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PART ONE

INTRODUCTION

1.1 The Project

Liffey Vale House and Gardens is a 1.15 Ha site on the north bank of the River Liffey, lying between Islandbridge and Chapelizod. The house, which is a Protected Structure, has been unoccupied for many years, is derelict, and has suffered more than one fire, such that only the shell of the house, and a few internal walls remain intact. It is protected by a temporary, modern, metal roof. The site includes the former garden and orchard, that relate to the historic structure, plus the land between this area and the River Liffey, which was formerly meadowland but like the house and gardens has been abandoned for many years.

Dublin City Council want to restore the house and gardens, to serve the community for the purposes of leisure and education, including interpretation, and a small café. It is hoped that the site will provide a focal point for the development of new and existing pedestrian routes and parklands in the vicinity. It was agreed that the precise nature of the development should arise out of a thorough analysis and testing of the nature and capacity of the site, and its relationship to its context, and the interests of the local community.

To this end, Dublin City Council appointed a multi-disciplinary design team, led by Blackwood Associates, Conservation Architects.

Design Team	
Client	Dublin City Council Parks & Landscape Services
Architect / Conservation Architect	Blackwood Associates Architects
Landscape Architect	Mitchell Associates
Structural / Civil Engineers	David Kelly Partnership
Building Services & Fire Safety Engineers	FLN Consulting Engineers
Quantity Surveyors	D L Martin & Partners
Ecologist	Mary Tubridy
Interpretative Consultants	Tandem Ltd.
Marketing / Business Advisor	Tourism Development International
PSDP	Safetydot.com
Design and Assigned Certifier	Blackwood Associates

This report records the stages of investigation, research, consultation debate and design development that informed the proposal as submitted for Part VIII approval.

1.2 The Purpose of Stage One

Stage One of the project has been about developing a comprehensive understanding of the buildings and the site, and refining, and defining, the specifics of the brief. This process has facilitated the development of the design of the conservation and extension of the historic building, a strategy for the management of the important biodiversity of the site, and the design of the landscape, These are illustrated in Part Five of the report. The approach has been holistic, the different disciplines collaborating and informing each other to ensure a comprehensive response to *the place*.

This report provides a record of the site analysis, the process of developing the brief, and the design and the strategies agreed for the conservation of the building and management of the nature. In the appendices are included the records of the historic building assessment, the engineering and landscape strategies, the assessment of the natural history of the site, the tree survey, and the situation analysis, all of which informed the process of brief development and design.



Fig. 1.01 Liffey Vale House, as viewed from the Phoenix Park.

1.3 Process for Stage One

Stage One of the project involved the following processes on the part of the design team. On-going dialogue and discussion between all design team members was of crucial importance to the refinement of the brief and the subsequent design.

Site Familiarisation & Assessment

- Site visits: walking the site, photographing and recording
- Ecological assessment and survey; recording and interpreting (See **Appendices F, G & H**)
- Architectural conservation assessment and survey of house and boundary walls: measured surveys and checking levels (see **Appendix A**)
- Survey drawings: including record of surviving historic features (see **Appendix A**)
- Structural Assessment (see **Appendix B**)

Site History and Development Context

- Desktop study of previous initiatives and studies of the site and environs
- Familiarisation with the planning context of the site: Local Area Plan and City Development Plan
- Familiarisation with OPW plans for the Phoenix Park
- Study of available historic maps and records of the site and immediate environs
- Researching the history of the Tramway

Site Analysis

- Analysis of the current form and location of the site, in particular in relationship to access and connectivity: pedestrian, cycle and public transport routes.
- Context of other cultural, leisure facilities and public green open spaces in the locality.
- The potential impact of a number of other projects and initiatives which are either currently underway, or likely to proceed during the next decade. These are recorded in chapter **1.5**.

Other Surveys & Investigations

- Tree Survey (see **Appendix J**)
- Archaeological Assessment of the site (see **Appendix K**)
- Invasive Species: eradication proposal (see **Appendix I**)
- Ground Investigations (See Structural Engineers' Report **Appendix B**)
- Water quality testing (See Structural Engineers' Report **Appendix B**)

Consultations

In order to ensure the viability of the proposal, and draw on existing experience of the site and locality, extensive consultation has been carried out, both within the Dublin City Council, and with stakeholders, including community groups, sports clubs, State bodies and businesses. A comprehensive programme of consultation of external stakeholders was led by Tourism Development International.

Initial Consultations

- Dublin City Council: Area Office, Drainage, regular meetings with Parks Department.
- OPW: Discussion of the possibility of re-opening the gate in the Phoenix Park to public access
- Background Consultations by Tourism Development International with Fáilte Ireland, Dublin Zoo, OPW, Irish Tourist Industry Federation, Rowing Ireland, Fisheries Ireland and other stakeholders. (see **Appendix M**)

Consultation Workshops

Two workshops, facilitated by Tourism Development International were held:

- Dublin City Council Executives Workshop to ascertain:
 - Perception/Observation of the Site at present
 - Travel/transport observations in relation to the Site
 - What is needed at the site
 - Residents' viewpoint
 - Visitors' viewpoint
 - Successful outcome measurements
 - Concerns
- Community / Local Stakeholders' Workshop to ascertain
 - Perceptions / observations of the present condition of the site
 - Travel / transport observations
 - Priority needs at the site in the context of the immediate locality and wider area
 - Successful outcome measurements
 - Concerns about the development of the site

Details of the workshops are provided in the Situation Analysis (**Appendix M**).

Brief Development

- Informed by the collective assessments and consultations the Working Brief was debated, developed and adopted by the design team, in consultation with Dublin City Council. See chapters **4.2, 4.3**.

Visits to other relevant projects

- Design Team visit to Sonairte: an interactive visitor centre promoting ecological awareness and sustainable living at Ninch, near Laytown County Dublin. See chapter **4.4**.
- Architects visits to cafés at Harold's Cross, Herbert Park, and Happy Out, Dollymount, to investigate spatial and operative requirements for small cafés.

Design Development

Alternative designs were prepared, exploring approaches to using and extending Liffey Vale House, development and use of the site, and the adaptation of a part of the adjacent site, belonging to the Department of Defence to permit a direct connection to the Liffey Valley Park. Proposals were presented to Dublin City Council over a number of meetings, and feedback taken on board in order to develop the proposal as presented in this report. (Chapters **5.4, 5.5**). The design alternatives considered, and the process followed are described in **Part 5.1**. Fire Safety Strategies (**Appendix C**) were developed and discussed with DCC fire officers. Services and Energy efficiency strategies were developed in parallel to the scheme design. The design was governed by the understanding of the significance of the historic building. (Chapter **2.3**).

Interpretative Strategy

The interpretative consultants were involved from the outset of the brief and design development process, and the interpretative strategy developed in parallel with the design. See chapters **4.5, Part Six**.

Biodiversity Strategy

This was developed in collaboration between the architects, the ecologist and landscape architects

Cost Control

The Quantity Surveyors prepared cost estimates as the design developed.

1.4 Previous Studies & Initiatives

Since the turn of the current century there have been a number of initiatives, studies, reports and proposals that are of relevance to the current project. The proposal for Cois Abhainn, at the site of Liffey Vale House has grown out of the cumulative insights and understanding emerging from these studies.

April 2019	Post Strip-Out Survey Report	Howley Hayes Architects
October 2018	Asbestos Survey	About Safety Ltd.
August 2018	Visual Structural Inspection	Trevor Wood Consulting Engineers
October 2016	Conservation Plan & Historic Study	Howley Hayes Architects
August 2016	Landscape Masterplan	Dermot Foley Landscape Architects
January 2016	Feasibility Report for the creation of a linear parkland and visitors centre at the Long Meadows	Dublin City Council
2015	Feasibility report for bridge at the Irish War Memorial Gardens	OPW
2012	Green Infrastructure, A quality of Life	Urban Form
2011-2017	Dublin City Council Development Plan	
2008	Pedestrian Bridge at Liffey Park Part VIII Planning Permission	Henchion Reuter Architects
June 2008	Liffey Vale Masterplan	Shaffrey Associates Architects Bernard Seymour Landscape Architects
2007	Phoenix Park planning context study	Brady Shipman Martin
2006	Liffey Vale, Building Report	Shaffrey Associates Architects
2004	Liffey Vale	Dublin City Council
2004	Preliminary Guidelines for management of Vegetation along the Liffey	UCD
2003	Huston Gateway	Dublin City Council
2000	Sustainable Recreational Use of Natural Resources Project (SRUNA)	Dublin Corporation

1.5 Related Projects

There are a number of projects, either proposed or underway, that will impact on the potential number, and nature, of visitors to the area, and alter the context in which any development at Liffey Vale will operate. There is no final date for the completion of these initiatives, but it is hoped all are likely to be operational within the next 10 years. The proposals for Cois Abhann have therefore been developed in the context of these proposals. These proposals are located in relationship to Liffey Vale in **Fig. 3.03**.

New Bridge at the War Memorial Gardens

The design team for the new bridge linking the War Memorial Gardens at Islandbridge with the north bank of the River Liffey were appointed on the basis of a design competition. The design for the bridge is underway and once the planning process has been completed, construction is hoped that this project will proceed in the near future. The client for this project is the OPW.



Fig. 1.02 Artist's impression and location plan for the proposed new bridge at the War Memorial Gardens.
Source: Irish Times and DCC Feasibility Report 2016

New Bridge at Longmeadows

A new bridge is proposed to link the Liffey Valley Park at Longmeadows with the walkway on the south side of the River. The bridge, proposed by Dublin City Council has been awarded Part VIII permission, but there is currently no timetable for its construction.



Fig. 1.03 Artist's impression and location plan for the proposed new bridge at Longmeadows.
Source: Part VIII application documents Henchion Reiter Architects 2008 and DCC Feasibility Report 2016

Liffey Walks

In 2016 Dublin City Council Culture Recreation & Amenity Department investigated the feasibility of the development of new pedestrian routes that would complement the existing walkway on the south side of the river Liffey and create the potential for a number of circular walks linking the War Memorial Gardens, Chapelizod and the Phoenix Park. The proposed new pedestrian bridges at Longmeadows and the War Memorial Gardens are fundamental to the development of an expanded network of walkways and cycleways. Existing and potential paths are recorded in the site analysis in Part Three of this Report. (See Fig. 3.03).

Phoenix Park

The OPW commissioned a Strategic Review of the Visitor Experience in the Phoenix Park and the Draft Report was completed in 2018 and subject to public consultation and submissions through 2019. Amongst the measures proposed in the plan that are likely to commence in the near future is the development of the Magazine Fort. This is likely to develop over a number of years but will serve to bring more visitors to the area of the Phoenix Park close to Liffey Vale. There is also the possibility of the opening up, and making accessible of the pedestrian gateway in the wall of the park, opening onto the Chapelizod Road, approximately opposite to Liffey Vale House.



Fig. 2.01 Rocque's Map of 1756 Building shown in similar location to the current house



Fig. 2.02 Ordnance Survey Map of 1843. The historic boundary of the site is marked. The house represented is similar to the current footprint, the orchard is clearly indicated and the diagonal ditch is in-situ.

PART TWO

HISTORY OF THE SITE & CONSERVATION ASSESSMENT

2.1 The Site

Location

The historic site of Liffey Vale is situated on gently rising ground, between the River Liffey, and the road that links the city of Dublin to Chapelizod, the west and northwest of the country beyond. At this point this road follows the boundary wall of the Phoenix Park, which dates from 1680. The house is located close to the road, but at a much lower level, so it has only a limited presence. The level of the site, on the garden side of the boundary wall is up to 2.2 m below that of the adjacent road and footpath, the average level difference being 1.6m . Between the garden edge and the river is a wide level area of land.

The River Liffey runs in the same location it has for 2 million years: both prior to, and subsequent to, the last ice age. At this point the river valley is narrow and flanked to the north and south by steep escarpments, with narrow level flood plains beside the river banks. However, the control of the flow of the Liffey, through the weir at Islandbridge and further dams and controls upstream, mean there has been no recorded flooding at the site in recent memory (Source OPW Floodinfo.ie).

This stretch of the Liffey has been the location of human settlement and trade for thousands of years, with extensive Viking settlements and associated burials recorded in the vicinity. Lying upstream of the highest reach of the tides at Islandbridge, and regulated by the weir there, the level of the river is predictable and the flow steady, leading to the location of a number of boatclubs downstream from Liffey Vale.



Fig. 2.03 View of this site I, in its context, looking towards Chapelizod. Steep bank to the left (south bank) and the former floodplain recolonised by trees on the right (north bank). The Liffey Valley Park in the background is still open land. The regulated level of the river Liffey is currently about 800mm - 1m below the level of the former flood plains.

The area of land, to the west of Islandbridge between the boundary wall of the Phoenix Park and the River Liffey is the townland of Longmeadows. Historically this land has been used as pasture, browsing crops such as hay, and for allotments. Liffey Vale has always been in an isolated location, within this townland, being the only house, in the townland, between the east end of Chapelizod village and the houses adjacent to the weir at Islandbridge. It has been isolated from the land to the north, since 1680, by the enclosing wall of the Phoenix Park. (**Fig. 2.04**).

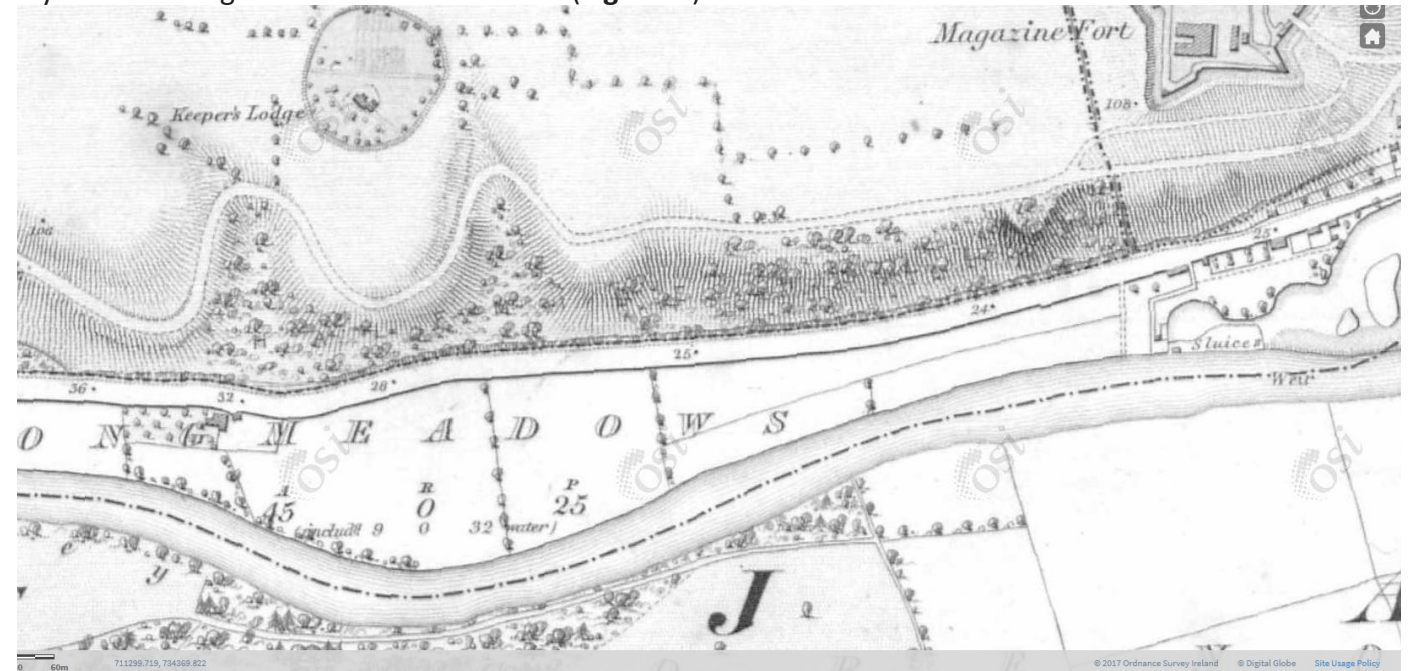


Fig. 2.04 Ordnance Survey map from 1843, showing the townland of Longmeadows in the context of the Phoenix Park, and the weir to the east.

The Site

Record of a house in this location first appears on John Rocque's 1756 map of Dublin. (**Fig. 2.01**). On the Ordnance Survey Map of 1843, the current extents of the orchard and garden, and the 18th and 19th century wings of the house, and the line of the western boundary wall can all be clearly seen, in what appears to be their current location. (**Fig. 2.02**). There also appears to be a ditch running from the boundary of the land to the river, in approximately the location of one of the current ditches.

The 1863 edition shows a ditch along the southern boundary of the site, extending eastward for half a kilometre, managing the drainage of the entire area. (**Fig. 2.05**). By the 1911 edition of the map, the tramway is shown running along the line of the Chapelizod Road, (**Fig. 2.06**). Both maps show building between the earlier house and the boundary in the location of the now demolished annexe. (Refer Building Condition Report). These later maps also show the current driveway and entrance, and the garden wall extending south to the ditch boundary, but it cannot be ascertained, for certain, if there was any form of pedestrian entrance (and steps) between the house itself and the road. Valuation records from the 19th century show that the land holding was of 1 acre 1 rood and 18 perches, analogous with the area of the orchard and garden, and indicating that the surrounding meadows were in other ownership.

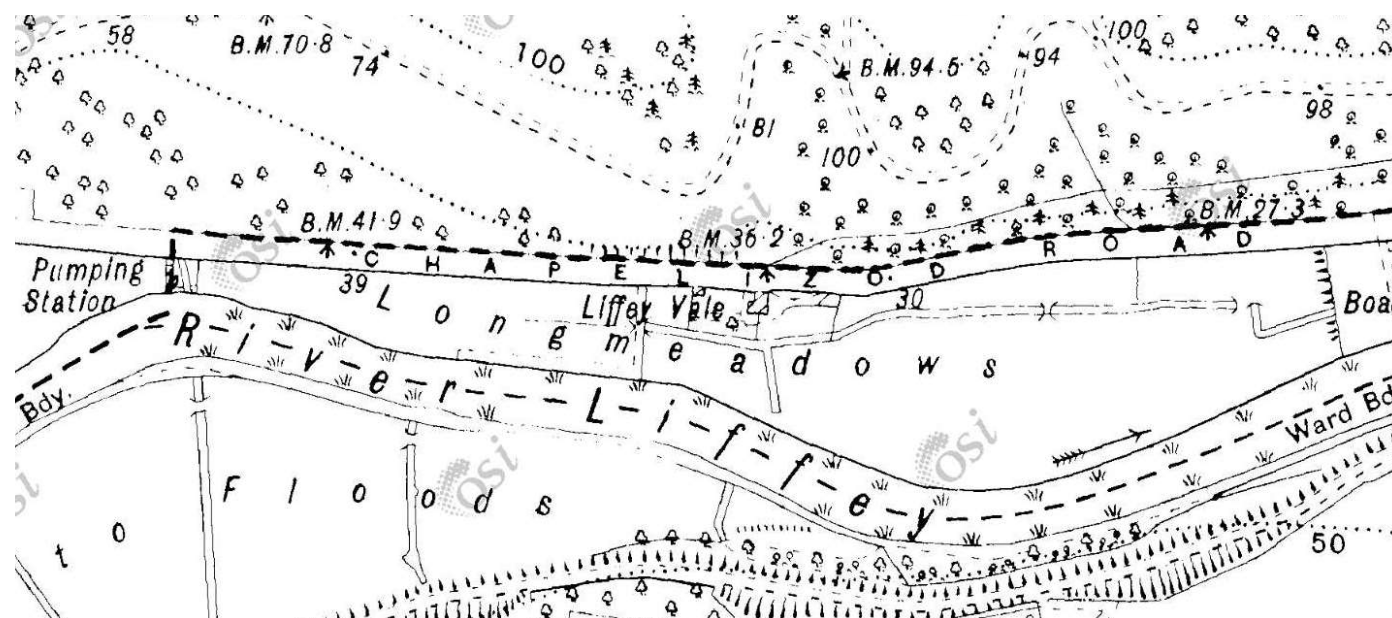


Fig. 2.05 Cassini map from 1860s, showing the diagonal ditch toward the river, and the longitudinal ditch leading into the fields to the east.

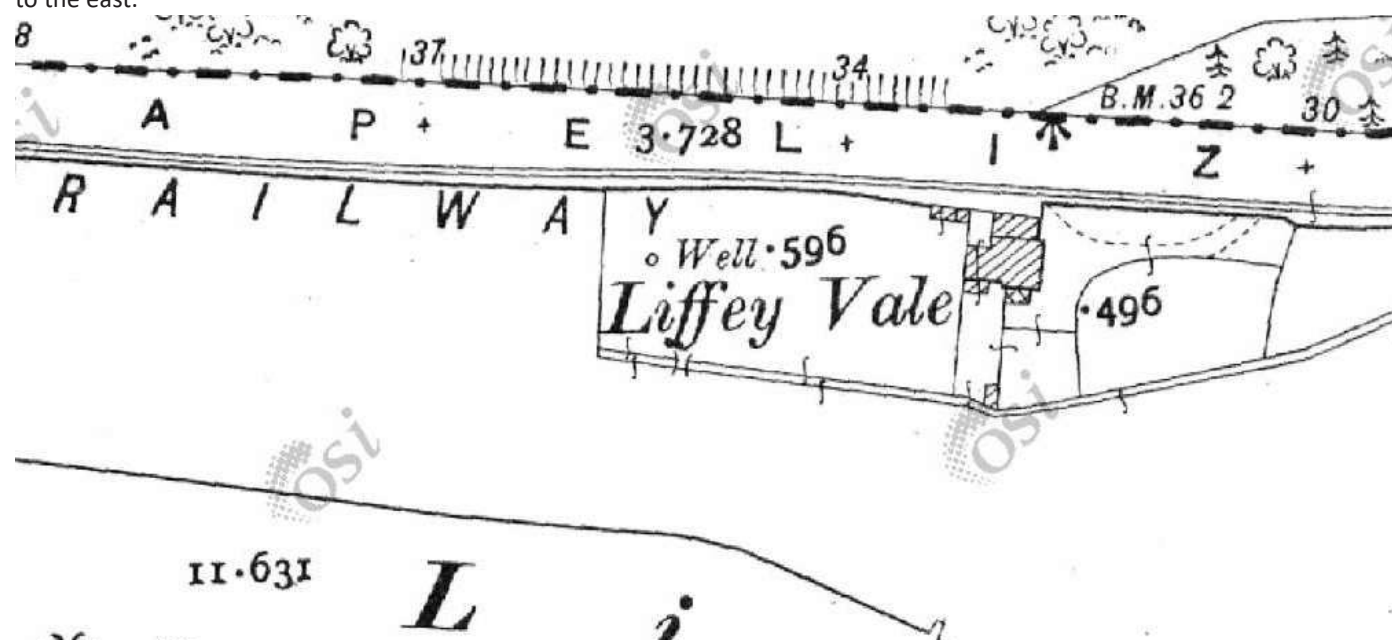


Fig. 2.06 Ordnance Survey map from 1911, showing the ditch flowing to the east, the annexe in place, and the current layout of driveway gardens, and orchard. The well is also marked, and the Tramway is in place.

The historic form of the site can still be read, with orchard trees surviving to the west of the house, and more formal space to the south of the entrance drive. There are a number of specimen trees. The Lombardy Poplars, are likely a fairly late addition, being fast growing and short lived, and while maybe not the most attractive of trees act as a prominent marker of the site, from a distance, both along the length of the Chapelizod Road, and from within the Phoenix Park. There are two copper beeches, and a group of handsome sycamores, at the west end of the site, which may be self-seeded but have matured into fine specimens. These trees make a substantial contribution to the surrounding area, when seen from the path on the south bank, when moving along the Chapelizod Road, and from within the Phoenix Park.

The current site also includes the land between the historic garden and the river. This mostly level area, consists of scrub, with many native trees, notably a large willow and many self-seeded alder. Along the

river margin is a narrow strip of wetland, with rushes and other plants of the river margin. At the east end of this area the level of the ground has been modified by the deposition of soil, creating a small "hill", the top of which is approximately level with the road, and adjacent playing fields. This modification presumably dates from the construction of the playing fields, in the mid to late 20th century, it represents a significant change to the historic form of the land.

Roadside Location

The roadside location has a major influence on the nature of the site. Prior to the opening of the Chapelizod bypass in 1989, the Chapelizod Road was one of the principle routes into Dublin, carrying traffic from Chapelizod, the Liffeside towns of Lucan and Celbridge and the more distant towns of Kildare, Mullingar and the north west of the country. Although this traffic now largely avoids the road that passes along the boundary of the site, it still has a big impact in the form of traffic noise from the busy dual carriageway on the south side of the river. When this road was built there was substantial remodelling of the topography of the escarpment on the south side of the river.



Fig. 2.07 The orchard in its current form



Fig. 2.08 Roadside location: the house and its site largely concealed from the road, behind the wall

Tramway History

For over half a century the Chapelizod Tramway ran along the northern boundary of the site. Initially opened as a steam tramway in June 1881, it was extended to Lucan in 1883, was later electrified, and the final tram ran in April 1940. The gantries that carried the electricity wires are still in-situ, now used for street lighting, and are an interesting feature and link to a sometimes overlooked piece of Dublin history. The trams were important in bringing travel, and excursions, within the budgets of ordinary Dubliners.

The original steam trams would have been exceptionally heavy, and the retaining wall that forms the northern boundary of the site would have fulfilled a considerable structural function in bearing the applied loads of the moving engines and carriages. It is possible that the calp wall to the north side of the house may have been associated with the construction of the tramway. Modern Dublin bus routes and stops often replicate the earlier stops and routes of the trams. It would be interesting to research if there was once a tram stop here serving both Liffey Vale and the gate into the park opposite, and the keeper's house at the top of the hill. With the gantries still extant and prominent this is an interesting aspect of the history of the site that could be explored further.

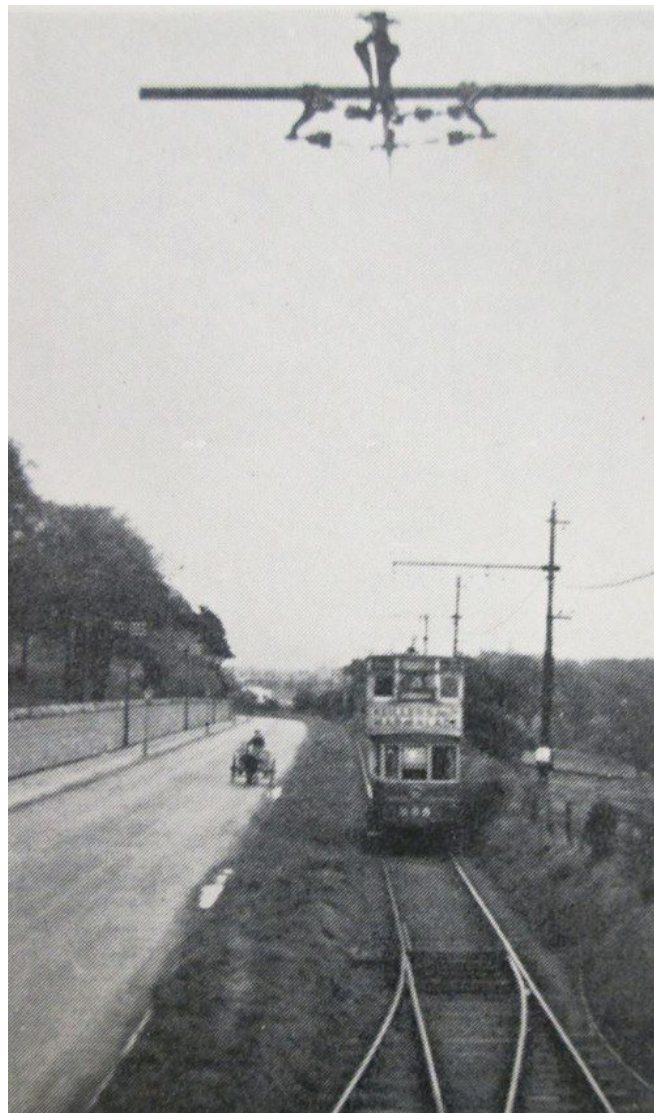


Fig. 2.09 The Dublin & Lucan Electric Tram to the east of Chapelizod. Wall of Phoenix Park to the left. The gantries are still extant, including those adjacent to Liffey Vale.

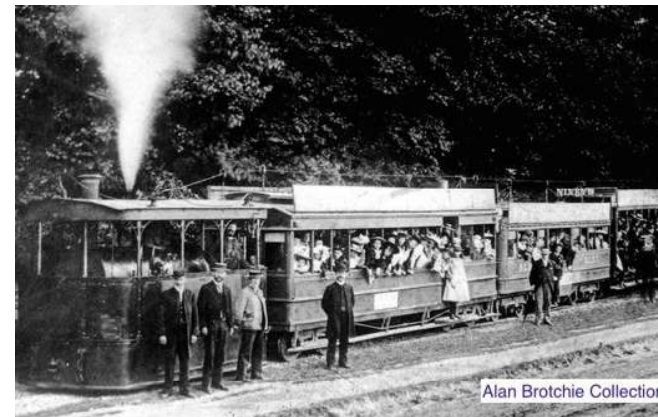


Fig. 2.10 The Steam Tram, on a school excursion

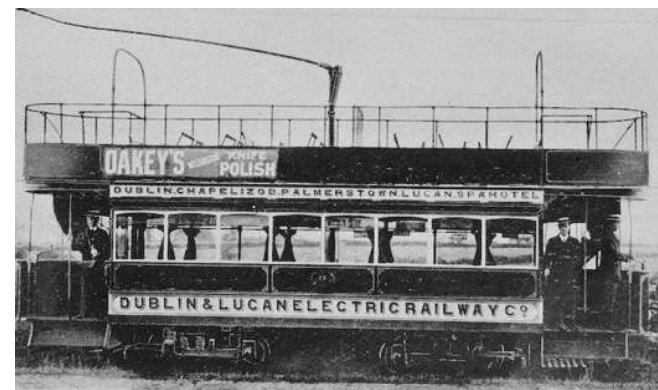


Fig. 2.11 The electric tram

2.2 The House

A detailed record, in the form of photographs and drawings of the interior and exterior of the house, the boundary wall, and other features within the curtilage of the house is provided in the Building Condition Report (**Appendix A**).

Liffey Vale house is a domestic structure of three wings. The western and central wings formed an L-shaped building and date from the 18th century, although this part of the building may have been constructed in more than one phase, and has certainly been subject to a number of alterations subsequently. The gables of the westernmost wing, with their applied cementitious half-timbered details give the appearance of a 1920s-30 suburban house. Most of the external render is cementitious.

The eastern wing dates from the early to mid-19th century, and takes the form of a three bay villa typical of Dublin of that period. The symmetrical front elevation, raised ground floor level, and generous rooms to either side of the front door display the expression of a genteel residence. **Figure 2.12** provides a summary of the ages of the building.

The entirety of the roof, and the majority of the interiors of the house, including the staircase and upper floor, were destroyed by fire subsequent to the preparation of the earlier Masterplan by Shaffrey Associates in 2008. Their building report of 2006 provides a record of the building prior to the fire.

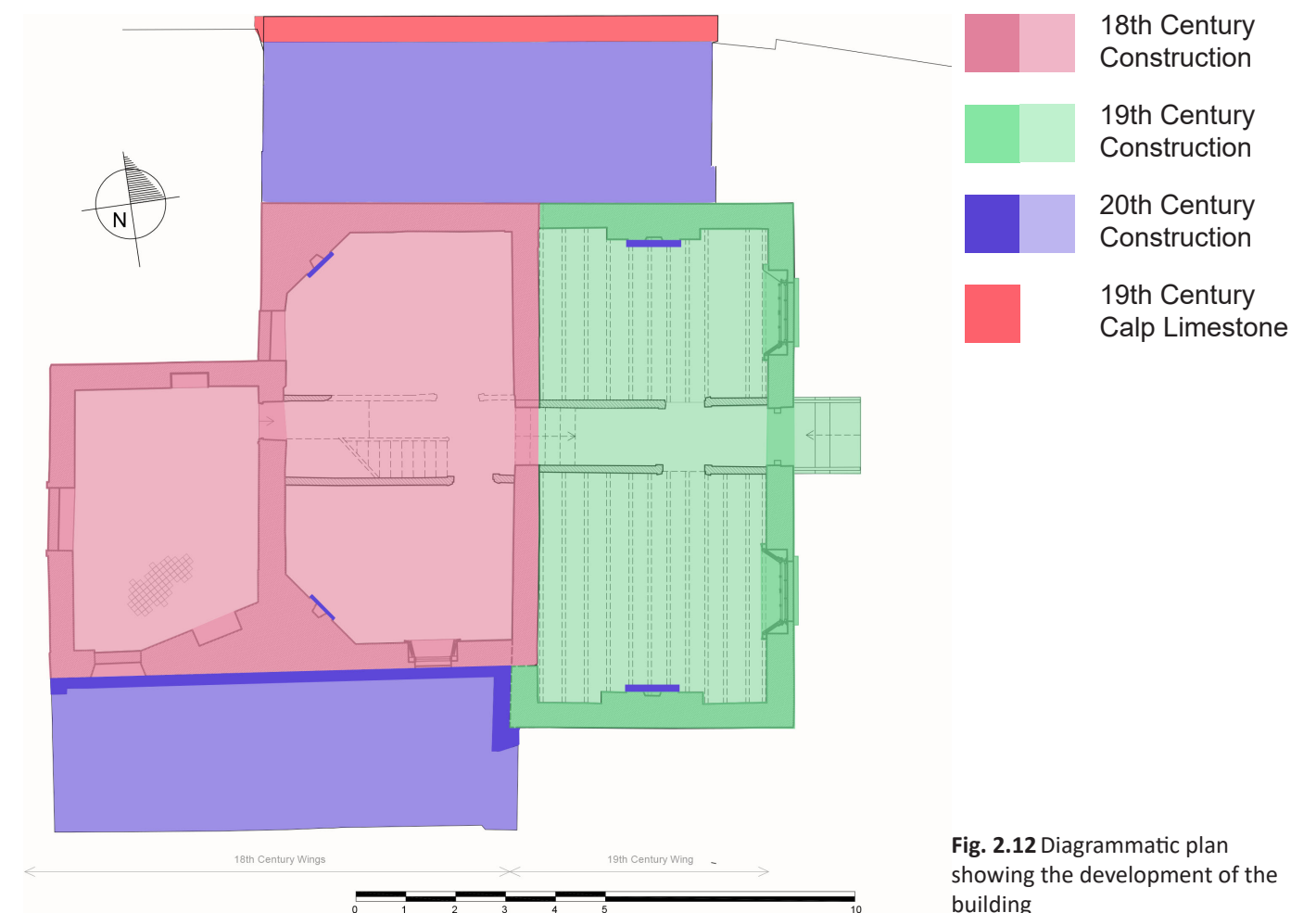


Fig. 2.12 Diagrammatic plan showing the development of the building

Subsequent to the fire a 20th century single storey extension, and a 19th / 20th century two storey “annexe” between the house and the calp wall to the north were also demolished.

The rooms within the 18th century two-storey part of the building were small in scale and modest in detail. Most of the fireplaces were from the early 20th century but a couple of earlier ones remain. Where the internal plaster has failed it is possible to read the location of former window openings in the eastern wall of the 18th century central wing. All window and door openings, with the exception of the front door have been blocked up, but historic sash windows survive at the east elevation of the 19th century wing and at the upper level of the west elevation of the west wing.

Liffey Vale House is considerably older than its external appearance suggests. It has been much altered over the years, and much of its interest lies in its evolving form and exoression.

Liffey Vale House is recorded in Dublin Cty Council’s Record of Protected Streuctures, Reference 1346



Fig. 2.13 The symmetrical entrance elevation of th 19th century east wing viewed from the garden.



Fig. 2.14 The house from the south west: 18th century wings, with 19th century wing behind. Scars of demolished single storey 20th century extension in foreground.



Fig. 2.15 The interior of the central, 18th century wing. All the upper floor structure has been lost, but fireplaces and a two storey partition survive.



Fig. 2.16 The 18th century wings of the house, viewed from the northwest.

2.3 Assessment of the significance of Liffey Vale

The cultural significance of Liffey Vale may be considered through a number of aspects of its form and history.

Historic Significance

Liffey Vale is a rare example, in such close proximity to the centre of the city, of a semi rural house, in its original site and setting. A mixture of the flood risk associated with the river, and the fixed historic boundary of the Phoenix Park, mean the townland of Longmeadows was never significantly developed for either housing or industry, and the river valley in this location survives as a rare thread of open semi-natural environment, within a mile or two of the heart of the city. A number of topographical views of Dublin City survive from the 18th century, with the viewpoint in the Phoenix Park, close to Liffey Vale House. These views depict an arcadian foreground to the view of the distant spires, domes and chimneys of the city. (See **Figure 2.17**). Whereas the earliest part of the building may have been constructed to house those working on the land, the later 19th century wing establishes that the residents had more genteel considerations, and probably means. The building in the context of its setting therefore embodies an interesting link to the evolution of this part of the city of Dublin. It is a rare example of a dwelling in this context.

The site is also interesting in relationship to the history of the tramway, briefly outlined above.

Architectural Significance

The house has been subject to extensive alterations, extensions and modifications over the years, followed by a serious fire, and as such the building displays no features of outstanding architectural quality, or completeness, in either its external form or its interiors. Always a relatively humble building in scale and detail, the ravages of time and fire have also destroyed most of the subtle patina of age in the interior, that once embodied in its fabric, aspects of the human stories of the inhabitants.

The architectural significance of the building, as it survives, lies primarily in the relationship of its scale and form to the adjacent garden and orchard. That being said, enough of its historic details survive that these may be retained and conserved, and used as the basis to renew lost windows and interior joinery, such that the presentation of the essence of the building could be considerably enhanced. There are also traces that can be read in the derelict building that help understand the evolution of its form. The building is of local architectural significance.

The form of the house embodies the changes and evolution from a functional, essentially rural function to a more genteel, albeit modest, home on the fringes of the city. The boundary walls of the site are integral to the curtilage of the Protected Structure and they are also of local significance.

Social Significance

No records have been found of the former owners or inhabitants of the house. As there is no street number associated with the house it is not possible to accurately associate available census records with the house. It is possible information in this regard may yet be uncovered. The house is, however, significant in that it embodies the social standing of the place, in the context of the meadows that would once have been used for agricultural or horticultural purposes.

The River Liffey is the defining feature of the site, and its place in the local and national consciousness is significant. This length of the river, between Chapelizod and Islandbridge, is notable for the rowing clubs that use its predictable flow. It is also (on the south bank) an important walking route for residents and visitors to the area.

Landscape Significance

The River Liffey as a feature of the landscape has flowed in this location for 2million years. The flow of the river, following the end of the last Ice Age 12,000 years ago, created the steep sided valley that is seen today.

The landscape of the current site of Liffey Vale House has significance in relation to to both its human and natural history and the symbiosis of the two. As noted above the site of the house, including orchard and gardens, embodies a rare example of a dwelling house of this nature and its associated setting surviving in such close proximity to the city. A number of mature specimen trees and orchard trees survive, and remain important features of the site. The taller trees of the garden artea, in combinatio with the self-seeded native trees in the southern section of the site contribute to views along the course of the river, and from within the Phoenix Park and the War Memorial Gardens

The level land between the grounds of Liffey Vale House and the river is the flood plain of the Liffey. Until the early 20th century it was subject to regular seasonal flooding, which enriched the soil for the growing of crops such as hay, and probably the grazing of livestock also. The surviving ditches in this area (some silted up others still containing water) are a historic landscape feature from this period. Since the damning of the river upstream for water supply and power generation, the flow of water has been controlled and the last time the level area of the site was flooded was in the 1950s during extreme rainfall. (Source OPW flooding records). As such, the land is no longer valuable for horticulture or agriculture, and elsewhere along this length of the Liffey has largely been taken over for leisure purposes: boat clubs and the GAA pitches to the east of Liffey Vale, and Liffey Valley Park to the west.

It is only at this location, as well as the narrow margin of the river bank elsewhere, that the land has been left unmanaged, and native trees and plants have been allowed to "rewild" the area, in a manner unplanned or tended by people. This has resulted in a notable richness of biodiversity within the site, a significant haven for a rich mixture of plants and animals, vertebrates and invertebrates. This is of considerable local significance.

Overall Significance

It is in the combination and symbiosis of all three aspects of the significance of the site that the overall significance of the site should be acknowledged, and for its rarity within the city, as an open space and haven for nature.



Fig. 2.17 *A Prospect of the City of Dublin from the Magazine Hill in his Majesties Phoenix Park*. Engraving by James MacArdall, after a painting by Joseph Tudor. c 1750s. This illustrates the context of Liffey Vale House in the mid 18th century. This ideal of a bucolic rural setting, close to the city of Dublin informs the spirit of Liffey Vale House. Although the city has changed, and grown, the valley of the River Liffey and the Phoenix Park survive as green spaces, representing a continuation of this ideal.



Fig. 2.18 The site viewed from the footpath on the south side of the River Liffey

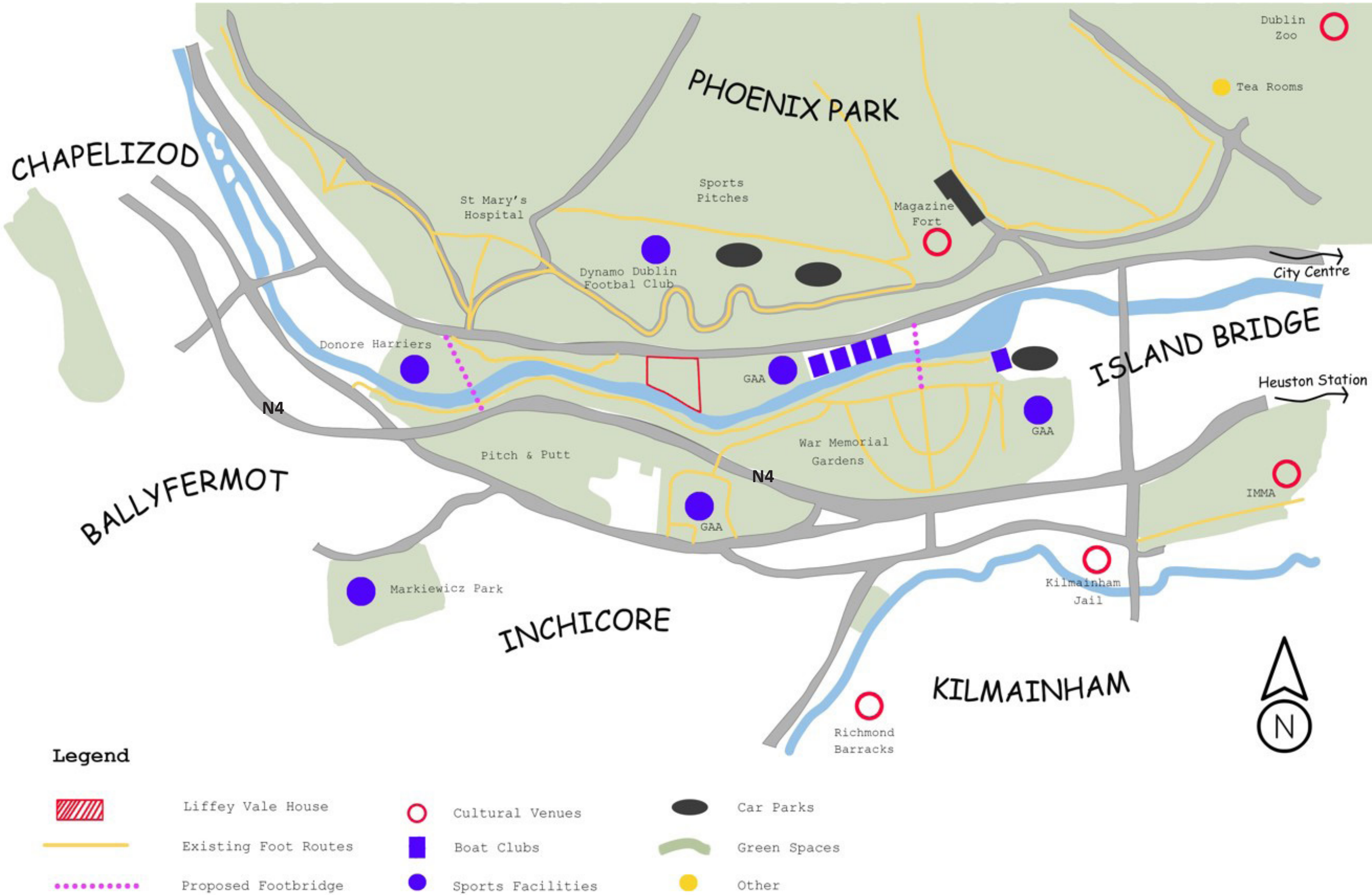


Fig. 3.01 Map illustrating the context of Liffey Vale House & Gardens

PART THREE

SITE ANALYSIS: OPPORTUNITY & CONSTRAINTS

Location & Connectivity

The site of Liffey Vale House embodies a number of notable contrasts. As the crow flies the site is within a mile of a number of important, and much visited, cultural, and recreational sites, and close to centres of population at Chapelizod, Islandbridge, Ballyfermot, Kilmainham and Inchicore. It is directly adjacent to the Phoenix Park. However, accessing the site of Liffey Vale on foot from any of these places currently requires a lengthy walk along the busy Chapelizod Road. Although the site is located beside this main thoroughfare, few members of the public would currently be aware of the existence of Liffey Vale.

Fig. 3.01 illustrates existing pedestrian routes and roads, and the proximity of important cultural sites to Liffey Vale House. It also shows the location of sites of outdoor recreation, existing car parks, and the location of the two proposed new pedestrian bridges, described in **Chapter 1.5**. The same area is illustrated in the aerial view in **Fig. 3.02**

Although Liffey Vale is located in close proximity to the War Memorial Gardens and the Phoenix Park, and within walking distance of the other sites, and residential areas identified, at present access to the site from any of these requires walking a considerable distance along the busy Chapelizod Road. The nearby Liffey Valley Park is separated from the site by an area of land owned by the Department of Defence. The nearest, currently open, access into the Phoenix Park is through the Chapelizod Gate, approximately opposite the west end of the Liffey Valley Park.

There is a Dublin Bus stop on either side of the Chapelizod Road close to the house, and a cycle lane is located on the footpath on both sides of the road, linking Chapelizod to Islandbridge. When the two proposed pedestrian bridges are completed, this will bring access from the footpath on the south bank of the river much closer. Thus the site has great potential, for pedestrian access, but also a number of opportunities to improve connectivity, which ideally would be implemented, if the site is to flourish as a destination.



Fig. 3.02 Aerial view of the location of Liffey Vale House. Photo: OSI.

Links to the Phoenix Park

The Phoenix Park is one of the most popular and universally used public open spaces in Dublin. As well as a place of relaxation and exercise for generations of Dubliners, it is also the location of team sports. The most extensive area of sports pitches is located in the section of the Fifteen Acres at the top of the bank opposite Liffey Vale House and Gardens. Phoenix Park is enclosed by a wall, which is necessary to enclose the deer, and prevent them straying onto roads. There is, however, a pedestrian gate in this wall, currently kept locked, located directly opposite Liffey Vale House (**Fig. 3.03**, and indicated on the map in **Fig. 3.05**). If this gate were re-opened to the public, this will create an easy link between users of the park and the site of Cois Abhann. Footpath access would need to be improved through the valley that leads down to this gate. (**Fig. 3.04**). The OPW have expressed their willingness to facilitate these changes.



Fig. 3.03 Gate in the wall opposite Liffey Vale



Fig. 3.04 The valley leading down to the Liffey Vale gate.



Fig. 3.05 Map showing the footpaths and zones within the Phoenix Park. Source: Phoenix Park Conservation Management Plan



Fig. 3.06 Aerial view showing the Liffey Valley Park in relationship to the site of Liffey Vale House. Source: Dublin City Council

Connectivity to the West

The Liffey Valley Park, located to the west of the site, is separated from it by an area of land, owned by the Department of Defence. (**Fig. 3.06**). This site is slightly less than half the size of the Liffey Valley House and Gardens. If access were made possible across this area of land, into the orchard (there is a blocked doorway in the western boundary wall), access to Cois Abhann, from Chapelizod and, once the proposed Longmeadows Bridge (See **Fig. 1.03**) is constructed, from the footpath on the south of the River, would become both easier and more pleasant. The Department of Defence site is mostly level, but with a steep bank along the line of the Chapelizod Road. **Fig. 3.07** illustrates the nature and form of the site. The exploration of the feasibility, and agreement of the creation of a route through this site, are described in **Chapters 4.1** and **5.1**.

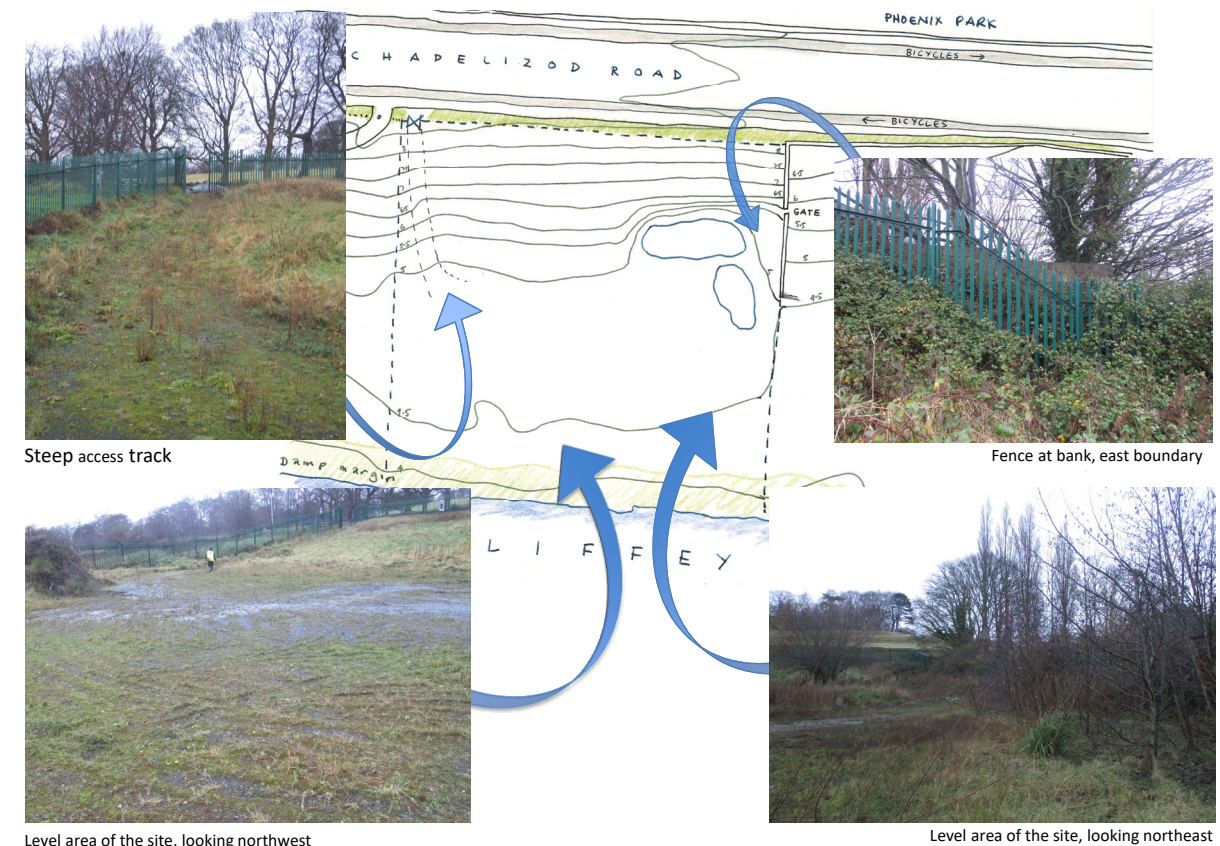


Fig. 3.07 Map of the topography of the Department of Defence site, and photos illustrating its nature.

Connectivity to the East

Immediately to the east of the site of Liffey Vale House are the grounds of St. Brendan's GAA Club. Although owned by the OPW these lands are on a long lease to the club. The land has been levelled in order to provide the pitches. Spoil from this operation forms the raised, eastern part of the site of Liffey Vale. The levelling of the site means there is a steep bank along the river, which has been naturally colonised by trees. Beyond the GAA pitches there are a number of boat clubs. The rowing activity associated with these clubs is an important feature of this stretch of the river.

Beyond the boat clubs is the location of the landing point of the proposed bridge into the War Memorial Gardens. (See **Fig. 1.02**).

Dublin City Council's 2016 *'Feasibility Report for the creation of a linear parkland and visitors centre at the Long Meadows'* suggested a riverside walk connecting the site of Liffey Vale House to the War Memorial Gardens Bridge. This proposal, combined with the proposed new bridge at Longmeadows would create an attractive circular walk. However, it would also require negotiating with a number of other landowners. An alternative approach to improving connectivity to the east of the site could be the improvement of the pedestrian footpath on the south side of the Chapelizod Road.

This area is illustrated in **Fig. 3.08** below.

Natural Connectivity

Non-human life is not bound by the restrictions of land ownership. Birds and insects fly across boundaries, all nature of creatures swim in the waters of the river, others burrow through the soil. Plants procreate through seed and spores spreading through the air, as well through the soil and borne by flowing water. Manmade features do put some limitations on the movement of other life forms however, such as the wall of the Phoenix Park keeping in the deer. Much wildlife, most notably bats, but some birds and insects also, are deterred, or confused, by artificial lights at night.

As noted in the Ecologist's Report in **Appendix F**, the site of Liffey Vale House is especially rich in natural habitats, and, particularly since the house ceased to be occupied, has become a haven of wildlife, with native trees and other plants and animals colonising the site. Natural connectivity, in terms of close proximity of other areas of semi-natural environment, is important in encouraging this process. The 'wildlife corridor' of the River Liffey is particularly effective in this case, connecting the site to the open hinterland of Dublin, upstream. The natural connectivity does not differentiate however, between native and non-native species, and the Himalayan balsam on the site has been brought in by riverborne seeds.

Reference to the aerial view in **Figure 3.02** shows how the site is located in an area dominated by grassed areas and trees. Most of the greenspaces are managed parklands, but the woodlands on the steep escarpment on the south side of the river, the site of Liffey Vale, and the river bank of St. Brendan's GAA grounds are noted as largely natural, self seeded trees.



Fig. 3.08 Aerial view of the area to the east of Liffey Vale House & Gardens. Source: OSI.

Immediate Context of the Site

The site is bounded on the north by the Chapelized Road from which it is protected by a wall and by a dense hedge at the east end of this boundary. There is a considerable change in level between the road and the site, with the boundary wall performing a retaining function, of up to 1.7m. Much of the wall is modern, but some lengths of historic stone wall survive. (See **Appendix A** Building Condition Report). There is no direct view into the site, but the roof of the house is visible above the wall.

The Phoenix Park is on the opposite side of the road, and from here the roof of the house, and the distinctive Lombardy Poplar trees are a notable feature of the view from a number of points along the meandering Military Road. **Fig. 3.09** describes the setting of the site from the Chapelized Road.

Views into the site from the Department of Defence site to the west, and the St. Brendan's grounds to the east are largely blocked by vegetation. Viewed from the footpath on the the south side of the River, the site is a mass of native trees, and a natural riverbank, with no view of the house and only the Lombardy Poplars and copper beeches in the background indicative of the presence of a garden. (**Fig. 3.10**).

Character Zones within the site

The site can be divided into three distinct zones, in terms of history, topography, and vegetation. These are shown in **Fig. 3.11**. A detailed description of the vegetation is given in **Appendices F & G**.



Fig. 3.09 Views of the site from the north side



Fig. 3.10 The site viewed from the south side of the River Liffey



- Zone 1 Historic site of Liffey Vale House: Garden and Orchard
- Zone 2 Former flood plain & riverbank: flat land with ditches
- Zone 3 Reclaimed land, imported fill: over 2m above level of the flood plain

Fig. 3.11 The zones within the site

Zone 1 Historic Site of Liffey Vale House

This area contains the remains of the formal garden, with the driveway, lawn and fine specimen trees to the east of the house, and the orchard to the west of the house.

The Garden

The lawn of the garden is substantially below the level of the Chapelizod Road. A dense hedged bank descends to the drive which has a retaining wall between it and the lawn. Four Lombardy poplars define the east end of the lawn, and there are large mature specimen copper beech and cherry trees and a large mature ash. The original southern boundary is indistinct; obscured by the deposited spoil of Zone 3.

The Orchard

The orchard slopes gently from the boundary wall down to the hedge of laurel along the ditch that forms the southern boundary of the site. A number of mature fruit trees are grouped in the eastern part of the orchard and at the west end are a row of four more Lombardy poplar, a copper beech, and an attractive group of mature sycamore, which although probably self seeded have matured into a fine group of trees. Some of the boundary wall is in poor condition (Refer to **Appendix A** Building Condition Report) and there is a blocked doorway in the western boundary wall. At the west end of the orchard there is well.



Fig. 3.12, 13 Looking east across the garden lawn: enclosed by mature trees and rising ground to the north, east and south.



Fig. 3.14 Orchard looking west: fruit trees in the foreground, beech beyond.



Fig. 3.15 The well, with sycamores behind.

Zone 2 Former Flood Plain

This area is level, but bisected by a ditch, with another ditch forming its northern boundary. A diagonal former ditch that forms the eastern boundary of this area has silted up and dried out and is currently just a depression in the land. The vegetation of this area is predominantly natural, and native, though Himalayan balsam is present, an annual whose seeds are carried by river water. There are very many juvenile, semi mature and mature alder trees, and two mature willows, that display the characteristic splitting, and regeneration from the fallen timber.



Fig. 3.16 Former flood plain: boundary ditch to the orchard. Willow to the left, laurel hedge to the right. **Fig. 3.17, 18** Former flood plain: mixed native vegetation and regenerating willow

Zone 3 Reclaimed Land

This area of the site was formed of imported spoil, at the time the adjacent sports pitches were levelled. As such, most of this area is between 2m and 3m above the level of the former flood plain, with a large open semi level area, and steep banks on the south, west and northern sides of the zone. Vegetation is dry grassland and scrub, with semi mature sycamores at the top of the bank down to the river.



Fig. 3.19 Reclaimed land at boundary with St. Brendans to the left. Raised ground offers views of the river.



Fig. 3.20 Open level area offers views into the upper parts of the trees. Alder to left, garden trees to right.

Experience of the site

On entering the site, from the Chapelizod Road, the visitor has the sense of entering a secret world. The driveway turns and descends toward the pleasant symmetrical east elevation of Liffey Vale House. (Fig. 3.21).

Once within the site the visitor feels secluded by its wealth of mature trees, the high boundary wall to the north and west, and the rise of the reclaimed land to the south east. The tall mature trees in both the former garden and orchard, and the willows and alders on the flood plain provide a great sense of enclosure, and they shelter the site from the wind. The gentle rise across the garden from south to north contributes to the sense of being in a suntrap creating a pleasant microclimate within the site. (Fig. 3.22).

Currently there are no formal paths leading from the gardens into Zones 2 and 3, and the ditch along the former boundary of the orchard prevents access from there. Access to the higher ground in Zone 3 requires a scramble up steep uneven banks. Crossing the ditch that bisects Zone 3 is only possible via a bridge formed of decking planks.

The top of the bank to the reclaimed land offers views down the river and into the upper parts of the trees elsewhere in the site, offering great opportunities for bird watching and watching passing rowing boats. The river can also be experienced from the flat lands of the flood plain, framed by trees and the plants of the river margin.

Within the site, the visitor is almost entirely shielded from sight of modern human development: in addition to the enclosure provided by the trees within the site, the steep wooded escarpment on the south bank of the River Liffey shields the site from any visual connection with the extensive suburban areas to the south. The only view out of the site is above the retaining wall, towards the rising land of the Phoenix Park (Fig. 3.23).

However, the site is not entirely protected. Whereas the environment is green and pleasant, and birdsong, is a constant, the soundscape of the site is disturbed by the sound of vehicles, from both the adjacent Chapelizod Road, and the constant background rumble from traffic on the N4 dual carriageway, which runs in a cutting at the top of the steep bank to the south of the river.



Fig. 3.20 The driveway leading into the site from the Chapelizod Road



Fig. 3.21 Tall alders enclose the site



Fig. 3.22 Diagrammatic section of site



Fig. 3.23 The only view out from the orchard: north to the Phoenix Park



Fig. 3.24 The former flood plain, sheltered by alders



Fig. 3.25 The mature willow at the south west corner of the site.

PART FOUR

EMERGING BRIEF

4.1 Original Brief & Brief Development Process

When inviting design teams to tender for the project at Liffey Vale House, the summary of the brief, as issued by Dublin City Council was as follows

“Dublin City Council proposes to restore the house and gardens, providing new cultural and leisure facilities, and open these to the public for recreational, cultural and community uses..... The restoration of the derelict Georgian building and associated gardens of Liffey Vale House & Garden shall, at a minimum, incorporate a small interpretative centre, café and bus drop off point thus establishing it as the focal hub for a planned wider valley park route.

This project will include the provision of leisure and educational outdoor spaces incorporating the existing small wetland and woodland area close by....

...The proposed development sits within the wider context of the separate upgrading by DCC of the adjacent Liffey Valley Park,the planned construction of a new pedestrian bridge at Chapelizod (under a separate contract) and the design and installation of a new pedestrian bridge at Lutyens War Memorial Gardens at Islandbridge by the OPW.”

Prior to the consultations that were carried out as part of Stage One, the Dublin City Council Parks Department issued a summary statement of the project intention. The design objectives for the project was given as follows:-

' Liffey Valley House and Gardens will become the focal hub of the proposed 'Liffey Valley Trail' and associated parkland. DCC wishes to sympathetically renovate the historic character of the original pre-1756 Liffey Vale House. These plans include the introduction of tea rooms, an indoor and outdoor education and events space, celebrating the history of the Liffey and the unique biodiversity within the area.

Due to the enclosed nature of the orchard and historic formal design of the gardens surrounding Liffey Vale House it is envisaged that Liffey Vale Gardens will be restored to the original herbaceous cottage style. In addition the development of a new renovated wetland area with an informative ecological trail within the environs of Liffey Vale House would be of great benefit as an education resource for schools as well as encourage elements of eco-tourism and providing a unique setting for local leisure.

The Parks Department will also develop proposals for the adjacent Liffey Valley Park and ensure there is a coordinated approach to any landscape proposals developed by DCC for the adjacent site.'

At the time this document was prepared, it was hoped that the entire Department of Defence Lands to the west might be integrated into the site of Liffey Vale. It was subsequently established that the Department wanted to retain use of the land. A design solution was developed and agreed with the

Department of Defence, enabling a direct connection from the Liffey Valley Park into the site of Liffey Vale House, while the Department retained use of and access into the level land beside the river, for future use. The evolution of this design solution is provided in Part Five.

The central purpose of Stage One of the project has been to develop, refine, and test, this brief, to assess the potential of the site, and building, to fulfil the ambitions of Dublin City Council for the site, and to ensure that the detailed project design developed for submission for Part VIII application, is a viable project and satisfactory to both internal and external stakeholders.

The consultations, with Dublin City Council Executives, other state bodies, and local stakeholders were of central importance to trialing and confirming the initial ideas, establishing the ethos and priorities and considering and rejecting other possibilities that were raised during consultations and design team discussions.

The two workshops, held in late 2019, firstly with executives of Dublin City Council, and secondly with local stakeholders were invaluable in gauging interest in the site. Both the hopes and concerns voiced in these workshops informed the content of the working brief, and the design proposals that followed. The Situation Analysis Report (**Appendix M**) provides a record of these workshops. It was also important in establishing the tourism potential and context for the project, informed by the background consultations carried out by Tourism Development International.

Prior to the commencement of the design the following principals were established with Dublin City Council:

- Dublin City Council do not require the site to be a big money generator, but it does need to be self-sustaining.
- When restoring, and if necessary extending Liffey Vale House, it is important to retaining its scale and relationship with its setting.
- The natural environment of the site is to be the principal draw for the public, with the functions provided within the restored building serving the site, rather than the site providing the setting for the function within the building.
- The site is one to be returned to again and again, rather than a once in a lifetime experience, a local / regional resource rather than national / international one.
- There should be potential for active engagement, with education, for all ages a guiding principal.
- The principal audience is likely to be Dublin based, but this relationship and commitment of local interest, will be crucial in generating its character and potential to attract Irish visitors from further away, and tourists.
- The site will be an exemplar for environmental management, and sustainable design.
- As such it can become a place where local communities can engage with Dublin City Council.

A number of ideas, ostensibly within the scope of the original brief, were raised, discuss, and rejected as not viable at the site, including artists' studios, residential accommodation for staff or artists in residence, a hub for cyclists, and a garden centre with products for sale.

The Working Brief, adopted in February 2020, prior to the commencement of the design process is provided in **Chapter 4.2**. The brief was further refined through the design development process, which is recorded in **Chapter 5.1**, and the summary of accommodation provided on the site is given in **Chapter 5.4**.

The practical trying and testing of ideas for the house and site through the process of design was important in ensuring a viable project emerged, suited to the unique nature of the site. This was the opportunity to finalise the scale of facilities provided: ensuring a snug fit between the scale of the development and the architectural and natural significance of the place.

The nature of the historic building, and the dynamic nature of the natural environment required the establishment and adoption of clear building conservation strategies, (**Chapter 5.2**) and land management strategies (**Chapter 5.3**). The summary of accommodation provided on the site is given in **Chapter 5.4**.

Cois Abhann

At commencement, the project title was 'Liffey Vale House & Gardens', reflecting the name of the house which has stood on the site since the middle of the 18th century, the conservation and regeneration of which are one of the *raisons d'être* of the initiative. However, through the process of developing the brief, and identifying the natural environment as the focus, it became clear that Liffey Vale may not be the best title for the overall project; there could be confusion with the adjacent Liffey Valley Park, and the ubiquity of the use of the Liffey name for private businesses and commercial ventures, community and public facilities.

The chosen title Cois Abhann reflects the riverside location, the river being central to both the character of the site, and the nature of the biodiversity which will thrive and be celebrated at the site. Liffey Vale House will be an important destination along the riverside routes which are being extended through the construction of the proposed new bridges and other initiatives.



Fig. 4.01 The house in its setting of gardens and mature trees



Fig. 4.02 The riverside that has generated the name Cois Abhann

4.2 Working Brief

The working brief adopted, as agreed with Dublin City Council and the Design Team in February 2020.

Ethos

- Touch the ground lightly
- Learn lightly: interpretation of the site will be embedded in its design and presentation
- The design and management of the site to provide an exemplar of sustainable building design and renovation, sustainable land management and universal access to nature.
- The main purpose of the site being as somewhere you visit for the open space, rather than the inside spaces.
- Walking, being in the outdoors, balance of people with nature: access to the site to be principally pedestrian, public transport, bicycle, groups dropped off by bus.
- Parking will be limited to 2 no. staff spaces and 3 / 4 no. accessible spaces
- Paths into and through the site will fit into the network of existing and soon to be expanded or reinstated paths along the River Liffey, through Liffey Valley Park, and through the Phoenix Park.

Buildings

Liffey Vale House will be conserved and repurposed, and / or limited new buildings or extensions to the house may be located on the site.

Buildings to include

- Café:
Small café serving drinks and snacks only c. 20 seats inside, plus external terraces for sitting out (possibly with some shelter from the rain). Running of café will be tendered out: management ethos must be in harmony with that of the overall project
- Public toilets:
- 1 universally accessible AC
- 3 / 4 no. unisex cubicles
All accessed from external areas, probably close to the café.
- Educational Facilities
- One multi-purpose internal space large enough for group of 30-35. This may also be used by community groups, and include exhibits and interpretative material.
- Space for wet gear adjacent to internal educational space
- Consider, providing shelters within the site (may double up for use by café)
- Staff Facilities
- Office / staff room
- Storage for educational material
- Accessible toilet 1 no.
- Storage for tools

Building Design

- Building materials to be selected for their low embedded energy, and harmony with nature
- Buildings will be energy efficient to run, carbon neutral.
- Building design will be wildlife friendly: where possible, and practical, permitting co-habitation with birds, insects etc.
- Conservation of the Protected Structure will be in harmony with the original materiality of the building.

Landscape Design

- The site will be open during the hours of daylight.
- The site will permit those walking through the site, on the way to elsewhere, as well as those coming specifically for what the site has to offer.
- The site as a whole is the exhibition: demonstrating contrasting ecologically responsible management approaches. It will be zoned in response to its historic form and current and potential biodiversity:
 - Historic orchard: restored historic garden, demonstrating ecologically friendly horticulture.
 - Historic formal garden, and trees: demonstrating ecologically friendly management.
 - External level grassed area, such that this can be used for small outdoor events
 - Re-wilded river side site: limited access only; given over to nature.
 - Re-wilded riverside site: open access to the public by new paths.
 - Rewilded / managed reclaimed land, at east end of the site, demonstrating how this can support biodiversity
 - Natural river margin: limited access; in the short length where the path follows the river, boardwalks to be used above the level of the natural bank.
- Paths to be gently inclined (≤ 1 in 25) wherever possible, rather than ramped. Alternative stepped routes may be included in places.
- Regular halting places and benches to facilitate the less able bodied, and stopping and enjoying the place.
- “Subtle play” areas to be included within the site.
- Outside the re-wilded areas, the design, planting schemes and management regime to demonstrate ecologically responsible and effective regimes for public spaces and private gardens; these can act as exemplars to Tidy Towns / Pride of Place / City Neighbourhoods initiatives.
- Sensory elements embedded in the design, for the benefit of the partially sighted.
- Investigate possibility of providing storage area for one of the boat clubs.
- Provide bicycle parking for private bikes, and possibly one of the public bicycle schemes.
- Existing mature trees to be retained and managed as far as possible. Willow and alder trees in re-wilded areas to be retained to show the natural regeneration processes and the benefits of dead wood.
- Boundaries between “zones” to be demarcated using new native hedges, and the managed and regenerated existing ditches.

The Story

The following themes are likely to be included:

- The River: history of development and life of the river in geological, prehistoric and historic timeframes. Natural processes and interaction with humans: for food, transport, leisure
- The interaction of nature and humans:
- Eco-friendly land management: rewilding
- Eco-friendly land management: horticulture
- Eco-friendly land management: civic spaces
- The life of trees: growth, decay, regeneration
- Planting for pollinators
- Liffey Vale House and grounds
- The Lucan and Chapelizod Tramway

Signage

The site to be identified from the Chapelizod Road by banners designed to be hung from the historic tram-way poles.

New signage (with distances!) within the Phoenix Park, Liffey Valley Park, and at the War Memorial Gardens will be required in order to encourage visitors to take a walk to Liffey Vale..

Related infrastructural projects

The brief for and design of the project assumes the following projects will be going ahead, either in parallel, in the near future, or within the next five years.

- Department of Defence lands: extension to Liffey Valley Park, taking in the steep section of this site.
- New Longmeadows Bridge
- New pedestrian crossing across the Chapelizod Road, to link with re-opened gate into Phoenix Park.
- OPW opening of gate into Phoenix Park, re-establishment / improvement of paths linking to this gate from the Military Road at the top of the hill.
- New OPW bridge at the War Memorial Gardens

Further development of the brief

On the basis of the Working Brief the design for the buildings and landscape were commenced.

Having established the functional requirements and ethos, the brief was further refined through the design process, as we tested the capacity of the historic building and the site.

The final schedule of accommodation provided is given in **Chapter 5.4.**

4.3 Comparative Projects

A number of projects have inspired and informed the design, and brief development for Cois Abhann. We looked at a number of nature reserves, visitor centres, and cafe buildings, particularly those located in sensitive natural environments, as well as buildings that reused, or reimagined derelict buildings..

Centre of the Earth

The Centre of the Earth, in Birmingham, is run by the Wildlife Trust for Birmingham and the Black Country, and located only 1.5km from the centre of the city. The once derelict site was established as a nature reserve with the help of local volunteers. The Centre building, opened in 1993 is designed by David Lea, a respected architect with a long history of designing ecologically responsible buildings, which are also elegant responses to the building brief. The building is a timber framed structure built to demonstrate the sustainable use of natural resources.

The Centre displays many parallels with the Cois Abhann site, and demonstrates the viability of such a project in a city. Many of the Centre's activities reflect what is hoped to be delivered at Cois Abhann.

- Activities for Primary and Secondary schools.
- Training for teachers, community, youth and play workers
- Workshops for students in higher education and teacher training.
- Afterschool activities and study support for children of different ages.
- Demonstrations of habitat creation in small urban spaces.
- A venue for meetings, workshops and training days
- A place to enjoy and study urban wildlife

Touching the ground lightly

We looked at a number of other nature reserves and visitor centres. The Glencoe Visitor Centre in Scotland, by Gaia Architects, although a new building, is built at a domestic scale and makes beautiful use of natural materials. The building touches the ground lightly and the natural landscape runs right up to the building. At Anglesey Abbey the visitor facilities, designed by Cowper Griffith Architects, combine a series of simple modern forms, keeping the overall scale of the building traditional, while enclosing extensive areas of space, and using timber structure and cladding to create a distinctive building.



Fig. 4.03 Centre of the Earth, Birmingham, City of Birmingham Wildlife Trust. David Lea, architect



Fig. 4.04 Glencoe Visitor Centre, Gaia Architects. The building, and decks sits within the landscape.



Fig. 4.05 Sculthorpe Moor Nature Reserve. Access to woodland and nature



Fig. 4.06 Anglesey Abbey Visitor Centre
Cowper Griffith Architects

Granby Street Winter Garden, Liverpool

This project saw two terraced houses, which were roofless, with the upper floors collapsed, transformed into a wintergarden for a Community Land Trust. The architects preserved the surviving structure of the houses in its raw state, making a feature of this, in contrast to new elements and the greenery of the plants. In the words of the architects:

"Assemble's design strategy for the Winter Garden sought to transform the typically private space of the terraced home into a focus for neighbourhood activity..."

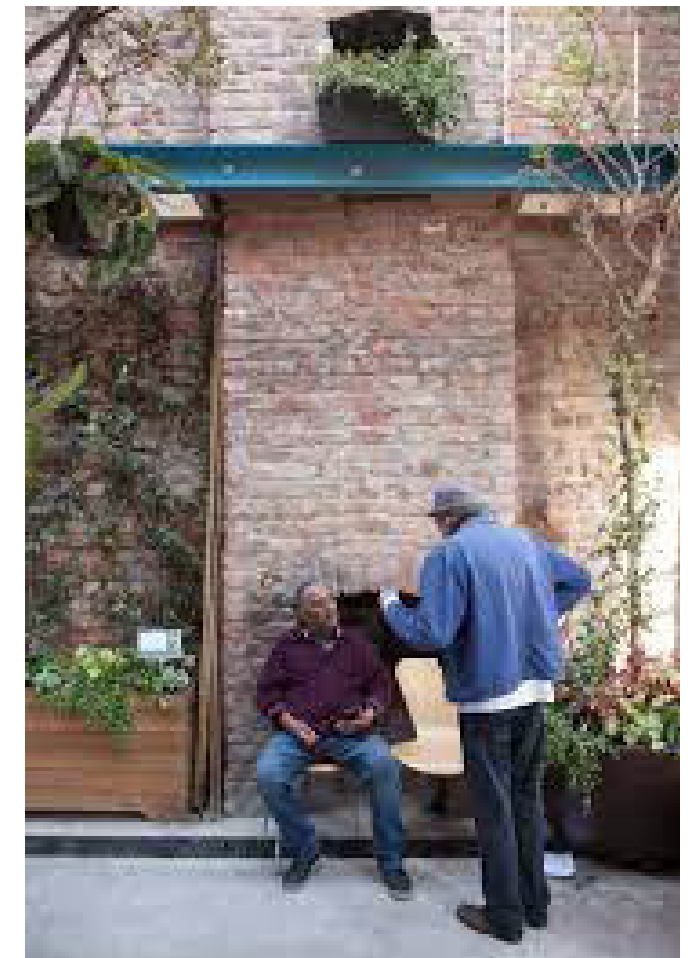


Fig. 4.07, 08 Granby Road, Liverpool. A pair of terraced houses, reimagined as a community winter garden, for a Community Land Trust. Historic features of the house are retained but the upper floors removed. Assemble Architects

4.4 Sites visited

Sonairte

On 6th March 2020 the design team and representatives of Dublin City Council visited Sonairte, at Ninch, near Laytown Co. Meath. This was an invaluable visit as there are a number of parallels between both the nature of the site, the ethos of Sonairte, and what it is planned to establish at Liffey Vale. The project team were given a warm welcome and helpful insights into the successes and challenges of the centre.

Established in 1988 by the local community and concerned environmentalists, to promote environmental awareness and education, the site has developed and evolved in the subsequent decades. The site slopes gently down the hill to the River Nanny. The buildings, are a group of fine historic farm buildings. The site, covers ten acres and is held under long term lease. There is a horticultural area, in the former orchard, and a nature trail along the banks of the River Nanny. Given the nature of the site they are able to provide experience for people with special needs, but not wheelchairs.



Fig. 4.09, 10 The buildings at Sonairte are of historic interest, and will be further conserved and developed in time.

All aspects of and land management, building renovation and construction are undertaken following the green philosophy of the centre, particularly in the choice of building material and use of renewable energy and energy conservation.

The ethos of Sonairte is

- to provide education in all aspects of ecology
- to promote sustainable living through learning and cooperation
- to promote sustainable development
- to promote organic, ecological and sustainable farming practices
- to promote environmental awareness and nature conservation
- to promote appropriate and sustainable technologies
- to promote the use of genuinely renewable resources
- to promote intercultural exchange
- to promote reconciliation
- to promote fair trade



Fig. 4.11 Old trees in the orchard are retained, and the horticultural training is delivered and organic produce grown.



Fig. 4.12 A former stable, sensitively adapted is used as a room for educational groups.



Fig. 4.13 Fallen tree along the nature walk has been kept as a feature.

In terms of business model, Sonairte is a registered charity. They have a small shop / information centre and café, but has been dependent on a mixture of grants and volunteers in order to keep running, as well as income from training programmes. An upstairs room is let out for yoga classes and similar, and other spaces are made available for compatible events and uses.

In terms of education and training Sonairte run a programme for Primary Schools, and support visits from secondary schools, transition year students and Youthreach, offering hands on experience of both horticulture and nature conservancy / research. Groups are usually up to 30 in number. They have one room, a former stable building that can accommodate them. The emphasis however is on the outside spaces and activities.



Fig. 4.14 New building elements are appropriate in scale and sympathetic to the historic structures.



Fig. 4.15 The river Nanny at Sonairte is tidal, and rich in bird life and biodiversity.

Visits to Cafés

The architects visited a number of cafés around Dublin, all associated with open spaces or parks that are the responsibility of Dublin City Council. All provided outdoor seating and takeaway options, and in some cases this was the main attraction for customers. Cafés visited included a variety of scales and locations, including Herbert Park, Phoenix Park Tea Rooms, Harold’s Cross Park, and the Happy Out at Dollymount. Of the buildings visited only the first two were purpose built, Harold’s Cross being a repurposed public toilet building, and Happy Out being located in a group of converted shipping containers.

The brief at Cois Abhann is not to provide sit down meals or lunches, but principally teas and coffees, cakes and light snacks, with all baking and food production to occur off-site. The visits were invaluable, in developing understanding of the size of servery / preparation space required for efficient but comfortable working conditions, and the importance of copious fridge provision, dry storage space, and waste management and storage.



Fig. 4.16 Happy Out Cafe: the customer experience



Fig. 4.17 Happy Out Cafe: the other side of the hatch



Fig. 4.18 Harold’s X: a converted public toilet building



Fig. 4.19 Herbert Park: a large purpose built café

4.5 Development of the Interpretative Approach

Interpretative concepts for Cois Abhann were developed in parallel with the development of the brief, and the design. Tandem Ltd., the interpretative designers commenced by producing an Audience Engagement Strategy, (see **Appendix N**), informed by the research undertaken by Tourism Development International for the Situation Analysis document.

Their strategy developed with an overview of all threads of the story of Liffey Vale House, and the history and ecology of the site. **Fig. 4.20** illustrates the interpretative concepts, and the full interpretative strategy is provided in **Part Six** of this report.

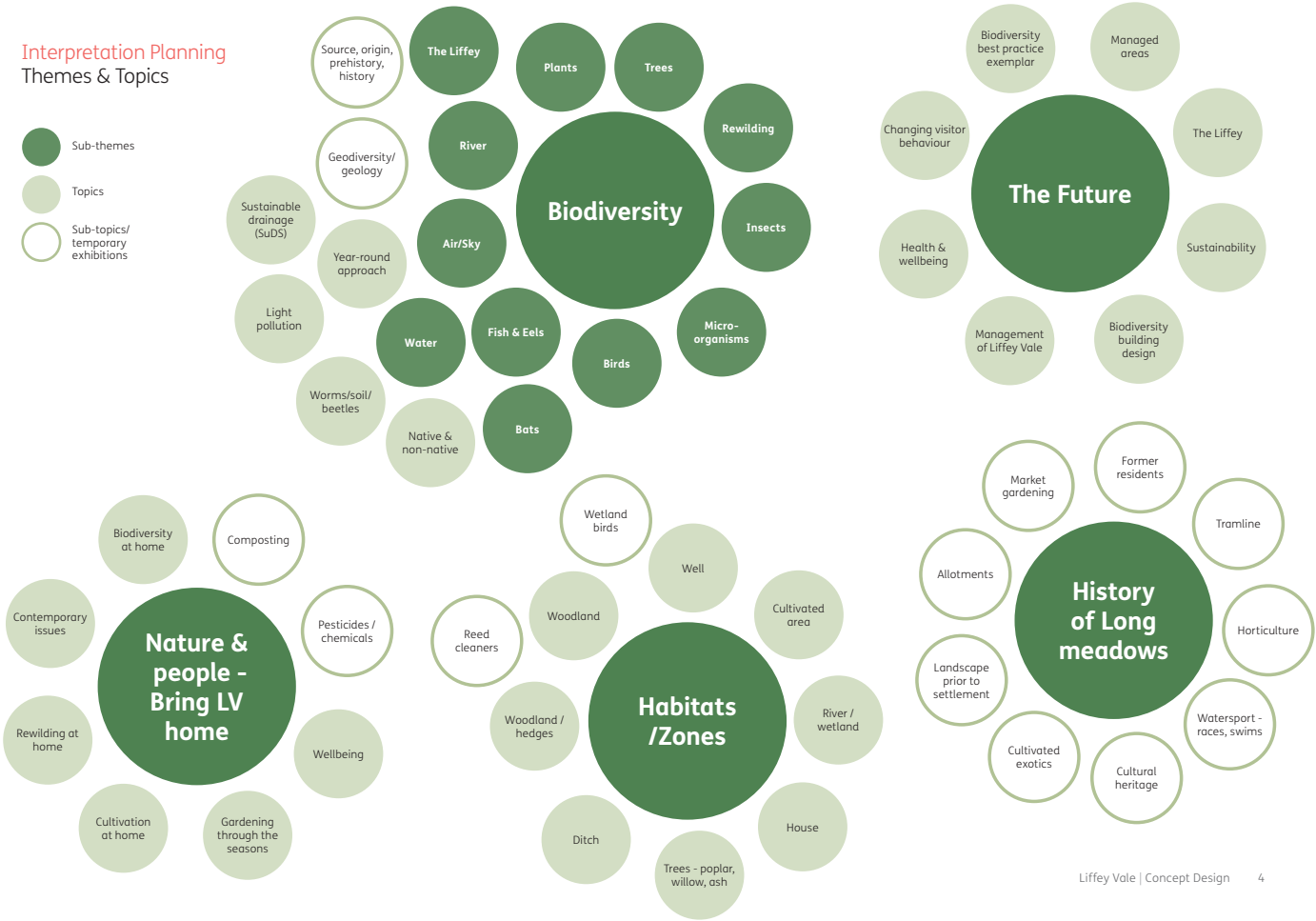


Fig. 4.20 Interpretative Topics

PART FIVE

DESIGN PROPOSALS

5.1 Alternatives Considered: New Buildings

Introduction

Informed by the analysis of the site, the consultation process, and the conclusions of the Situation Analysis, the design team explored a number of alternative approaches to the fulfillment of the terms of the Working Brief, in the context of the potential, and limitations of the existing building and the nature and sensitivities of the site. It was important to test out a number of approaches in order to ensure the developed design fulfilled the potential of the site and provided the best fit between the conservation and presentation of the natural environment and the historic house, and the delivery of a practical and effective response to the brief. Over a series of meetings the proposals were presented to the client, discussed, and their responses integrated into the refining of the design and of the detailed brief.

The key decisions to be made regarded the location of the required facilities within the site, and in relation to each other: the education spaces, exhibition spaces, public toilets, café, and staff facilities and storage. In turn the scale, extent and character of each of these functions was explored, and the extent to which educational functions, interpretation, and eating and drinking could happen outdoors, or in external shelters, and the extent to which the functions were best provided for in fully interior spaces. The practicalities of internal spaces and shelters being multi-functional were also fully explored.

The landscape design and building design were developed in parallel, and at all times it was kept in mind that the site was one that would be passed through, *en route* between other places, as well as visited as a principal destination. The ethos of the project is such that the outdoors experience of nature, is the *raison d'être* of the site, to be complemented by the facilities and experiences provided within the buildings.

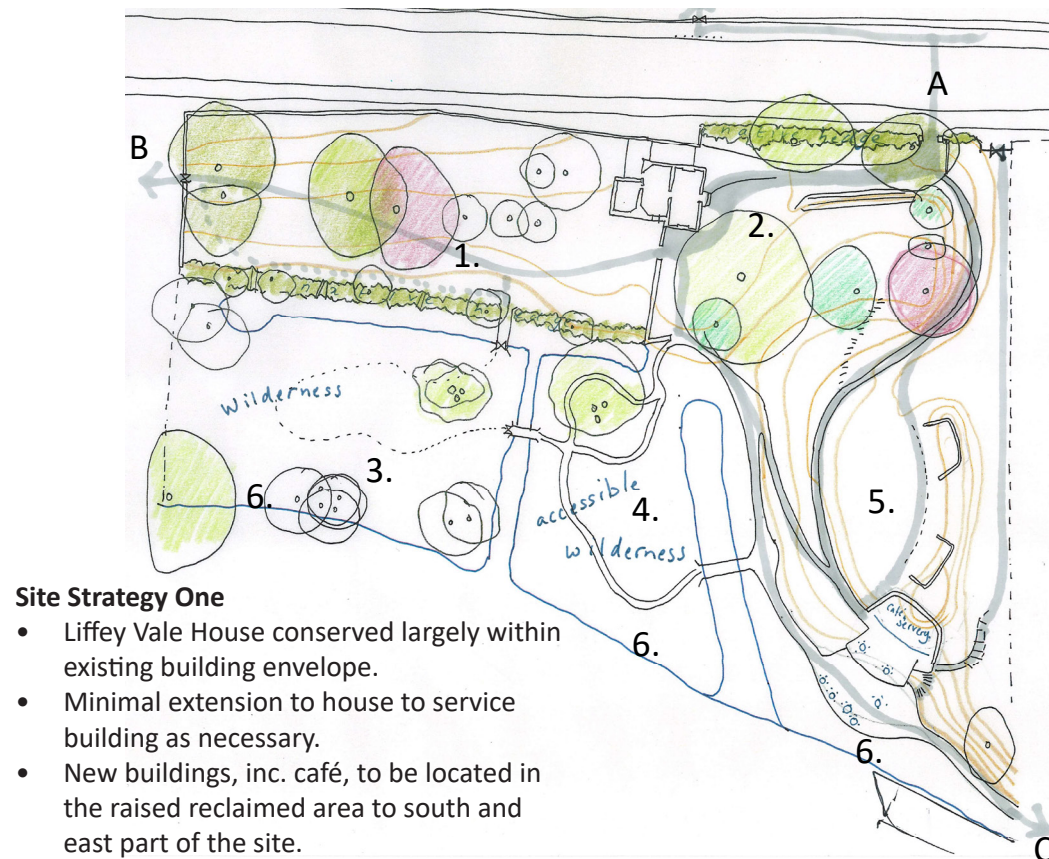
In designing the layout of the site, the location of the facilities and the layout of buildings, the provision of universal access was a governing factor. It is the essence of the brief that Cois Abhann should provide access to, and a rich and varied experience of nature, for all who come to visit the site.

Initial alternative approaches to developing the site

At the commencement of the design process two alternative site strategies were identified and explored.

Site Option One (**Fig. 5.01**) conserved the historic house largely within its existing envelope, restoring its historic setting, and located new buildings in the raised area of reclaimed land, with views over the river.

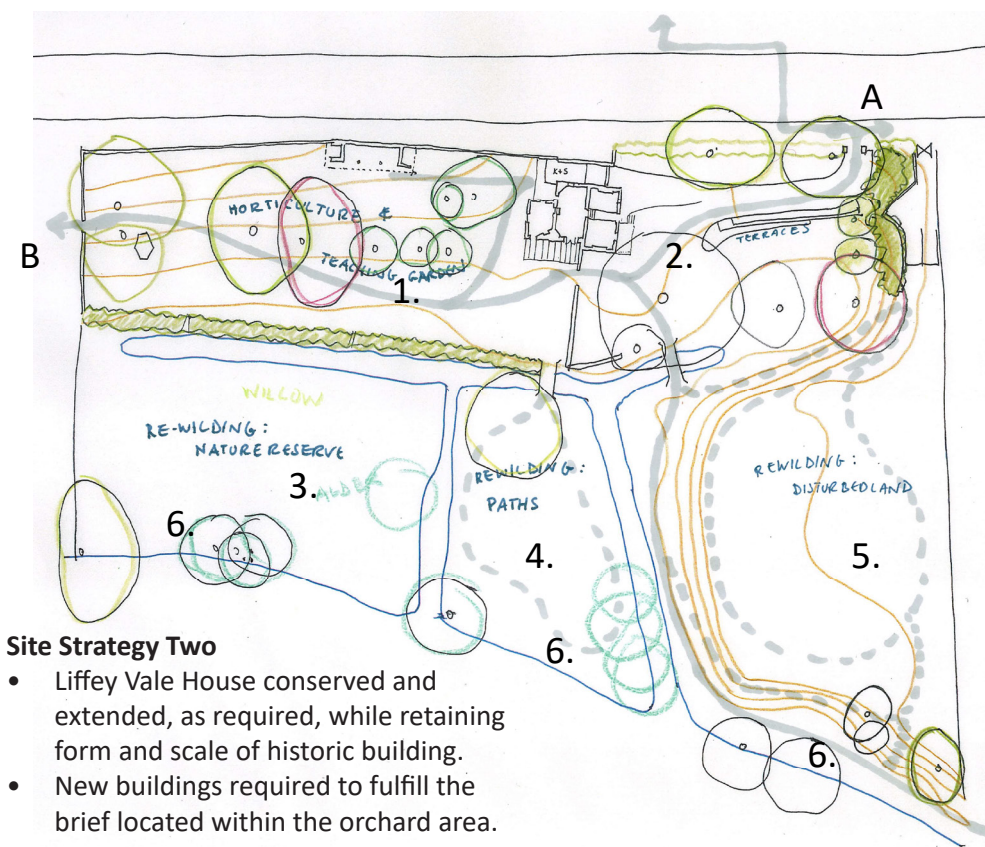
Site Option Two (**Fig. 5.02**) located all buildings and services in the vicinity of Liffey Vale House, within the area of the original house and garden.



Site Strategy One

- Liffey Vale House conserved largely within existing building envelope.
- Minimal extension to house to service building as necessary.
- New buildings, inc. café, to be located in the raised reclaimed area to south and east part of the site.

Fig. 5.01 Site Strategy Option One:



Site Strategy Two

- Liffey Vale House conserved and extended, as required, while retaining form and scale of historic building.
- New buildings required to fulfill the brief located within the orchard area.

Fig. 5.02 Site Strategy Option Two:

Site in Five Areas of Land Management

1. Orchard: horticulture & learning garden
 2. Formal garden, external events space
 3. Rewilding Area: nature reserve, limited access
 4. Rewilding Area: general public access
 5. Rewilding Area, reclaimed land: general public access
 6. Natural river bank
- Trees shown are existing trees to be retained.

Three access points to site

- A Through existing rebuilt gateway: access from Chapelizod Road, existing Dublin Bus routes and to new road crossing into Phoenix Park.
- B Re-established route from west through Department of Defence Lands (pending) and into existing Liffey Valley Park
- C To new Liffey Valley walkway (to be established in the future).

Assume site open dawn until dusk

Exploration of Site Strategy Option One

The Situation Analysis (**Appendix M**) and the consultations with both public groups and Dublin City Council officials all identified the river as of prime importance to the character and identity of the site, and as a draw to bring in visitors. It was noted that one of the strengths of the site is as a "*Prime site of the banks of the River Liffey at a point where it changes from being an urban river to a semi-rural one*", and that one of the weaknesses of the site is that there is "*No current visual or physical access on site to the river*".

The conservation assessment of the site identified the raised reclaimed area in the south east of the site as the least historically and ecologically significant, and therefore a suitable location for new buildings.

Based on these two aspects of the nature of the site, we looked at the feasibility of establishing a café and associated facilities on the raised reclaimed ground at the east end of the site, which affords lovely views of the river, while leaving the wilderness area undisturbed.

Whereas it was acknowledged that, particularly if a walkway is established on the northside of the river, a café/ event space overlooking the river could be a successful, it was agreed that the project needed to concentrate on finding a viable new use for Liffey Vale House. Development close to the river could draw attention away from activities in the house and its associated orchard and gardens. Also it was noted that providing services and construction costs in two separate areas of the site would extend the budget beyond what is currently available. It was therefore decided not to pursue this concept further. One aspect of this option that was retained was a footpath providing potential access for a mobile coffee unit.



Fig. 5.03 Plan of cafe building, located at the top of the grassy terraces overlooking the river Liffey. Two blocks linked by a covered area. One a generous seating room, the other containing a servery kiosk, kitchen and storage, with public WCs at the north end, located to be accessed from the footpaths. By separating the servery and service building from the internal seating area the concept was that the internal room could also be used for events.

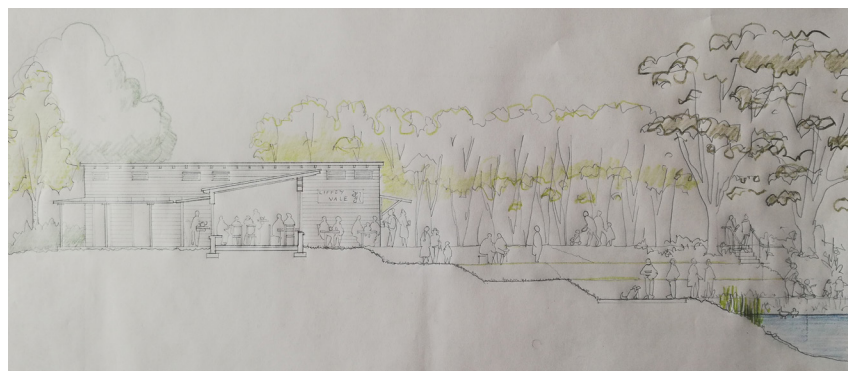


Fig. 5.04 Section through cafe building, located at the top of the grassy terraces overlooking the river Liffey. The internal seating area has outlooks across the river, wilderness and meadow, and could also be used for meetings, education or events.

Exploration of Site Strategy Option Two

The alternative site strategy was to keep all new construction within the orchard and garden area of Liffey Vale House. In order to ascertain the scale of new building required it was first necessary to test the potential of the house, for what could appropriately be provided within the existing envelope of the historic building, while respecting its significance and character.

Exploring the potential of Liffey Vale House

Liffey Vale House is a domestic structure, the small scale of its former rooms being suited for the functions of a house. We first looked at the implications of reinstating the upper floor and floor plan of the house prior to the fire. The small domestic scale (all but one of the rooms are less than 20m² in area), and low ceiling heights made the rooms unsuitable for the aspects of the brief requiring a space for educational groups, presentations and lectures, and limited their flexibility for use for exhibition.

The historic floor levels provided challenges in relation to making the building universally accessible. At ground floor the three wings of the house are each at a different level, with only the central wing being approximately level with the external ground. At the lost upper floor of the house, the room in the west wing is several steps below those of the central wing.

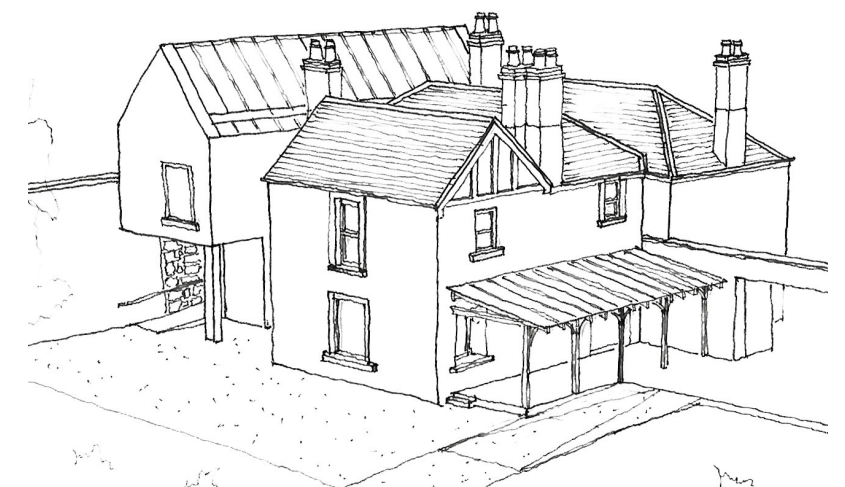
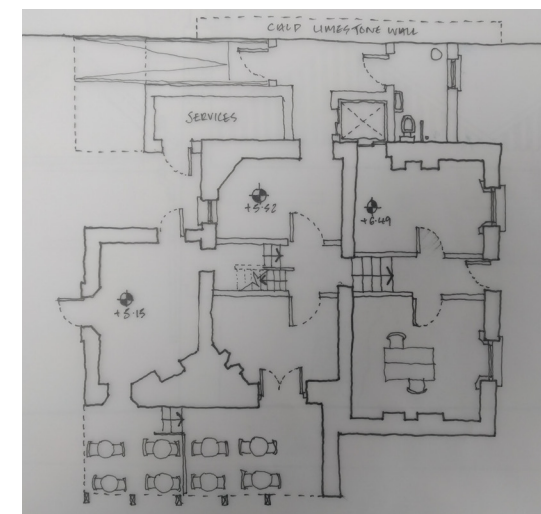


Fig. 5.05, 5.06 Sketch ground plan and 3D of Liffey Vale House with lift and accessible WC on the north side of the building.

If the building were to be made universally accessible this would require the installation of a lift to serve the upper floor. Locating a lift on the north side of the building could serve the changes in level between the east and central wings, but not those between the central and west wings. It would require a new building that would be higher than the historic roof levels, and would compromise the scale of the historic house. A ramp at ground floor level could be installed to provide universal access between rooms at that level, but the upper floor room in the west wing would still be inaccessible to those unable to use steps.

If a lift is to fulfill its function it needs to be of a scale to provide comfortable access for wheelchair users and manoeuvring area for entry and exit to the lift. The impact of this is that provision of a lift requires a space as large as, or larger than, any of the spaces it would be serving.

The inefficiencies of space associated with providing universal access, the unsuitability of the scale of spaces for public use, and the fact that most of the historic interiors had already been lost, led to the decision not to reinstate the upper floors of Liffey Vale House. **Fig. 5.05** illustrates exploration of lift and servicing provision to the house with all rooms and floors reinstated.

Extending Liffey Vale House and designing its setting

Whereas most of the elements of the former interior have been lost, the surviving character, and significance of the building lies in its scale, irregular form, and its relationship to its historic setting. The challenge for the design was how to find the best way to reuse the structure, giving it new life and purpose, and fulfilling the current brief, while retaining its historic essence and significance. If the building was to be extended, in order to make it usable, we needed to ensure any new structures did not swamp the form of the historic building, but rather became elegant additions to its setting. Suitable matches needed to be identified between the scale and nature of the spaces within the historic building and the requirements of the brief.

The main issues to be resolved were as follows:

The House

- Resolving the level differences internally
- Resolving the level differences externally
- Servicing the building
- Using the volume for interpretation
- Retaining historic features and character
- Relationship to garden setting
- Flexibility for the future

Extensions / New Buildings

- Connected to, or separate from the house
- Flexibility for the future
- Scale in relationship to the house
- Location of public toilets
- External spaces created between old and new
- Materiality and detail

Scale of new buildings

We were aware that the scale of Liffey Vale House made it sensitive to being swamped by any new building, whether attached or in its vicinity. We therefore aimed to work with building sections that did not exceed the width of any of the three historic wings, and to keep the eaves and ridge levels of any new roofs below those of the house.

Location of new building

It was agreed that any extension to the historic building should be located on the orchard and north side of the house; the formal character of the front door and east elevation needed to be retained. A number of different locations were explored for the café and education spaces.

Moving between the levels

Having decided to not reinstate the upper floor of Liffey Vale House, there was still the requirement to provide universal access between the various floor levels of the three wings at ground floor, and between the interior of the house and external ground levels.

Internally the use of platform lifts was considered, but it was felt their scale and location had a negative impact on the use and presentation of the interiors of the house. Platform lifts are expensive, and prone to technical issues, but they also separate those unable to use steps from other visitors, and thereby do not sit comfortably within the ethos of universal access inherent in the project brief.

The use of generous gentle ramps, in specifically designed spaces enable the experience of changing levels to be universal, and to be integrated into the presentation of the interpretation in the building.

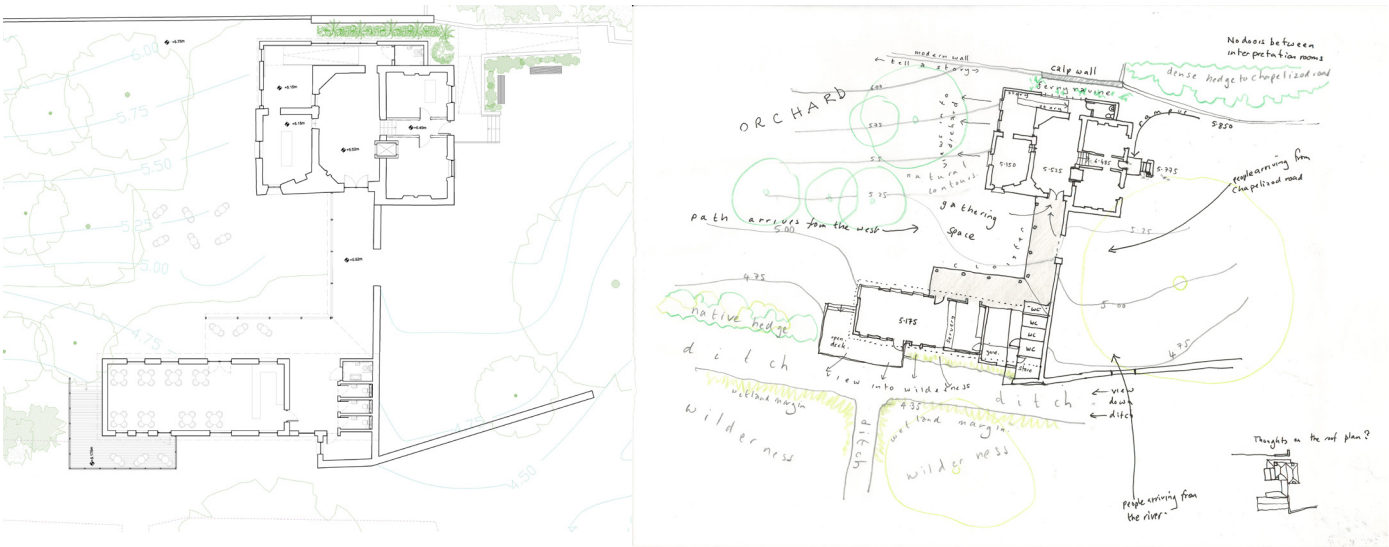


Fig. 5.07, 5.08 Plan and concept sketch of the cloister scheme

Cloister Scheme

This scheme locates the café in a separate single storey building to the south of the house, but connected by an external “cloister”, creating a courtyard space between the two. The café building followed the line of the boundary ditch and had a projecting deck looking into the wilderness. Toilets were accessed through the cloister so they would serve all.

The levels within the house were resolved with a platform lift and a ramp.

It was decided not to pursue this scheme on the basis of its impact on both the historic setting of the house, and the nature in the wilderness. Whereas educational groups could gather in either the central wing of the house, the cafe or a shelter located in the orchard, there was not space for a generous internal dedicated education space within these buildings.



Fig. 5.09 3-D Sketch of “cloister scheme”

Nature and scale of educational spaces

At the early stages of exploring site strategies we considered the nature of the educational spaces to be provided. The educational space needed to be able to be used independently, such that events in the room would not prevent other visitors from accessing interpretative materials and exhibitions. Given that the priority of the site is to learn about nature in the natural environment the possibility was explored of the principal learning space for larger groups taking the form of a roofed, but external shelter building, located away from the house.

The largest space within the historic house, and the only one of a scale with the potential to house educational groups of 20 + is the central wing (with all original partition walls removed) at 36 m². However, being located at the centre of the building it was not ideally suited to provide the potential for isolation from regular visitors, and its size put a considerable limitation on the numbers that could be catered for.

The conclusion arising from both the sketch designs and the discussions was that an internal room for education was required, and ideally this should be at least 40m².

Location and scale of café

Initial sketch ideas explored locating the café within the historic house, but both the scale of the spaces, and the challenges of servicing the café quickly proved this not to be ideal. It was also agreed that ideally the café should be able to serve those moving through the site, and that it should be able to operate separately from the educational or interpretative aspects of the project.

Location of Public Toilets

As the site is primarily an outdoor one, it was important that public toilets could be accessed without entering the buildings. Ideally they would be access to them from within the building would be protected from the weather.

Servicing the buildings

The installation of services into a historic building is always challenging, as they can detract from the authentic presentation of internal spaces. We therefore planned to locate the highly serviced functions such as the kitchen and WCs in the new build parts of the project.

There were advantages to connecting the buildings, new and old, in terms of connectivity.

Agreed Proposal

Informed by all the above considerations, the boundary wall scheme (see **Fig. 5.10 - 5.12**) was developed and agreed as the approach on the basis of which the detailed proposal was developed. The approach to the conservation and design of proposed alterations to the Protected Structure is provided in **Chapter 5.2**. The Design Proposal is provided in **Chapter 5.4**

Site Design

The design of the site was developed in parallel to the design of the buildings, with regular meetings and collaboration between the landscape architects and architects. Informed by the Ecologist's assessments of the site (**Appendices F, G & H**) the Biodiversity management strategy was agreed (See **Chapter 5.3**). Full details of the landscape design for Cois Abhann is provided in the Landscape Architects' Design Work Book in **Appendix E**, and **Chapter 5.5**.

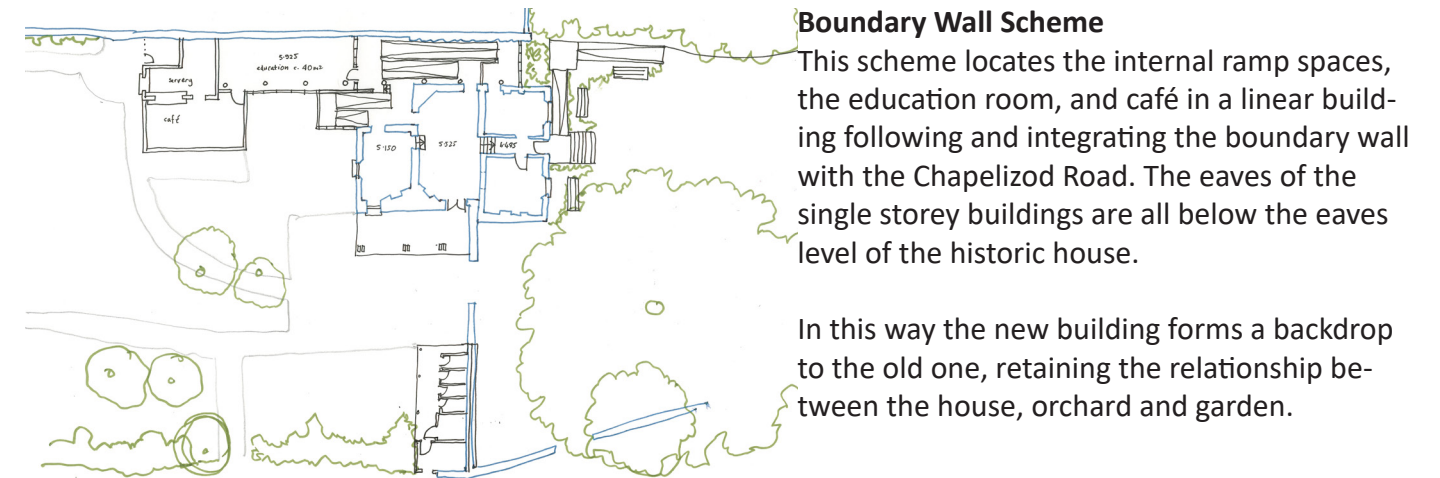


Fig. 5.10 Plan of the "Boundary Wall" scheme.

The WCs, shown to the south of the house, were relocated to the far end of the linear building.

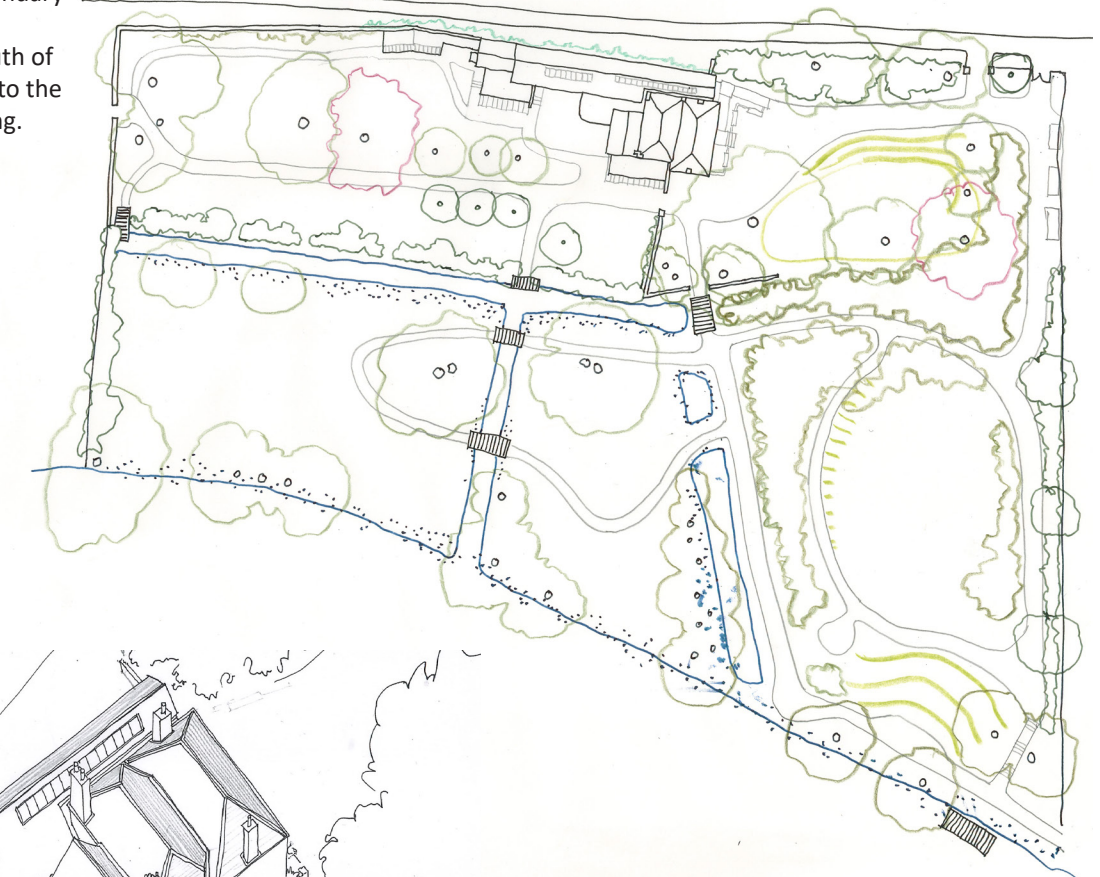


Fig. 5.11 Plan of the boundary wall scheme, in the context of the overall site

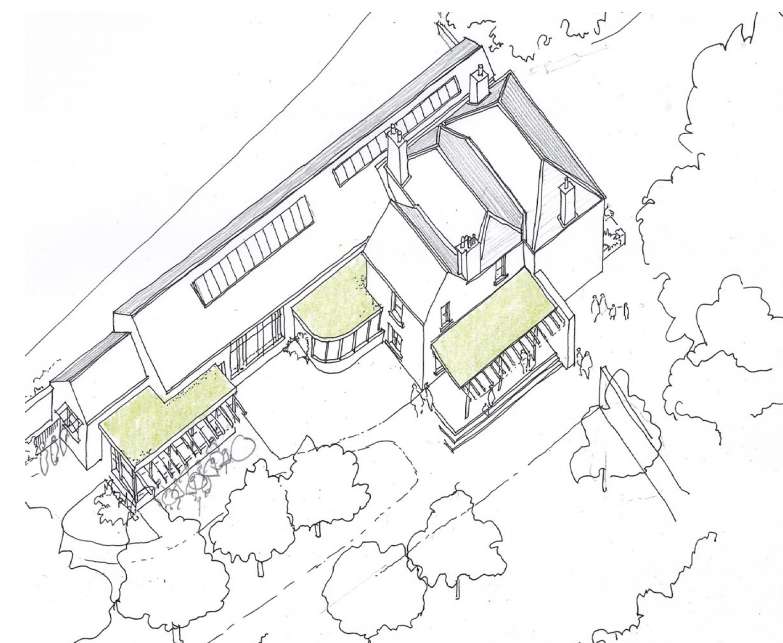


Fig. 5.12 3-D Sketch of boundary wall scheme, on the basis of which the proposal has been developed.

Site Design

The design of the site was developed in parallel to the design of the buildings, with regular meetings and collaboration between the landscape architects and architects. Informed by the Ecologist's assessments of the site (**Appendices F, G & H**) the Biodiversity management strategy was agreed (See **Chapter 5.3**). Full details of the landscape design for Cois Abhann, its ethos and inspiration, is provided in the Landscape Architects' Design Work Book in **Appendix E**.

Department of Defence Site

Out of the initial site analysis stage of the project it was clear that the use of the Department of Defence site, lying between the site of Liffey Vale and the Liffey Valley Park was of key importance in relation to access to the site. Initially it had been hoped that the site could be integrated into the overall site, but when approached, the Department of Defence made it clear that they required to retain use of the site. Therefore we looked at if it would be possible to create a direct pedestrian link between the existing public park and Cois Abhann, while the majority of the site was retained by the Department of Defence.

Following an initial visit by design team members, it was clear that whereas the majority of the site was an extensive level area, the steep bank along the line of the Chapelizod Road was of limited use for activities of the Department of Defence.

We explored the creation of a path following the contours of the land in order to create a universally accessible connection to a reopened doorway in the western stone boundary wall of the orchard of Liffey Vale House. (see **Fig. 5.14**).

Another element of the brief that was the provision of a bus pull in, to allow groups of visitors to be dropped off at the site. We therefore looked at how this could be satisfactorily integrated into this area, with universally accessible pathways linking to the new link into the Liffey Valley Park. The design also integrated two additional universally accessible parking spaces to serve Cois Abhann.

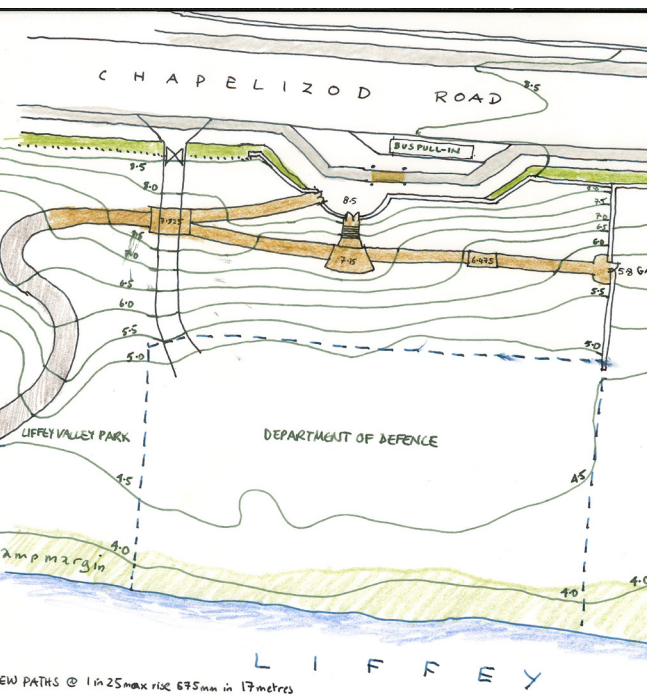


Fig. 5.13 Initial sketch for creation of footpath



Fig. 5.14 Blocked doorway in the wall of the orchard



Fig. 5.15 The steep area of land along the boundary with the Chapelizod Road that it is proposed to incorporate into the Liffey Valley Park, in order to make a direct pedestrian-link to Cois Abhann.

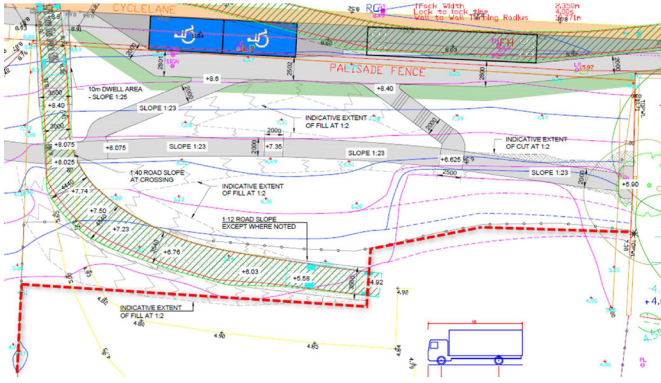


Fig. 5.16 Proposed new boundary for the Department of Defence

The outline proposals were presented to the Department of Defence and were the basis on which negotiations commenced regarding the transfer of lands to Dublin City Council.

Effectively what will be created is an extension of the Liffey Valley Park up to the boundary with Cois Abhann.

An account of the development of the design of this area, in order to comply with all road safety and vehicular access considerations is provided in the Engineer's Report, **Appendix B**.

The final landscape design is shown in **Chapter 5.5** and the Landscape Architects' Workbook, **Appendix E**.

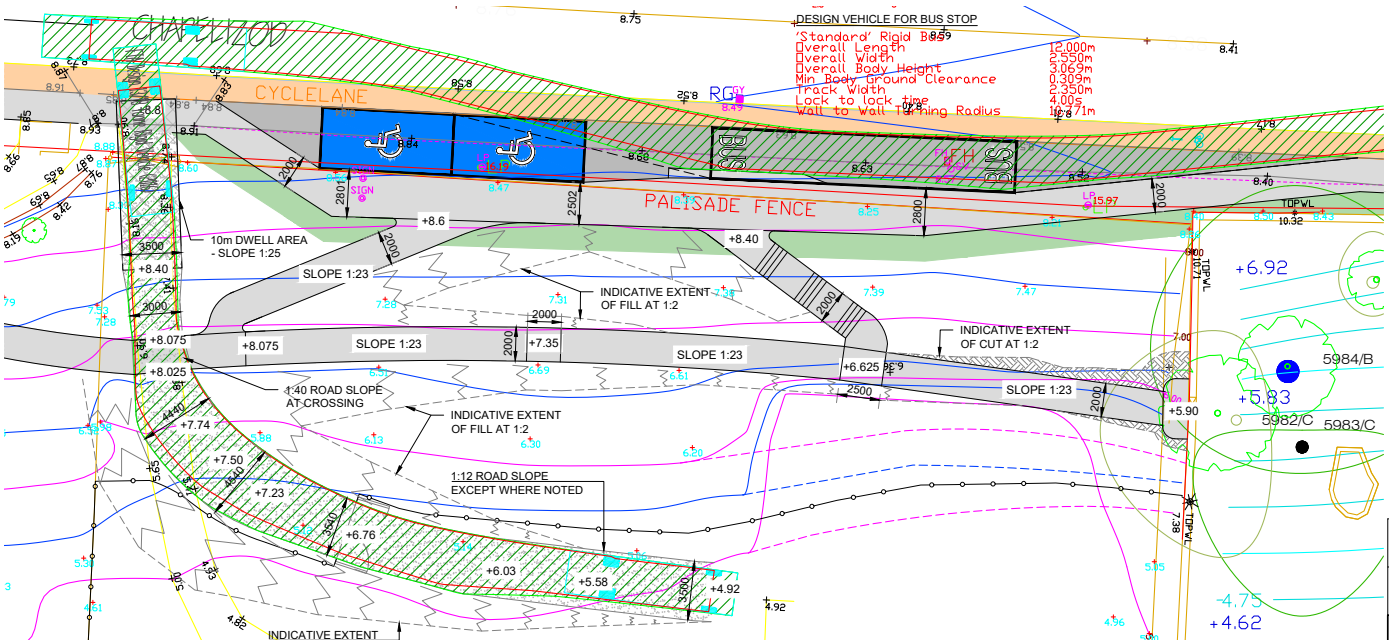


Fig. 5.17 Proposed new footpaths, steps and bus pull-in layby.

5.2 Conservation Approach

As stated in Part 2.2 of this report, the significance of the house of Liffey Vale lies as much in its location, scale and its relationship to its site and setting, as in the fabric and design of the building itself. As such, in approaching the use, conservation, and presentation of the Protected Structure the Design Team have prioritised the need to ensure the scale, and the domestic external character and form of the building is retained in relationship to the site, while ensuring the building has a sustainable new use.

The domestic nature of the building, the multiple floor levels, and the small scale of the original rooms, meant it was challenging to identify a viable public use that could be provided within its historic envelope. It was agreed with the client that in finding use for the building that would serve the public, and relate to the proposed use of the site for the promotion and interpretation of biodiversity, that the building would require to be extended. The challenge was to provide the useful space required for the public function of the building, while not swamping the scale of the historic building, or cutting it off from its relationship with the garden, orchard, and approach drive. Part of our brief was to provide universal access for visitors. The ramps are a response to this. These new spaces offer the opportunity for exhibition as well as movement through the spaces in an inclusive manner for all, and enable the envelope of the historic building to remain free of obtrusive platform lifts.

Proposed Extension

Refer to drawings 539-P-12, 539-P-13, 539-P-14, 539-P-15.

The new building has been designed to follow the line of, and to integrate, the boundary wall that lies between the site and the Chapelizod Road. (See **Building Condition Report, Figures 3.58, 3.69**). The proposed extension thus serves as a built backdrop to Liffey Vale House. It also serves to protect the orchard area, from the noise and proximity to the busy road. The new pitched roofs (which are clad in zinc to differentiate them from the slate roofs of the Protected Structure) are never wider in span than those of the house, thereby always being secondary to, and complementing the scale of the three roofs of the historic structure. The extensions contain ramps, facilitating universal access within the entire building, an education room, staff and public toilet facilities, (avoiding the installation of wet services within the historic building), storage, plus a small café serving drinks and snacks.

Where the new building, enclosing the main ramp, runs between the north wall of the house and the boundary wall, the new roof is designed to be supported on new steel columns, minimising the impact on both the calp wall to the north, and the wall structure of the house. See **Sections C-C' and D-D'**. The valley gutter is constructed below the historic eaves level, retaining the integrity of the historic roof form. Roof lights in this area give the character of an external space, and emphasise the separate nature of the boundary wall and house. The eastern gable to this part of the building is set back from the eastern elevation of the 19th wing, so this important symmetrical entrance front can still be read in its historic form. (See **Proposed East Elevation**).

A single story “hinge” building encloses the final ramped link between the lowest two levels within the historic building. This flat roofed building slips between the main roof of the new building and walls of the historic house, ensuring the form of the house can still be easily read. (See **Section E-E'**)

The texture of the modern lime insulating plaster on the extension will subtly contrast with the proposed lime harling of the 18th century wings and the lined and ruled lime plaster of the 19th century wing.

Conservation and treatment of the Protected Structure

Refer to As existing / demolition drawings 539-P-02, 539-P-03, 539-P-04, 539-P-05 and

Proposal drawings 539-P-12, 539-P-13, 539-P-14, 539-P-15 and

Appendix A Building Condition Report

Exterior

Externally, we propose to present the house, largely in its late 19th century form.

Surviving sash windows, at the east and west elevations, will be repaired, and new sash windows, replicating the details of the surviving historic windows, will be installed in the reopened window openings elsewhere.

Hard cement based plaster, and applied details will be removed, and replaced by lime based insulating plasters, with a thrown harled finish on the 18th century wings, and a lined and ruled float finish on the 19th century wing. These contrasting finishes will help to subtly differentiate, and tell the story of the evolution of the house. The front door and fanlight will be reinstated. The chimneys to the 19th century wing will be rebuilt based on the photographic record from before the fire (See **Building Condition Report Figure 2.10**).

The modern metal roof and temporary timber roof structure will be removed and replaced by a natural slate roof to the original profiles, on a new timber roof structure. The photographic record of 2006 will be used as an important resource in replicating the roof as far as possible.

New features externally will be the extension (described above), and the modification of a previously modified opening to form a doorway on the south elevation. A new veranda will also be constructed to provide a sheltered external area. These two new features are located in the area previously much modified by the now demolished single storey room (See **Building Condition Report Figures 2.01, 2.08**).

Interior

The historic interior of the house has been almost entirely lost through a series of destructive fires, as well as being subject to multiple alterations and modifications prior to the fire. The interior prior to the fire was neither especially rare, nor of especially high quality. What had been the interesting patina of age, use and modification to suit the needs of the occupants was another victim of the fire.

The loss of interior plaster and floors, does however reveal scars of previous manifestations of the building, which would otherwise have been concealed. (i.e. See **Building Condition Report Figures 2.15, 2.42, 2.52, 2.53** where evidence of former openings in a formerly external wall can be seen). A full photographic and drawn survey of the current interior of the building is provided in the Building Condition Report.

The proposed works allow that the former domestic layout of the building could be reinstated in the future, if a different function were found for the building.

18th Century Wings

The first decision to be made, with regards the treatment of the interior was the extent to which the interior could, or should, be recreated. Given that so little of the interior survives, and that the scale of the lost rooms within the two storey 18th century wing was so small, it was decided not to propose full reinstatement of floors, stairs and partitions, but to retain the building as a shell, albeit with repaired and / or reinstated joinery features, and the good quality fireplaces left in-situ. It has been decided to reinstate the lime plaster to the walls, and the ceilings of the upper floor rooms in their former location and to reinstate the skirting boards at both floor levels. This approach will allow the former layout of the house to be read, while providing viable lofty exhibition spaces. (See **Sections A-A'; B-B'; D-D'**).

In the central wing it is proposed to demolish the surviving brick noggin partition wall. Whereas this is an interesting feature, it is in a dangerous structural condition, the timber base plate having rotted. Retention would require demolition and rebuilding. Prior to demolition it will be fully recorded and the surviving doorways and architraves carefully removed. If in fair condition, tie beams within the wall at first floor and wall plate level will be retained, or if not, they will be replaced to provide structural stability and indicate the former plan form. At the upper floor the architraves and frame of the doorway will be reinstated, connected to these members to act as a “ghost door”. (See Proposed Plan drawing **539-P-13**.) Thus it is hoped this space will provide both a useful space for exhibition, and an understanding of the history of the building. The floor of the central wing is a mixture of concrete slab, and suspended timber floor. It is proposed to replace this in its entirety with a heated polished concrete slab.

A new opening will be formed in the north wall of Room 18-04 to provide access to the ramp area. The opening will be formed with new hardwood timber beams over the opening. The opening will be lined in natural hardwood planks to differentiate it from historic openings in the building. (See **Section D-D'**).

In order to give access to the lower ramp, an existing window in the west wall of 18-04 will be extended to ground level. The historic architrave will be repaired and / reinstated to indicate this is a historic opening. (See **Section D-D'**).

In the smaller space of the west wing, Room 18-01, a tiled ground floor survives. Subject to investigation this will be retained, if feasible. Experience shows that it is rarely possible to lift a tiled floor without destruction of the tiles. An entirely new opening is required to give access to the ramp. This will be formed similarly to those in the north wall.

19th Century Wing

In contrast to the 18th century wing, the two rooms, and corridor of this wing have survived in form, and with a number of historic features intact, or repairable. Therefore it has been decided to reinstate these rooms in their intended form, with timber suspended floors, lime plastered walls, with picture rail and dado rail, and ceilings at the original level. (**Sections B-B', C-C'**)

A new opening will be formed in the north wall of Room 19-07 to provide access to the ramp area. The west side of this opening will be at the building joint between 18th and 18th century wings, and the new beams over the opening will be of hardwood timber. The opening will be lined in natural hardwood planks to differentiate it from historic openings in the building.

Methodology

Prior to any demolition, or temporary removal of any elements of the building they will be recorded. Elements removed for repair or replication will be clearly labelled with their purpose and original location. Following removal of modern and unsound plasters the building will be inspected and any previously concealed features (such as evidence of previous alterations) recorded and interpreted.

Throughout the conservation works, appropriate materials and methodologies will be used to ensure new and replacement work is compatible with the nature and materiality of the construction of the building. Where the thermal performance of the building is being upgraded, natural breathable materials will be used, compatible with the performance of the fabric of the building. A lime based insulating external render has been identified which is compatible with traditional finishing techniques.

Where new openings are being formed in the historic masonry, existing rubble stones will be removed and the reveals rebuilt using clay bricks, laid in lime render. New hardwood beams will be used and temporary support provided as specified by the structural engineers.

Fire damaged joinery will be repaired and reused wherever possible and practical. Elsewhere reproduction joinery will be based on the historic profiles. 5 of the surviving fire places will be retained, where the chimney pieces are in fair condition. This includes 20th century tiled features, which are a part of the building’s story. Where the fire places are very badly damaged they will be removed but the hearth recess plastered and retained as part of the story. Similarly sockets for joists and beams, within the masonry walls will be kept, so the former floor levels can be read. Generally new lime plasters and renders will be used throughout, both internally and externally. However when removing the cement based renders and failed lime plasters, if any areas of sound lime plaster are found these may be kept. It is foreseen that this may be possible on the north elevation facing into the ramped area.

The replacement roofs will be timber structures, insulated at ceiling level, with natural slates selected.

5.3 Site & Biodiversity Management Strategy

Liffey Vale house, its former gardens, and associated lands are to be redeveloped and made publically accessible as a centre for bio-diversity. The ambition is that the site will offer the public the opportunity to expand their understanding of the natural world and their relationship with it, while enjoying a walk around or through the site. To these ends the site will provide exemplars for low ecological impact building, and for land management methodologies that support and enhance the biodiversity of the ecosystems present on the site.

The proposal applies subtly variant methodologies for the design and management of the various zones of the site, based on analysis and understanding of the history, and evolution of the site, its current condition and the habitats present. See Site Zones Map.

Site history

At this point in its course, the River Liffey flows in the same location, between bluffs of higher land, as it did prior to the last Ice Age. There is archaeological evidence of human occupation of the area during the Bronze Age, Viking and Mediaeval periods, and important settlements, mills and crossing points of the river developed at Islandbridge and Chapelizod. The wall to the Phoenix Park was constructed in the late 17th century, with the main road connecting the city of Dublin to the midlands and west of the country passing along its perimeter. The site lies between this road and the Liffey.

A record of a building at the site first appears on Roque’s map of 1760. The house and associated of lands have remained in quasi rural isolation, but within easy reach of the City of Dublin ever since. There is a well located in the orchard area. This hasn’t been dated, but it is possible that it predates the house.

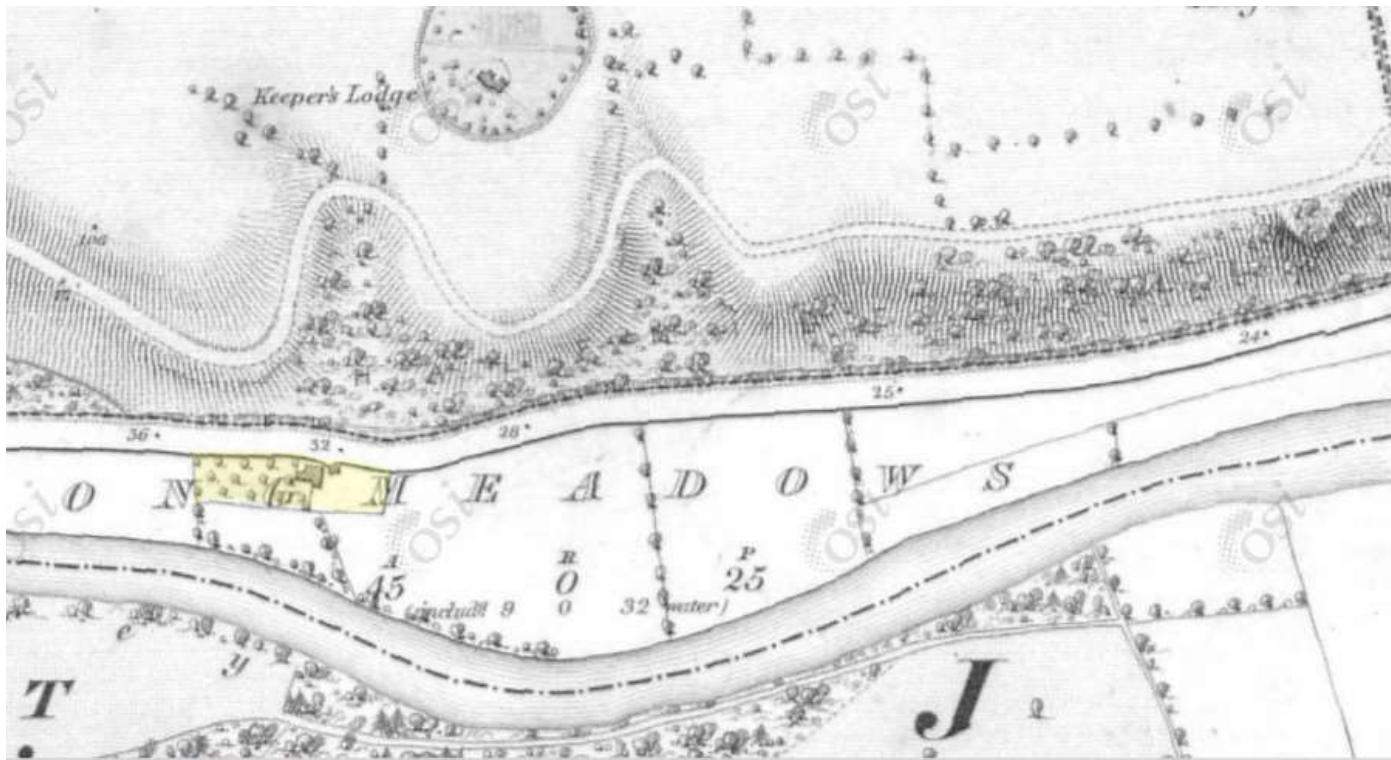


Fig. 5.18 Map showing historic site of Liffey Vale, corresponding to the current orchard and garden (OSI)

The lands associated with the house consist of a long strip of rising ground, varying in width between 25m to 35m and running parallel to the Chapelizod Road. It is separated from the road by a retaining wall, the site being up to 1.8m below the level of the adjacent road. While the elevation of this area of land may have protected it from flooding, it is further protected by a boundary ditch. Between the boundary ditch and the river lies level land; part of the original flood plain of the Liffey. This would have been either cultivated or grazed. Two further historic ditches cross this land connecting the boundary ditch to the river, but these are currently partially silted up and dry. The last record of this land flooding is 1954. The weirs on the river control its flow, keeping the level fairly consistent and ensuring that the highest penetration of tidal waters is Islandbridge.

The most recent modification of the site is the raised area at the eastern end, consisting of imported spoil, deposited there when the GAA playing fields in the adjacent OPW owned site were drained and levelled in the mid-20th century.

Proposed management for enhanced biodiversity

The approach to the management of the site at Cois Abhainn is informed and inspired by the principal of “rewilding”, with that concept adapted to the particularity and potential of this site. Rewilding is a term that has come into frequent use, since the beginning of the 21st Century. However, not unlike the ubiquitous term sustainability, it can be used in different contexts, and may be misunderstood, or misplaced. Rewilding refers to the process of allowing formerly cultivated land to be left to its own devices, such that plants and animals, from the microscopic through to the larger trees and mammals recolonise it through “self-willed ecological processes”.¹ Rewilding is a dynamic process; the outcomes are neither finite nor certain. The resulting form and environment of the site will continue to change over coming decades. In order to be an effective exemplar it is proposed that the observation and recording of these changes be part of the raison d’etre of Cois Abhann.

A widely read account of rewilding, in the English language, is “Wilding” by Isabella Tree, documenting the transformation of the Knepp Estate, formerly an intensive farm, in West Sussex, England. In contrast to Knepp, and further examples in the Highlands of Scotland, and the Netherlands, the site at Liffey Vale, at only 1.2 Hectares is diminutive in size, and urban in location, and this will have an impact on the way that nature responds to the site. The principals applied in areas of the site are inspired by the same approach, and the outcomes can be just as valuable and interesting, illustrating the potential of nature to regenerate in a small semi-urban site.

To a significant degree the site of Liffey Vale House, abandoned and derelict for decades, has been allowed to rewild naturally. This is particularly the case in the former flood plain area, less so in the orchard and garden areas. It is over 20 years since the house was occupied and its orchard and gardens tended, and longer since the land between the garden and the River Liffey was managed in any way. Most results of this “rewilding” have been good but some were bad (i.e. the invasive Japanese knotweed). If other plants had come in, the results would have been better for the biodiversity of the site. This project will replace invasive species with more environmentally appropriate plants and ensure appropriate management and monitoring of change.

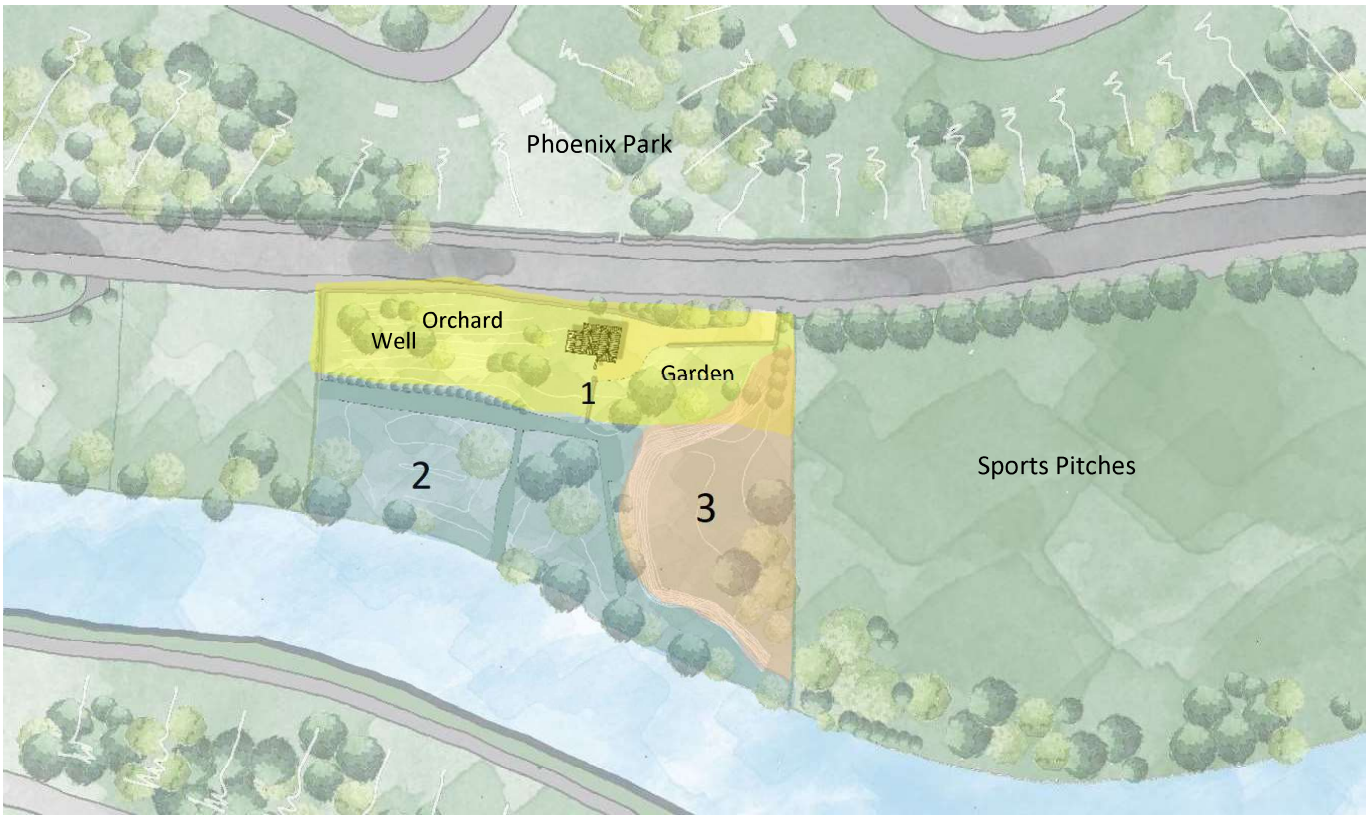
¹ Tree, I. Wilding p.8 (2018)



Zone 1: Orchard

Zone 2: Former flood plain

Zone 3: Raised reclaimed land



Site Zones Map

- Zone 1: Orchard & Garden: the historic site of Liffey Vale House
- Zone 2: Riverside margin and formerly flooded fields and ditches
- Zone 3: Reclaimed land: formed of fill deposited when sports pitches were made

Fig. 5.19 The three zones of the site of Liffey Vale House

Current condition of the site

Alder, ash and elder saplings have self-seeded and bramble thickets are spreading in the orchard and gardens. In the former water meadows, larger alders have established themselves along the ditches, and the mature willows have split, fallen and regrown. Trees are also colonising the raised area at the east end of the site. A number of species of bats have been recorded at the site, common bird species nest and frogs, are also resident. It is not however, only native “wild” species who are claiming space for themselves. The laurel, buddleia and snowberry have spread from their original planned locations within the garden, and two stands of Japanese knotweed have established themselves in the reclaimed part of the site. Himalayan Balsam, an invasive annual, is brought into the site by natural processes.

Proposal

In order to maximise the potential within the site, for the development of increased biodiversity, and for learning opportunities for both the public, and the Dublin City Council, it is proposed to not simply stand back and let nature take its course throughout the site. By a series of carefully considered interventions, and responses, to the contrasting existing conditions at the site we hope to facilitate the evolution of a variety of different habitats through the “self-willed” processes of nature. In proposing management regimes for the site, and in order inform the landscape design of the site we have identified three distinct zones:

1. The gardens and orchard, lying on the gently rising ground between the boundary ditch and the Chapelizod Road.
2. The level area, bounded and divided by historic ditches, that was formerly the flood plain of the River Liffey.
3. The raised area, at the eastern side of the site that is formed of spoil, dumped there when the GAA Sports Grounds were created.

These zones are shown on the Site Zones Map. (Fig. 5.??)

The proposal subdivides each of these zones into sub zones, with different levels of intervention and subsequent management regimes. These are identified on Management Zones Map. (Fig. 5.??).

1 Gardens and Orchard

Within the bounds of the historic garden and orchard it is proposed to take a composite approach, illustrating how wild species can flourish in a garden / cultivated area in combination with wildlife friendly ornamental planting. The management regime will be low maintenance and organic, and the buildings and paved areas and drainage designed to minimise negative environmental impacts. Existing garden plants of limited value for biodiversity i.e. cherry laurel, buddleia, snowberry and privet will be removed and replaced with more wildlife friendly species.

1A. Boundary Shrubbery / Hedge to Chapelized Road

This area will demonstrate how an effective and attractive biodiverse barrier can be created using a mixture of native and non-native species. This hedge is required to provide a dense secure visual and sound barrier to the Chapelized Road.

Proposal: Remove much of the vegetation, including bramble thickets. Retain the native trees, and prune to ensure safety adjacent to the road. Retain and prune the lilac. Retain the ground flora, including bluebells. Replant with a dense mixture of native and ornamental species.

1B. Front Lawn / Garden

This area will provide an attractive area for sitting, walking and small events. It will demonstrate wildlife friendly management of a garden space, while retaining the historic form and essence of the place.

Proposal: Retain the large ash, the large cherry and two of the poplars. Retain old established shaded grassland, enhanced with reseeding. Remove self-seeded cherries, alders and hawthorn. Some of these may be replanted elsewhere on the site. Create new terraces between the driveway and lawn with ornamental planting. The eastern end of this area will be regraded, and planted with trees as a continuation of zone 3A.

1C. House: setting, access and environs

The access to and the setting of the house has to provide universal access for visitors and a transition zone between the information, education and exhibition areas within the building, and the landscape around. The building and new landscape features are intended to be an exemplar of wildlife friendly construction and landscape design.

Proposal: Paving to be permeable, and use natural materials. Water will be collected from roofs of buildings. Ornamental planting selected to be non-invasive and pollinator friendly. Lawns planted with native grasses, and managed using a planned mowing regime to maximise species diversity. Self-seeded alders to be removed and replanted elsewhere on the site.

1D. Orchard

This historic area is to be retained as an orchard, and used to demonstrate managed meadow grassland as well as the benefits, for both human consumption and wildlife of fruit trees. The mature sycamore and beech trees at the west end demonstrate large trees in a garden / parkland setting.

Proposal: Fell poplars, retaining timber for seats and bridges. Prune and retain fruit trees, plant additional trees using Irish Heritage varieties. Retain sycamore and beech. Establish grassland paths but avoid suburbanising the area. Establish mowing regime that encourages wild flowers. Seed areas of wild flowers and

bulbs. Remove most of the self-seeded alder, elder, hawthorn and willow, but relocate them elsewhere, where possible. Planting along the wall: pear trees and wildlife friendly climbers. Enclose the well for safety, and retain as a habitat for frogs, and invertebrates.

1E. New Hedgerow

This historic hedgeline forms the boundary between the orchard and the former fields. It is largely formed of laurel which is of limited value to wildlife and creates dense shade. The new hedge will demonstrate the potential of a native hedge which is, in effect, a miniature woodland

Proposal: Remove laurel and other non-native species. Use a number of specimen trees such as rowan to provide structure, and plant a rich mix of flowering and fruiting native species, which will be cut and laid, over the ensuing years, to establish a dense and wildlife friendly hedge. A number of framed views will be left through into the wilderness, creating natural cover for observers.

2 The Wilderness

From the perspective of its current and potential ecological importance this is the most significant zone of the site. It is also the area where fewest interventions will be made prior to, and during, the rewilding process. The wilderness area is bounded by ditches and the river. From a visitor management perspective this is important in that the visitor must cross a bridge in order to enter this area, highlighting its autonomy and specialness.

2A. The Ditches

The ditch that forms the boundary with the orchard is currently full of water and this extends along a part of the central ditch, but the water does not, in normal circumstances meet the river. The historic diagonal ditch that forms the eastern boundary of this zone is silted up and dry. Wetland habitats are particularly biodiverse, so it proposed to reinstate and enhance the ditches to enhance the extent and variety of wetland habitats within the site.

Proposal: It is proposed to dig out, and rewet all the ditches. At normal river levels the ditches will not meet the river, but if that river level rises in time of very heavy rain the river water may penetrate the ditches. In a number of places the profile of the ditches will be altered to create zones of different depths of water in order to provide a wider variety of wetland habitats. Some wetland species such as kingcup, water mint and wild angelica (sourced from within the Liffey River catchment area) may be planted in order to decrease the opportunity for Himalayan Balsam to self-seed. If and when it does appear it will be removed prior to setting seed.

2B. The Wilderness West

This area has been “rewilding” for many years. It consists of abandoned wet grassland and is dominated by native species.

Proposal: This area to the west of the central ditch will be subject to the fewest interventions, and largely left to its own devices. Willows will be left to fall and regrow: the dead timber providing an important habitat. A few alders from the garden and orchard area may be relocated here. A circular path will lead into the area, so the public can observe the area, but most of the area will be the preserve of wildlife.



Fig. 5.20 Map showing the location of the management zones of the site

2C. The Wilderness East

This area lies between the ditches, and has a large group of semi-mature alders on the line of the diagonal ditch. The large, partly fallen, and regenerating willow is a particularly interesting feature of this area, **illustrating the value of rotting wood, and the capacity of trees to regenerate.**

Proposal: In this area a number of the self-seeded alders and willows from the garden will be relocated to create an alder dominated woodland. This area will be more accessible to the public with the circular route and a secondary grassed route.

2D. Riverbank margin

This area is particularly sensitive, as any intervention here could impact negatively on protected and high profile species i.e. salmonids. It is not proposed to modify it.

Proposal: The riverside path will be constructed such that the river margin remains undisturbed.

3 The Reclaimed Land

Although both environmentally, and historically the least significant area of the site, this zone is also important as an example of how nature colonises disturbed land (of which inevitably there is much in any city). It is also valuable, in that its raised elevation provides the opportunity to look out into the canopies of the trees and to look down onto the River. It is in this area that the stands of Japanese knotweed are located, and the first intervention will be the removal of this invasive species using approved methodologies.

3A. New woodland habitat: on steep banks

This zone is located on both existing steep banks and on the new banked areas arising from formation of the new universally accessible paths and parking area. It is an opportunity to demonstrate 'pioneer' woodland; trees that naturally colonise disturbed ground, paving the way for other species to follow.

Proposal: Remove non-native species, but leave some bramble, and other native shrubs. Take care to leave ivy leaved broomrape and bluebells. Plant Leinster sourced hazel (for coppicing), oak, spindle, birch and crab apple. Retain the semi-mature sycamores near to the river. Manage the woodland to enhance biodiversity: coppicing of the hazel illustrating regeneration and how bluebells and other woodland species respond to changes in available light through the woodland canopy.

3B. Event meadow: grassland habitat

The level area at the top of the banks will be used as an opportunity to demonstrate biodiverse grassland habitats which can thrive on disturbed ground. The open area may be used in the future for occasional events.

Proposal: Use appropriate wildflower and native grassland mix in any bare patches. Execute selective mowing to encourage wild flowers. Plant small copse (pocket forest) of native trees.

3C. Boundary Hedge and Trees

This area enhances with natural vegetation the fence that forms the boundary with the sports pitches.

Proposal: Plant the boundary fence to the east, with native hedge and specimen trees, similar to 1E.

3D. Viewing terraces

In this area overlooking the river it is intended to create an area where the public can sit and enjoy the outlook of the river and into the wilderness area of the site.

Proposal: The steep bank will be remodelled to form grassed terraces. Grass, native shrubs and small trees will be planted to provide stability to the slopes.

Opportunities for monitoring and community engagement

The project at Cois Abhann offers the opportunity to illustrate the potential and processes of managed rewilding, in the specific context of Dublin and the River Liffey. The project is a further chapter in the story of the site: the symbiosis between humans and non-human life forms over thousands of years. The new paths and infrastructure will enable the public to explore and enjoy the environment and learn about the natural world. Highlights will be the river and the abandoned fields, now a “wilderness”.

This project will bring in better plants and ensure appropriate management. The public is being invited in to see what happens when only limited maintenance is applied, and a site is taken over by a management body which ensures biodiversity enhancement is the objective. It will demonstrate good management for biodiversity to the people who visit the site who can learn about mowing regimes for grasslands which will enhance grassland biodiversity, the establishment of native hedgerows, habitats which will encourage bird nesting and the selection of pollinator friendly shrubs and herbs.

As the new, modified and existing woodlands and grasslands establish themselves, other species and life forms will follow: insects and birds, fungi, mosses, algae, microscopic life forms. Exactly what and when cannot be foretold, but this project offers the opportunity to observe, monitor and learn from this process. Bird diversity and numbers of nesting birds is an excellent indicator. Other forms of monitoring may also be undertaken; there is a wealth of opportunity for community engagement and dissemination of understanding through educational initiatives.



Fig. 5.21, 22 Cois Abhann offers multiple opportunities for monitoring, citizen science and community engagement

5.4 Design Proposal: The Building

The brief evolved in a number of ways over the process of developing the final design. The appropriate size for both the cafe and education room has been trialed and tested to make the best match between capacity and a building that is in keeping with the scale and character of the site and the Protected Structure.

All principal spaces have been conceived with a view to durability and flexibility; acknowledging that exhibitions and use of spaces may evolve over time.

The final schedule of accommodation is as follows:-

Historic Building

• Staff Room	20.3 m ²
• Corridor	5.8 m ²
• Reception / Introduction	15.8 m ²
• Exhibition Room One	35.5 m ²
• Exhibition Room Two	18.2 m ²

Building Extension

• Circulation Areas (including interpretation)	78.0 m ²
• Staff WC	4.6 m ²
• Education Room	48.1 m ²
• Store	8.8 m ²
• Café Seating Area	23.1 m ²
• Café Servery & Circulation	13.2 m ²
• Kitchen	19.1 m ²
• Store One	7.1 m ²
• Store Two	8.8 m ²
• Staff WC	4.4 m ²
• Universally accessible WC	4.7 m ²
• Unisex Cubicle	3.1 m ²
• Unisex Cubicle	3.1 m ²

External Covered Areas

• Veranda	24.3 m ²
• Café	16.4 m ²
• Veranda circulation to WCs	20.3 m ²



Fig. 5.23 The proposed new buildings follow the boundary wall, shielding the site from the road, and preserving the relationship between the house and its historic setting

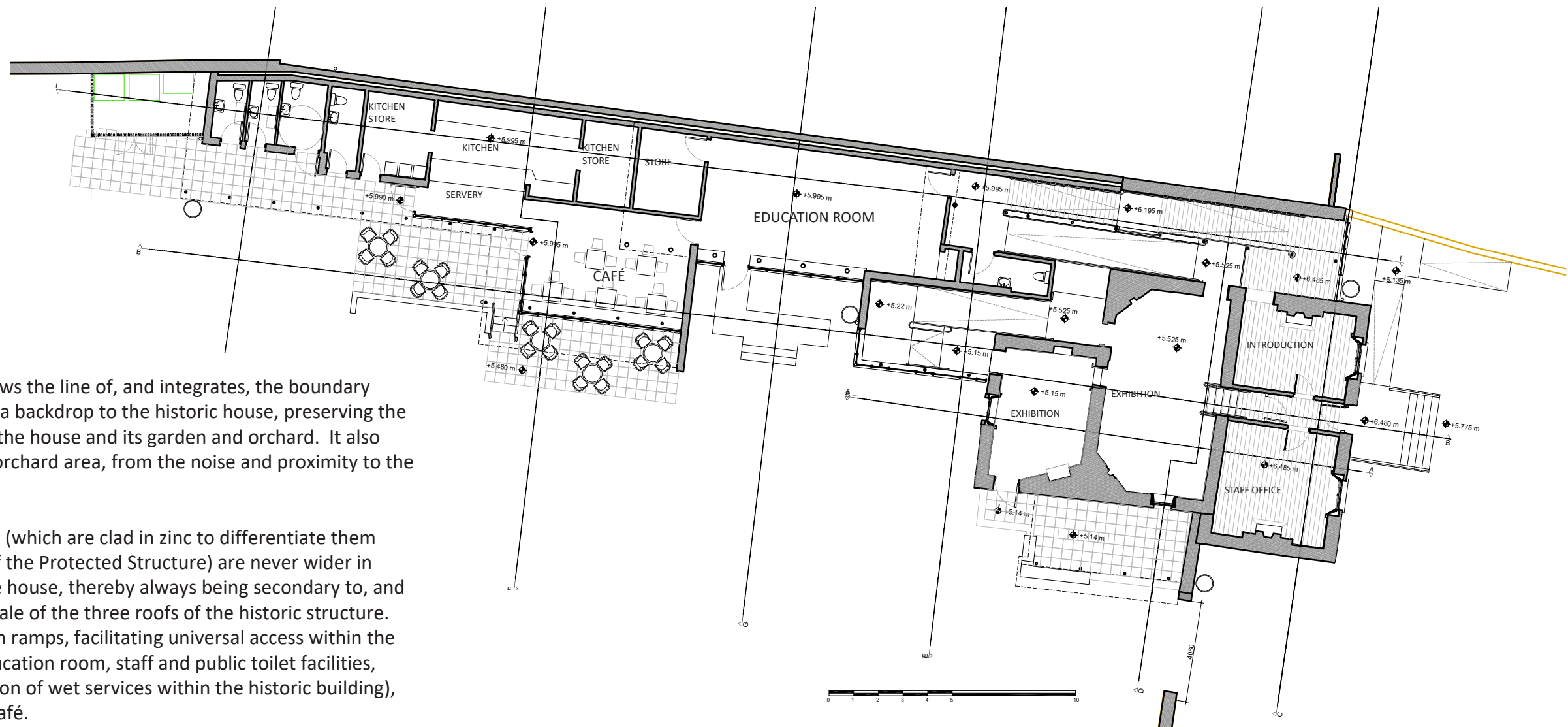


Fig. 5.24 Ground Floor Plan

The New Building

The new building follows the line of, and integrates, the boundary wall. As such, it forms a backdrop to the historic house, preserving the relationship between the house and its garden and orchard. It also serves to protect the orchard area, from the noise and proximity to the Chapelizod Road.

The new pitched roofs (which are clad in zinc to differentiate them from the slate roofs of the Protected Structure) are never wider in span than those of the house, thereby always being secondary to, and complementing the scale of the three roofs of the historic structure. The extensions contain ramps, facilitating universal access within the entire building, an education room, staff and public toilet facilities, (avoiding the installation of wet services within the historic building), storage, plus a small café.

The eastern gable to the extension building is set back from the eastern elevation of the 19th wing, so this important symmetrical entrance front can still be read in its historic form.



Fig. 5.25 Section BB



Fig. 5.26 East Elevation

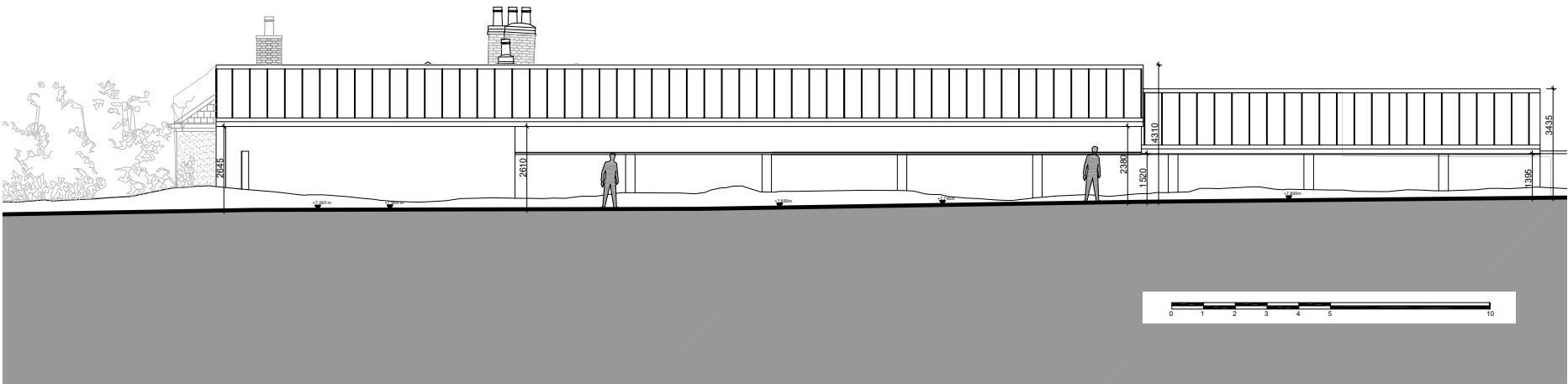


Fig. 5.27 North Elevation

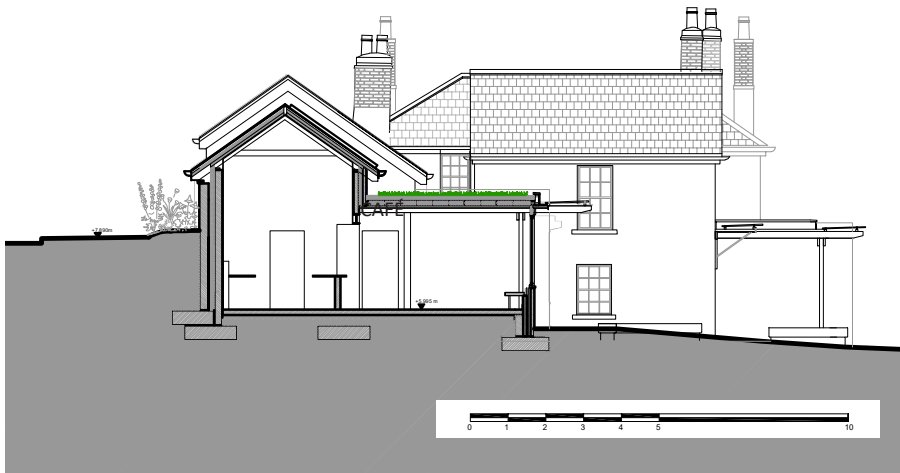


Fig. 5.28 Section FF' / West Elevation



Fig. 5.29 South Elevation



Fig. 5.29 Section DD'



Fig. 5.30 Section AA'

Interiors of the Protected Structure

The entire volume of each of the central and west wings will be used for the exhibition, with the traces of the former domestic rooms; fireplaces, skirtings and joist sockets retained in-situ, so the form of the original house can be understood. Upper floor ceilings will be reinstated in their original location.

In the east wing the two reception rooms will be reinstated in their historic form, with the southern room used by staff, and the northern room becoming the reception / introduction to the exhibition.

Where the new building, enclosing the main ramp, runs between the north wall of the house and the boundary wall, the new roof is designed to be supported centrally on new steel columns, minimising the impact on both the calp wall to the north, and the wall structure of the house.

The valley gutter is constructed below the historic eaves level, retaining the integrity of the historic roof form. Roof lights give the character of an external space, and emphasise the separate nature of the calpstone boundary wall and house.

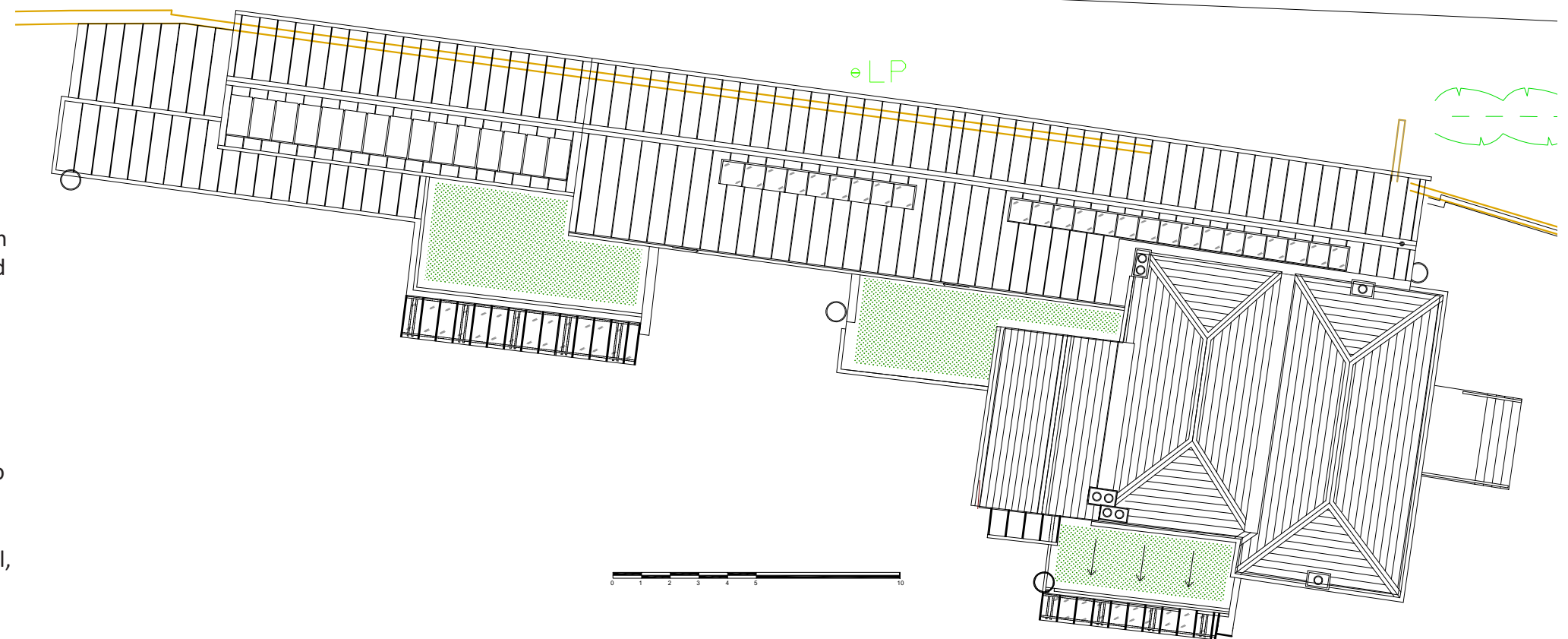


Fig. 5.31 Roof Plan

5.5 Design Proposal: The Site

A detailed account of the landscape design is given Appendix E.

The site has been designed with accessibility, and flexibility in mind, with many alternative routes around and through the site, encouraging the curious visitor to wander and explore rather than a fixed route.

Cois Abhann will be a place on the way to elsewhere, as well as a destination in its own right.

There is a relaxed and informal relationship to the historic building, and we have worked, as far as possible, with the natural levels of the land. The area where most disturbance is necessary is in the least sensitive area: in the reclaimed land in order to provide gentle sloping paths and the viewing terraces overlooking the river.

Department of Defence Site

Out of this stage it became clear that the use of the Department of Defence site, lying between the site of Liffey Vale and the Liffey Valley Park was of key importance in relation to access to the site. Following an initial visit by design team members in December 2019, outline proposals were made on the basis of which negotiations commenced regarding the transfer of lands to Dublin City Council to enable a direct pedestrian connection between Liffey Valley Park and the site of Liffey Vale.



Fig. 5.32 Site Plan

Department of Defence Site

The strip of steeply sloping land, along the Chapelizod Road is to be transferred from the Department of Defence to Dublin City Council. This land will in effect become an extension of the Liffey Valley Park. A path, following the contours, parallel to the Chapelizod Road, links the existing path in Liffey Valley Park to the reopened doorway in the western boundary wall of the orchard.

Two new universally accessible parking spaces and a new bus pull-in layby has been created to facilitate bus and coach groups visiting the site. Two new pedestrian links from the footpath on the Chapelizod Road, one stepped, and one gently sloping, connect the layby into the new path linking Cois Abhann and Liffey Valley Park. These will replace the current exit from the park. A dense low hedge will be planted to protect the edge of the Chapelizod Road footpath, as the slope will be made steeper by the creation of the layby. The new length of park will be planted with meadow grass and wild flowers, and native trees, and mini wet lands created at the bottom of the slop to deal with run-off.

A new, more gently inclined access route is created for the Department of Defence, with security bollard provision to prevent unauthorotised access down this driveway.



Fig. 5.33 Plan of extension to Liffey Valley Park



Fig. 5.34 Aerial view of Cois Abhann, in context

PART SIX

INTERPRETATION STRATEGY

Cois Abhann, Biodiversity Centre
at Liffey Vale House and Gardens

Interpretation Strategy

Issue 03



Cois Abhann, Biodiversity Centre at Liffey Vale House and Gardens Interpretation Strategy

Overview

In our modern world, our connection with nature has become strained. Our indoor lives dominate. Our fresh air and access to water are taken for granted. Awareness of natural food sources is through the supermarket. Our understanding of soil and water is limited to garden centres, and as the environment and climate changes, we are not connecting our behaviour with what is happening in nature.

Through education comes understanding, and through effective interpretation, the plans for Cois Abhann: Biodiversity Centre at Liffey Vale House and Gardens can reconnect people with the natural world and instigate behavioural change around the significant issues that have impacted our natural lives.

Cois Abhann can be the first step in a renewed understanding of our local environment and our place within it. It has the potential to be a hub for best practice and develop as a project that will instil pride. As the visitor arrives and explores Cois Abhann, a world they did not realise will slowly unfold as they explore the outdoor zones and diverse habitats. A brief visit to the centre can supplement and support the main, outdoor experience. When a visitor leaves Cois Abhann, interpretation should fill them with a new understanding about how the locality around them works from the microscopic to the mega. It will be a unique experience for those who happen upon it during a walk, or visitors who are intentionally drawn to it to investigate what the site has to offer.

Outdoor Area

The outdoor experience is the primary experience at Cois Abhann. It's where the drama unfolds, and nature can be experienced through all the senses. Interpretation inside the building is a commentary and complement to the outside. The two (later three) external entry points to the site will welcome visitors to this extraordinary landscape, highlighting areas to discover and enjoy through heads-up mapping and detail the zones of the site, the sequence they can visit, where to avail of a cup of tea or where to find out more.

Outdoor interpretation will orientate the visitor to where they are, what Cois Abhann is all about and will encourage them to have fun.

Every visit, for first-time visitors and repeat visitors, will hold something new, a new experience to remember as nature mingles with the change in weather, climate and seasons.

This sense of arrival will compel visitors to explore the site. With bespoke, interpretive signage to direct, engage and orientate.

The outdoor space (and veranda) near the building's exit might serve as a Tour Meeting Point for guided tours, target audience groups including schools and the starting point for lectures. As decisions progress in the future around staffing, a guided tour route could be developed to deliver an overview of the site that magnifies the miniature natural wildlife and interprets information for the visitor.

The outdoor area will reflect the interactivity and sense of fun displayed indoors, so visitors tangibly connect with a sense of place and meaning. Outdoors, the visitor will be encouraged to search and seek to discover the incredible activity around them. Insertions in each zone will be subtly differentiated, and feature key messages to be addressed, understood and appreciated.

Cois Abhann Biodiversity Centre Interpretation Strategy

Zone 1 - Gardens and Orchard Zone - the historic site

As visitors self-guide or are guided through this zone, they will understand its heritage and legacy as a garden and orchard. Fruit trees and hedges that remain might encourage fruit harvesting as an annual event at Cois Abhann. These might also lead to natural foraging events outdoors and raise awareness of our natural food sources and habitats.

‘Wildlife-friendly’ species will be highlighted as a way to introduce ideas around landscape management and non-friendly species to increase awareness of biodiversity’s competing yet adapting forces. It might explore the low-maintenance and organic land management regime across the zone at different locations; boundary shrubbery, front lawn, house environs, new hedgerows and orchard areas.

Functional areas in the zone may be turned into active learning experiences. Water barrels will collect roof rainwater for use on-site or as a rain garden. Refuse bins may lie beside compost, recycling and worm bins visualising the decay of materials acting as a secondary learning tool to encourage conversations around the sorting of waste, the nature of bio-degradable items that become waste and how this impacts biodiversity.

Throughout the zone, areas will be identified for interpretation that responds to the key messages for visitors to consume. For example, a focus on the ash tree will explore issues around Ash dieback disease, and a focus on Alders or Willows might explore the number of species that are enjoying a symbiotic relationship with the tree.

Worm bins might expose the life and times of soil, refuse and composting by offering visitors the chance to experience a tiny, natural zoo complete with opportunities during the week to ‘feed the worms’ or ‘clean the worm house’ for braver visitors. Further research at the next stage of the project will identify prime locations for interpretive impact, such as under the veranda outdoors.

In the next stage of the project, as we explore key take-home messages the visitor might remember, we will evaluate how themes and topics surrounding land management might be explored. Mowing regimes or methods to avoid the use of pesticides might be addressed to encourage visitors to assess their own behaviour at home.

There is also an opportunity to focus on the individual magic that happens across the outdoor zones at Cois Abhann; the resilience of the Willow tree that grows in damp environments, or the secret weapons in nature that stops some plants from being eaten. These stories can be located throughout the visitor journey.

The cycle of life might also be explored in a ‘Tree-house’, but not the kind you expect. Trees in the wilderness or shed branches will be left where they fall. In the garden areas of dead wood would be a consciously cut and placed features. Removed trees may be allowed to rot on-site as a living classroom, a rotting treehouse, providing an opportunity to showcase wildlife, fungus and organisms that live and thrive on decaying wood. Other trees and features may be reinterpreted as benches or seating with bespoke carvings or messages engraved within.

The garden/orchard zone may also investigate ‘Wonder Weeds’, a reappraisal of the value of weeds such as the dandelion in a world that has been told that weeds are ‘bad’.

The well area may encourage interpretation around frogs species, pond dipping and open discussions on pond biodiversity.

Interpretation can appeal to visitors with a vague interest in nature and to those who are more interested. It must include a key message to the visitor; why they should care. Interpretation works on the basis that we understand and appreciate information if we can relate to it. Therefore, information relating to nature must also relate to the visitor, their families, their lifestyles and even their future. This strategy will be

Cois Abhann Biodiversity Centre Interpretation Strategy

explored in the next phase so that, for example, the alder tree mentioned above and its myriad of wildlife sustained within can be relatable to the visitor and thus encourage behavioural awareness and even subsequent adjustment.

Zone 2 - The Wilderness and Wetland Zone

This area is deemed the most ecologically important in the site and also the most untouched area. Visitors can peer through the boundary hedge or walk across the bridges to view the wilderness area and observe it from a protected distance. This area is where we come closest to the concept of rewilding.

Interpretation could explore the origin and route of the river, the original flood plain of the Liffey, how the weirs of the river now control its flow, land management approach of the ditches, an overview of the Liffey's lifespan and the incredible variety of species thriving there. The birdlife and birdsong visible will be connected to the interpretation already touched on. Wetland birds such as kingfishers, grey herons, mute swans and water hens may nest along the area while other non-wetland birds such as cormorants, black-backed gulls and herring gulls may be identified.

Along the trail through the Wilderness Zone, interpretation will include plants and fish in the river such as salmon, pike, bream, roach and perch. Visitors may also be asked to look out for other animals yet to be identified. Otters, for example, have been reported upstream in neighbouring Palmerstown, but the activity of rowers along the route may have affected their residence. Subtle hints regarding human impact on diversity can be delivered in this way without being overt.

Some insects start their lives in the water while others such as damselflies and dragonflies are never too far away. Visitors will be enthralled by the quiet, busy, natural world in front of them, viewing the area as the Wild(erness) West, a law unto itself and the preserve of wildlife. The eastern part of the Wilderness might become dominated by alder woodland, a tree often found along watercourses.

Interpretation can direct visitors with tips on how to enjoy nature in the locality by, for example, suggesting bats are best seen or heard at dusk in summer on calm evenings. Many visitors enjoy walking in the Phoenix Park and War Memorial walk to Chapelizod and the experience at Cois Abhann can spill out to ensure greater understanding throughout the locality.

Interpretation may also address complex issues around water quality and celebrate the work of the common reed as natural filters that house micro-organisms that break down dirty and polluted water.

Zone 3 - The Reclaimed Land Zone

As the visitor continues through the outdoor zones, the story continues the colonisation of nature on disturbed land. This area is the most recently modified and consists of imported spoil, deposited there when the neighbouring GAA playing fields were drained and levelled in the mid-20th century.

Along the viewing terraces or the route, visitors might learn about the difficulties of Japanese knotweed and how it was disposed of metres beneath topsoil to ensure it does not regrow. The prevalence of bramble and native shrubs here and the biodiversity hidden within can act as eye-openers for the visitors. Common in the Irish landscape and despite detrimental pruning, these plants and shrubs are hotels for wildlife and birds who prefer nesting in bushes rather than trees.

Cois Abhann Biodiversity Centre
Interpretation Strategy

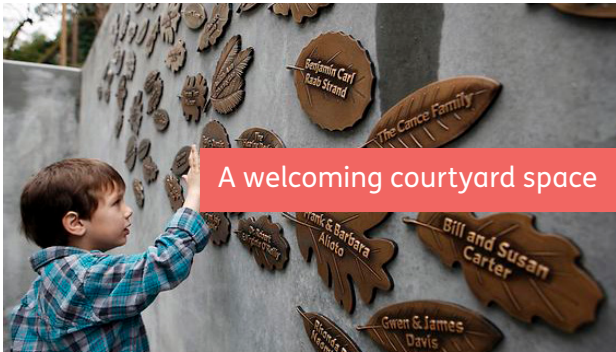
The level area at the top of the banks will be used as an opportunity to demonstrate biodiverse grassland habitats which can thrive on disturbed ground. For event-goers attending performances or lectures, interpretation will explore (in the following stages of the project) how visitors and event-goers can be actively and passively engaged.

Hazel trees located here may act as a case study to discuss coppicing and regeneration. The event meadow can also serve as a focus for grassland habitat, as can the trees that join Cois Abhann with the neighbouring GAA pitch.

These trees are a bat motorway. The Pipistrelle Bat travels along the trees from the Phoenix Park to feed at night.

The raised level of this area affords the opportunity to look out into the canopies of trees, and also across, up and down the river.

Cois Abhann
Outdoor interventions



A welcoming courtyard space



A showpiece to highlight the site



Encouraging interaction



Look towards highlighted views



Explore your senses



Interactives built into nature



Birdhide screen



Cois Abhann
Outdoor interventions



Updatable boards for seasonal highlights



Labelling in-situ



Cois Abhann
Outdoor interventions

Lectern - tree species

Bug Hotel

Worm Bin

Site map - orientation

Tactile elements built into lectern - pond life

Site map - orientation

'I've spotted' - seasonal highlights

Lifecycle of a tree

Wetland identification - species - rubbings post

Inlays in path - 'Wonder Weeds'

Guided tour meeting point and welcoming area with leaf casts in wall

Native wildflower sculptures

Bat Corridor

Bramble biodiversity and habitats - integrated graphic panels

Highlighting river life and river biodiversity - graphic panels and viewing frames

Viewing frame to encourage visitors to look up into tree canopy

Integrated graphic panels

Please note: Indicative locations of outdoor interventions

Tactile elements built into lectern - pond life

Lectern - tree species

Guided tour meeting point and welcoming area with leaf casts in wall

Native wildflower sculptures

Bat Corridor

Bramble biodiversity and habitats - integrated graphic panels

Highlighting river life and river biodiversity - graphic panels and viewing frames

Viewing frame to encourage visitors to look up into tree canopy

Integrated graphic panels

Lectern - tree species

Cois Abhann Biodiversity Centre Interpretation Strategy

The Building

The Georgian building is a secondary offering supporting the primary, outdoor experience. The building will provide an overview for people of what is happening in the landscape at Cois Abhann. As a structure, it will reflect the ethos of the site from the first approach, representing the values it promotes as a low-ecological impact building.

The interior is also a teaser for the outdoor site will motivate those uncertain about continuing through or exploring the outdoor area. It is a warm, inviting and exciting place where nature and the outdoor zones are given centre stage. Visitors get up close and personal with what is outside. They will learn about land management, biodiversity, and the developing ecosystems that are slowly taking shape.

As the visitor moves through the building they will experience modern and heritage builds, double-height ceilings and bright link spaces, that have a modern, external feel in their design.

A wild roof garden may house beehives, or the attic space may be for the reserve of wildlife.

Interpretation will not be overt or distracting; it will be part of the immersive visitor experience focused on the outdoor zones, be passive and engaging while avoiding exclusive and didactic information.

Reception/Information Area (1.)

This room is traditional in form, scale and detail, and is the most reflective in appearance of the historic house. The opening from this traditional room through to the bright, naturally lit ramp space will be inviting. Upon entering, visitors will graduate towards a visitor reception. Behind them, they will see the staff only area in the building and understand that Cois Abhann is managed by staff busily investing

their time in this new, exciting space. Although a relatively small space, there may be an opportunity to sell brochures, leaflets or small items associated with the site.

Interpretation may be characterised by the tone and voice of Cois Abhann. The energy and enthusiasm of the passionate people who (potentially) work there may be reflected in front-facing and updatable interpretive signage. Live updates of the latest nature news will engage new and repeat visitors. Billboards might advertise that bluebells may be expected to bloom this week, or the resident barn owls may be asleep upstairs. It might also advertise activities and events on site such as when the next tour might be, what's happening each day and what the visitor can experience.

The next stage of the project will explore how visitors and locals can be welcomed into the space. Will staff or volunteers be available to entice and welcome people or will it be a self-guided experience with the welcome signage graphically encouraging the curious visitor to discover the building and site area and avail of tangible information to understand the surroundings?

A short audio-visual projection could also feature in the reception area that presents a National Geographic-style timelapse of nature at Cois Abhann showing the growth and decay of evolving ecosystems. A wordless overview of the species, plants, flora and fauna presenting the action and activity of the outdoor zones; a flower blossoming, a tree losing its leaves, worm mating, the decay of leaves, the lifecycle of an eel, the building of a birds nest, the hunting of an owl, the death of a chick. Over 30 seconds the visitor might feel they have just watched an overwhelming and compelling film trailer of nature only to step outside into the quiet serenity realising that all of this activity is happening, albeit much slower, smaller and quieter, right before their eyes at Cois Abhann. The visitor should understand that by continuing through the exhibition space, they will have fun and learn more about what is to be seen, big and small.

Cois Abhann Biodiversity Centre Interpretation Strategy

Link spaces (2. and 4.)

The link spaces will be modern, bright, open and connect the visitor with the outdoors.

This first link space (link 2.) will have a large roof light with a large window facing east back up the drive and integrating the historic calp stone boundary wall. As such, it has an external feel, in contrast to Room 1 (Welcome Room) and Room 3 (Exhibition Room). The visitor will be drawn along the route and maintain a visual link to the outdoors.

Blending with the modern, architectural feel, interpretation might favour contemporary displays using large visuals, audio elements, multi-sensory interactive features or compelling graphics to complement the design but also instigate learning and an engaging visitor experience.

In the next stage of the project, key messages will be devised to prioritise what the visitor should understand in these rooms and support the primary outdoor experience. These key messages will feed into the interpretation. For example, a key message might be to stress the site is active all-year-round, and each visit will offer a new experience. Interpretation might visualise the expected life cycle of nature at Cois Abhann and the tasks required by staff at critical points of the year. This approach might encourage repeat visits through a nature-inspired 'event calendar'.

Equally, if a key message is to understand the history of the house and River Liffey, visuals of the conservation of the house with a brief history of the residents, the neighbouring tramline and historic Liffey may be the focus here. The exposed calp stone wall may serve as a backdrop to this story. The next stage of the project will decide what interpretation may be allocated in each area.

This space also provides access to the Education Room, which may also be used as a temporary exhibition space in summer when schools are closed and summer visiting numbers are high. This layout will encourage management of smaller groups and classrooms through the space, and allow self-directed visitors enjoy the exhibition rooms.

As the visitor journeys through a smaller link space (4.) this bookmarks the end of the internal visitor experience. The link space will also have a bright and modern feel with a view of the landscape. A blank wall along this link can offer 'to dos' for the visitor as they enter into the outdoor zones and leave the internal space 'see the wonderful willow', 'peer into the wormery' or 'practice pollinating at home'.

Exhibition Rooms

The exhibition rooms will be a multi-sensory, immersive discovery space, where nature, art and culture intersect. The visitor experience in each room will blend with the internal architecture of the space. As the project stages develop, we can explore how darkly lit areas in Room 3 (larger Exhibition Room) may use AV media or microscope to enhance understanding of the outdoor zones. The double-height space could be used to draw visitor's eyes upwards, encouraging the visitor to look up and be rewarded by interpretation focusing on, for example, birds or insects in flight in the context of the carefully conserved historic structure. The veranda window provides a visual connection to the outdoor zones and may serve as a seated viewing area where activity outside can be enjoyed and observed.

Cois Abhann Biodiversity Centre Interpretation Strategy

In Exhibition Room 3 or 5 (smaller Exhibition Room) Interpretation surrounding these CCTV viewing boxes might show the breeding and feeding of young animals; however, it will also show the cruel aspects of raising young in the wild; a Blue Tit's nest might show a lone female feeding three young, only one of which might survive. Interpretation should be presented as natural as possible, viewing nature as the visitors do, as a voyeur, commenting on the way the bird adapts its regime as a lone parent to sustain the young, raising hope and intrigue among visitors. Interpretation can include multiple intriguing facts; how many of the birds are likely to survive; what happens to those who do not survive, or the amount of energy expelled by the tiny feeder to maintain young.

Educational, fun and enjoyable discovery elements will provoke the visitor to discover highlights at Cois Abhann. Architecturally, Room 5 (smaller Exhibition Room) is also double-height, with more natural light and a connection to the outdoors through a ground-level west window.

Bird song audio might task the visitor with identifying birds they are likely to hear around Cois Abhann and in the locality at particular times of the year. Discovery boxes might reveal CCTV cameras with real-time day and night video streams from outdoor bird nests. A live stream could also record activity from the barn owl or bats located in the attic space.

The exhibition room will also be updatable to reflect seasonal observations and year-round activities. This would include natural weather warnings and, for example, a newly fallen tree branch at Cois Abhann that can be celebrated, in natural terms, as a new 'tree house' (see page 3 above) for Cois Abhann's mini beasts.

Discovery rooms can also be used to update visitors on Citizen Science reports. Citizen Science is a research-led project carried out by members of the public who volunteer to collect scientific data. Data gathering can focus on monitoring biodiversity, invasive species and climate change. Volunteers could also be encouraged to take part in events such as the

removal of Himalayan Balsam along the Liffey, an annual plant that reappears and needs to be consistently removed.

Cois Abhann does not have extensive data yet and therefore is an incredible opportunity to engage the public directly with science through the outdoor zones of Cois Abhann. The Environment Protection Agency suggests Citizen Science programmes encourage people of all ages to get out into nature. By monitoring over the coming years, the public, staff and volunteers can record the changes on the site occurring through the self-willed ecological processes, interact with the interventions we are proposing, and experience first-hand, the biodiversity-friendly management regimes and values of the site.

As water is also a key topic, this could be extended to include 'water warriors' who might undertake river assessments and have guided river walks to understand issues affecting water quality in the area.

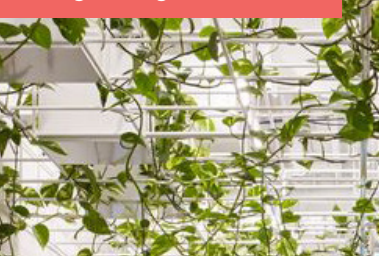
The exhibition areas will deliver educational and learning brochures as well as encouraging interaction, debate and commentary. In this way, learning is shared and passive through mutual enjoyment. Seed exchanges, advice on pollinator window boxes and information on how to add to Dublin's biodiversity can be pitched at visitors who have access to a window box or small urban garden.

Tools to explore the outdoors may also be displayed in a 'Nature Explorer Zone' such as wellies, wet gear, microscopes, collecting jars, note pads and record sheets to encourage younger visitors to seek, find and record their discoveries.

The next stage of the project should reveal more opportunities for further site-specific and year-round interaction across each of the outdoor zones. The process will interrogate how Cois Abhann can respond to current environmental questions reflected in the area to influence individual and community behaviour.

Cois Abhann
Visitor Centre

Foliage hangs from above



Take a seat and listen to bird song



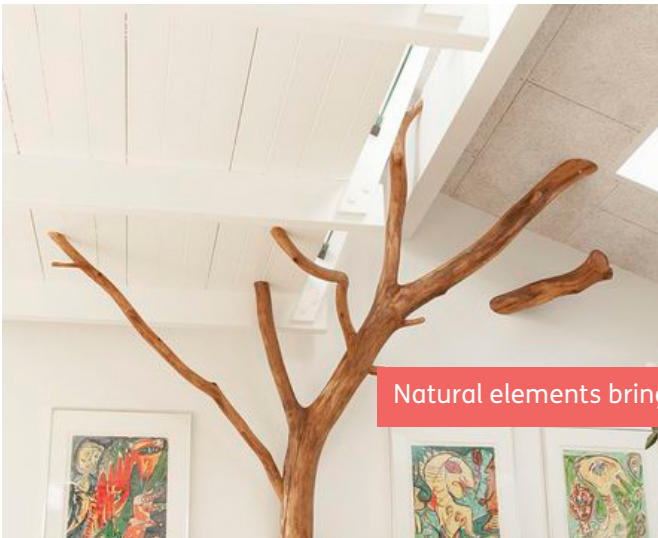
Peek underground and search for bugs



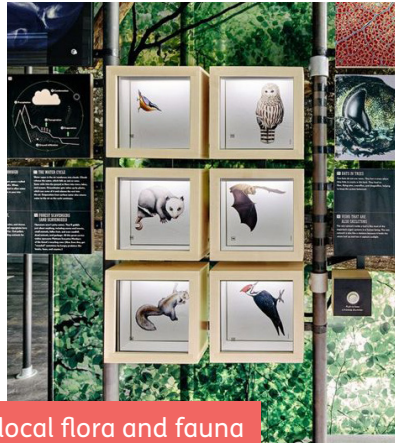
Lift the lid of a bird box to watch
a live video feed from the garden



Natural elements bring the outdoors inside

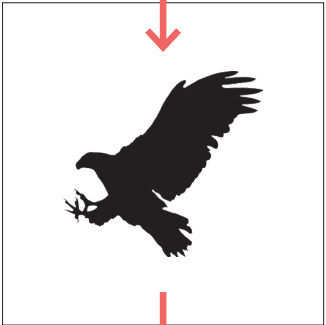
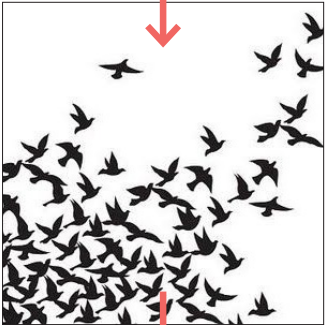
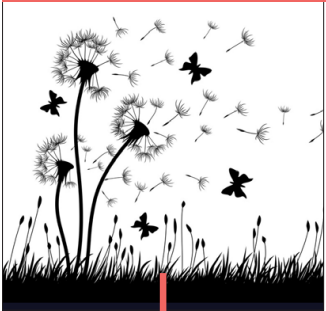


Discover local flora and fauna



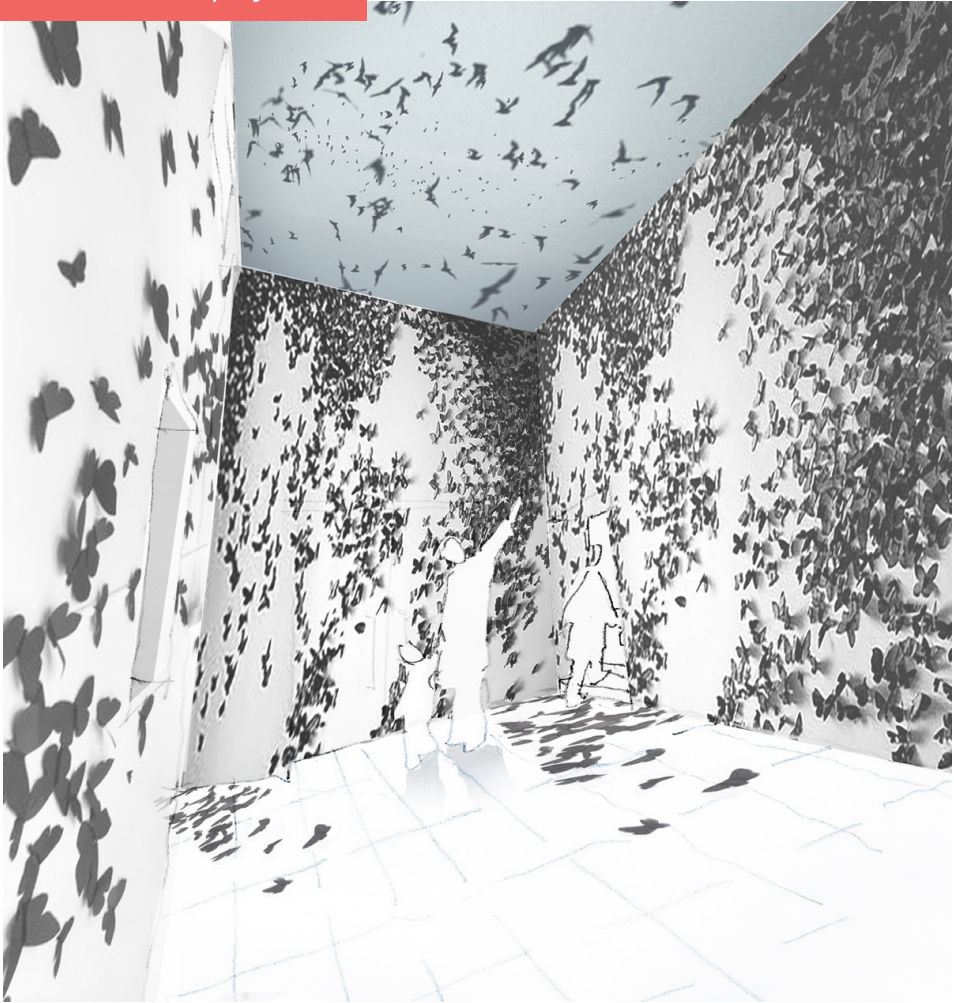
Cois Abhann
Visitor Centre

Potential AV storyboard



Watch as bats fly past
and roost overhead

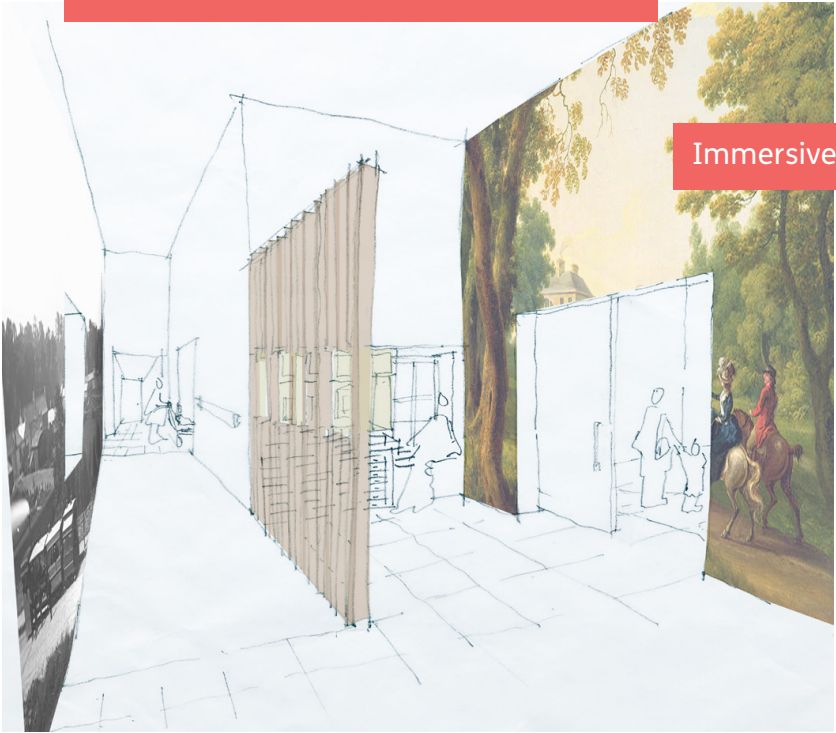
An immersive 360 projection



Discover the different seasons



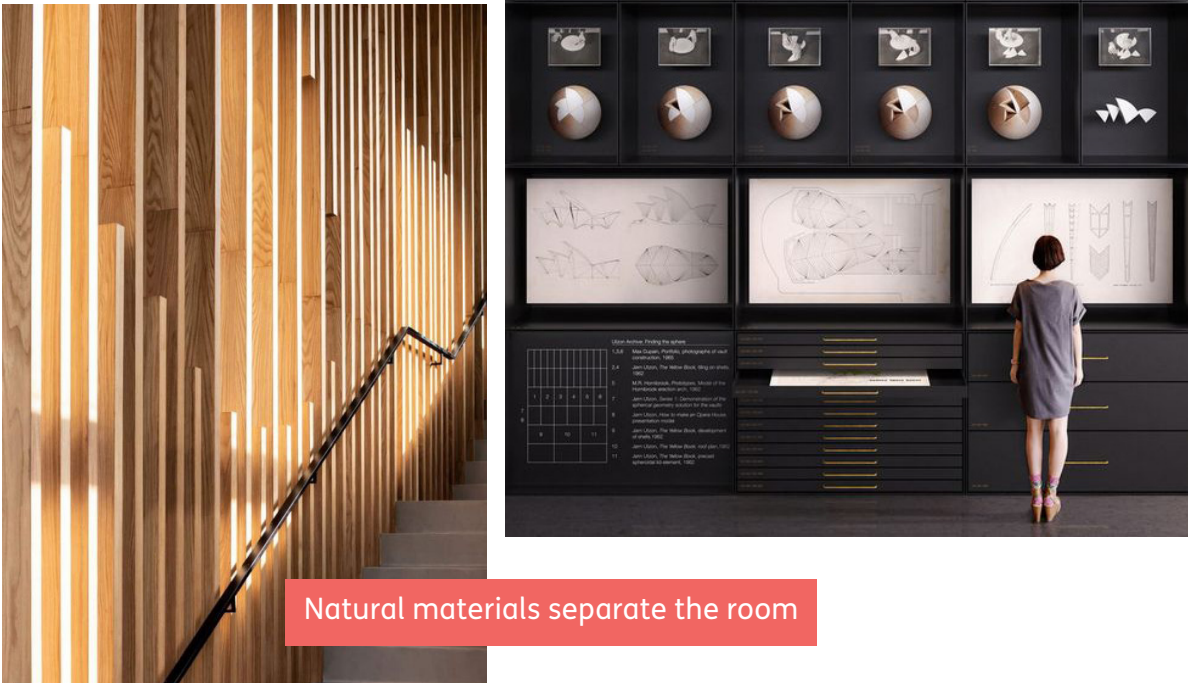
Look out to the orchard and the tram line



Immersive wallpaper graphics



Natural materials separate the room





We can help you tell your story



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APPENDIX A

BUILDING CONDITION REPORT

BLACKWOOD ASSOCIATES ARCHITECTS

CONTENTS

1.0 Introduction

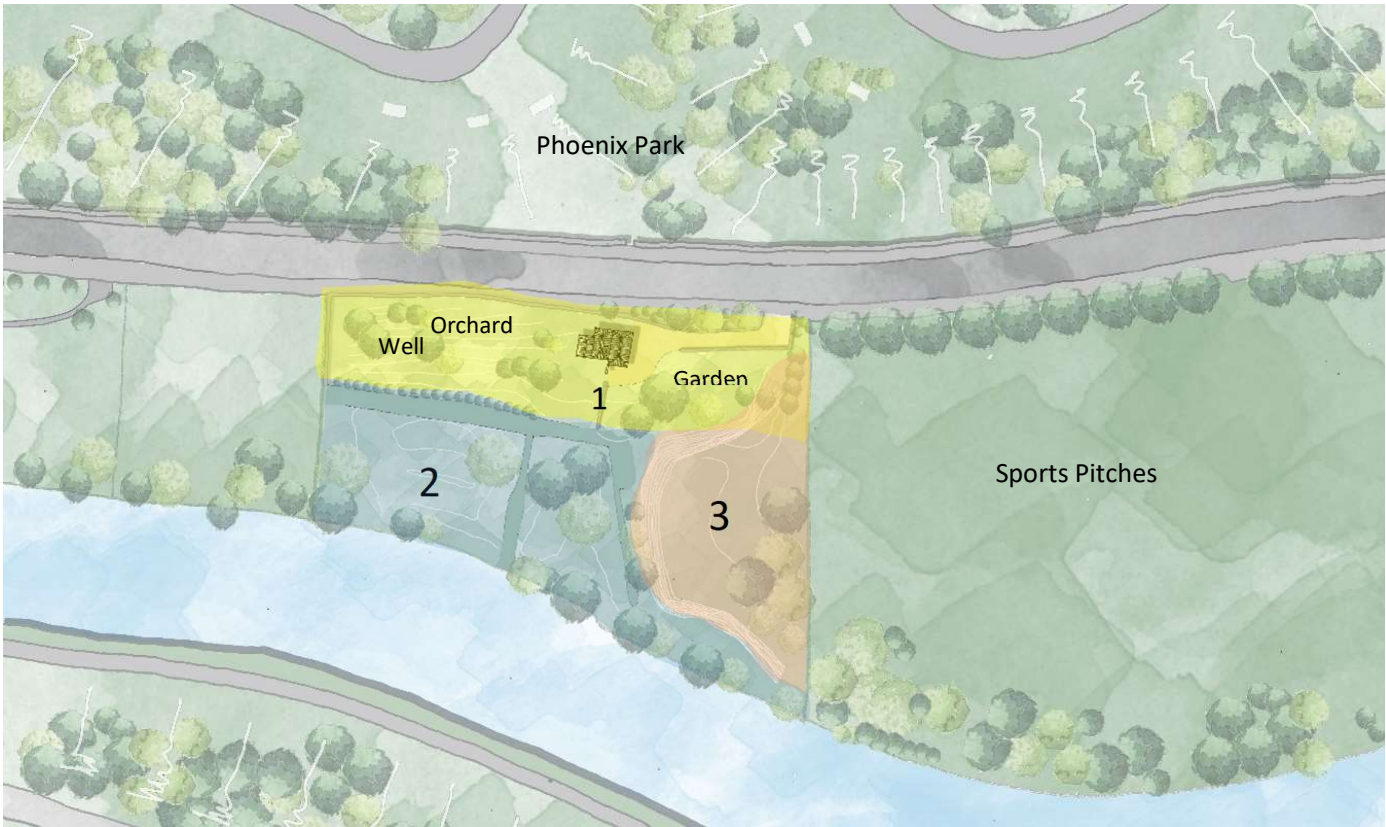
2.0 Building Description

- 2.1 Exterior
- 2.2 Interior

3.0 Building Condition

- 3.1 Roof Structure
- 3.2 Chimneys
- 3.3 External Walls
- 3.4 Internal Walls, Partition Walls & Finishes
- 3.5 Floors
- 3.6 Fireplaces
- 3.7 Joinery
- 3.8 Steps & Staircases
- 3.9 Curtilage of the house

4.0 Overall Assessment



Site Zones Map

- Zone 1: Orchard & Garden: the historic site of Liffey Vale House
- Zone 2: Riverside margin and formerly flooded fields and ditches
- Zone 3: Reclaimed land: formed of fill deposited when sports pitches were made

Figure 1.01 The site of Liffey Vale House

1.0 Introduction

Liffey Vale House is accessed via a short driveway from the Chapelizod Road. Its original site was a strip of land between 25m and 35m deep, running parallel to the road, and bounded on the southern edge by a ditch. Between the ditch and the river Liffey the level land would have been the flood plain of the Liffey, until its flow was controlled by the weir at Islandbridge. This area of land, is now part of the site, but historically did not belong to the house, and may have been used as meadow or pasture. The site of Liffey Vale consisted of a garden to the east and an orchard to the west. (Figure 1.01).

The dwelling appears to have been constructed in two phases, a two storey “L” shaped plan built in the 18th century with single storey 19th century addition to the east, facing the access drive which addresses the formal lawn to the front. It is possible the 18th century building embodies more than one phase of construction, but subsequent alterations from the 19th and 20th centuries make these difficult to decipher. (Figure 1.05).

A 20th century two storey “annexe” structure, on the north side of the house, between the house and the retaining calp stone wall onto the Chapelizod Road, (Figure 1.02) and a single storey flat roofed structure on the south side of the 18th century wings, (Figure 1.03) were demolished subsequent to the 2016 Conservation Plan, prepared by Howley Hayes Architects

Owned by Dublin City Council and listed as a protected structure (RPS Ref No 1346) in Volume 3 of the 2016-2022 Dublin City Development Plan, the house has been derelict for some time and has suffered significant damage as a result of a series of fires since the beginning of this century.

Although modest in scale and architectural features, the building’s character is illustrated through it’s typology as an early, probably agricultural structure and later formal “villa” style dwelling which in context provides a unique understanding of the surrounding area which includes Chapelizod and Phoenix Park.

Despite the significant damage some fragments of the building’s historic fabric are still present, albeit in poor condition, including fireplaces of various vintages and elements of original joinery items such as panelled doors & architraves, sash windows, shutter boxes and sections of skirtings, dado and picture rails. These are recorded in Parts 2 and 3 of this report.



Figure 1.02 The two storey annexe to the north prior to demolition
(Photo: Shaffrey Associates 2006)



Figure 1.03 Single storey extension to the south prior to demolition
(Photo: Shaffrey Associates 2006)



Figure 1.04 East elevation of house entrance as approached from driveway from the east

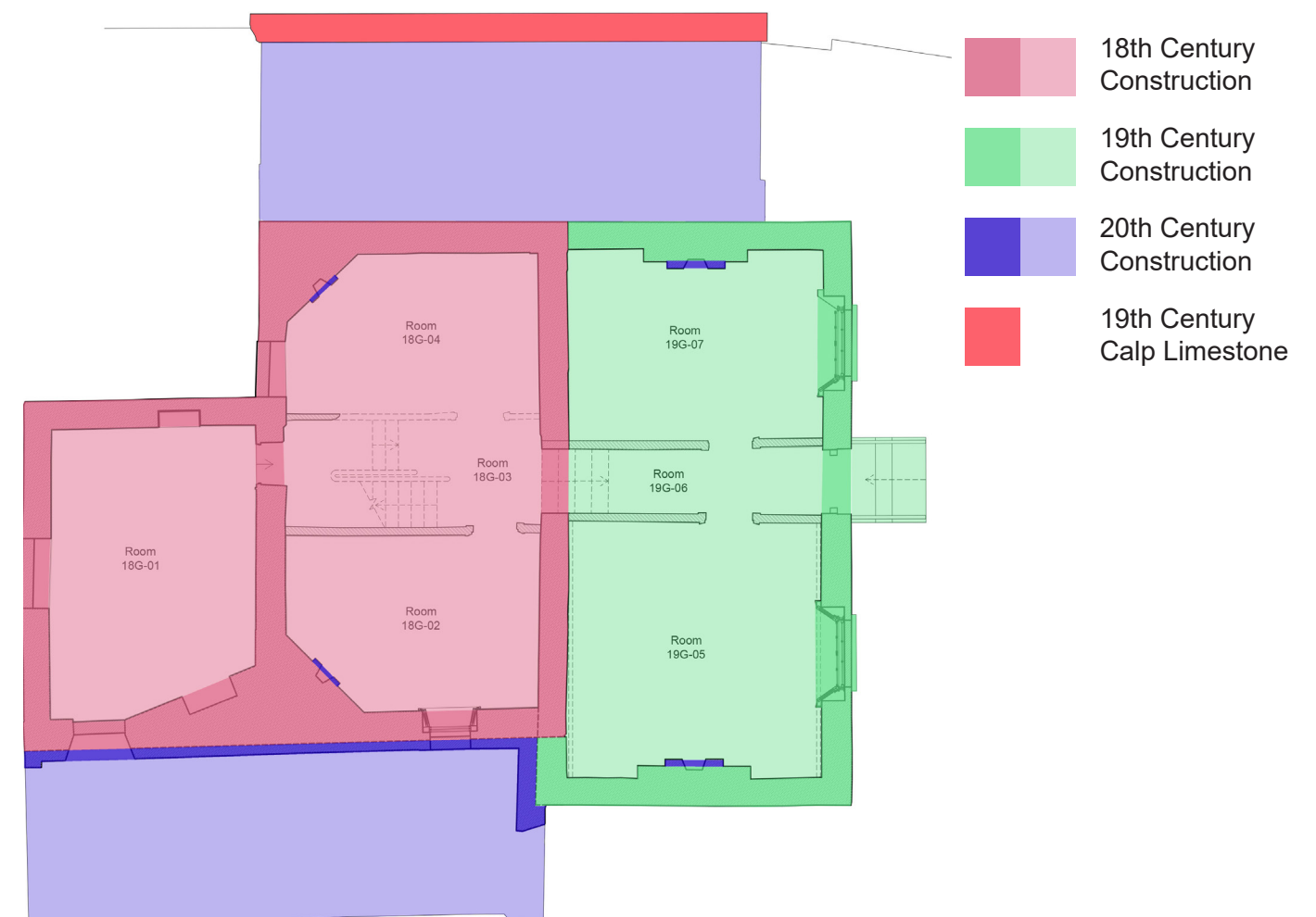


Figure 1.05 Ground Floor Plan, showing the phases of construction and features

2.0 Building Description

2.1 Exterior

The current roof is a modern temporary roof, of profiled metal sheeting onto a light timber structure, but follows the form of the historic slated roof. The surviving historic slate roof and can be seen in record photographs dating from 2008. (Figures **2.08**, **2.10**).

18th Century Wings

The older two-storey, western wings of the house have been subject to extensive later alteration, such that their original 18th century presentation is unclear. Although the single storey extension to the south has been demolished, an in-situ concrete layer remains attached to the historic wall, with beams cast into the historic structure. (Figure **2.01**). This will require to be carefully removed. All of the windows and doors have been blocked, some of them prior to the most recent render coat. Once the cement based renders, and cast concrete walls are removed, some further interpretation of the evolution of the form of this part of the house may be possible.

The westernmost wing has a gable to north and south. The southern gable has been adorned with a fake half-timbered detail, giving the house the appearance of 1930s suburbia. The central wing is hipped north and south, with valley gutters between the adjacent roofs.

The chimneys, located at each end of the central wall between the two wings, are rendered at low level and brick at upper level. They appear to have been subject to several phases of alteration.

19th Century East Wing

The 19th century wing has been subject of far less alteration than the earlier wings, and as such, apart from the absence of the chimneys which were demolished following the post -2008 fire. This wing retains its 19th century character, of a three bay single storey “genteel” villa. The roof is hipped to north and south, with a valley gutter between this roof and the adjacent hipped roof. The east and south elevations are coated in a cementitious roughcast render, with exposed brick at the eaves, possibly indicating where historically there was a fascia board. The chimneys were demolished following the fire but are recorded in photographs from 2006. (Figure **2.10**).

North Elevation

The north elevation which, prior to demolition, was internal to the northern annexe, combines 18th and 19th century walls. It is coated in a lime dash render, which has been coated with limewash at ground floor level of the 18th century section, with cementitious repairs to the wall and render, and voids where structural members have been removed. (Figures **2.02**, **2.05**).

Calp Boundary Wall

Immediately to the north of the house, on the line of the boundary with the Chapelizod Road is a well built calp stone wall, which serves as a retaining wall as well as a boundary wall. Its construction is in contrast to the rendered rubble walls of the house, being of fairfaced stone, and with some coursing. Prior to the demolition of the annexe it formed the north wall of that building, (Figure **1.02**). but appears to have been built as an external face. It is possible this wall was associated with the tramline that once ran along the Chapelizod Road. See also wall elevation (Figure **3.65**).



Figure 2.01 The exterior from the southwest: 18th C wings in foreground, 19th C wing to rear



Figure 2.02 The north elevation to the left, calp wall to the right

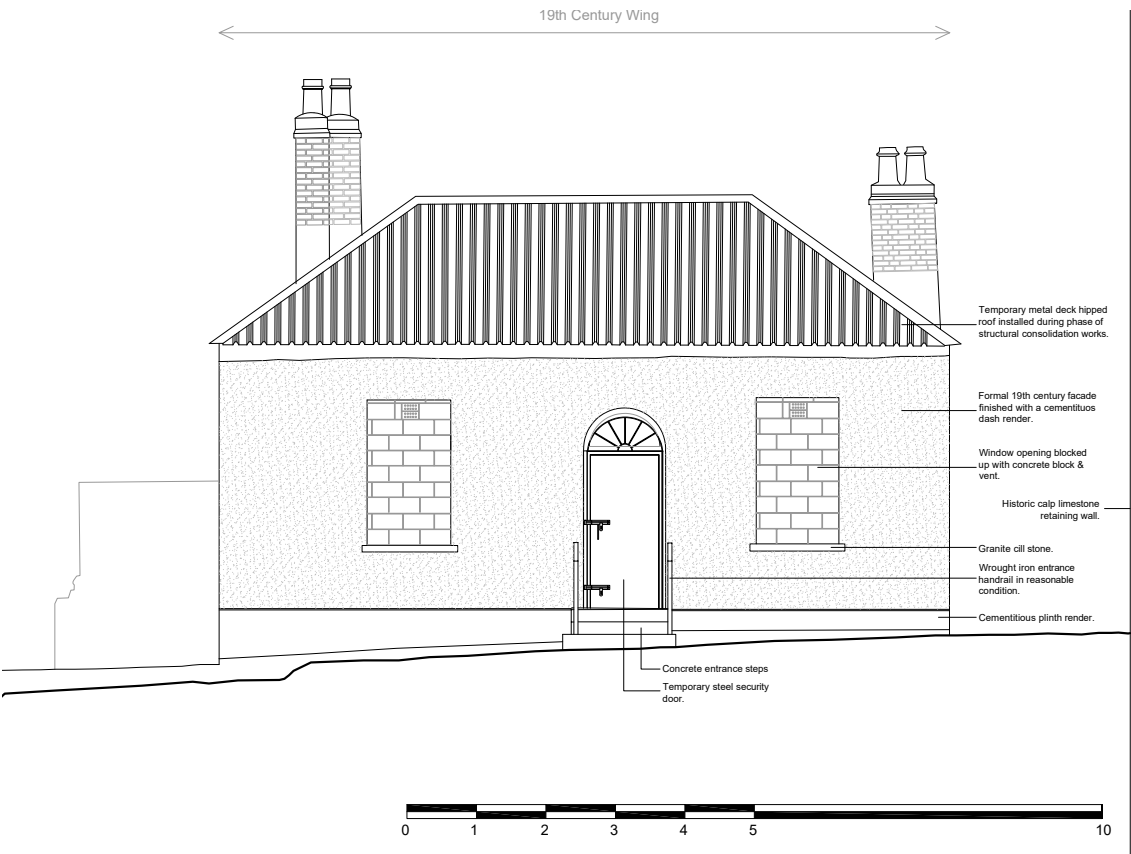


Figure 2.03 East Elevation- Blackwood Associates Architects Survey

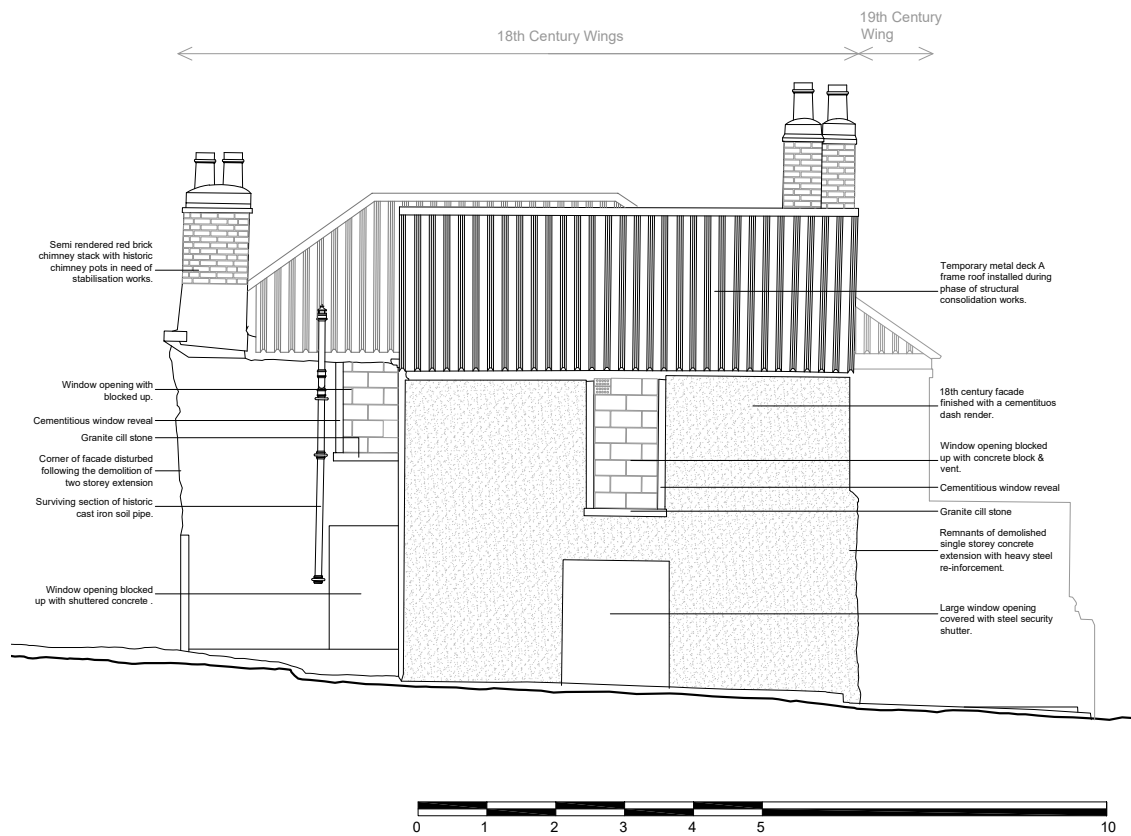


Figure 2.04 West Elevation- Blackwood Associates Architects Survey

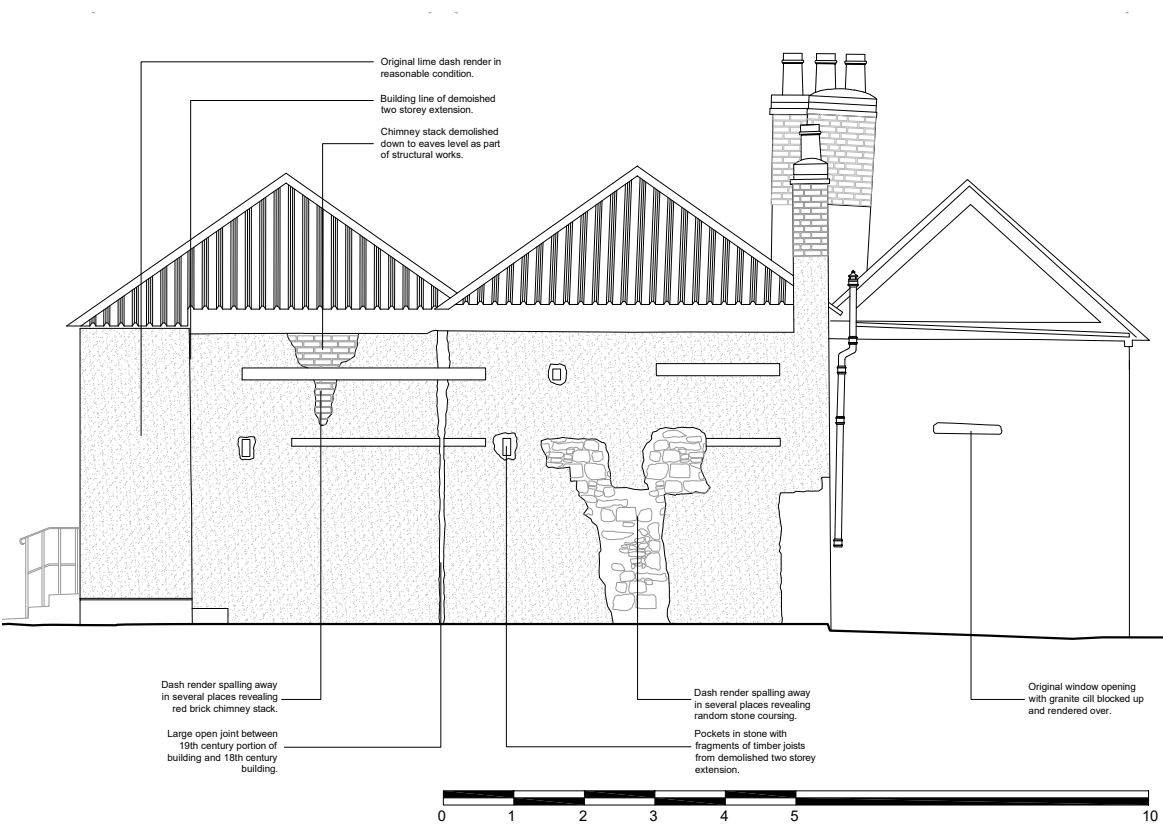


Figure 2.05- North Elevation- Blackwood Associates Architects Survey

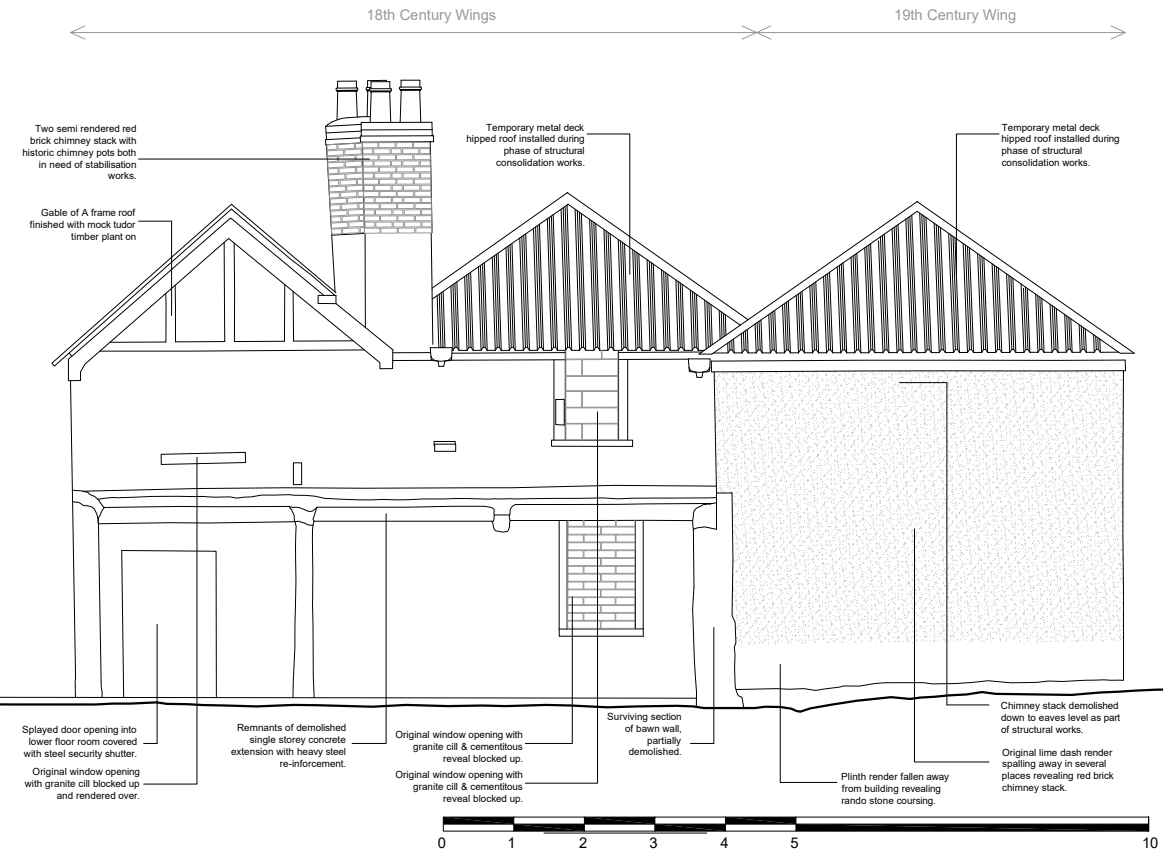


Figure 2.06 South Elevation- Blackwood Associates Architects Survey



Figure 2.07 The exterior from the northwest



Figure 2.09 The exterior from the south east: 19th century wing in foreground



Figure 2.08 The exterior from the southwest, when single storey extension and remains of historic roof were still in place. (Photo: Shaffrey Associates 2006)



Figure 2.10 The 19th century wing from the east, prior to the fire: roof slates and structure, and chimneys still in-situ. (Photo: Shaffrey Associates 2006)

2.2 Interior

18th Century Wings

The two storey, central and western wings of Liffey Vale date from the 18th century. The fabric of the interior shows ample evidence of subsequent alteration during the 19th and 20th centuries. It is possible that it was subject to alteration during the 18th century too, and may represent more than one phase of construction during that century. As such it will be important during conservation works to record the fabric, and interpret any further information that comes to light as layers of later work are removed, and finishes and fabric repaired and renewed.

Within the 18th century wings, all the upper floors have been destroyed by fire, and only one internal partition survives. However, as late as 2006, when Shaffrey Associates prepared a building assessment, followed by a Masterplan for the site in 2008, extensive upper floor structures and partitions still survived. These are recorded in their report of 2006.

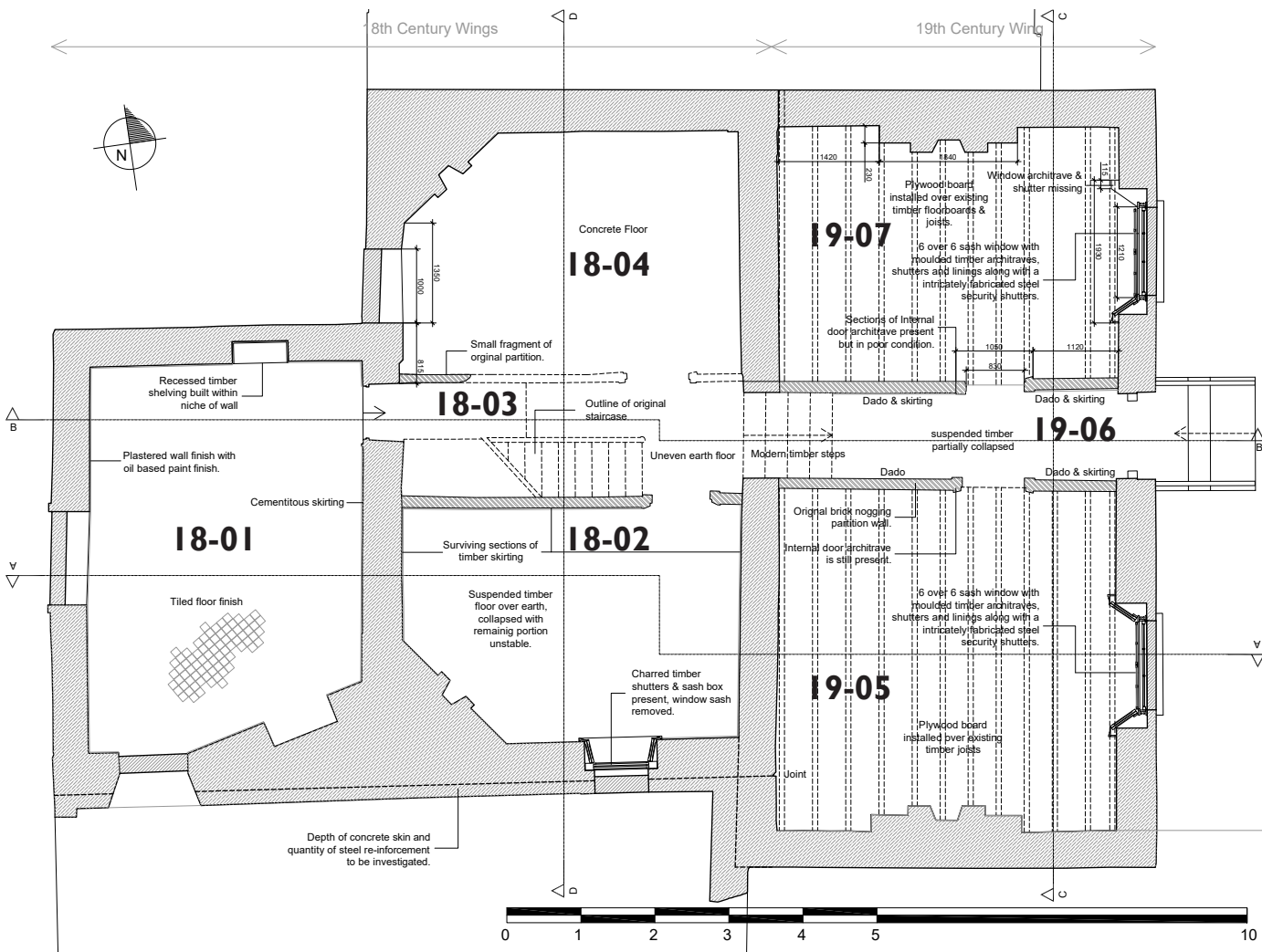


Figure 2.11 Lower Floor Plan- Blackwood Associates Architects Survey

19th Century Wing

The single storey, eastern wing of Liffey Vale consists of two rooms to either side of a central hallway. The floor of this wing is 960mm above that of the central wing of the house. Although the ceilings are gone, this part of the house is the least damaged by the fires, and the six over six sash windows and some of the shutters and architraves survive at the blocked windows.

The following pages provide survey section drawings, recording the surviving fabric and features followed by a photographic record of the interior of the house.

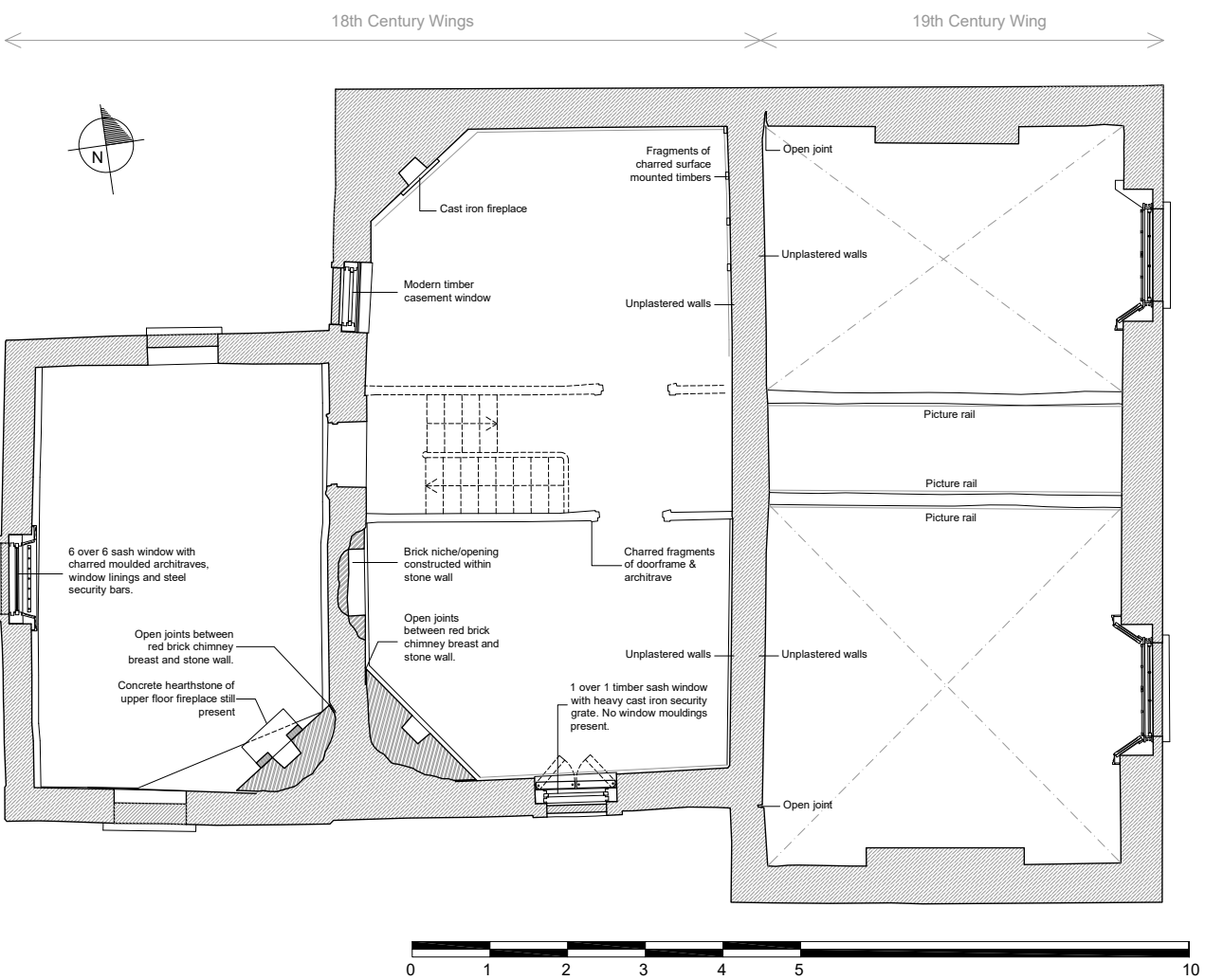


Figure 2.12 Upper Floor Plan- Blackwood Associates Architects Survey

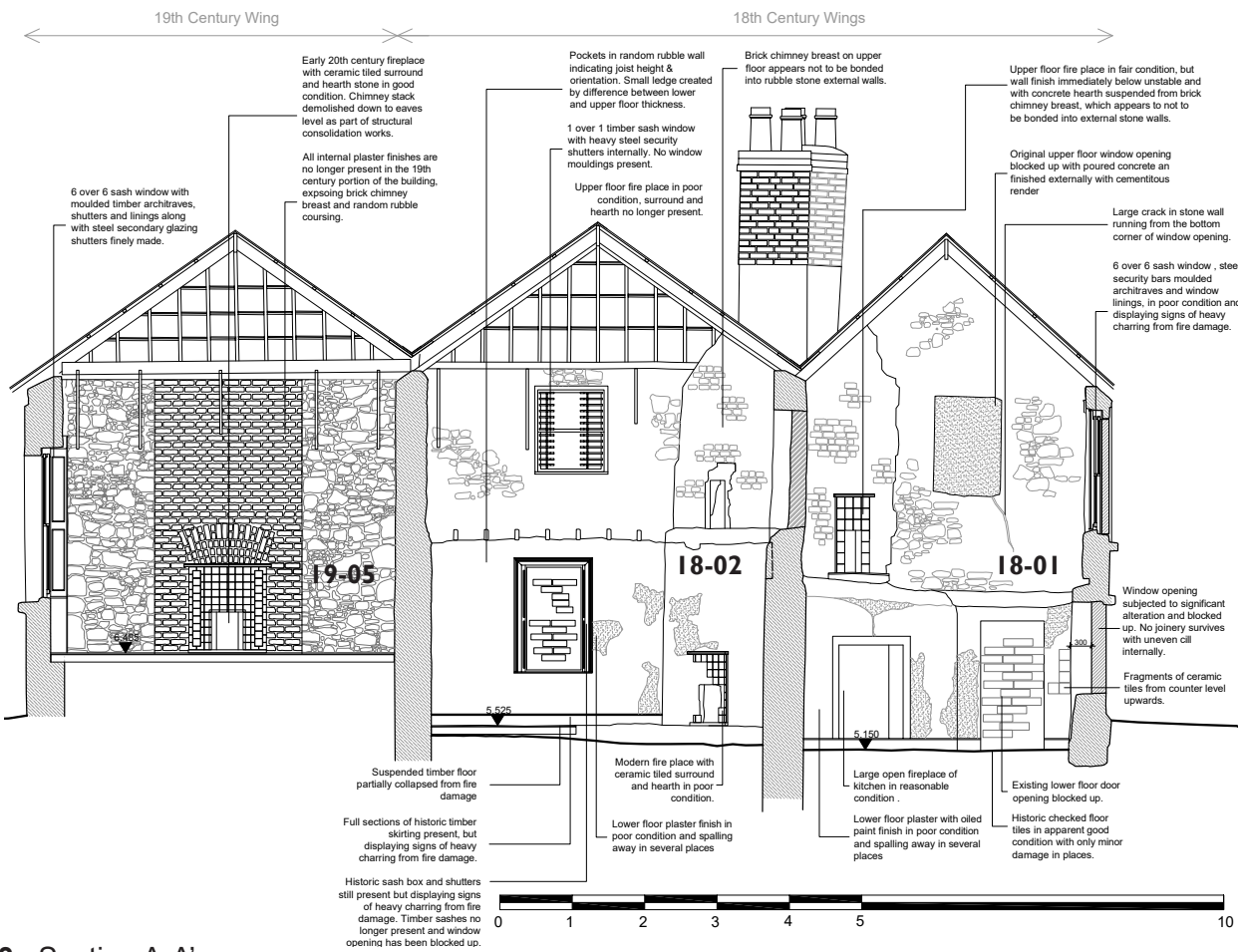


Figure 2.13 Section A-A'

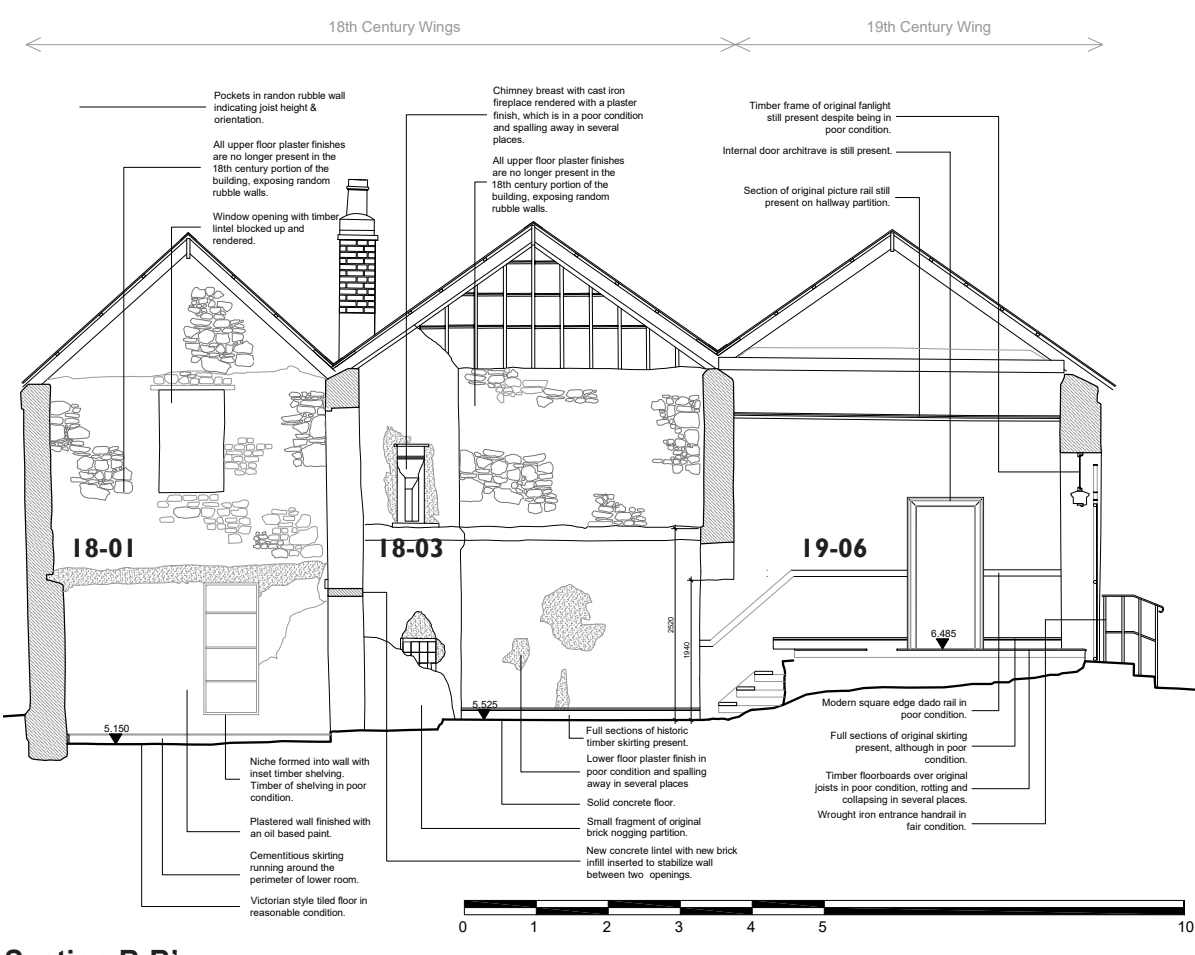


Figure 2.14 Section B-B'

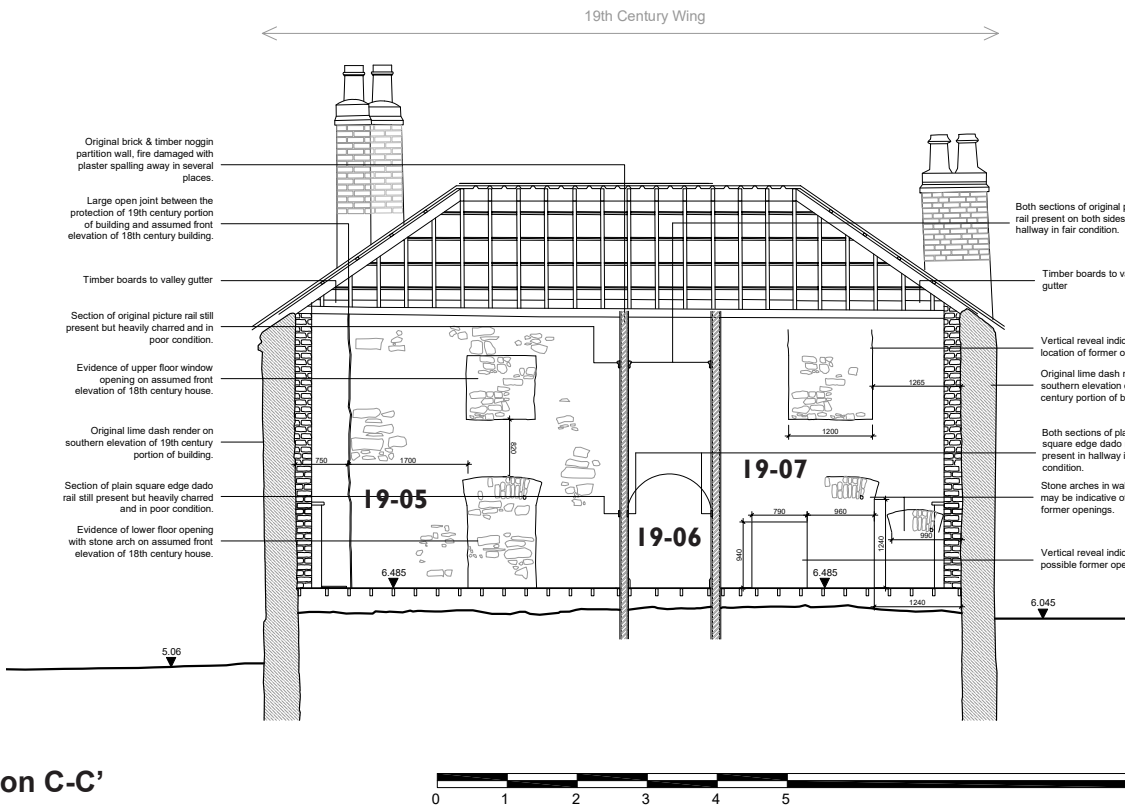


Figure 2.15 Section C-C'

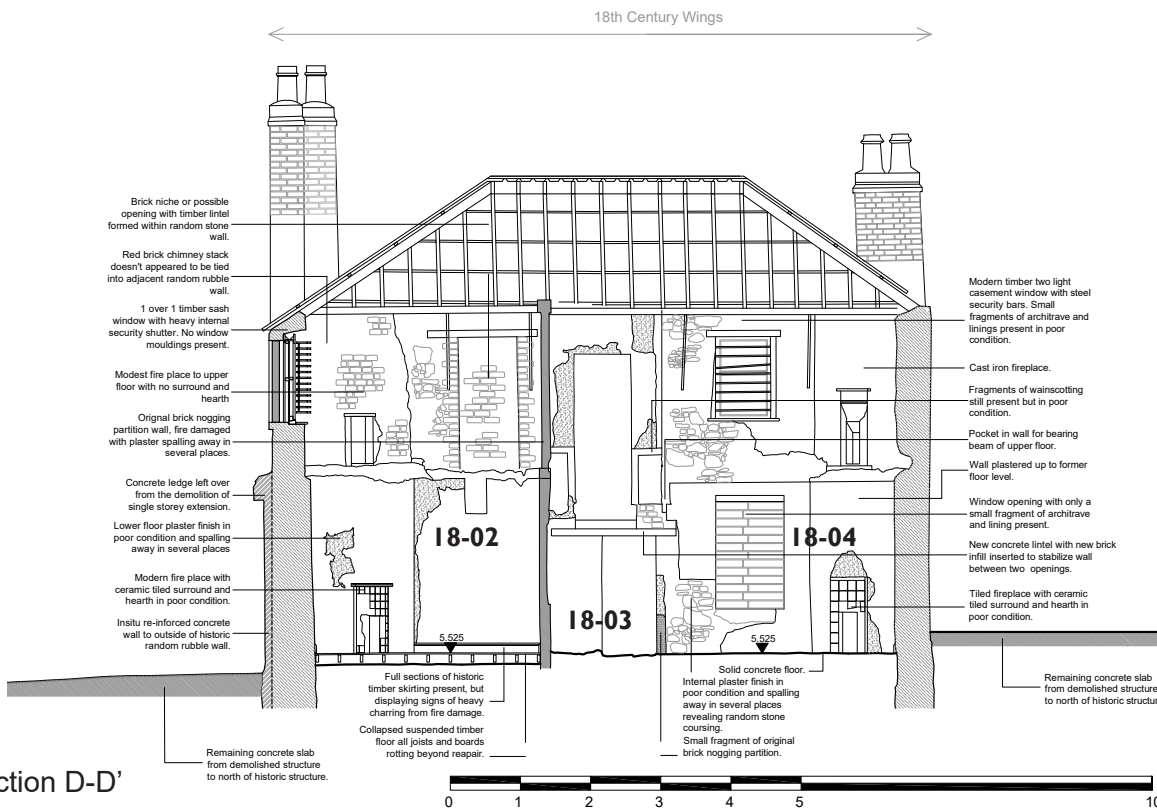


Figure 2.16 Section D-D'

Room 18-01
West Wing



Figure 2.17 Southeast corner See scars of repairs and alterations. Brick chimney breast at upper floor is not bonded into walls, suggesting this is a later addition



Figure 2.18 Modern precast lintel below timber that runs at former cornice level



Figure 2.19 Tiled Floor



Figure 2.20 Northeast corner Doorway at upper level is at half landing level of the former stairs. Storage recess in north wall.



Figure 2.21 Southeast corner 20th C tiled fireplace at upper level, earlier fireplace at ground floor level



Figure 2.22 Southwest corner Blocked former doorway into single storey extension



Figure 2.23 West wall: six over six sash window, security bars and architraves survive at the upper floor



Figure 2.24 Northwest corner Plaster at ground floor is finished with a gloss paint suggesting use as a kitchen or dairy

Room 18-02
Central Wing



Figure 2.25 Northwest corner
Brick recess in west wall.



Figure 2.26 North wall:
Brick & timber partition with room 18-03. Surviving architrave at upper floor.



Figure 2.27 East wall
Plaster, timber floor and skirtings survive at ground floor



Figure 2.28 Southeast corner
Architrave to window survives, but damaged by fire

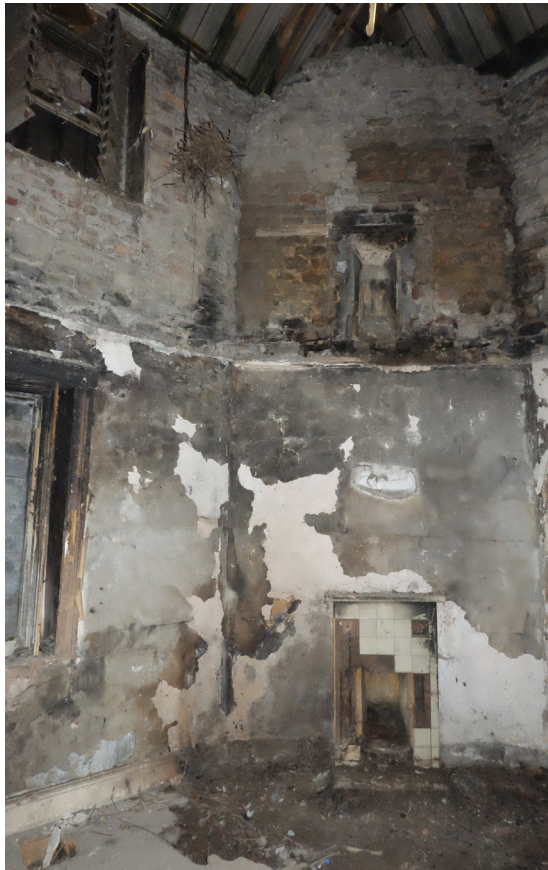


Figure 2.29 Southwest corner Fireplaces in very poor condition. Brick chimney breast at upper floor not bonded into wall



Figure 2.30 Northwest corner:
Partition wall to right. Damaged timber floor



Figure 2.31 Northwest corner
Surviving architrave to door, looking into Room 18-03.

Rooms 18-03, 18-04
Central Wing



Figure 2.32 West wall See modern pre-cast lintel at door into **Room 18-01**. 20th century window at upper level. Blocked window at ground level



Figure 2.33 - 34 South Wall: Brick partition with timber noggins. Line of handrail and stair stringer visible. The timber base plate of this wall is rotten and the structure fragile.



Figure 2.35 West wall Remains of former partition wall to **Room 18-03** beside doorway into **Room 18-01**.



Figure 2.36 Northwest corner. Apex of chimney breast at former ceiling level. 19th century fireplace at upper level.



Figure 2.37 Northeast corner Remains of partitioned space indicated by timbers in wall. Salvaged doors, shutters and boards.



Figure 2.38 East wall: arched opening into 19th century wing. Smooth plaster indicates extent of former corridor **18-03**.



Figure 2.39 Southeast corner Doorway into **18-02**

Rooms 19-07, 19-06
East Wing



Figure 2.40 Room 19-07 Window (East wall)
Brick relieving arch, surviving shutters, windows and steel secondary glazing



Figure 2.46 Room 19-06
Corridor looking west



Figure 2.41 Southeast corner
Junction of external wall and partition wall to **19-06**



Figure 2.42 Northwest corner
Breaks in bond of stonework suggest former openings (Refer Section C-C')



Figure 2.43 Northwest corner Open joint at junction between 19th and 18th C walls



Figure 2.44 North wall: 20th C tiled fireplace. Brick chimney breast bonded into wall



Figure 2.45 East wall
Steel secondary glazing

Room 19-05
East Wing



Figure 2.47 Room 19-06 Surviving joinery details



Figure 2.48 Room 19-06 Bakelite light switches



Figure 2.49 Decorative tile on fireplace



Figure 2.50 East Wall: Sash window, architraves, shutters and steel secondary glazing



Figure 2.51 Southwall 20th C fireplace and hearth. Brick chimney breast and relieving arch



Figure 2.52 Northwest corner Open joint at junction of 18th & 19th C construction.



Figure 2.53 West wall Blocked windows from earlier manifestation of the house before construction of 19th C wing



Figure 2.54 North wall: Partition wall of plastered brick with timber noggins



Figure 2.55 Northeast corner Doorway into 19-06

3.0 Building Condition

3.1 Roof Structure

The current roof is a modern temporary structure, installed after the destruction of the slated roof, and timber roof structure, in the fire subsequent to 2008. The form of the roof follows that of the original. The construction of the house over different periods has resulted in the configuration of roofs at different heights and styles. The roof to the 18th century portion of the house consists of two different styles of roof structure; a gable fronted pitched roof over the west portion and a hipped structure over the east (central wing) portion. A further hipped roof covers the later 19th century portion of the house.

Images from the Shaffrey Associates reports of 2006 and 2008 provide evidence of the form of the historic roofs and that the roofs were originally covered in natural slate with clay ridge tiles. If the house is to be conserved, a replacement roof needs to be designed, informed as far as possible by the evidence of the original.

It is possible that the gables on the west wing are a later addition and that this wing was once hipped. (See **Figure 3.03**). However the rubble stone construction of these gables suggest they are at least of 19th C construction if not earlier.

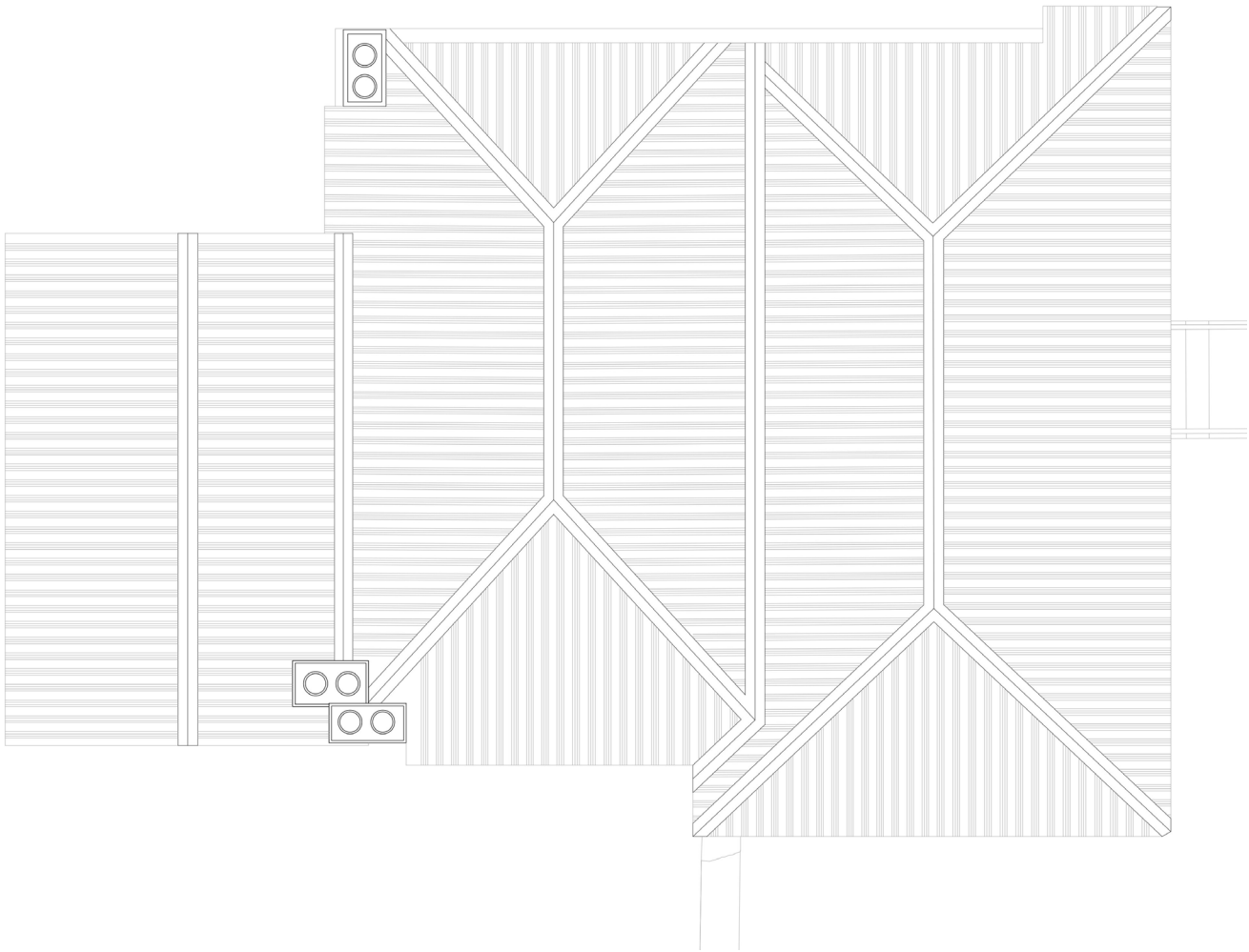


Figure 3.01 Roof Plan- Blackwood Associates Architects Survey



Figure 3.02 Condition of the roof of the 19th century east wing in 2006. Photo Shaffrey Associates



Figure 3.03 North gable of the 18th century west wing; possible construction joint



Figure 3.04 Eaves detail of 19th century east wing. Brick of chimney constructioun visible in the wall



Figure 3.05 The modern temporary roof structure as viewed from Phoenix Park

3.2 Chimneys

In total there were eight flues serving the house, these were contained in one double and one single chimney stack serving the 18th century wings of the house and two single stacks to the 19th century wing. The stacks of the two chimneys serving rooms 19-05 & 19-07 have been demolished down to eaves level; these stacks were present in pictures taken in 2006 (see Figures 1.03 & 2.10). They presumably were removed when the replacement roof was installed following the fire. At both north and south elevations of this wing the plaster has failed at the brick flues within the otherwise rubble stone masonry.

The double chimney stack serving the original rooms at both ground and first floor levels of rooms 18-01 & 18-02 is leaning, and displays a large amount of vegetation growth protruding from its junction with the adjacent roof which will need to be carefully removed. The stack on the northwest corner of the central 18th century wing served rooms on both floors of room 18-04.

All the surviving chimney stacks are constructed of red brick with the lower sections rendered. The upper redbrick sections are likely to be later 19th or early 20th century modifications. All are topped with ceramic chimney pots. Lead flashings to all stacks appear to be functioning in diverting rainwater onto the metal deck roof. The mortar joints to the exposed red brick portion are in poor condition and the brick faces are badly eroded in places.

The structural engineer will need to assess if they can be retained in their current condition or will need rebuilding due to instability arising from movement and brick decay.



Figure 3.07 Double chimney stacks on south elevation serving the 18th century wings of the building.



Figure 3.08 Chimney stack on northwest corner of the central 18th century wing of the house



Figure 3.06 Double chimney serving 18th century wings



Figure 3.09 Brickwork to 19th century chimney visible through failed render on south elevation of 19th century east wing.



Figure 3.10 Brickwork to 19th century chimney visible through failed render on north elevation of 19th century east wing

3.3 External Walls

The external walls are constructed of rubble stone, (a mixture of calp & granite where this is exposed) with structural openings, and chimney breasts formed in red brick. The whole building has been finished with a roughcast render which appears to be mostly cementitious render, but with areas of lime based render, notably on the north elevation. The 18th century part of the building has smooth cement borders planted on at window reveals, and eaves, and the black fake half timber effects appear to be formed of a hard cement render also.

The cementitious render is in poor condition, both visually and technically with uneven poor quality finishes and cracks which allow penetration of water. The hard and impermeable nature of the cementitious render is incompatible with the need for breathability, and incremental movement in the rubble walls. The render is spalling away from the walls in a number of locations most notably in the areas of the red brick chimney construction.

The 18th century wings of the south elevation carries an in-situ re-enforced concrete skin with embedded steel reinforcement at ground floor level, the remains of a 20th century single storey extension which was demolished. Also projecting from this elevation is a rendered stone wall.

The north elevation also bears the marks of further additions, a two storey annexe has been demolished. (See Figure 1.02). Pockets in the stone walls are evidence of the annexe's floor structure, whilst sections of limewash and lime dash are also present. The north elevation also displays a large vertical open joint between the 18th & 19th century stone walls.

Overall the walls appear to be structurally sound however there is some cracking evident in the render above a number of windows, which would suggest that the timber heads are rotting in these locations, and there may be some structural movement in the rubble walls. At the north elevation the masonry at the junctions between the different phases of construction are not bonded and there are numerous scars following the demolition of the 20th century annexe. The south elevation has been subject to significant structural works during the construction of the 20th century extension, with large steel lintels embedded into the wall and a build-up of in-situ concrete construction tied into the original rubble walls. It is possible that there has been some structural movement subsequent to the loss of floor and roof timbers, which would have acted to tie the external and cross walls together.



Figure 3.11 North elevation
Large open joint between 18thC and 19thC phases of build. Sockets for former floor structures.



Figure 3.12 North Elevation
Evidence of pockets in wall for structural timbers to demolished 20th century two storey structure.



Figure 3.13 South Gable
Tudor revival decoration to the south gable of the 18th century portion of the house.



Figure 3.14 East Elevation
Crack at the window head at the east elevation of the 19th century wing.



Figure 3.15 South Elevation 18th C wings
Remaining reinforced concrete from the demolished 20th century single storey structure.



Figure 3.16 South Elevation 18th C wings
More evidence of reinforced steel embedded within the concrete on south elevation.

3.4 Internal walls, partition walls & finishes

The internal faces of the masonry external walls were finished with a lime plaster, however most of this has been lost as a result of the fire damage. The exposed masonry is of random rubble with red brick window reveals and chimney breasts. Almost no plaster survives at the upper floor level, but there is extensive plaster at the ground floor level of the 18th century wings. This most intact example of this is at ground floor level in **room 18-01**, where the plastered wall is finished with a heavy oil based paint. At the junction with the tiled floor in this room, a chamfered cementitious skirting runs around the perimeter of the room. In the south west corner of this room remains a small portion of 20th century ceramic wall tiles.

The masonry internal wall between the western and central wings of the 18th century part of the building is similar in depth to the external walls. This wall provides evidence of the upper floor level in the west wing, corresponding with the half landing level. A modern precast concrete beam ties the wall at the former landing level, where the doorways at ground and first floor do not align. Sections of this wall appear to have been repaired after the fire: possibly due to instability arising from loss of the floor joists in the fire (See Part 2, **Figures 2.17, 2.18**). Fragments of wainscotting survive at the upper floor door. (**Figures 2.32**).

Within the central wing, most of the walls that partitioned the rooms at both ground and first floor have been lost, but the two storey brick noggin construction wall survives, between the room to the south (Room **18-02**) and the former central corridor / stairwell. (Room **18-03**). This wall is interesting, bearing witness to the line of the stairs and handrail, and also the profile of the ceiling at the upper floor. (**Figure 2.26**). The south side of the wall displays pockets, confirming the location of former floor joists. (**Figure 3.17**). This wall is in a perilous state with many of the structural timbers heavily charred from the fire, and the timber base plate rotted. Apart from a small section at ground level, the majority of the partition on the opposite side of the former stairwell (Room **18-03**) has been lost. These walls, as well as the lost floor structures, may have performed an important function in tying the principal masonry walls together.

The internal wall between the central 18th century wing and the eastern 19th century wing was once an external wall and on the eastern side evidence of blocked openings can be read (**Figure 3.21**). These are recorded on Section C-C' (**Figure 2.15**). Open joints provide evidence of the construction joints between the 18th century and 19th century wings of the house. (**Figures 2.43, 2.52**). At the 19th century wing, the original timber partitions with brick infills, to either side of the entrance hall (**19-06**) have survived in fair condition but are heavily braced at the top where they would have originally been tied by the ceiling joists. The base of these walls will have to be inspected, when floors are repaired.



Figure 3.17 Evidence of rafters in brick & timber partition wall between Rooms 18-02 & 18-03



Figure 3.18 Remains of lost partition to the hallway between rooms 18-03 & 18-04.



Figure 3.19 Surviving brick nogging partition displaying charred timbers and scar from stair



Figure 3.20 Brick noggin partition, Room 19-05
Sections of historic dado picture rail and architrave



Figure 3.21 Random rubble walls to room 19-05
Evidence of openings in formerly external wall

3.5 Floors

The entirety of the original timber upper floors, in the 18th century wings, were lost as result of fire damage. Evidence of the size and location of much of the former floor structure can be read however in the pockets in the masonry of the walls, and ledges formed by both plaster and in some cases diminution of the wall thickness at the upper level. (Figures 2.17, 2.18, 3.17, 3.22).

Timber suspended floors survive in the 19th century wing and are in the poor condition, but concealed by plywood boards. (Figure 3.24). There is a considerable void below them, arising from the raised floor level and the natural fall of the land. The joist ends will need to be inspected for rot, missing boards replaced, and ventilation ensured.

The suspended timber floor in the central corridor ends before the steps that lead to the lower 18th century wing. Again this section floor is very unstable with sections of floorboards either missing or collapsing due to wet rot. (Figure 3.23)

In the central 18th century wing a timber floor partially survives in Room 18-02, its level only a few inches above soil level. An area of concrete floor slab exists in the north side of Room 18-04. This floor breaks down towards the former central corridor Room 18-03. (Figure 3.18).

In the eastern wing of the 18th century building (Room 18-01) the ground floors consists of a solid ground floor with a ceramic tiled finish which could potentially be restored as part of the conservation works, subject to investigation. (Figure 3.26).



Figure 3.24 Suspended timber floor to room 19-06, with unstable joists and missing boards.



Figure 3.25 Temporary plywood boarding over original floorboards in room 19-07.



Figure 3.22 Decayed suspended timber floor in north west corner of Room18-02



Figure 3.23 Edge of concrete slab at former stair / corridor space Room18-03



Figure 3.26 Pockets in stone wall of 18-02 shows direction of joists and level of upper floor.



Figure 3.27 Ceramic floor tiles to room 18-01.

3.6 Fireplaces

Fireplaces are present in each room. These would have been the principal method of heating prior to the building becoming vacant at the end of 20th century.

In the 19th century wing of the building the chimney breasts are brick, with brick relieving arches over the opening. (**Figures 3.30, 3.31**). The tiled fireplaces date from the 20th century, however the hearth stones have been removed in both rooms. The fireplace in the southern room is particularly charming, with decorative windmill tiles, but both fireplaces are interesting in reflecting the style and taste of the early 20th century.

In the central 18th wing the splayed red brick chimney breasts at upper floor are not bonded into the rubble masonry, suggesting these may be a later, possibly 19th century feature. The fireplaces to the lower floor rooms of 18G-02 & 18G-04 have 20th century ceramic tiled fireplaces & hearths, which are in very poor condition. (**Figures 3.32, 3.33**). At the upper floor there is an attractive cast iron fireplace, albeit damaged, in the northern room. (**Figure 3.32**).

In the 18th century west wing both fireplaces are again located within splayed chimney breasts, but the lower breast is at a different angle to the upper one. The brick chimney breast at the upper floor is not bonded to the rubble masonry walls, suggesting this is possibly a later addition. (**Figures 3.28, 3.29**).

In the lower floor room of 18-01 is a large open fireplace with a fixed cast iron base, which would have been used for cooking; a cast iron stove has been found on the site which may have been fixed to the base. On the upper floor room there is a 20th century tiled fireplace with a concrete hearth projecting perilously from the chimney breast due the loss of the floor.



Figure 3.30 Room 19-07: tiled 20th century fireplace



Figure 3.31 Room 19-05: tiled 20th century fireplace with interesting windmill tiles.



Figure 3.32 Room 18-04: upper floor cast-iron fireplace, tiled fireplace in poor condition below



Figure 3.28 20th C tiled fire place at upper floor, limestone fireplace at lower floor in room 18-01.



Figure 3.29 Room 18-01: note different angle, and lack of bonding of upper chimney breast.



Figure 3.33 Room 18-02: upper floor fire place lost, lower floor in very poor condition.

3.7 Joinery

Windows

All of the building's window openings have been filled in externally, however a number of timber sash and casement windows, are still present in the building. The windows to rooms 19-05 & 19-07 are well proportioned 6 over 6 timber sash windows with partially surviving architraves, timber shutters and sash boxes. Unusually these windows have also been fitted with a set of well made and detailed secondary steel framed glazing. In room 18-01 a 6 over 6 timber sash window with associated timber mouldings and internal iron security bars has survived.

Elsewhere windows are either entirely lost, or are poor quality 20th century replacements. However in some places fragments of architraves, reveals and shutters survive, which could serve as a basis for repairs or replacement.

Doors

In the entrance hallway the moulded 6 panel entrance door has been removed and set aside, whilst fragments of the frame and fanlight above remain in situ. Timber architraves, and frames survive at the 19th century room partitions, and the architraves survive to the door openings in the partition between rooms 18-02 and 18-03. A number of salvaged internal panelled doors are stored in room 18-04.

Skirtings & Dado Rails

Skirtings survive on the partition walls of 19th building fragments of skirting, architraves, dado & picture rails also remain in situ, whilst some sections of of skirtings also survive in the 18th century wings.



Figure 3.36 Doorways in partitions, 19th century wing. Room 19-05



Figure 3.37 Doors, shutters and skirtings, salvaged following the fire. Rppm 18-04.



Figure 3.34 Sash window, timber shutters, and steel secondary glazing Room 19-07



Figure 3.35 Sash window, timber shutters, and steel secondary glazing Room 19-05



Figure 3.38 Sash window, timber architraves, reveals & window board, iron bars. Room 18-01



Figure 3.39 Fire damaged timber architraves & reveals. Room 18-02

3.8 Steps & Staircases

The formal entrance into the 19th century east wing is accessed via a set of concrete steps with a wrought iron balustrade. The steps and balustrade are in fair condition. The internal floors at ground floor are at three different levels, and there were two different levels at the lost upper floors. Five timber steps linked the level of the 19th century wing, descending 960mm down to the ground floor of the central wing. These steps have been lost in the fire but the string and handrail can still be read on the wall. (Figure 3.40).

From the central hallway the upper floors of the 18th century wing were accessed via a returned timber staircase. Photographs from the Shaffrey Associates report of 2006(Figures 3.42-45) show the form of the stairs prior to the fire. The first flight rose to the landing providing access to the upper floor within 18-01. The staircase turned 180 degrees to the upper landing and the upper rooms in 18-02 and 18-04. Only a heavily scorched dado rail remains of the staircase configuration, however scars and joist pockets to the masonry walls indicate the levels of the original landings and floors. The ground floor of the west wing is 375mm lower than that of the central wing, and there would have been two steps at this doorway. The hall floor may also have been stepped, or sloped.



Figure 3.40 Steps between former corridor 18-03 and corridor 19-06



Figure 3.41 Traces of stair and handrail on partition wall between 18-03 and 18-02.



Figures 3.42 - 45 Lower hall 18-03, Steps up to 19-06, and the staircase within the 18th century wings, all taken in 2006, prior to the fire. Photographs Shaffrey Associates.

3.9 Curtilage of the house

The historic site of the house contains a number of structures that are essential parts of the curtilage of the house.

Gate posts

The gate posts of Liffey Vale are partially demolished, but the stones and caps are stored beside the house, so they can be rebuilt (See **Figures 3.46, 3.47, 3.48**).

Retaining walls to driveway

The land to either side of the driveway rises to the north and falls steeply to the garden to the south. 20th century walls fulfill a retaining function to either side. Neither are of historic interest. (**Figures 3.49, 3.50**).



Figure 3.46 Pier caps stored beside the house.



Figure 3.47, 48 Gate piers to the driveway entrance



Figure 3.49 Driveway: retaining walls to north side of driveway



Figure 3.50 The retaining wall to the south side of the driveway

Boundary Wall

The boundary wall follows the edge of the footpath of the Chapelizod Road. There is a considerable change in level between the footpath and the site, so all along its length the wall fulfills a retaining, as well as an enclosing, function. Close to the house the length of calp wall (Figure 3.63, 3.68) is probably from the 19th century and may possibly be associated with the tramway that used to run along the Chapelizod Road. The current lamp standards (Figure 3.63) were originally tramwire gantries, and are an interesting feature of the history of the site. To the west of this wall is a long length of modern wall, (Figure 3.56) with prominent expansion joints. This ends close to the bend in the line of the wall.

To the west of the bend the wall is a combination of rubble construction, (Figure 3.51) including rounded river type boulders, mass concrete (again containing rounded river pebbles) (Figure 3.52). In places repairs (Figure 3.51) and top courses (Figures 3.60, 3.61) are constructed in concrete block. Parts of the wall are plastered, but elsewhere this has either failed, or never been applied. There are also holes. Figures 3.57, 58 and 3.64, 65 are surveys of the walls. At the west end of the site the wall returns to form the boundary with the adjacent site, owned by the Department of Defence. The top of this wall steps and there is a bricked up doorway halfway down the slope. (Figure 3.66). At the bottom of the slope the wall is only 1.6m in height. There is a security fence on the west face. (Figures 3.54, 3.55)



Figure 3.51 Stone wall at east end, Note the blockwork repair



Figure 3.52 Mass concrete wall at west end



Figure 3.53 Open joint at corner



Figure 3.54 Security fence obscures view of brick & stone wall with concrete coping



Figure 3.55 The stepped upper part of the wall is constructed of blockwork



Figure 3.56 The calp wal (obscured by vegetation) and modern wall viewed from the Phoenix Park

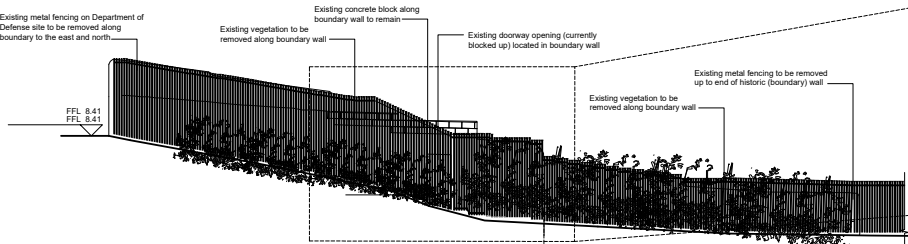


Figure 3.57 Elevation of the boundary wall from the Department of Defence Site

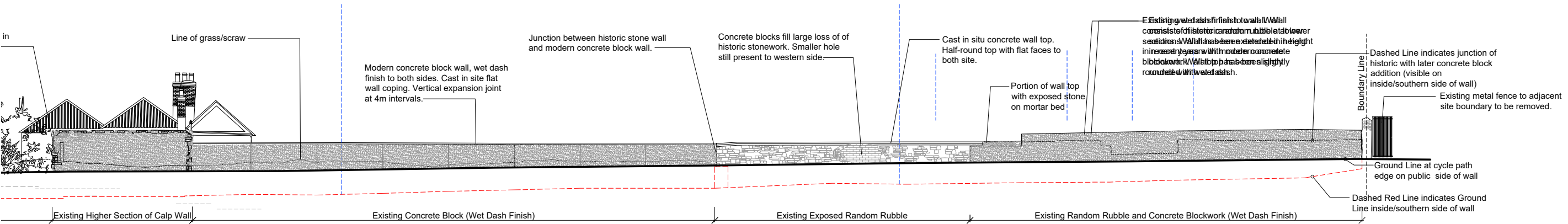


Figure 3.58 Elevation of the boundary wall from the Chapelizod Road



Figure 3.59 The stone western boundary wall follows the slope of the land. The blocked doorway is beside the sycamore tree.



Figure 3.60 The wall has been built up in concrete blockwork at both boundaries



Figure 3.61 Note the rounded boulders of the rubble stone construction, and the hole repaired with concrete block.



Figure 3.62 Buttress at junction of old and new walls



Figure 3.63 Calp stone wall at north side of the house. Low retaining wall to drive in foreground. Tram gantry beyond

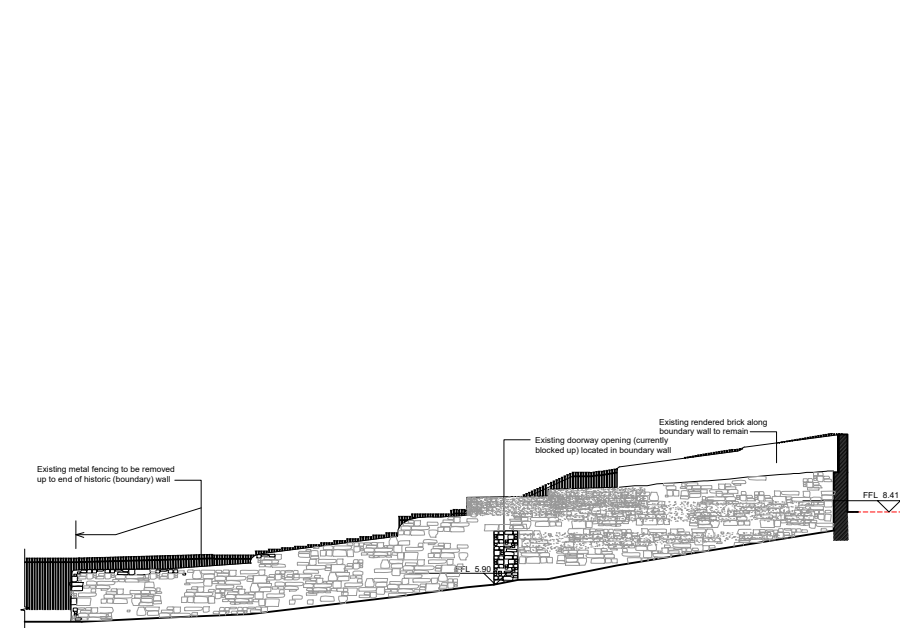


Figure 3.64 Elevation of boundary wall at the west end of orchard



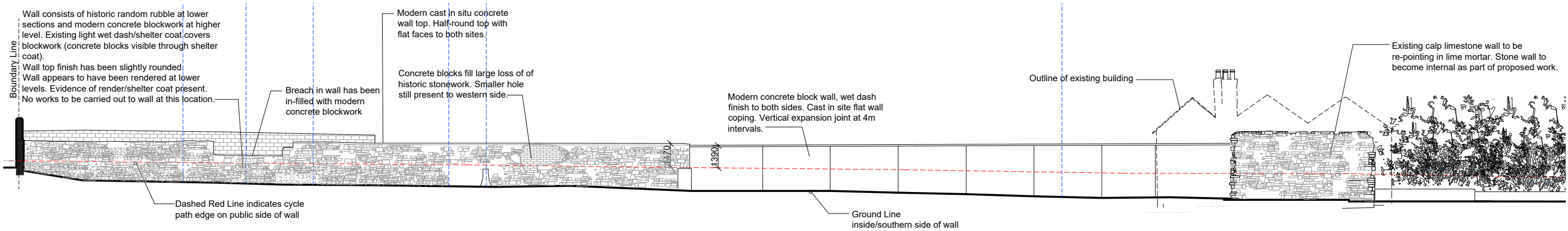
Figure 3.66 Bricked up doorway in west boundary wall



Figure 3.67 Collapsed wall at junction of rubble and mass concrete, repaired with blockwork



Figure 3.68 Calp wall: the stone of the gate piers stored at base



Walls between orchard and garden

A wall projects from the southwest corner of the 19th century wing. (Figure 3.70). A wall is shown in this location on the OS map of 1838, and it can therefore be assumed this is a historic feature even if the structure maybe later. On the southside of the opening between the garden to the east and the orchard to the west, the wall continues down to the former boundary on the north side of the ditch. It is lower in this location (Figure 3.71) and currently obscured by vegetation. A modern wall returns for a length of the ditch. (Figure 3.72).

Well

At the west end of the orchard there is a well. It has not been possible to date the well, but the current built structure is of concrete so therefore not old. It is however and interesting and integral feature of the site.



Figure 3.69 The Well, western boundary wall behind



Figure 3.70 Wall projecting from house dividing orchard from garden



Figure 3.71 The lower, southern section of the wall in 3.70



Figure 3.72 Low wall along north side of ditch (east of wall in 3.71).

4.0 Overall Assessment

The house of Liffey Vale, and its associated historic boundary walls, have been subject to over two centuries of change, addition, decay, and a number of destructive fires. As such, much of the historic detail and fabric has been lost. However, the essence of the house and walls remains, and, being of traditional construction, are eminently repairable. Although so much has been lost, the house retains its scale and relationship to the very particular nature of the site. It is this which is its most valuable feature.

The loss of plaster and internal floor and partition wall structures within the house have revealed interesting evidence relating to the evolution of the house and the nature of its construction. It could be possible, when conserving and repairing the building to retain some of these exposed features. Most of the historic interiors having been lost, and given that, even before the fire, the building contains no features of outstanding historical interest, it is not imperative to return the structure to its pre-fire form within the building envelope.

What is essential will be to work with the inherent materiality of the structures, respecting their scale, and history.

APPENDIX B

CIVIL & STRUCTURAL ENGINEERING SERVICES REPORT

DAVID KELLY PARTNERSHIP

Cois Abhann Liffey Vale Biodiversity Centre for Dublin City Council

STAGE I: PRELIMINARY DESIGN

CIVIL AND STRUCTURAL ENGINEERING SERVICES REPORT

**March 2021
Rev. 06**

Job No. 19097



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1.0 INTRODUCTION

This project comprises the restoration of Liffey Vale House and Gardens (a Protected Structure), to provide cultural and leisure facilities and to open these to the public for recreational, cultural and community uses.

The key elements of the brief with respect to the civil and structural engineering design for the project are to conserve and restore the Protected Structure, to improve public access to the site and to ensure the conservation and biodiversity value of the sensitive river-scape is maintained.

Our approach to the Protected Structure is to retain as much as possible of the historic fabric, repairing it where necessary and to design new structures that are low-key and do not detract from the existing building.

Our approach to improved public access is, in conjunction with the design team, to provide the vehicular access only to the extent required for servicing, emergency and universal access requirements. The structure of both the vehicular and pedestrian surfaces will use concrete elements only where absolutely necessary.

Our approach to below-ground services is to use existing foul and surface water drainage routes and features (such as swales) within the site as much as possible, to minimise hard surfaced areas and to adopt a SUDS approach which provides interception through rainwater harvesting and infiltration, and filter strips to provide treatment for runoff from impermeable surfaces.

2.0 SITE ASSESSMENT

2.1 Overview

The site is situated on the northern banks of the River Liffey at Longmeadows, Dublin. The house sits on higher ground overlooking the floodplain below and the River Liffey to the south. The 1838 OS map shows the house, with a garden to the west and farmland on the floodplain. The 1866 century edition OS map (see figure 1 below) shows the site largely as it is now with a drainage ditch flowing east across the site with a branch flowing south-south-east. Access to the site was at the eastern end as it is today.

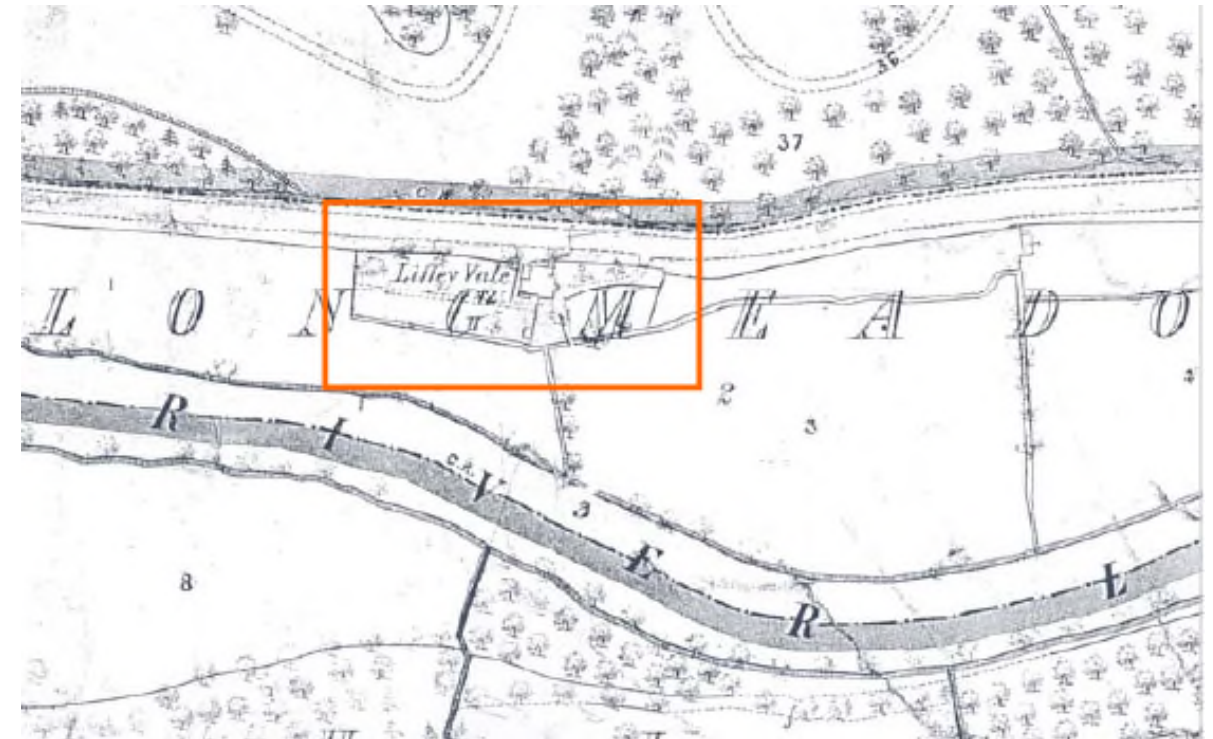


Figure 1 Ordnance Survey Map 1866

2.2 Desktop Study

Existing information relevant to the site was reviewed to inform the design of the ground investigation and the site assessment process generally. The following information sources were reviewed:

- Previous reports on the site prepared for Dublin City Council
- Geological Survey Spatial Resources (www.gsi.ie)
- Drainage records held by Dublin City Council
- Flood Risk mapped data provided by OPW (www.floodinfo.ie)

2.3 Ground Investigation

Borehole logs from the greater Dublin Drainage Scheme, 1969 obtained from the Geological Survey of Ireland indicated that the ground profile at the site was likely to comprise mud fill on grey silt on sand and gravel. Following a competitive tender process, a ground investigation of the site was undertaken in late 2020 comprising shell and auger boreholes to confirm the ground profile, and trial pits to investigate the upper soil layers and the foundations of the existing structures on the site. In-situ and laboratory testing of soil and water samples was carried out for the engineering properties of the subsoil and for potential ground contamination.

The ground investigation determined that the ground profile at the site comprises approximately 2.5m of soft to very soft sandy clay over 2m of clayey gravel and sandy silt over stiff grey gravelly clay which was proved to a depth of 9m. Two boreholes were excavated – one at the location of the proposed extension, and the second in the meadow on the floodplain. A standpipe has been fitted to one of the boreholes to allow water levels to be monitored. In addition, several trial pits were excavated to determine the depth of the existing foundations for the house and north boundary wall. A slit trench was excavated to locate the existing surface water drain crossing the site. Made ground was encountered within the soft upper layer around the house. Water ingress to the trial pits was noted at 1.8 to 2 m depth. (see figure 2 below for locations of trial pits and boreholes).

Laboratory testing for engineering parameters and in-situ plate tests for pavement design were also carried out. Laboratory testing of soil samples taken from the site found that all samples satisfied the criteria for inert waste set out in the European Landfill Directive.

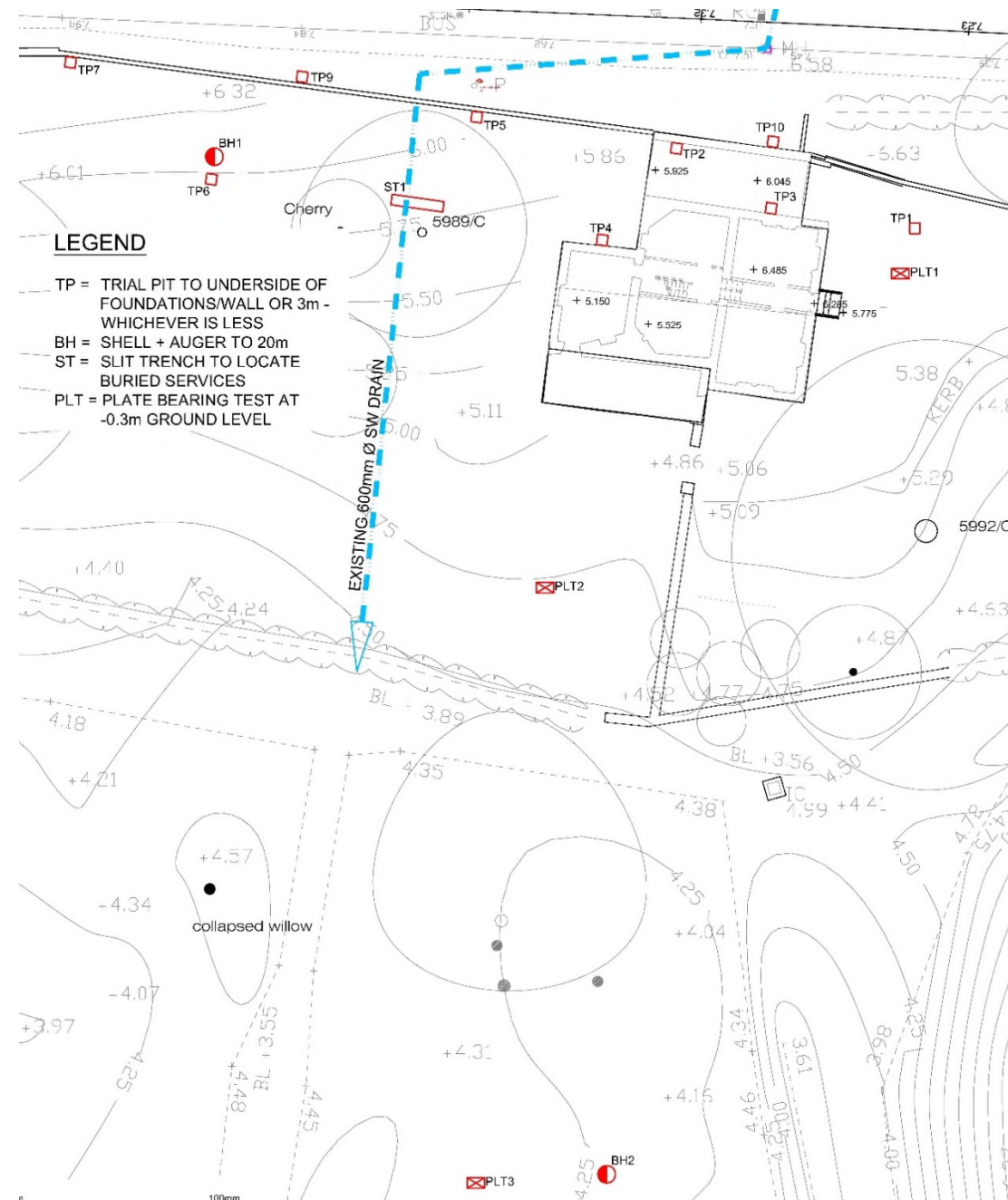


Figure 2 Ground Investigation Layout

2.4 Water Quality Testing

A water sample from the existing surface well at the west end of the site was tested and found to contain high levels of coliforms, E. coli and manganese. The coliform / E. coli contamination is probably due to human actions on the land surface. The site, including the area around the well, has been used by several individuals camping/sleeping rough. The elevated manganese may reflect natural conditions but could indicate contamination by organic waste. It is not intended to use the well as a source of drinking water. It would require cleaning and re-testing before considering it as a future source for irrigation of the garden.

2.5 Below Ground Drainage and Utilities

The review of drainage records obtained from Dublin City Council indicated that a 300mm diameter foul sewer traverses the site south of the house and that a 600mm diameter surface water drain originating in the Phoenix Park crosses the site west of the house and discharges to the River Liffey.

A below ground utilities survey and CCTV survey of the existing drainage on site were undertaken to verify the drainage record and establish the location of any other buried services on site (see figure 3 below).

The CCTV survey has established that there is an existing 100mm diameter connection to the public sewer within the site. The connection is intact at the public sewer but the branch which once served the house is broken a short distance from the sewer. The existing connection establishes the precedent of a connection from the property to the sewer which can be repaired and re-used subject to the agreement of Irish Water. It also established that the surface water drain crossing the site discharges into the swale / drainage ditch south of the house, not to the River Liffey as previously thought.

The below ground utilities survey found no other buried services in proximity to the house within the site. Water and gas are in the public road and footpaths to the north. Over ground electricity supply is at the north site boundary.

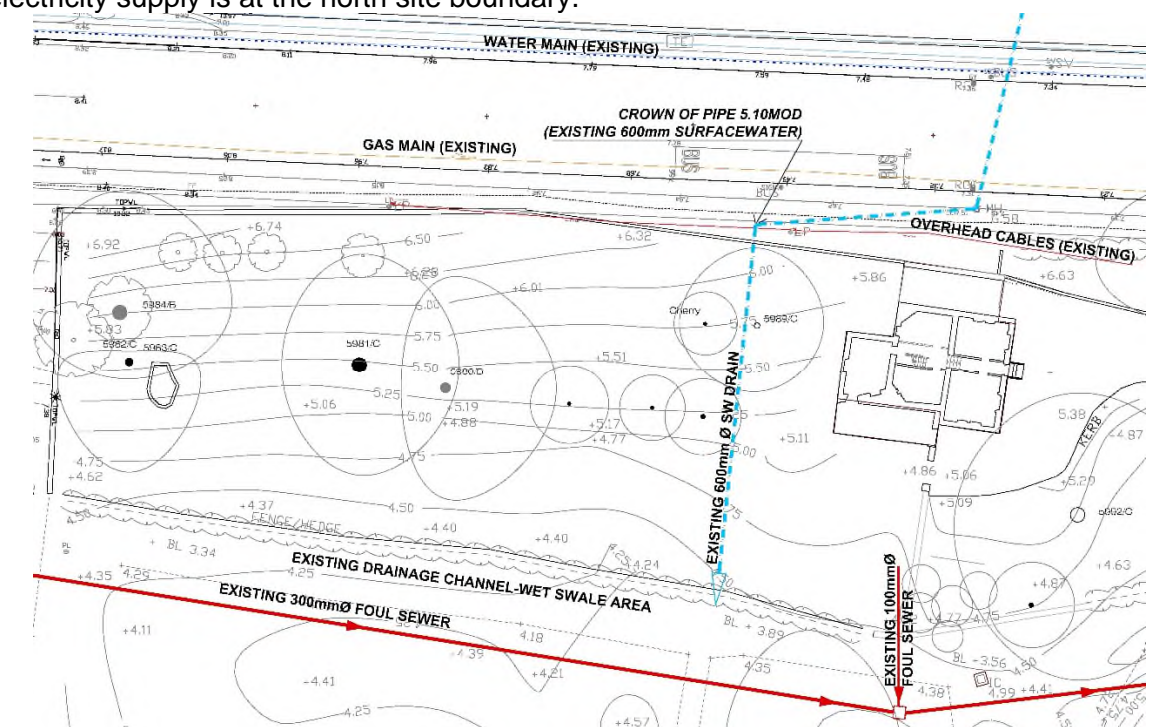


Figure 3 Below Ground Utilities Survey (drawing excerpt)

2.6 Flood Risk

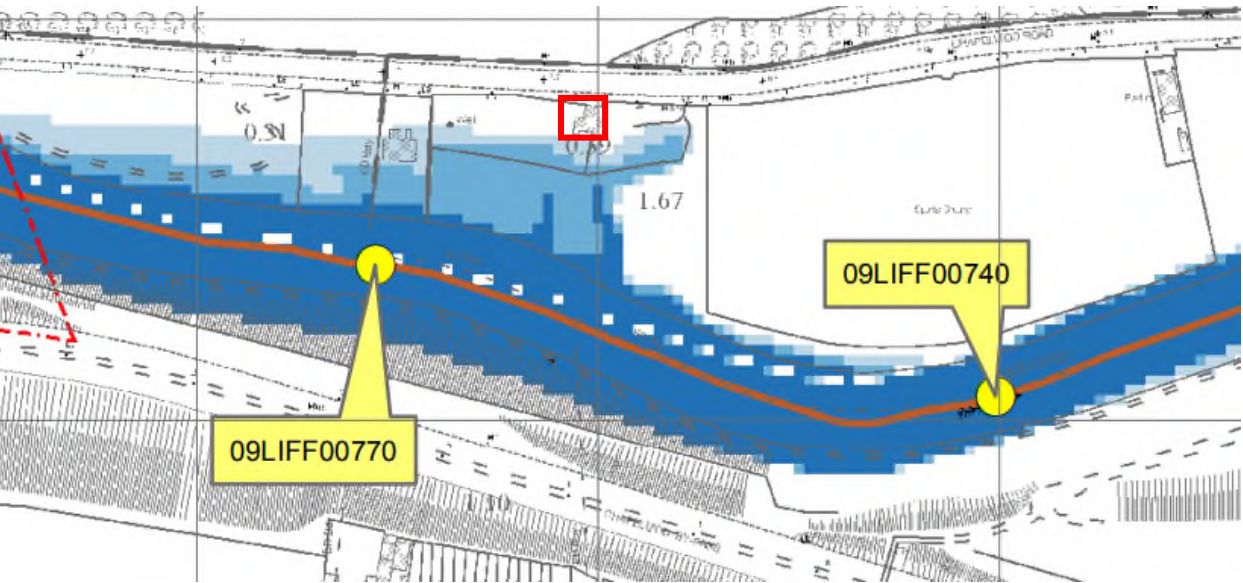
The south-west corner of the existing house lies just inside the boundary of Flood Zone C as shown on the *Dublin City development Plan 2016-2022: Strategic Flood Risk Assessment*. This document recommends that development in Flood Zone C should screen out indirect sources of flood risk and where this is not possible present mitigation measures. The Assessment suggests the most likely mitigation measures include setting floor levels above the 1 in 100 year fluvial and 1 in 200-year tidal flood level with allowance for climate change and freeboard over the flood water level.

Indirect flood risks such as flooding from the adjoining road are unlikely as the road boundary wall would direct such water to the site entrance and driveway which is a meter below floor level at the front door of the house.

The 1 in 200-year tidal flood level below the weir at Islandbridge is 3.54mOD (from CFRAM flood extent map – coastal – current scenario. Allowing for 500mm increase for climate change plus 300mm freeboard gives a minimum design floor level of 4.34mOD. The 1 in 100-year fluvial flood level at the site (see Figure 4 below) is 4.59mOD. The lowest floor level in the existing house is 5.15mOD (in the proposed Exhibition Room), and in the proposed new extension is 5.995mOD. The minimum freeboard provided is thus 0.56m (and more typically 1.4m freeboard is provided).

The highest recorded flood in the (upstream) vicinity of the site (adjacent Chapelizod Road) was in December 1954 when a level of 5.79mOD was recorded by ESB International (recorded as 8.5mOD relative to Poolbeg datum (a higher datum in use at the time). Interpolation of the adjoining recorded flood levels suggests the flood level at the site in 1954 was 5.3-5.8mOD. This means that the two exhibition rooms in the existing house may flood if this level of flooding occurred again, but the new extension and east section of the existing house would not.

The use of flood resilient finishes in these rooms should be considered.



Node Label	Water Level (OD) 10% AEP	Flow (m³/s) 10% AEP	Water Level (OD) 1% AEP	Flow (m³/s) 1% AEP	Water Level (OD) 0.1% AEP	Flow (m³/s) 0.1% AEP
09LIFF00770	4.18	N/A	4.59	N/A	5.14	N/A
09LIFF00740	3.98	N/A	4.32	N/A	4.84	N/A

Figure 4 Fluvial Flood extent (Eastern CFRAM Study: Scenario – Current); House in Red

3.0 EXISTING BUILDING

3.1 Overview

A key aim of this project is to conserve the existing building. The proposed structural works are intended to maximise retention of historic fabric. The conservation and structural repair will use materials such as lime mortars and timber beams which are compatible with the surviving fabric. Missing structure will be reinstated only where necessary for the overall stability of the building, for example structural floors in the 18th century wing destroyed by fire will not be reinstated, isolated bracing beams will be introduced instead.

The existing building was built in three phases beginning in the 18th century. The eastern section was added in the 19th century and two further extensions, now demolished, at the north and south sides were added in the 20th century. The building was extensively damaged by fire resulting in the loss of most of historic roof and internal structure. A temporary roof has been constructed to protect the remaining historic fabric.

3.2 Key Structural Issues and Proposed Works

- a. Some 20th-century construction, mainly concrete and embedded steel, from the now demolished extensions remains embedded in the external walls. It is proposed to carefully remove these and to repair the masonry with brickwork or stone masonry bedded in lime mortar as appropriate. See figure 5 below.



Figure 5 North Elevation with Embedded Concrete Highlighted

- b. There are minor cracks in the masonry walls principally at lintels over window openings. It is proposed to repair these by filling the crack with lime mortar and stitching across it with small diameter stainless steel tie bars. The existing cementitious render will be removed prior to this work and new lime-based render applied (see architects report for more information on this).

- c. The existing suspended timber ground floor joists in the eastern section will be repaired and strengthened where necessary.
- d. Two internal brick nogged timber stud partitions in the eastern entrance corridor have survived and are currently temporarily braced. These will be retained. The base of each partition will be exposed to determine the extent of repair required (if any) to the timber studs and sole plate.
- e. The surviving double height partition in the western section was significantly damaged by fire and the feet of the timber studs are decayed. This partition will need to be carefully dismantled. See figure 6 below.



Figure 6 Fire-Damaged Internal Partition

- f. The temporary metal sheet roof and associated structure will be replaced with a new natural slate roof with a raised collar timber rafter roof structure and the chimneys will be repaired.
- g. Two existing blocked up window opening will be extended to form new door openings.
- h. Four new timber beams will be fitted at the location of the former staircase in the new double height exhibition space.
- i. Three new wall openings will be required to provide access to the new extension via new ramped areas. These will be formed by first propping and then carefully removing the masonry and installing new timber beam lintels to support the masonry over the new openings.

4.0 NEW EXTENSION

4.1 Overview

The new single-storey extension extends westwards along the northern boundary, its roof stepping to reduce in height as it does so. The extension encloses the space between the north wall of the house and the northern side boundary and widens to wrap around the north west corner of the house.

The design approach aims to minimise impact on the historic house and the calp limestone boundary wall. At foundation level this is achieved by keeping the new foundation for the extension as close to ground level as possible to avoid potentially undermining the existing structures and to reduce the volume of excavation (and associated disposal of material off-site) required. The new superstructure supports the extension roof independently of the historic structures and avoids applying significant additional load to them.

4.2 Foundations and Substructure

The made ground and soft to very soft material encountered in the upper soil layers are unsuitable to support structural loads therefore the foundations need to extend to the stiff grey/black gravelly clay some 4 m below ground level. The water ingress and instability of the trial pits when excavated suggest that trench fill type foundations will not be practical, and risks destabilising existing shallow foundations to the boundary wall and house. In view of the above we propose to support the new structure on piles embedded in the stiff gravelly clay (see figure 7 below).

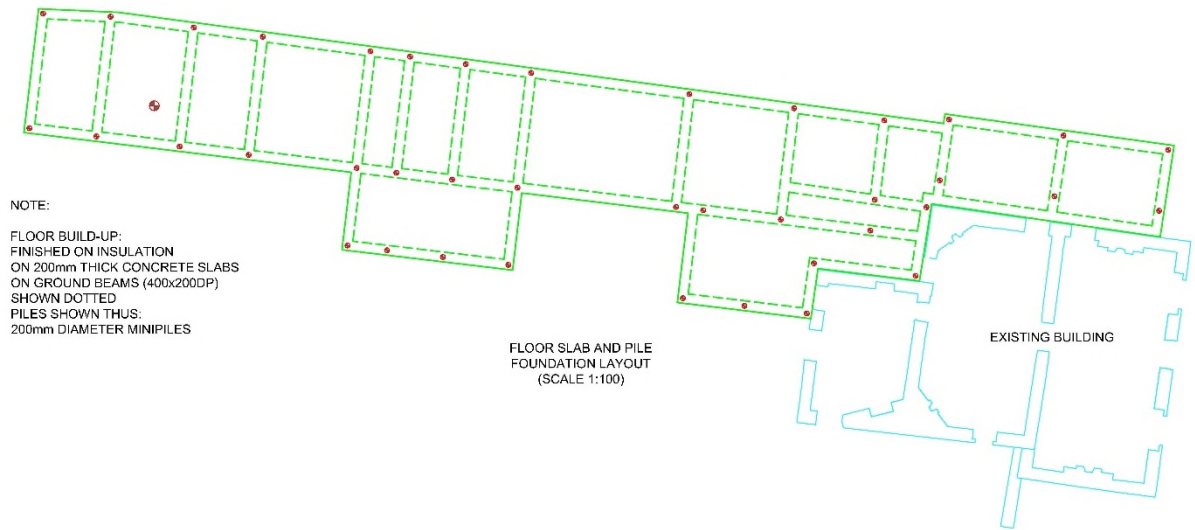


Figure 7 Extension - Proposed Piled Foundation and Suspended Concrete Floor (in green)

The piled foundation will support concrete ground beams and a concrete slab which will not rely support on the upper soil layers. This approach will minimise the amount of material required to be removed from the site landfill and will reduce the overall volume of concrete required to construct the foundations compared to a more traditional deepened strip foundation and ground bearing floor slab. GGBS concrete will be used to minimise the carbon footprint of the substructure.

4.3 Superstructure

The superstructure will comprise load-bearing masonry with steel and timber elements including columns at the south facing external wall and a timber and steel roof structure. The roof structure will be exposed and will be detailed in close collaboration with the architect. The masonry walls will be constructed of clay blocks where possible to minimise the carbon footprint of the new structure. Overall stability of the structure will be provided by the load-bearing masonry walls supplemented by bracing of the steel frame. A lining wall will be constructed at the inner face of the north boundary wall which will incorporate a waterproofing and drainage layer.

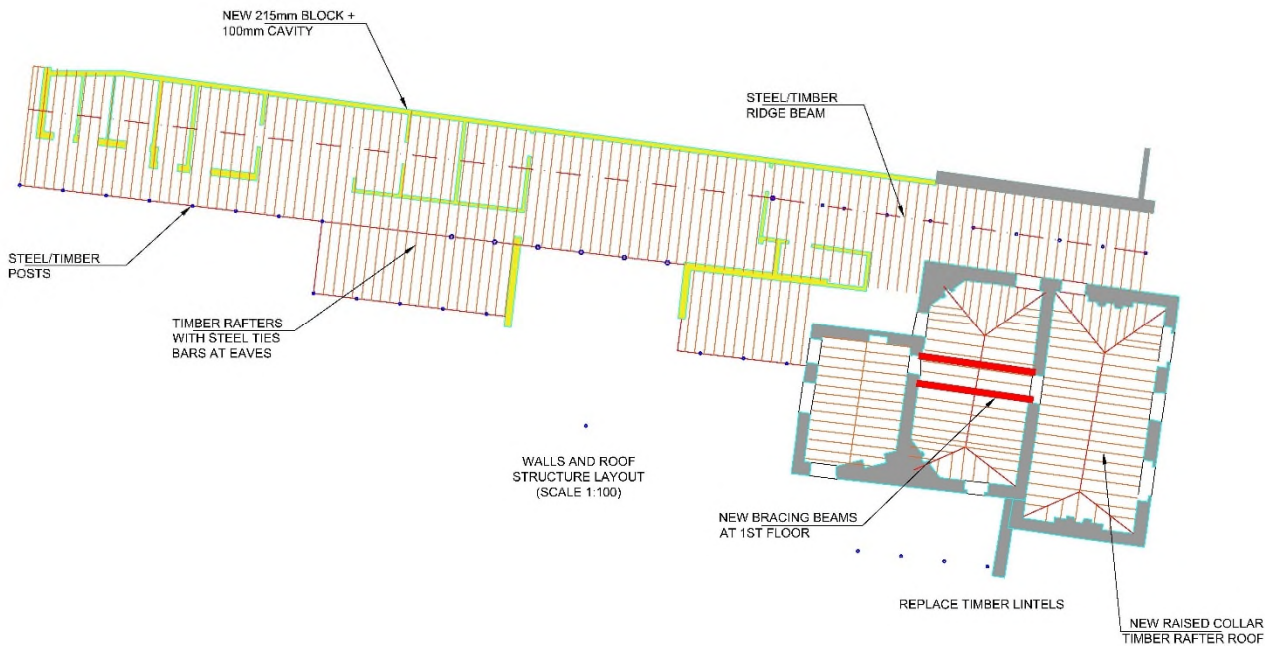


Figure 8 Extension - Proposed Roof Structure

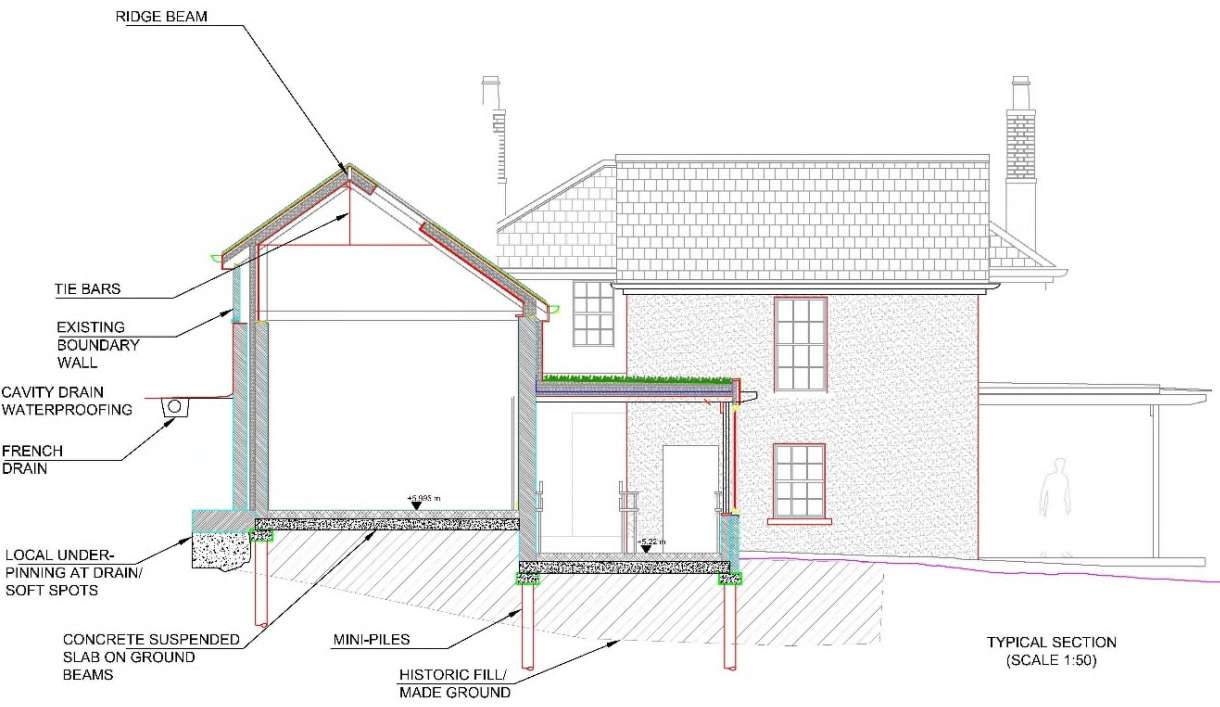


Figure 9 Extension - Proposed Cross-Section

5.0 BELOW GROUND DRAINAGE

5.1 Existing Drainage

5.1.1 Surface Water Drainage

A 600mm diameter surface water drain serving the Phoenix Park crosses the R109 in front of the property, enters the site and runs from north to south, immediately west of the house, 8.9 metres from the rear elevation. The ground investigation revealed that this drain is a concrete pipe approximately 700mm below ground level and has a diameter of 600mm, having dug a slit trench to expose the drain. Drainage records (see figure 10 below) indicated that this drain extends to the river however the CCTV survey has determined that it discharges to the existing swale running west to east across the site. The manhole just outside the northern site boundary is located under the public cycle lane which will need to be temporarily closed to expose the manhole. The drain has been located by excavating a slit trench which established that it is located 8.9m west of the house.

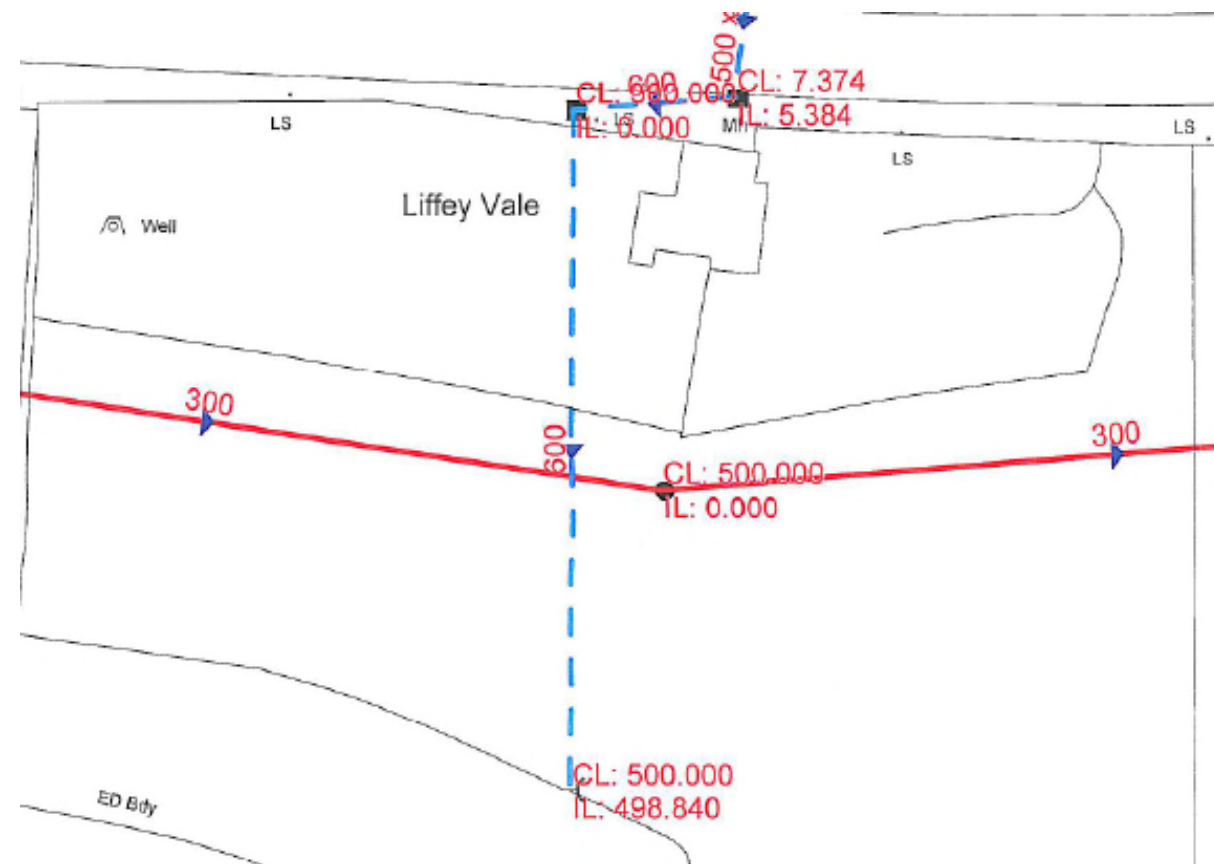


Figure 10 Excerpt from DCC Drainage Record showing Existing Surface Water Drain (blue) and Sewer (red)

5.1.2 Foul Drainage

An existing 300mm diameter foul sewer flows west to east across the site to the south of the house (see Figure 10 above). There is an inspection chamber due south of the house which is on an existing connection to the sewer from the house. The CCTV survey was able to get access to the sewer at the inspection chamber to confirm this. The house branch sewer is a 100mm diameter ductile iron pipe, for the first 7 metres towards the house and a clay pipe thereafter. It has collapsed approximately 13 metres from the connection.

5.2 Proposed Drainage

5.2.1 Surface Water Drainage

There is a relatively small area of impermeable paving proposed, limited to the entrance drive, parking spaces and a terrace at the café. The area of roof run-off will be increased by the new extension. It is proposed to adopt several SUDS measures to attenuate and treat surface water run-off as part of the proposed design, these include rainwater harvesting, filter drains and swales. Surface water from roofs will be collected in water butts as part of the proposed rainwater harvesting system with an overflow to the existing drainage ditch (wet swale). Surface water from paved surfaces will be collected in shallow filter drains (french drains) at the edges of the paved areas and conveyed via overflows from collector filter drains to the existing drainage ditch which traverses the site and connects to the watercourse. This will act as a wet swale. See figure 11 below.

It is proposed to retain in-situ the existing 600mm diameter surface water drain crossing the site. The new piled foundation for the extension will bridge over the drain so that it will not be subject to any additional load from the new building.

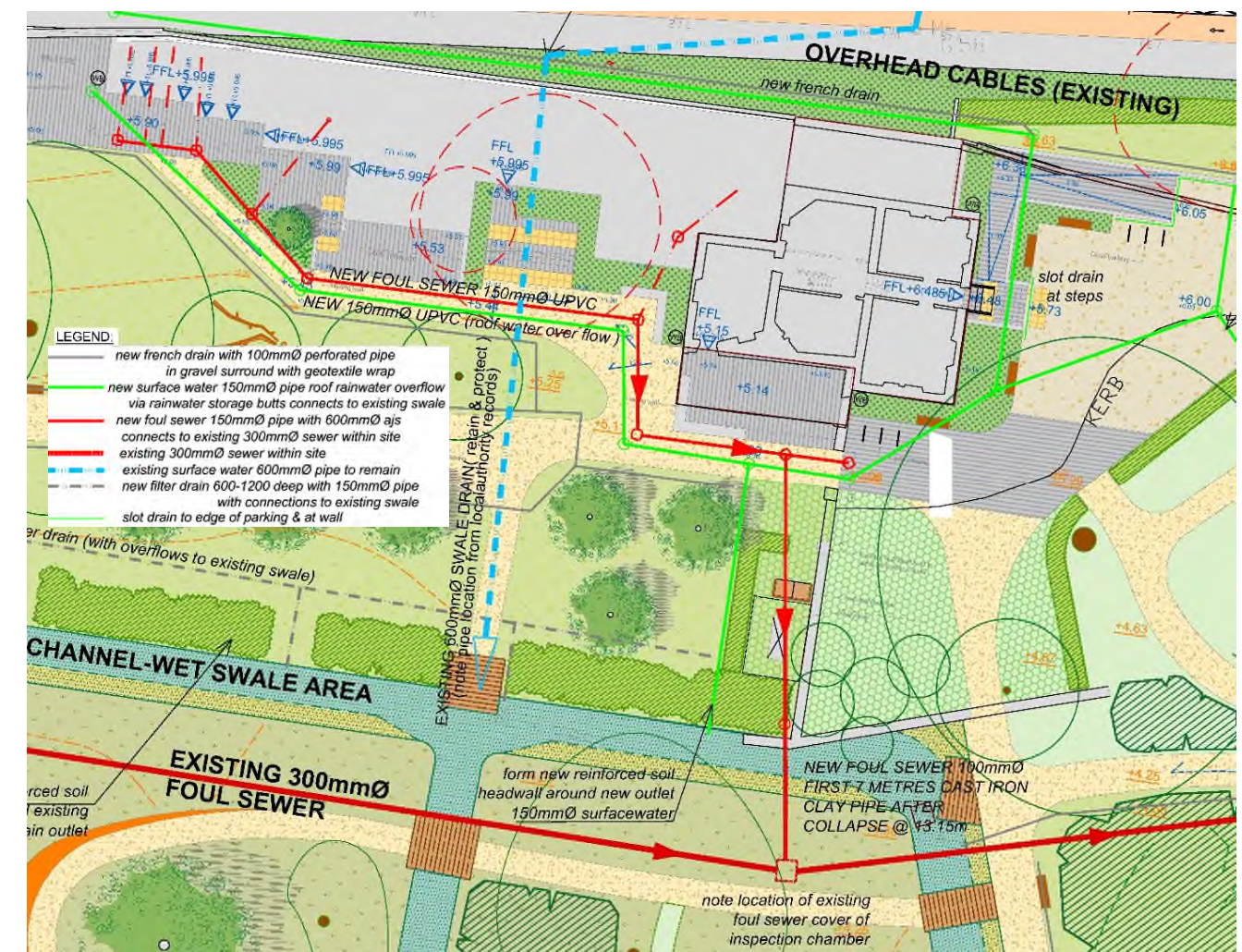


Figure 11 Proposed Drainage Layout at Liffey Vale

There will be a small volume of additional surface water run-off at the Department of Defence lands from the new paths and Department of Defence access road. This will be collected using filter drains on the lower edges of the road and paths which will be connected to mini-wetland areas.

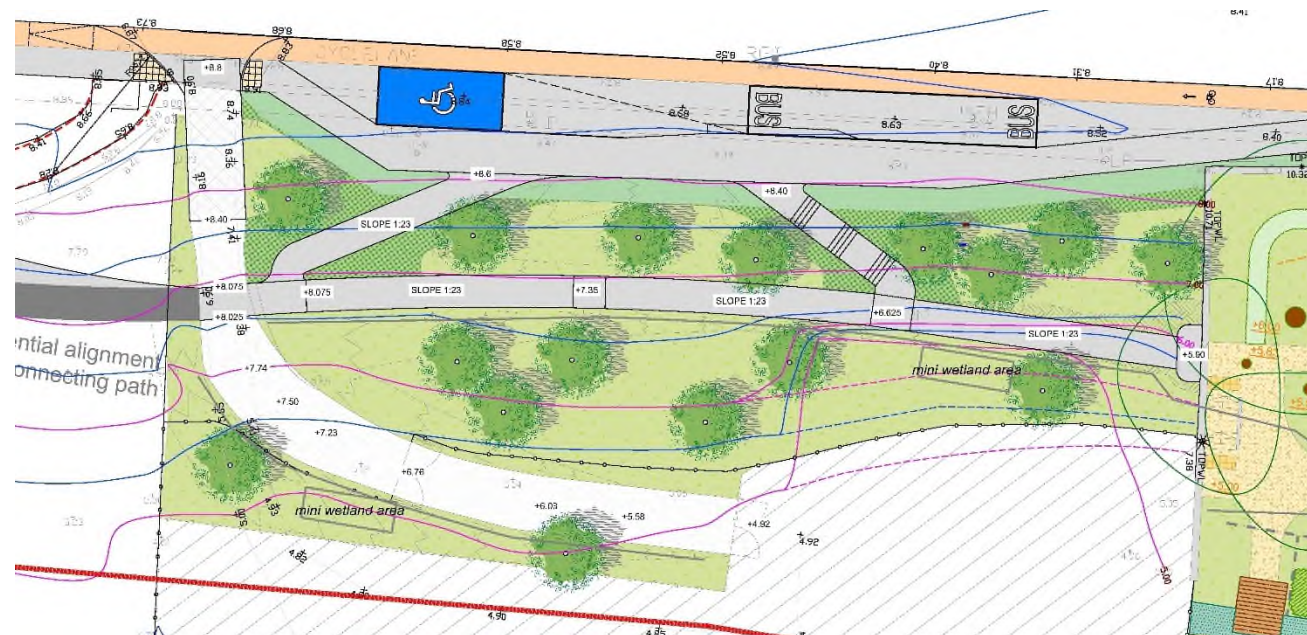


Figure 12 Proposed Drainage Layout at Department of Defence Lands showing proposed mini wetlands.

5.2.2 Foul Drainage

It is proposed to lay a new sewer along the southern and eastern sides of the building. This will connect at the existing connection to the 300mm diameter foul sewer which passes through the site to the south of the house. The proposed new sewer and connection is currently shown routed around existing trees to avoid disturbance to tree roots. The existing inspection chamber on the main sewer line will be retained. A pre-connection enquiry in relation to the intensification of use of the existing connection was submitted to Irish Water and they have confirmed the feasibility of our proposed connection (see Appendix C).

6.0 BELOW GROUND SERVICES

6.1 Existing Below Ground Services

A combined, existing underground services drawing accompanies this report. Existing below ground services at or adjacent to the site include:

- Gas (in the south carriageway R109) LP 180 PE-80 25mbar
- Watermain (on north side of R109) 125mm cast iron.
- Foul sewer: 300mm diameter (within the site)
- Surface Water drain: 600mm diameter concrete (within the site)

6.2 Proposed Below Ground Services

6.2.1 Water Supply

It is proposed to connect to the public watermain in the R109. A pre-connection enquiry was submitted to Irish Water and they have confirmed the feasibility of our proposed connection.

6.2.2 Other Services

Refer to Mechanical and Electrical Services Consultant's Report for details.

7.0 SITE ACCESS AND PARKING

7.1 Liffey Vale

Existing access to the site is via a gate onto the R109 at the north-east corner of the site. Vehicular access to the site will, in relation to the proposed development, be strictly limited to emergency vehicles, occasional Dublin City Council staff, very occasional visitor use and to the accessible parking.

It is proposed to relocate the existing site entrance a short distance to the east and to widen it slightly to allow emergency vehicle access. The proposed entrance shall incorporate 3m curve radii, dropped pedestrian crossing and dropped cycle track. This will facilitate universal pedestrian access between the footpath and the house.

The site is well served by public transport and is close to the Phoenix Park. It is not proposed to provide visitor car parking. There will be two accessible parking spaces and limited space for deliveries and staff. The proposed new bus pull-in to the west will facilitate group access by bus. Additional accessible car parking spaces will be provided here.

It is hoped that the Phoenix Park gate immediately to the north across the R109 will be re-opened with a new pedestrian crossing which would provide a pedestrian connection to the Phoenix Park. This would create a link via Liffey Vale and the upper part of the Department of Defence lands to the adjoining Liffey Valley Park.



Figure 13 Proposed Entrance – Swept Path Analysis for fire tender and universal access parking and proposed pedestrian crossing.

7.2 Department of Defence Lands

It is proposed to facilitate a new lay-by bus pull-in at the Department of Defence land immediately west of Liffey Vale. This will incorporate a new footpath south of the existing path and the cycle track will continue outside the bus parking bay as a cycle lane. It is also proposed to provide two disabled car parking spaces at this location.

It is proposed to alter the existing entrance to these lands to allow continued access to the lower part of these lands for Department of Defence use only. The altered entrance will incorporate 3m curve radii, a dropped pedestrian crossing and dropped cycle track.

The altered Department of Defence entrance and internal access road will be designed to carry 20 tonne weight laden vehicles. Currently these lands are not in regular use.

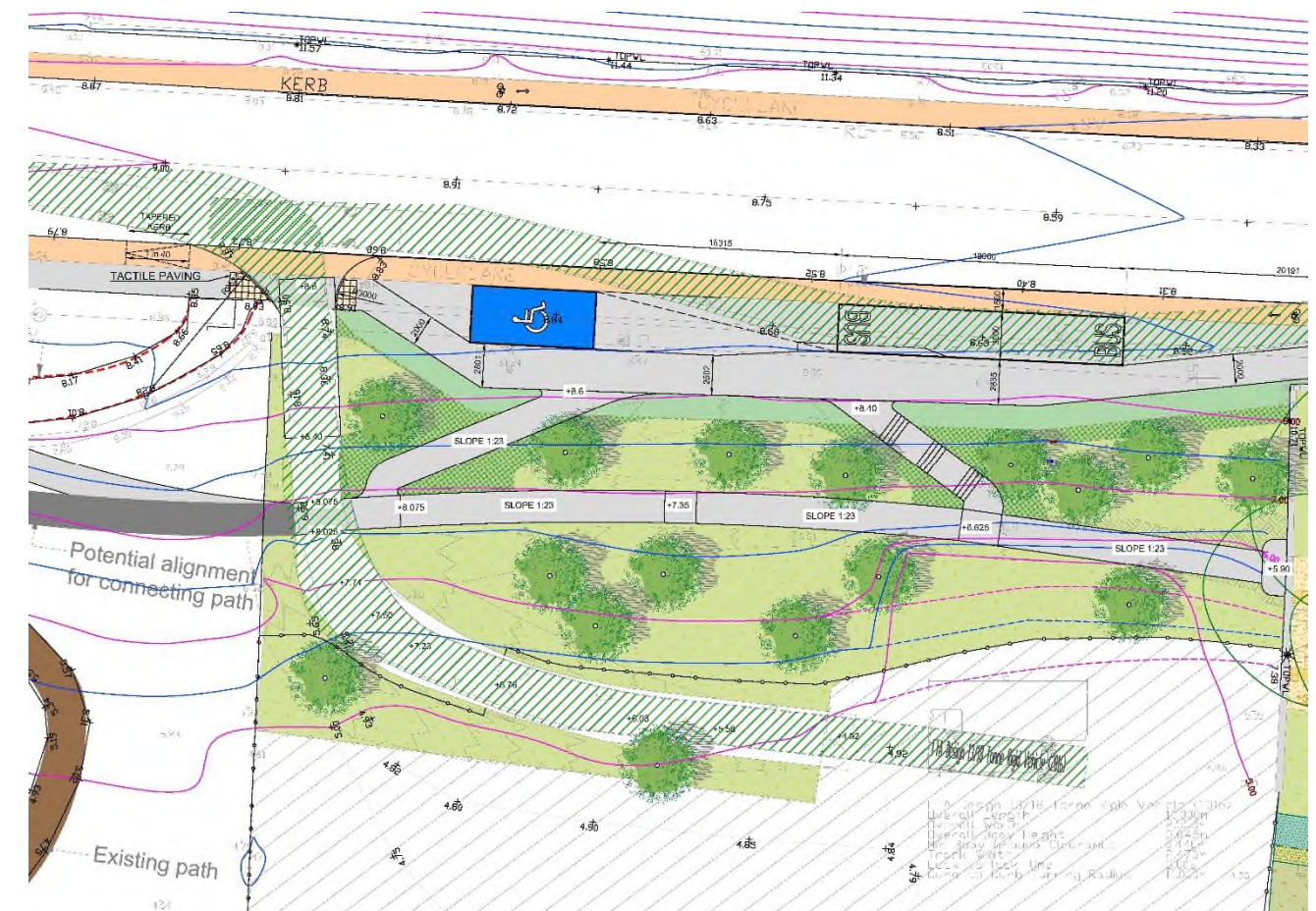


Figure 14 Department of Defence Access – Proposed Entrance Swept Path Analysis for rigid body truck and bus pull-in.

8.0 BOUNDARY WALL

8.1 Overview

The site is bounded on the northern and eastern sides by masonry boundary walls, typically 3m tall and 450 mm thick. It is constructed mainly of limestone calp stone masonry with a cast concrete inner face which incorporates stone and cobbles, probably from the original masonry wall face, but includes a rebuilt section of modern concrete blockwork immediately to the west of the house. A 215 mm thick solid concrete block wall has been built on top of the original wall at the north west corner of the site. A section of the North boundary has been partially reinstated in modern concrete block work.

It is proposed to limit the repair of the boundary to those areas where repair is essential to secure the structure of the wall in the short term. Dublin City Council has a supply of suitable salvaged stone for these repairs which will be used to supplement any stone recovered on site.

In the medium term much of the exposed stone and brickwork in the north and west boundary walls will require repointing with lime-based mortar.

8.2 North Boundary Wall (section of concrete blockwork infill)

This section comprises 215mm concrete blockwork at the roadside face partially infilling a large hole formed when the original stone masonry collapsed. A small opening in the wall remains. It is proposed to cut out the currently unsupported concrete cap, dismantle the modern blockwork and reinstate the missing section of wall using stone recovered from the site bedded in lime mortar. Stainless steel dowels may be required to tie the re-built masonry into the adjoining original sections. A new mortar cap will protect the new masonry and integrate it with the surrounding masonry.



Figure 15 North Boundary Wall

Immediately to the east of this section, the wall has a slight bulge at the inner face. This section will be grouted with lime mortar and the inner face stitched back to the grouted core.



Figure 16 Section with Slight Bulge (Inner Face)

8.3 North-West Corner

The roadside (northern) wall has cracked at the junction with the western boundary wall (see figure 17). The cementitious render will be removed locally, the crack opened up, the masonry re-built and stitched locally with stainless steel bars across the corner at the crack.



Figure 17 Boundary Wall – North-West External Corner

8.4 West Boundary Wall

This wall is approximately 3.5m high at its tallest and there are occasional diagonal cracks in this wall which will be opened out to expose the crack, packed tightly with lime mortar and, if necessary, stitched with stainless steel bars across the crack.



Figure 18 West Boundary Wall - Typical Crack Highlighted in Red

APPENDIX A – DRAWINGS

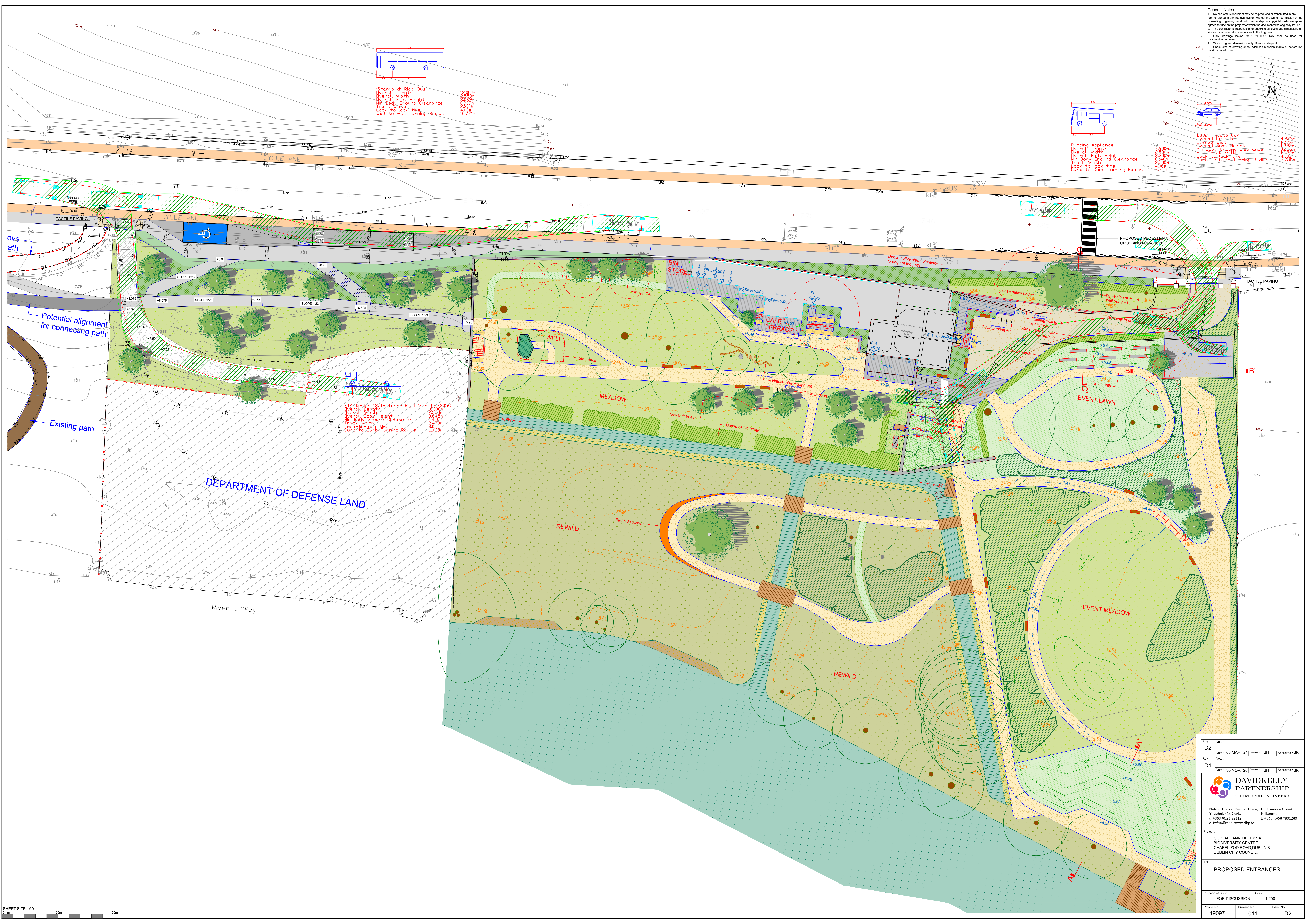
19097-011-D2 Proposed Entrances

19097-200-D4 Proposed Drainage Scheme

19097-201-D1 Existing Services Layout

19097-200a-D1 Preliminary Structure Plans

19097-200b-D1 Preliminary Proposed Section



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Standard Rigid Bus

- Overall Length: 12.000m
- Overall Width: 2.550m
- Overall Body Height: 3.050m
- Min Body Ground Clearance: 2.300m
- Track Width: 2.000m
- Lock-to-lock time: 3.000s
- Wall to Wall Turning Radius: 10.771m

Pumping Appliance

- Overall Length: 7.000m
- Overall Width: 2.500m
- Overall Body Height: 2.900m
- Min Body Ground Clearance: 2.300m
- Track Width: 2.000m
- Lock-to-lock time: 3.000s
- Curb to Curb Turning Radius: 7.750m

Private Car

- Overall Length: 4.200m
- Overall Width: 1.700m
- Overall Body Height: 1.500m
- Min Body Ground Clearance: 0.250m
- Track Width: 1.500m
- Lock-to-lock time: 2.000s
- Curb to Curb Turning Radius: 5.700m

SHEET SIZE: A0
0mm 50mm 100mm

Rev:	Note:
D2	Date: 03 MAR '21 Drawn: JH Approved: JK
Rev:	Note:
D1	Date: 30 NOV '20 Drawn: JH Approved: JK

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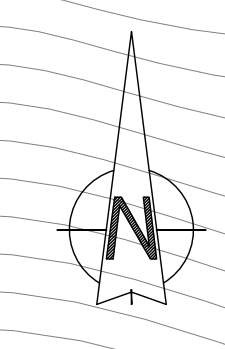
Project:
COIS ABHANN LIFFEY VALE
BIODIVERSITY CENTRE
CHAPELWOOD ROAD DUBLIN 8.
DUBLIN CITY COUNCIL.

Title:
PROPOSED ENTRANCES

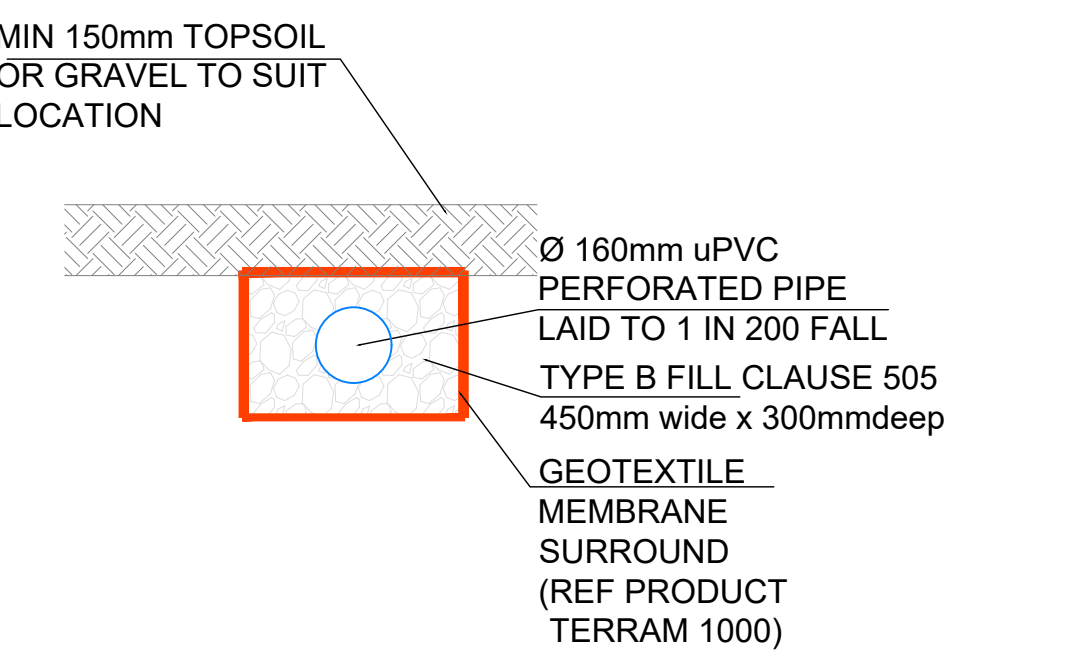
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19097	011	D2



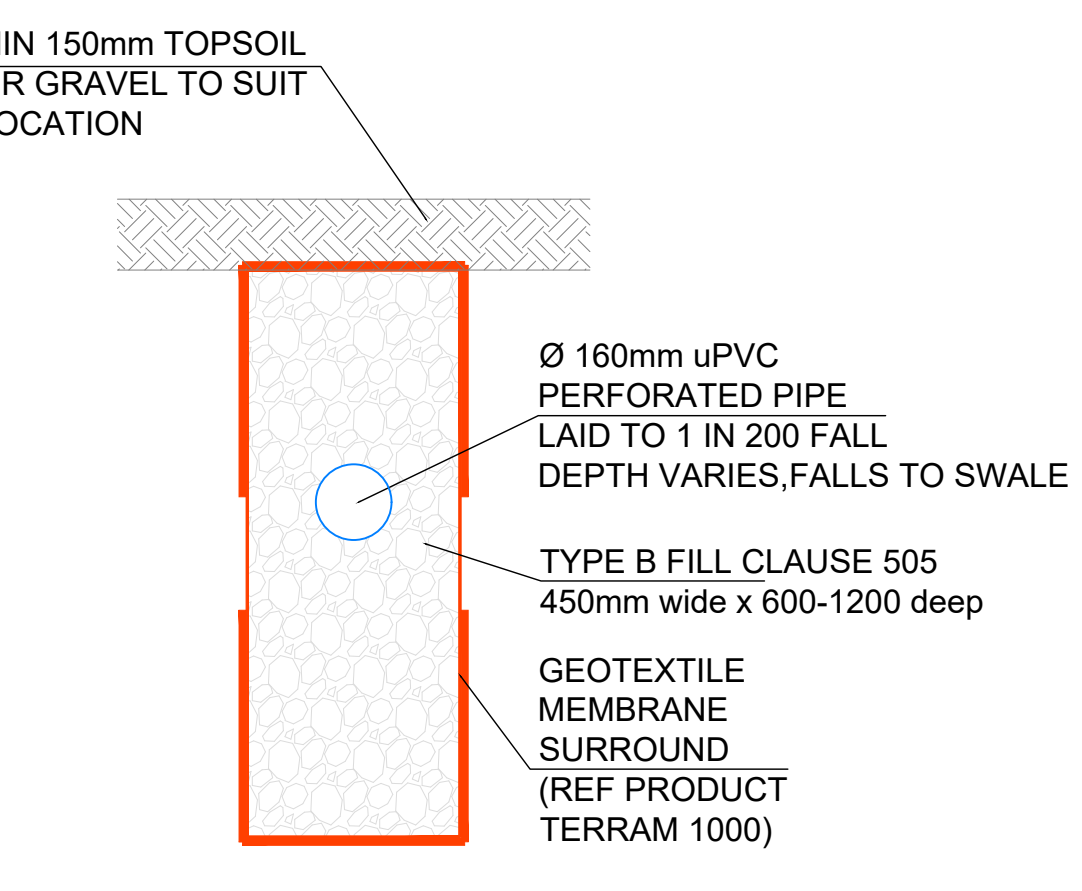
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DETAIL OF FRENCH DRAIN



DETAIL OF FILTER DRAIN



- new french drain with 100mmØ perforated pipe in gravel surround with geotextile wrap
- new surface water 150mmØ pipe roof rainwater overflow via rainwater storage butts connects to existing swale
- new foul sewer 150mmØ pipe with 600mmØ a/s connects to existing 300mmØ sewer within site
- existing 300mmØ sewer within site
- existing surface water 600mmØ pipe to remain
- new filter drain 600-1200 deep with 150mmØ pipe with connections to existing swale
- slot drain to edge of parking & at wall

Rev:	Note:
D4	Date: MAR '21 Drawn: RH Approved: AM
D3	Date: JAN '21 Drawn: JH Approved: AM
D2	Date: NOV '19 Drawn: PN Approved: JK
D1	Date: NOV '19 Drawn: PN Approved: JK

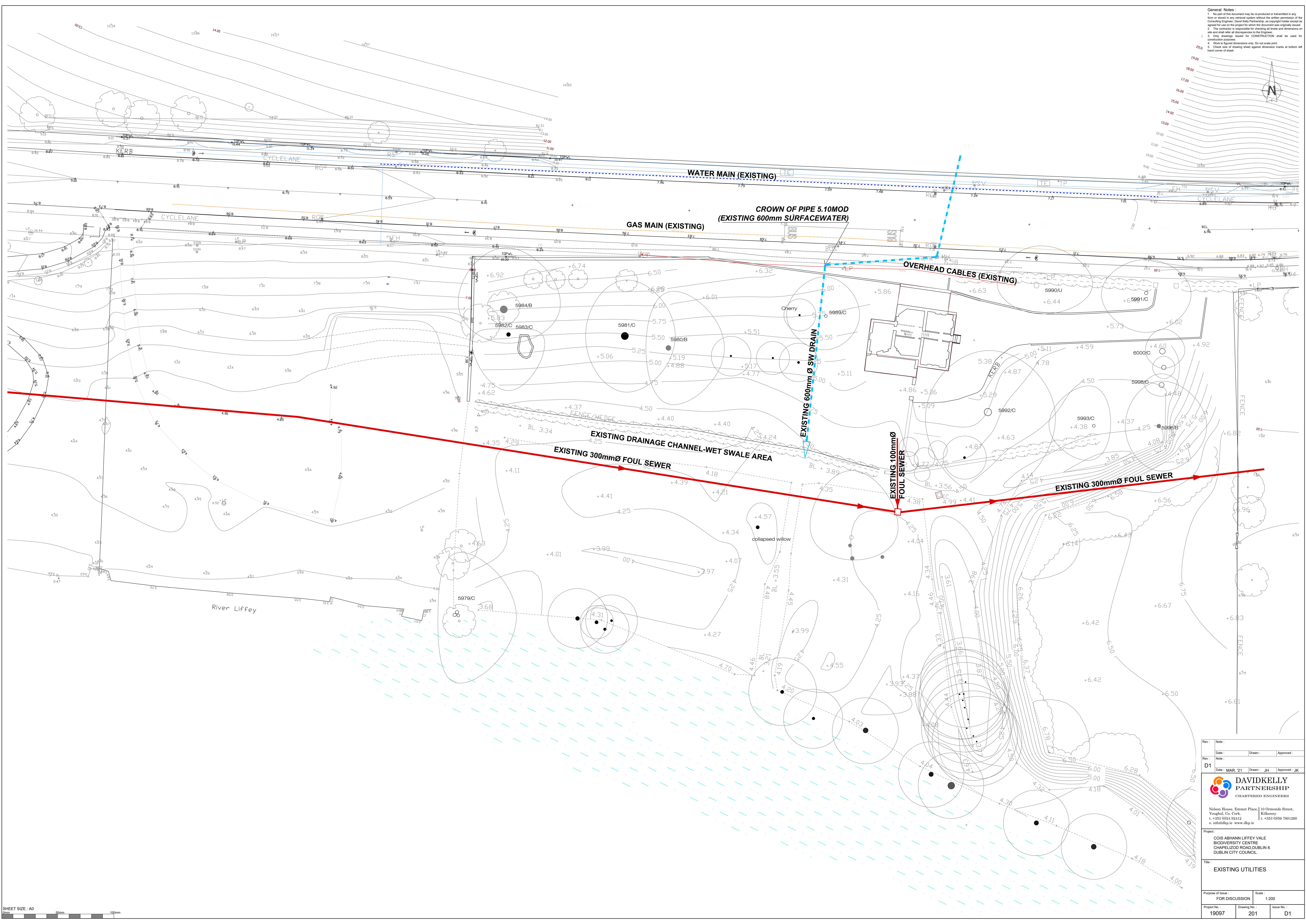
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Title:
PROPOSED DRAINAGE SCHEME

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		Issue No.:	D4



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Drawn:	JH
Approved:	JK



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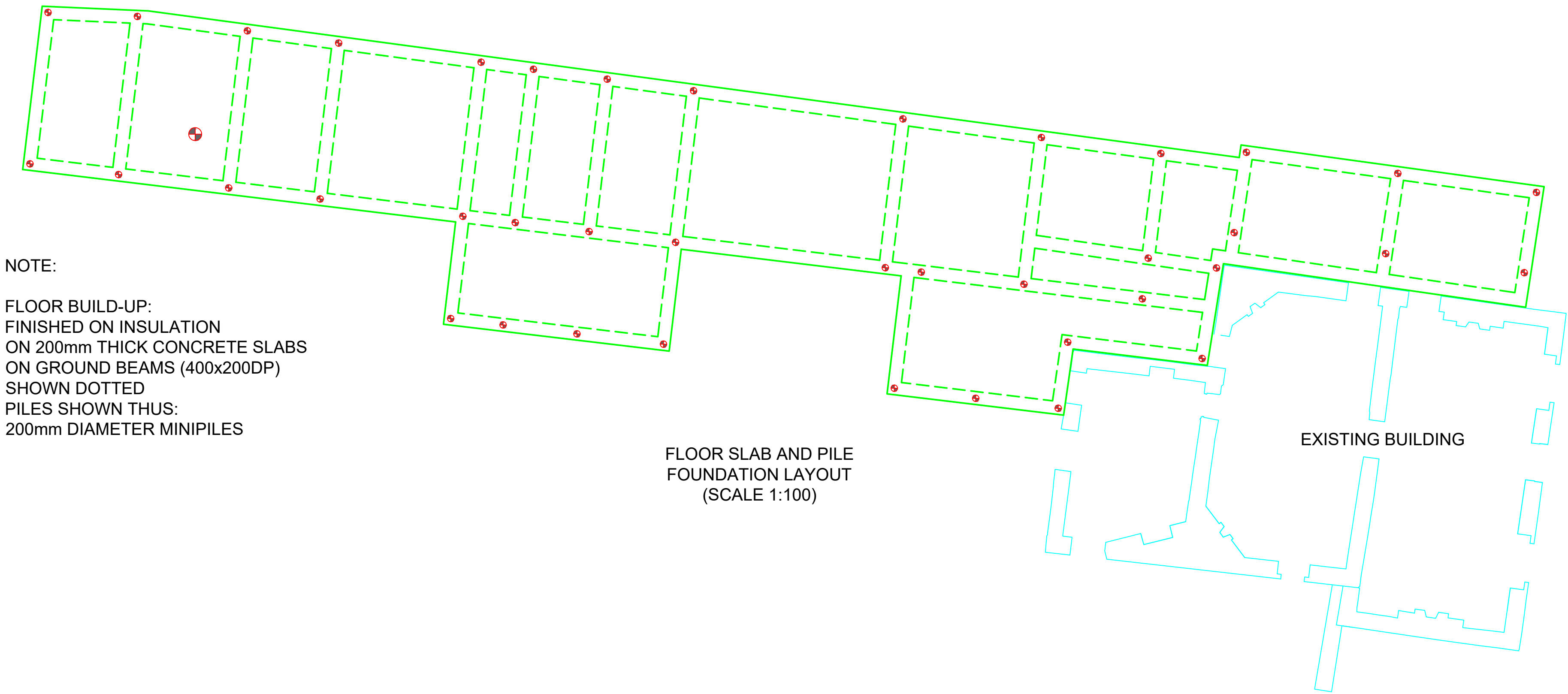
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Project:
COIS ABHANN LIFFEY VALE
BIO DIVERSITY CENTRE
CHAPELWOOD ROAD DUBLIN 8.
DUBLIN CITY COUNCIL.

Title:
EXISTING UTILITIES

Purpose of Issue:	FOR DISCUSSION	Scale:	1:200
Project No.:	19097	Drawing No.:	201
Issue No.:			D1

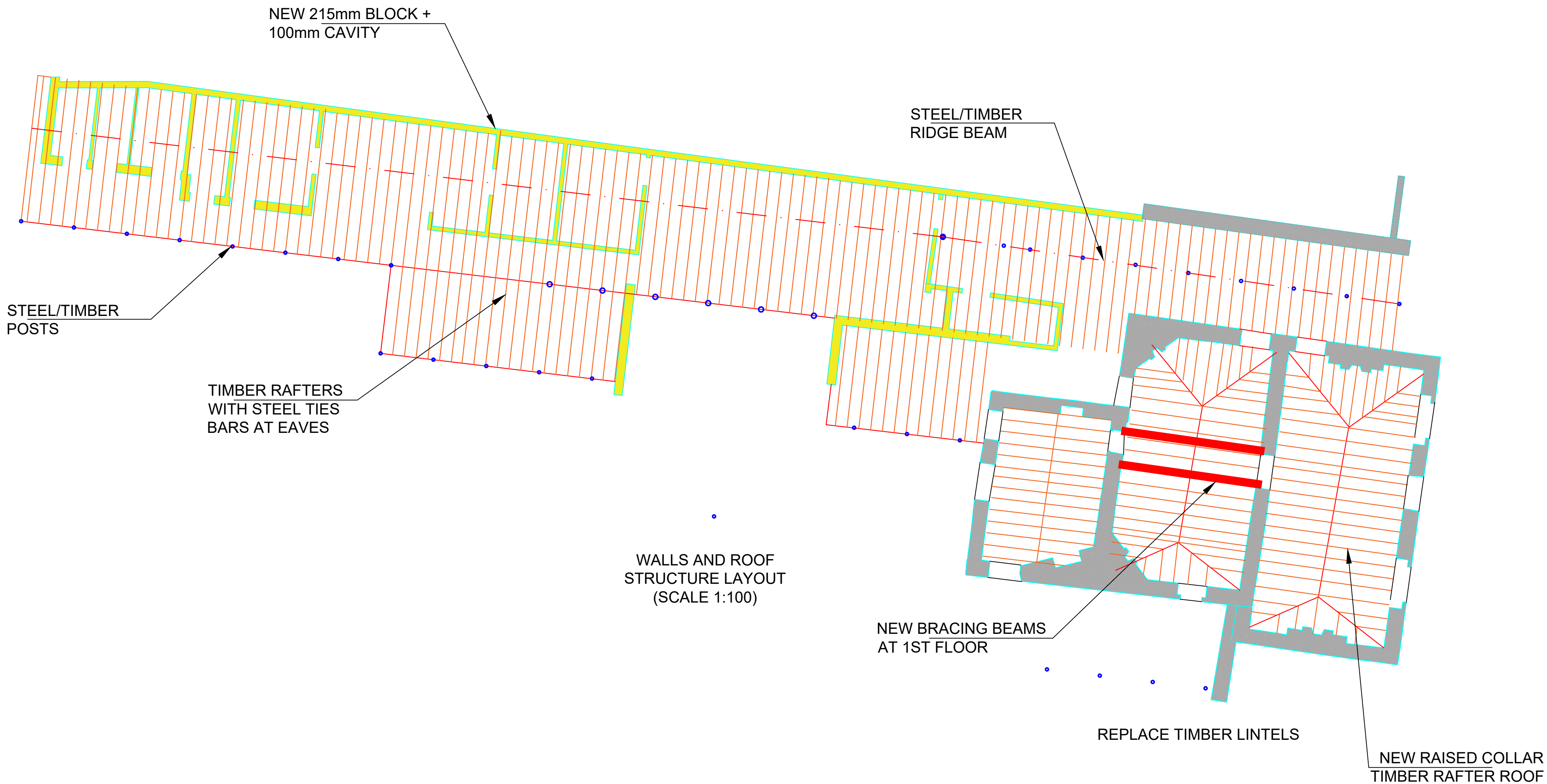


NOTE:

FLOOR BUILD-UP:
FINISHED ON INSULATION
ON 200mm THICK CONCRETE SLABS
ON GROUND BEAMS (400x200DP)
SHOWN DOTTED
PILES SHOWN THUS:
200mm DIAMETER MINIPILES

FLOOR SLAB AND PILE
FOUNDATION LAYOUT
(SCALE 1:100)

EXISTING BUILDING



NEW 215mm BLOCK +
100mm CAVITY

STEEL/TIMBER
RIDGE BEAM

STEEL/TIMBER
POSTS

TIMBER RAFTERS
WITH STEEL TIES
BARS AT EAVES


WALLS AND ROOF
STRUCTURE LAYOUT
(SCALE 1:100)

NEW BRACING BEAMS
AT 1ST FLOOR

REPLACE TIMBER LINTELS

NEW RAISED COLLAR
TIMBER RAFTER ROOF

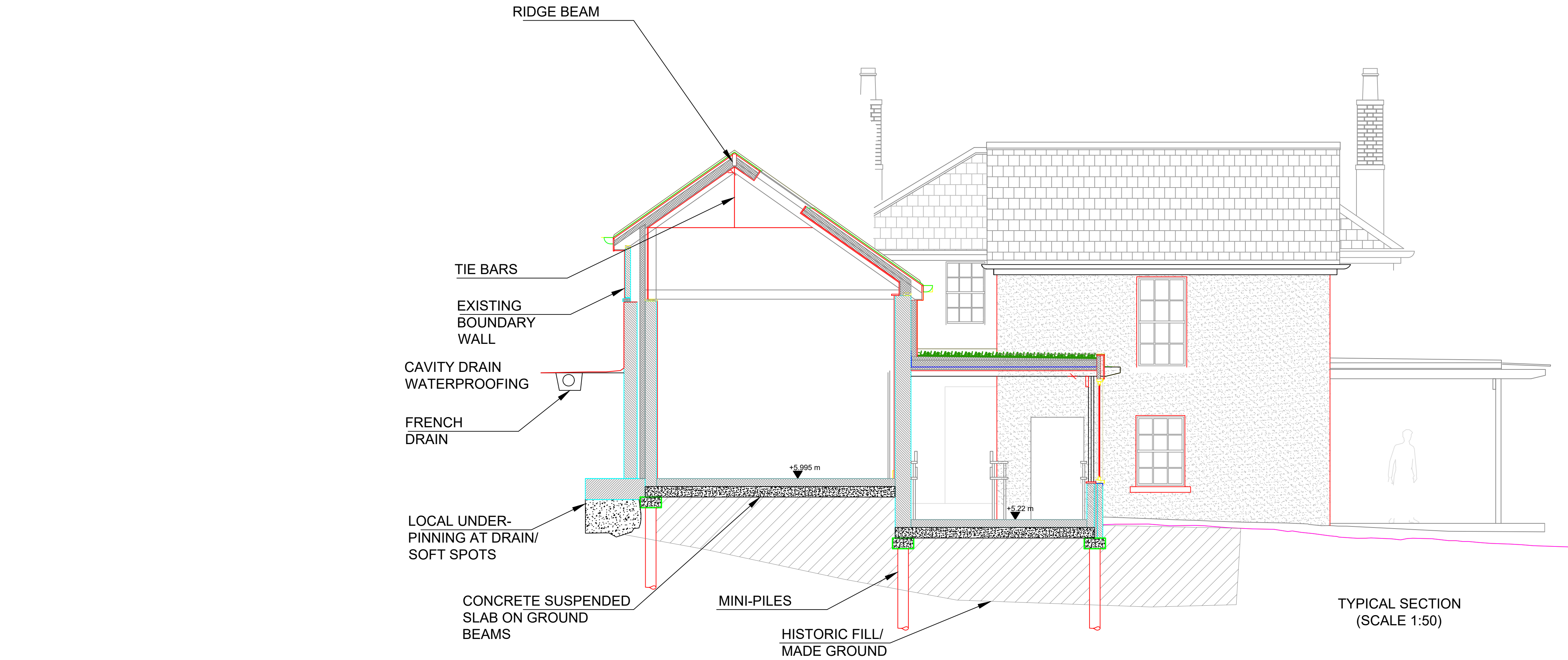
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 2. The contractor is responsible for checking all levels and dimensions on site and shall refer all discrepancies to the Engineer.
 3. Only drawings issued for CONSTRUCTION shall be used for construction purposes.
 4. Work to figured dimensions only. Do not scale print.
 5. Check size of drawing sheet against dimension marks at bottom left hand corner of sheet.

Rev :	Note :
Rev :	Note :
D1	Date : MAR '21 Drawn : PN Approved : JK
 DAVIDKELLY PARTNERSHIP CHARTERED ENGINEERS	
Nelson House, Emmet Place, 10 Ormonde Street, Youghal, Co. Cork. Kilkenny. t. +353 (0)24 92412 t. +353 (0)56 7801260 e. info@dkp.ie www.dkp.ie	
Project : COIS ABHANN LIFFEY VALE BIODIVERSITY CENTRE CHAPELIZOD ROAD, DUBLIN 8	
Title : PRELIMINARY PROPOSED PLANS	
Purpose of Issue : DRAFT	Scale : 1 : 100; 1:50
Project No. : 19097	Drawing No. : 200a
Issue No. : D1	


0mm 50mm 100mm

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0mm 50mm 100mm

Rev :	Note :		
Rev :	Date :	Drawn :	Approved :
D1	Date : MAR '21	Drawn : PN	Approved : JK
<div><div></div><div><div>DAVIDKELLY</div><div>PARTNERSHIP</div><div>CHARTERED ENGINEERS</div></div></div> <div>Nelson House, Emmet Place, Youghal, Co. Cork. t. +353 (0)24 92412 e. info@dkp.ie www.dkp.ie</div> <div>10 Ormonde Street, Kilkenny. t. +353 (0)56 7801260</div>			
Project : COIS ABHANN LIFFEY VALE BIODIVERSITY CENTRE CHAPELIZOD ROAD, DUBLIN 8			
Title : PRELIMINARY PROPOSED SECTION			
Purpose of Issue : DRAFT		Scale : 1:50	
Project No. : 19097	Drawing No. : 200b	Issue No. : D1	

APPENDIX B – DESIGNER’S ASSESSMENT OF RISK – PRELIMINARY STAGE



Nelson House, Emmet Place, Youghal, Co. Cork.
10 Ormonde Street, Kilkenny.

DESIGNER’S ASSESSMENT OF SAFETY AND HEALTH HAZARDS/RISKS																			
Project:		Liffey Vale																	
Job. No:		19097		Designer:		JK		Checker:		JK		Date:		03 03 2021		Sheet no:		01	
Design Stage: Stage 1: Preliminary																			
Note: review previous stage b/f items																			
No.		Key construction hazards (or risks) identified								Evaluations. Design decisions made (or alternative actions)									
1		New extension foundation excavations below level of existing boundary wall foundation could de-stabilise wall								A real risk given relatively poor ground conditions. Decision to keep foundation as high as possible by used piled foundation with suspended floor slab									
2		Existing boundary wall has limited capacity to accept additional load from new extension roof								Decision to support new extension roof on independent new columns.									
3		Retention of existing fire-damaged stairwell partition								Decision to remove as fire damage combined with decay in timber studs renders partition unstable and repairs would risk de-stabilising brick infill between the timber studs. Method statement will be required.									
4		Removal of embedded concrete from existing house external wall								Required. Method statement will be required.									
5		Some drainage works in lower meadows will be on potentially soft ground (depending on weather)								Highlight to PSDP/Preliminary Health and Safety Plan									
Notes re: providing information [see Chap 4]										Item Nos. (from above)					Remarks				
(a) for client’s designers [section 4.3]																			
(b) ‘Schedule 1’ hazards/particular risks [Box B]										5									
(c) other ‘particular risks’ [Box C]																			
(d) re: assumed construction methods [Box D]										3,4									
(e) for Safety File [section 4.5]																			
(f) in-house: b/f to future stages										1,2									

Other parties please take note: These are designer’s risk evaluations of design options carried out in-house for the purpose of our complying with designers’ duties under the Safety, Health and Welfare at Work (Construction) Regulations 2006. The evaluations relate only to those aspects/elements of the project which we are responsible for designing under the terms of our appointment by our client. Other parties should not rely on these evaluations for their own purposes; in particular, contractors, who must deal with and control all risks arising during construction, must carry out their own definitive risk assessments ab initio for that purpose.

APPENDIX C – IRISH WATER CONFIRMATION OF FEASIBILITY

John Kelly
Nelson House
Emmet Place
Youghal Co. Cork
Cork

15 March 2021

Re: CDS21001449 pre-connection enquiry - Subject to contract | Contract denied

Connection for Multi/Mixed Use Development of 2 unit(s) at Chapelizod Road, Dublin 8, Co. Dublin

Dear Sir/Madam,

Irish Water has reviewed your pre-connection enquiry in relation to a Water & Wastewater connection at Chapelizod Road, Dublin 8, Co. Dublin (the **Premises**). Based upon the details you have provided with your pre-connection enquiry and on our desk top analysis of the capacity currently available in the Irish Water network(s) as assessed by Irish Water, we wish to advise you that your proposed connection to the Irish Water network(s) can be facilitated at this moment in time.

SERVICE	OUTCOME OF PRE-CONNECTION ENQUIRY <u>THIS IS NOT A CONNECTION OFFER. YOU MUST APPLY FOR A CONNECTION(S) TO THE IRISH WATER NETWORK(S) IF YOU WISH TO PROCEED.</u>
Water Connection	Feasible without infrastructure upgrade by Irish Water
Wastewater Connection	Feasible without infrastructure upgrade by Irish Water
SITE SPECIFIC COMMENTS	
Water Connection	This Confirmation of Feasibility to connect to the Irish Water infrastructure does not extend to your fire flow requirements. Please note that Irish Water can not guarantee a flow rate to meet fire flow requirements and in order to guarantee a flow to meet the Fire Authority requirements, you should provide adequate fire storage capacity within your development.
Wastewater Connection	Please note that according to our records there is an existing 300 mm sewer running through this site (see drawing attached). It will not be permitted to build over any Irish Water infrastructure. The layout of the development must ensure that this pipe is protected and adequate separation distances are provided between Irish Water infrastructure and any structures on site. Alternatively you may enter into a diversion agreement with Irish Water and divert the pipe to accommodate your development. If you wish to proceed with this option please contact Irish



Uisce Éireann
Bosca OP 448
Oifig Sheachadta na
Cathrach Theas
Cathair Chorcaí

Irish Water
PO Box 448,
South City
Delivery Office,
Cork City.

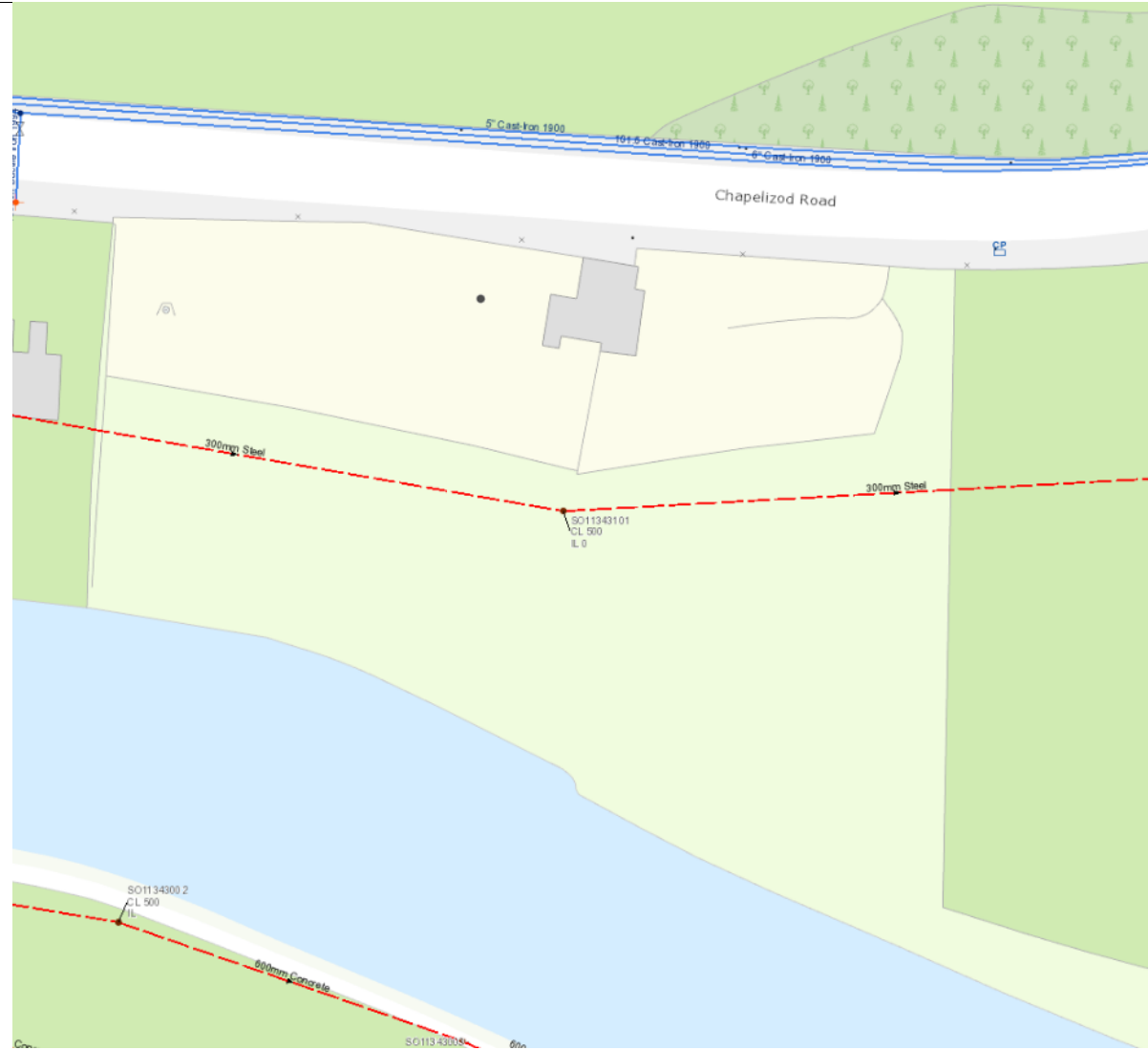
www.water.ie

Water at Diversions@water.ie and submit detailed design drawings before submitting your planning application.

It will be necessary to provide a wayleave over this pipe to the benefit of Irish Water and ensure that it is accessible for maintenance.

The design and construction of the Water & Wastewater pipes and related infrastructure to be installed in this development shall comply with the Irish Water Connections and Developer Services Standard Details and Codes of Practice that are available on the Irish Water website. Irish Water reserves the right to supplement these requirements with Codes of Practice and these will be issued with the connection agreement.

The map included below outlines the current Irish Water infrastructure adjacent to your site:



Reproduced from the Ordnance Survey of Ireland by Permission of the Government. License No. 3-3-34

Whilst every care has been taken in its compilation Irish Water gives this information as to the position of its underground network as a general guide only on the strict understanding that it is based on the best available

information provided by each Local Authority in Ireland to Irish Water. Irish Water can assume no responsibility for and give no guarantees, undertakings or warranties concerning the accuracy, completeness or up to date nature of the information provided and does not accept any liability whatsoever arising from any errors or omissions. This information should not be relied upon in the event of excavations or any other works being carried out in the vicinity of the Irish Water underground network. The onus is on the parties carrying out excavations or any other works to ensure the exact location of the Irish Water underground network is identified prior to excavations or any other works being carried out. Service connection pipes are not generally shown but their presence should be anticipated.

General Notes:

- 1) The initial assessment referred to above is carried out taking into account water demand and wastewater discharge volumes and infrastructure details on the date of the assessment. **The availability of capacity may change at any date after this assessment.**
- 2) This feedback does not constitute a contract in whole or in part to provide a connection to any Irish Water infrastructure. All feasibility assessments are subject to the constraints of the Irish Water Capital Investment Plan.
- 3) The feedback provided is subject to a Connection Agreement/contract being signed at a later date.
- 4) A Connection Agreement will be required to commencing the connection works associated with the enquiry this can be applied for at <https://www.water.ie/connections/get-connected/>
- 5) A Connection Agreement cannot be issued until all statutory approvals are successfully in place.
- 6) Irish Water Connection Policy/ Charges can be found at <https://www.water.ie/connections/information/connection-charges/>
- 7) Please note the Confirmation of Feasibility does not extend to your fire flow requirements.
- 8) Irish Water is not responsible for the management or disposal of storm water or ground waters. You are advised to contact the relevant Local Authority to discuss the management or disposal of proposed storm water or ground water discharges
- 9) To access Irish Water Maps email datarequests@water.ie
- 10) All works to the Irish Water infrastructure, including works in the Public Space, shall have to be carried out by Irish Water.

If you have any further questions, please contact Marko Komso from the design team on 022 54611 or email mkomso@water.ie For further information, visit **www.water.ie/connections**.

Yours sincerely,



Yvonne Harris

Head of Customer Operations

APPENDIX D – WATER ANALYSIS REPORT



City Analysts Limited,
Pigeon House Road,
Ringsend,
Dublin 4.

Tel: (01) 613 6003
Fax: (01) 613 6008

Email:
reports@cityanalysts.ie

www.cityanalysts.ie

Customer

Donncha O Dulaing
Dublin City Council
Civic Offices
Wood Quay
Dublin 1

Certificate Of Analysis

Job Number: 20-89221
Issue Number: 2
Report Date: 27 January 2021

Reason for re-issuing report: Client Request.

Site: Not Applicable
PO Number: 1264779
Date Samples Received: 01/12/2020

Please find attached the results for the samples received at our laboratory on 01/12/2020.

Should you have any queries regarding the report or require any further services, we would be happy to discuss your requirements. For additional information about the company please log-on to our website at the above address.

Thank you for choosing City Analysts Limited. We look forward to assisting you again.

Authorised By:

Louise Morrow

Authorised Date: 10 December 2020

Notes are not INAB accredited

Results relate only to the items tested.
Information on methods of analysis and uncertainty of measurement is available on request.
Any opinions or interpretations indicated are outside the scope of our INAB accreditation.
This test report shall not be reproduced except in full or with written approval of City Analysts Limited.



City Analysts Limited,
Pigeon House Road,
Ringsend,
Dublin 4.

Tel: (01) 613 6003
Fax: (01) 613 6008

Email:
reports@cityanalysts.ie

www.cityanalysts.ie

Certificate Of Analysis

Customer

Donncha O Dulaing
Dublin City Council
Civic Offices
Wood Quay
Dublin 1

Report Reference: 20-89221
Report Version: 2

Site: Not Applicable
Sample Description: Liffey Valley House Pond
Sample Type: Well
Lab Reference Number: 549861
Date of Sampling: 01/12/2020
Date Sample Received: 01/12/2020

Site / Method Ref.	Analysis Start Date	Parameter	Result	Units	PV Value (Drinking Water Only)
D/D3001#	02/12/2020	Aluminium, Total	10.4	ug/l	<= 200.0
D/D3000#	02/12/2020	Alkalinity CaCO3	254	mg/l	-
D/D3000#	02/12/2020	Ammonia as NH4	< 0.013	mg/l	<= 0.300
D/D1003	03/12/2020	BOD5	4	mg/l O2	-
D/D3001#	02/12/2020	Cadmium	< 0.2	ug/l	<= 5.0
*	-	Chlorophyll A	31.00	ug/l	-
D/D3001#	02/12/2020	Chromium	< 0.9	ug/l	<= 50.0
D/D1009	01/12/2020	COD	59	mg/l O2	-
D/D3011#	02/12/2020	Conductivity @ 20°C	699	uS/cm @20°C	<= 2500.0
D/D3001#	02/12/2020	Copper	< 2.0	ug/l	<= 2000.0
D/D1003	03/12/2020	Dissolved Oxygen	7.06	mg/l O2	-
D/D1003	03/12/2020	Dissolved Oxygen	66	%	-
D/D3001#	02/12/2020	Iron	123	ug/l	<= 200.0
D/D3001#	02/12/2020	Lead	< 1.7	ug/l	<= 10.0
D/D3001#	03/12/2020	Manganese	74.1	ug/l	<= 50.0
S/S3208	09/12/2020	Mineral Oil	< 1.00	mg/l	-
D/D3000#	02/12/2020	Nitrite as N	< 0.005	mg/l	-
D/D3000#	02/12/2020	Nitrate as N	< 2.00	mg/l	-

= INAB Accredited, U = UKAS Accredited, * = Subcontracted

Note:
PV Value is the parametric value, taken from European Communities, (Drinking Water) Regulations, 2014. S.I. No. 122 of 2014 and relates only to drinking water samples.
For queries on results, please contact us within two weeks of the report date to ensure that we can accommodate your query as samples cannot be stored indefinitely.
NAC & ATC - No abnormal change and acceptable to customers.
TVC - Total viable count
Site D = Analysed at City Analysts Dublin. Site S = Analysed at City Analysts Shannon



City Analysts Limited,
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Certificate Of Analysis

Customer

Donncha O Dulaing
Dublin City Council
Civic Offices
Wood Quay
Dublin 1

Report Reference: 20-89221
Report Version: 2

Site: Not Applicable

Sample Description: Liffey Valley House Pond

Date of Sampling: 01/12/2020

Sample Type: Well

Date Sample Received: 01/12/2020

Lab Reference Number: 549861

Site / Method Ref.	Analysis Start Date	Parameter	Result	Units	PV Value (Drinking Water Only)
D/D3001#	02/12/2020	Nickel	1.0	ug/l	<= 20.0
D/D1041#	02/12/2020	PH	7.15	pH Unit	6.50 - 9.50
D/D3000	02/12/2020	Phosphorus, Total as P04	< 6.12	mg/l	-
D/D3000#	02/12/2020	TON as N	< 2.00	mg/l	-
D/D1049	02/12/2020	Total Suspended Solids	92	mg/l	-
D/D3054#	02/12/2020	Turbidity	5.37	NTU	NAC & ATC
D/D3001#	02/12/2020	Zinc	46.1	ug/l	-
D/D1201#	01/12/2020	Coliforms	3370.0	MPN/100ml	<= 0.0
D/D1201#	01/12/2020	E.coli	2.0	MPN/100ml	<= 0.0

= INAB Accredited, U = UKAS Accredited, * = Subcontracted

Note:
PV Value is the parametric value, taken from European Communities, (Drinking Water) Regulations, 2014. S.I. No. 122 of 2014 and relates only to drinking water samples.
For queries on results, please contact us within two weeks of the report date to ensure that we can accommodate your query as samples cannot be stored indefinitely.
NAC & ATC - No abnormal change and acceptable to customers.
TVC - Total viable count
Site D = Analysed at City Analysts Dublin. Site S = Analysed at City Analysts Shannon

APPENDIX C

**COIS ABHANN LIFFEY VALE
BIODIVERSITY CENTRE.**

**FIRE SAFETY CERTIFICATE
COMPLIANCE DOCUMENT.**

BLACKWOOD ASSOCIATES.



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Glasgow
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info@flnconsult.com



Site: Cois Abhann Liffey Vale
Project: Biodiversity Centre
Project No: 3365.
Client: Blackwood Associates.



CONTENTS

1.0 INTRODUCTION 4
2.0 BACKGROUND 4
3.0 MECHANICAL SERVICES..... 4
4.0 ELECTRICAL SERVICES 8
5.0 APPENDIX A – MECHANICAL DRAWINGS..... 10
6.0 APPENDIX B – ELECTRICAL DRAWINGS..... 17

ISSUE STATUS

Revision	Date	Prepared by	Checked by	Purpose
P1	Sept 20	Donald Aiken		Initial Analysis
P2	11 th Dec 20	Donald Aiken		Revised Analysis
P3	18 th Feb 21	Donald Aiken	David Robertson	Updated analysis

SECTION A: INTRODUCTION

SECTION A1: GENERAL

FLN Consulting Engineers (FLN) have been appointed by Blackwood Associates (BA) to act as Fire Engineers and to submit a Fire Safety Certificate Application (FSCA) as part of the project for the Biodiversity Centre at Cois Abhann Liffey Vale. This document we only be applicable to the Biodiversity Centre and not to the general Gardens.

The basis for this review is to ensure that when completed the Biodiversity Centre Project will comply with Building Regulations Technical Guidance Document 'B' (TGD'B') – Fire Safety, as produced by the Department of Environment, Heritage and Local Government and all other referenced documents and standards.

This document is intended to demonstrate that, if the Biodiversity Centre works are carried out in accordance with the requirements of this report and the associated drawings, then the building will comply with the requirements of Part B (Fire Safety) of the Second Schedule of the Building Regulations and Technical Guidance Document 'B' (TGD'B'), 2006, Parts B1 to B5, Reprinted Edition 2020, Amendments and Corrections Incorporated.

The Biodiversity Centre will comprise the alteration and upgrading of the current existing main historic house to provide office, meeting and exhibition space and the creation of a new build visitor café, multipurpose room / education space and associated accommodation.

The following text will address the proposed fire and life safety provisions for and within the Biodiversity Centre works.

Section A2 of this report provides an overview of the building construction area and occupancy as proposed.

Section B, of the report is subdivided into sections to demonstrate compliance with Part B as follows:

- Section B.1: Part B1 – Means of Escape in Case of Fire.
- Section B.2: Part B2 – Internal Fire Spread (Linings).
- Section B.3: Part B3 – Internal Fire Spread (Structure).
- Section B.4: Part B4 – External Fire Spread.
- Section B.5: Part B5 – Access and facilities for the Fire Service.

Drawings to be read in conjunction with the report are detailed below, with revisions as stated on the drawing register:

- F[58]-001 FSCA Site Plan – Rev P1
- F[58]-002 FSCA Block Plan – Rev P1

- F[58]-010 FSCA Legend – Rev P1
- F[58]-100 FSCA, Ground Floor Plan, Fire Compartmentation. FFL +5.150, +5.525, +5.995 & +6.485 – Rev P1
- F[58]-110 FSCA, Ground Floor Plan, Travel Distance & Escape Widths. FFL +5.150, +5.525, +5.995 & +6.485 – Rev P1
- F[58]-200 FSCA, Section A-A – Rev P1
- F[58]-201 FSCA, Section B-B – Rev P1
- F[58]-202 FSCA, Section C-C – Rev P1
- F[58]-203 FSCA, Section G-G – Rev P1
- F[58]-300 FSCA, North Elevation – Rev P1
- F[58]-301 FSCA, South Elevation – Rev P1
- F[58]-302 FSCA, East Elevation – Rev P1

SECTION A2: DESCRIPTION OF WORK

This compliance document covers the proposed redevelopment of the existing house as part of the Biodiversity Centre Project at Cois Abhann Liffey Vale.

For the purposes of this compliance document, the building will be assessed as “Place of Assembly” under purpose group 5, and as such will comply with the requirements of TGD‘B’ and in particular for section B1 1.1 to 1.3 BS 5588-6: 1991 – Fire precautions in the design, construction and use of buildings – Part 6 Code of practice for places of assembly.

The Biodiversity Centre will be located within ground on the northern banks of the River Liffey at Longmeadow’s along Chapelizod Road. Access to the grounds is from Chapelizod Road.

The existing house is a Georgian House and a protected structure.

The proposed Biodiversity Centre accommodation is spread over various single storey levels through both existing derelict house and new visitor accommodation which will be connected by a series of ramps to allow universal access to all areas.

In the main house the accommodation is split over three ground levels, with a meeting/office space and reception/introduction area at the entrance level, exhibition space at mid-level and at the lowest level a second exhibition space with access to outside veranda.

To the rear of the main house there is a ramped area, interconnecting the three-house levels with the new building education centre and café.

The education centre comprises multipurpose space, café, servery, stores, and externally accessed toilets. The education centre is on the one level throughout.

The fabric of the existing house will be retained and sympathetically upgraded thermally where possible, while the new build will be of modern thermal construction.

The building although on various levels is single storey. The lowest external ground level around the building is +4.86, while the highest floor level is +6.485, hence the height to the top storey is 1.625m from lowest adjacent ground level.

The area, level, and height above grade for each floor within the development are given in Table A2.1 below.

Table A2.1: Floor Areas & Levels above Surrounding Grade

Level	Approximate Floor Area (m2)	Level Above or Below Surrounding Grade (& Floor Level) ^A (m)
House Top Level	43	+1.625 (+6.485)
House Mid-Level	36	+0.665 (+5.525)
House Lowest Level	19	+0.290 (+5.150)
Rear Ramped Area	45	Various
House Lowest to Mid-Level Ramped Area	16	Various
Education Centre & Cafe	95	+1.135 (+5.995)

Notes:

^A Grade taken as +4.86. Note levels vary around the perimeter of the Building.

Table A2.2: Summary of Building Depths and Heights

Depth of Basement from Highest Ground Level (m).	Height to Top Storey from Lowest Ground Level (m).	Height of Building – Mean Ground to Mean Roof Level (m)
n/a	+ 1.625 m	6.0 m

This report is to demonstrate that when completed the House and Garden Re-Wilding project will comply with the requirements of Part B (Fire Safety) of the Second Schedule of the Building Regulations and Technical Guidance Document ‘B’ (TGDB), 2006, Parts B1 to B5, Reprinted Edition 2020, Amendments and Corrections Incorporated and BS 5588-6: 1991 – Fire precautions in the design, construction and use of buildings – Part 6 Code of practice for places of assembly.

Compliance of the works in accordance with the Second Schedule of the Building Regulations is demonstrated in Section B of this document.

SECTION B: DEMONSTRATION OF COMPLIANCE

B1: MEANS OF ESCAPE IN CASE OF FIRE

Requirements in relation to Means of Escape in Case of Fire is demonstrated by compliance with BS 5588-6: 1991 – Fire precautions in the design, construction and use of buildings – Part 6 Code of practice for places of assembly; for TGD'B' Sub Sections 1.2: Design for horizontal Escape, Sub Section 1.3: Design for vertical escape.

Thereafter reference shall be made to TGD'B' Sub Section 1.4: General provisions for means of escape.

B1.0 Purpose Groups [TGD'B' Clause 0.3.2]

The defined purpose group shall be in accordance with Table B0.1.

Table B1.0: Purpose Group

Use	Group	Purpose for which a building or compartment of a building are used.
Place of Assembly & Recreation	5	Place of assembly or recreation including the following: (i) A theatre, public library, hall or other building of public resort used for social or recreational purposes. (iv) a public house, restaurant or similar premises used for the sale to members of the public of food or drink for consumption on the premise.

B1.1 Means of Escape Provisions for Different Purpose Groups and Building Types [TGD'B' Clause 1.1]

B1.1.1 Purpose Group 5 Assembly and Recreation [TGD'B' Clause 1.1.6]

Guidance for means of escape for Purpose Group 5, place of assembly and recreation buildings shall be demonstrated by compliance with TGD'B' Sub Sections;

- 1.2: Design for horizontal Escape,
- 1.3: Design for vertical escape,

Compliance of the above will be achieved with reference to BS 5588-6: 1991 – Fire precautions in the design, construction and use of buildings – Part 6 Code of practice for places of assembly.

- 1.4: General provisions for means of escape.

B1.2. Design for Horizontal Escape [BS5588 - 6
Clause 6.0]

B1.2.1 Occupancy [BS5588 – 6
Clause 6.6 Table 3]

Occupancy levels for the House Project for the various areas are detailed in Tables B1.2.2.A & B1.2.2.B., "Horizontal Escape Summary" and have been based on BS5588 - Part 6, Clause 6.6 Table 3, TGD'B' table 1.1 and summarised in Table B1.2.1.A : Occupancy Load Factors below.

Table B1.2.1.A: Occupancy Load Factors

Room/Area	Occupancy Load Factor (m2/person)
Exhibition ¹	1.5 or 0.4 over clear circulation routes
Museum / Art Gallery ¹	5.0
Restaurant	1.1 to 1.5
Meeting / Staff Room ²	1.0
Office (open plan) ²	5.0
Kitchen ²	7.0
Storage room ²	30

Notes:
¹ Taken from BS5588 – Part 6 Table 3
² Taken from TGD'B' Table 1.1.

B1.2.2 Travel Distances [BS5588 – 6
Clause 6.4 Table 2]

Critical travel distances are identified in Tables B1.2.2.B and B1.2.2.C, "Horizontal Escape Summary", for each room and are shown on the drawings associated with this application.

Within the building travel distances, where furniture or internal layout are known, is measured as the actual travel distance from the start point to storey exit.

In any other areas, where furniture/equipment layouts are unknown, the overall travel distance is calculated by multiplying the direct distance for the unknown section of travel by 1.5 and adding the remaining actual travel distance to the storey exit.

Travel distances have been based on BS5588 Part 6 Table 2 for open floor areas and table 8 for ancillary spaces, as noted and summarised in Table B1.2.2.A below.



Table B1.2.2.A: Maximum Travel Distances

Area	Escape in one direction only	Escape in more than one direction
All rooms	18m	45m
Plantroom (within Room)	9m	35m
Plantroom Total Travel (enclosed)	18m	45m

Table B1.2.2.B. Ground Floor Level - (FFL – +5.150, +5.525, +5.995 and +6.485: Level above Grade +0.29m, +0.665m, +1.135m and +1.625m)

Location/Room Reference	Occupancy Load Factor (m ² /person) ^A	Usage	Area (m ²)	Occupancy Actual or (Calculated)	Minimum Room Escapes Based on Occupancy		Maximum Travel Distance (m) ^B		Maximum Proposed Travel Distance (m) ^C	
					Req'd	Actual	One Direction of Travel	More than One Direction	One Direction of Travel	More than One Direction
@+6.485										
Entrance Corridor	Incidental	Circulation	6	Incidental	N/A	N/A	N/A	N/A	N/A	N/A
Office	No of seats or 5	Office open plan	21	8	1	1	18	45	10	N/A
Reception / Introduction	1.5	Exhibition	16.2	8 (10)	1	2	18	45	N/A	6.5
@+5.525										
Exhibition	1.5	Exhibition	36.5	30	1	2	18	45	N/A	14
@+5.150										
Exhibition	1.5	Exhibition	19	12	1	1	18	45	N/A	9
Ramped Area +5.150 to +5.525	Incidental	Circulation	29	Incidental	N/A	N/A	N/A	N/A	N/A	N/A
@Various levels										
Ramped Area (+6.485 to +5.525)	Incidental	Circulation	51	Incidental	N/A	N/A	N/A	N/A	N/A	N/A
Staff Toilet (+5.995)	Incidental	Toilet	4.6	Incidental	N/A	N/A	N/A	N/A	N/A	N/A
@+5.995										
Meeting / Interpretation	No of seats or 1	Meeting	48	(48)	1	1	18	45	9	N/A
Storage	30	Storage	8.7	Incidental	N/A	N/A	N/A	N/A	N/A	N/A
Food Store / Fridges	30	Storage	7.2	Incidental	N/A	N/A	N/A	N/A	N/A	N/A
Cafe	No of seats or 1.5	Restaurant	35.9	24 (24)	1	1	18	45	6.5	N/A
Kitchen/ Servery	7	Kitchen	19.2	(3)	1	1	18	45	14.5	N/A
Store / Fridges	30	Storage	8.8	Incidental	N/A	N/A	N/A	N/A	N/A	N/A
Total Occupants At this level				82 (135)						

Table B1.2.2C. External Accommodation (FFL +5.995: Level below Grade +1.135m)

Location/Room Reference	Occupancy Load Factor (m ² /person) ^A	Usage	Area (m ²)	Occupancy Actual or (Calculated)	Minimum Room Escapes Based on Occupancy		Maximum Travel Distance (m) ^B		Maximum Proposed Travel Distance (m) ^C	
					Req'd	Actual	One Direction of Travel	More than One Direction	One Direction of Travel	More than One Direction
Toilets	Incidental	Toilets	3.1	Incidental	1	1	N/A	N/A	N/A	N/A
Toilets	Incidental	Toilets	3.0	Incidental	1	1	N/A	N/A	N/A	N/A
Disabled Toilets	Incidental	Toilets	4.8	Incidental	1	1	N/A	N/A	3	N/A
Staff Toilet	Incidental	Toilet	4.4	Incidental	N/A	N/A	N/A	N/A	N/A	N/A
Total Occupants At this level				0 ^D (0)						

Notes

^A – Occupancy figures based on number of seats or where number of occupant's unknown, they will be calculated with occupancy load factor.

^B – Figure taken from Table B1.2.2.A: Maximum Travel Distances, are actual distance.

^C – Distances quoted are actual distance to storey exit, which is worst case distance. (i.e. any direct travel x 1.5 + any actual travel)

^D – Incidental use.

B1.2.3. Minimum Number of Escape Routes and Single Escape Route.

[BS5588 – 6
Clauses 6.4.2]

A minimum of 2 number escape routes will be required for escape from each room or storey where the occupants do not exceed 600.

A single direction of escape will be allowed where:

- The occupancy of the area, room or storey is less than 50 people, and;
- The limits of travel for one direction of travel are satisfied.

Where single means of escape is employed, in any part of the travel distance, these will be identified in Tables B1.2.2.B & B1.2.2.C, "Horizontal Escape Summary", for each room and are shown on the drawings associated with this application.

Table B1.2.3.A: Minimum number of escape routes.

Number of Occupants	Minimum number of escape routes
1 to 50	1 (See restrictions above)
1 to 600	2
More than 600	3

B1.2.4. Planning of Escape Routes and Exits

[BS5588 – 6
Clause 6.3.2]

The basic principle of escape route planning is to have very short escape routes or alternative means of escape.

The proposed building layout is mainly open plan and all rooms have an anticipated occupancy of less than 50 people. As such there are usually more than one escape route available and where there is only one escape route this can be reached within the one direction travel distance.

Due to the varying height difference of the spaces and the length of the interconnecting ramps, disabled escape has been considered to ensure access to exits are via two route where possible and within the required travel distances.

Existing building:

+6.485 escape is via the front entrance, while the reception area can escape through the rear ramped area to the Interpretation room.

+5.525 Escape is via front entrance, rear ramped area or via the lower exhibition space by ramp or doorway.

+5.150 Escape is direct to outside.

Note escapes down the rear ramp requires access through multi-purpose room to escape.

New build:

All rooms in the new build have direct access to outside for escape and can be reached within the one direction of travel distances.

Inner Rooms:

As the accommodation is open plan in the main existing areas there are no inner room but interconnected spaces.

The kitchen/servery areas is open plan but does require escape through an outer store room. The occupant will be familiar with the layout and it is open plan and hence is assumed to be acceptable.

The rear ramp is isolated and requires escape via other rooms, all within the max travel distances. The area will not be permanently occupied and as such is compliant.

Different Occupancy:

No areas have a different occupancy; hence all storeys/ rooms are in one ownership.

B1.2.5. Width of Escape Routes and Exits

[BS5588-6
6.6.2]

The required and proposed escape route widths from the areas are detailed in Table B1.2.5.A, below.

Table B1.2.5.A Width of Escape Routes

Location/Room Reference	Max. Occupancy (No. of People) ^A	Required Minimum Width of Escape Route (mm) ^B	Proposed Minimum Width of Escape Route (mm)	Escape Route Capacity (No. of People) ^C
All rooms	48	800	900	110

Notes

^A - Based on discounting one exit from area.

^B - Based on BS5588-6 Table 4

^C - Calculation of available escape route capacity takes account of the fact that the largest escape route may be unavailable.

Where door and a half or double door are provided the main door leaf should have the minimum required dimensions given above. Single doors will meet the widths quoted above.

Note the above widths will also apply to corridor doors on escape route to storey exit. The minimum corridors width will be a minimum of 150mm wider than the doors.

B1.2.6. Corridors

[TGD'B' Clause 1.2.5]

A protected corridor will be provided at the main front entrance of the building, to protect the escape from the two front rooms from the main exhibition space.

Sub-division of corridors will not be required as there are no corridors over 12m in length connecting two escape routes.

The rear ramped area is over the 12m in length but due to the height of the space at approx. 4.5m high, is assumed to be compliant.

There are no dead-end corridors.

B1.3. Design for Vertical Escape[BS5588-6
Clause 7.0]

The building is a single storey building and hence has no vertical escape routes. Reference clause applicable to this project shall be reviewed as necessary in this report.

B1.3.1 Number of Escape Stairs[BS5588-6
Clause 7.1 & 7.2]

Not applicable.

B1.3.2. Width of Escape Stairs[BS5588-6
Clause 7.1.2]

Not applicable.

B1.3.3. Protection of Escape Stairways

[TGD'B' Clause 1.3.6]

Not applicable

B1.3.4. Basement Stairways.[BS5588-6 Clause 7.2
TGD'B' Clause 1.3.7]

Not applicable

B1.3.4. Requirement for Protected Lobbies and Corridors.[BS5588-6 Clause 7.3.2
TGD'B' Clause 1.3.8.4]

Not applicable

B1.4. General Provisions for Means of Escape**B1.4.1. Protection of Escape Routes**

[TGD'B' Clause 1.4.2]

The fire resistance of all enclosures, door sets, and glazed elements will be to the minimum fire resistance test criteria and standards of performance to TGD'B' Appendices A & B and as indicated on Fire Safety drawings associated with this submission.

Fire rating of doors is in terms of integrity only and is demonstrated by testing in accordance with EN 1634 parts 1-3. The method of test exposure is from each side of the door separately.

B1.4.2. Doors on Escape Routes

[TGD'B' Clause 1.4.3]

Where Security on final exit door is required when the building is not occupied then hardware which is fully removable should be used. As this is an assembly building then the following is recommended.

Escape route doors, from all areas holding more than 50 people, will either be free from fastenings or be fitted with panic bolts complying with I.S. EN 1125, 1997.

Doors, other than those exit doors identified above, shall be fitted only with simple fastenings that can be operated from the escape side of the door without the use of a key.

Fire Safety in Places of Assembly (Ease of Escape) Regulations 1985 (S.I. No. 249 of 1985) should be consulted.

Doors on escape routes from a place of special fire risk or any room that is expected to hold more than 20 (assembly building) will be hung to open in the direction of escape.

In all cases in rooms where there is more than 20 people the escape door will opening in the direct of escape.

It should be noted that the final exit door on the front elevation will open inward due to the conversation and historic nature of this entrance. The building has multiple exit and is low occupancy and hence this is deemed to be acceptable.

All doors on escape routes will be hung to open a minimum of 90° and hence avoid reducing the door clearance width. They will be positioned to avoid, on opening, any reduction in stair or escape width.

Vision panels will be fitted in any doors sub-dividing escape routes.

B1.4.3 Construction of Escape Stairways

[TGD'B' Clause 1.4.4]

Not Applicable.

B1.4.4. Height of Escape Routes

[TGD'B' Clause 1.4.5]

All escape routes will have clear headroom of minimum 2m.

B1.4.5. Floors of Escape Routes

[TGD'B' Clause 1.4.6]

The floor of all escape routes should have non-slippery even surfaces.

Ramps shorter than 9m will not be steeper than 1 in 12 otherwise they shall be 1:20. Ramps will meet the requirements set out in TGD'K' & 'M'.

B1.4.6. Final Exits.

[TGD'B' Clause 1.4.7]

Widths of the Final Exits from the building are as shown in Table B1.4.6.1.A.

Table B1.4.6.1.A – Final Exit Widths.

Floor	Aggregate Occupancy Using Escape Route (No. of People) ^A	Width of Escape stair (mm)	Width of Final Exit Required (mm)	Width of Final Exit Available (mm)	Final Exit Capacity (No. of People)
Front Door	61	N/A	900	898	220
Exhibition Area Door	61	N/A	900	899	110
Education Room	85	N/A	900	930	110
Cafe	48	N/A	900	930	110

Notes

^A Figures calculated from maximum anticipated occupants existing from that area.**B1.4.7. Lighting of Escape Routes and Emergency Lighting**

[TGD'B' Clause 1.4.8]

Artificial lighting will be installed to illuminate the escape routes from the building development. Lighting installations shall be provided in accordance with CIBSE standards and guidance.

Emergency escape lighting will be provided:

- To indicate clearly and unambiguously the escape route so that the means of escape can be safely and effectively used;
- Provide illumination along such routes to allow safe movement towards and through the exits provided; and
- To ensure fire alarm call points and first aid firefighting equipment can be readily located.

Emergency lighting shall be non-maintained luminaries providing prompt lighting automatically in the event of local or complete failure of the power supply.

Emergency lighting will be provided for "defined and undefined escape routes" in accordance with TGD'B' Table 1.8. The installation shall be supplied and installed in accordance with the relevant recommendations of IS 3217:2013+A1:2017 "Code of Practice for Emergency Lighting", IS EN 1838 "Lighting Appliances – Emergency Lighting" and including, but not limited to, the following:

- Horizontal illumination at ground level on the centre line of defined escape route – 1 lux minimum and 0.5 lux minimum on un-defined escape routes.
- Response time to restore 50% of emergency lighting in 5 seconds maximum and full illuminance within 60s.
- At call points (break glass units) the minimum emergency lighting level provided shall be 5 lux.
- At disabled refuges, disabled refuge panel & at fire call points minimum emergency lighting level provided shall be 5 lux.
- Luminaries to comply with IS/IEC598-2-22.
- Flammability of luminaries to comply with IEC598-1 and IEC695-2-1, all external parts to be self- extinguishing within 30 seconds.
- Non-maintained emergency luminaires combined system for escape routes (i.e. sustained luminaries with 2 lamps).

B1.4.8. Lifts

[TGD'B' Clause 1.4.9]

No lifts are being installed as part of these works. Escape will be via ramps where required.

B1.4.8. Electrical Installation and Protected Circuits

[TGD'B' Clause 1.4.10]

All works in relation to the electrical installations shall be carried out with the requirements of National Rules for Electrical Installations (ET101) published by the Electro-Technical Council of Ireland.

The insulation of all electrical systems will comprise but not be limited to the following:

- Cable insulations will be flame retardant conforming to BS EN 60332 and be of low smoke zero halogen (LS0H).
- Electrical fittings will have a minimum index protection rating of IP20, in accordance with BS EN 60529.
- Electrical light fittings will not create a concentration of heat (heat spots) which might present a fire risk.

Any motors installed for moving the compact storage should be limited to 0.75kW motor size.

B1.4.9. Ventilation Systems

[TGD'B' Clause 1.4.11]

All ventilation systems shall be designed and installed in line with the guidance given with TGD'B' Clause 1.4.11.

B1.4.10. Refuse Chutes and Storage

[TGD'B' Clause 1.4.12]

Refuse chutes and storage areas will not be allowed within the building.

A refuse bin storage area will be provided within an external area between servery and staff toilet.

B1.4.11. Fire Safety Signs

[TGD'B' Clause 1.4.13]

Fire safety signs will be installed to guide users to escape routes and exit doors. All signs shall be illuminated either internally or externally. Signage shall also be provided at firefighting equipment, fire call points and fire doors in accordance with SI 132 of the Safety, Health & Welfare at Work (Signs) Regulations, 1995.

Fire doors will be fitted with kept shut signage in accordance with BS 5499: Part 5: 2002 unless they are held open by electromagnetic devices connected to the AFDA system.

The requirements of the Fire Services Act, 1981 & 2003, and BS 5499: "*Graphical symbols and signs – safety signs including fire safety signs, Part 5: Signs with specific safety meanings*" will also be met.

B1.4.12. Fire Detection and Alarm Systems

[TGD'B' Clause 1.4.14]

Due to the nature of the building a minimum L3 system will be installed into the building in accordance with IS 3218: 2013.

The system will be either an aspirating detection system (ASD) or high sensitivity point detectors to provide a high sensitivity smoke detection.

The following standards shall be used and complied with:

- IS 3218: 2013 +A1:2019 Code of Practice for Fire Detection and Alarm Systems for Buildings.
- IS EN 54: Parts 5, 7 and 8 Detection Devices.

Call points will be sited to provide maximum 30m travel and generally be at final exit and stair landings.

The following will automatically activate when the AFD&A activates:

- Active fire safety systems will automatically operate as required by the AFD&A system.

B1.4.13. Provisions for People with Disabilities

[TGD'B' Clause 1.4.15]

The Fire Brigade will not be relied upon to evacuate the building. This is the responsibility of the building occupier.

Staff shall be aware of the number of people requiring assistance in the event of an emergency evacuation and will have management procedures in place for this to occur (e.g. in the form of PEEP's).

The design of the building allows for level or ramped access to all areas of the building accommodation and the escapes have been designed to ensure that disabled occupants can self-escape within the travel distances noted in the report.

One disabled refuge has been allowed for at the front of the building, as the access ramp passes areas of glazing within 1.8m of the escape ramp. The glazing to the office adjacent to the disabled refuge will be 30min fire rated to protect the disabled refuge from any radiant fire threat from this space.

B1.4.14. First-Aid Fire-Fighting Equipment

[TGD'B' Clause 1.4.16]

First-aid fire-fighting equipment will be provided in the form of portable fire extinguishers in accordance with TGD'B'.

The first-aid firefighting equipment will comply with IS 291:2015 and shall be installed, inspected & maintained in accordance with the requirements of EN3-7:2004+A1:2007.

Where the first aid firefighting equipment is located in recesses or concealed boxes, adequate signage shall be installed as to be easily identifiable. Signage shall comply with SI 132 of the Safety, Health & Welfare at Work (Signs) Regulations, 1995. The requirements of the Fire Services Act, 1981, and BS5499: "*Graphical symbols and signs – safety signs including fire safety signs, Part 5: Signs with specific safety meanings*".

B1.4.15. Heating Producing Appliances

[TGD'B' Clause 1.4.17]

No new gas equipment is proposed for within the building under these works.

All proposed heat producing equipment shall be installed in accordance with the requirements of TGD'J'.

B1.5 Conclusion to Section B.1

When the Biodiversity Centre Project at Cois Abhann Liffey Vale is completed, it will comply fully with the requirements of Part B1, "Means of Escape Provisions for Different Purpose Groups and Building Types" of the Second Schedule of the Building Regulations.

B.2: INTERNAL FIRE SPREAD (LININGS)

Requirements in relation to Internal Fire Spread (Linings) is demonstrated by compliance with the relevant sections of Technical Guidance Document 'B', Section B2.

B.2.1. General Provisions

[TGD'B' Clause 2.1]

Finishes on walls and ceilings will be restricted by their surface rate of flame propagation which is graded in accordance with National (or European) Classes per Appendix A to TGD'B' Clauses A6-A8. The classes of linings required for walls and ceilings are defined in Table 2.1 below.

Table 2.1. Class of Lining Required for Walls & Ceilings.

Class ¹	Rooms
Class B – s3, d2 (Class 0)	In rooms exceeding 30m ² in Places of Assembly
Class B – s3, d2 (Class 0)	In places of special fire risk
Class B – s3, d2 (Class 0)	Circulation Spaces
Class D – s3, d2 (Class 3)	In bathrooms toilets and shower rooms.
Class C – s3, d2 (Class 1)	In all other rooms (not noted above)

¹ The Class Linings are defined as:

Class 0: achieved where:

- Either where the material and its substrate (if it is a composite product) is either composed throughout of materials of limited combustibility (when tested in accordance with BS476, Part 11; or
- A Class 1 material which has a fire propagation index (I) of not more than 12 and a sub-index (II) of not more than 6.

Class 1 or 3: Performance demonstrated by testing for surface spread of flame in accordance with BS476, Part 7.

B.2.2. Windows, Rooflights and Lighting Diffusers

[TGD'B' Clause 2.3.2,
2.3.3 & 2.3.4]

Any new windows, rooflights and lay-lights that are installed into the building will not be constructed from thermoplastic materials.

The use of thermoplastic in lighting diffusers shall be in accordance with the guidelines in TGD'B' Clause 2.3.4.

B.2.3. Conclusion to Section B2

When the Biodiversity Centre Project at Cois Abhann Liffey Vale is completed, it will comply fully with the requirements of Part B2, "Internal Fire Spread (Linings)" of the Second Schedule of the Building Regulations.

B3: INTERNAL FIRE SPREAD (STRUCTURE)

Requirements in relation to Internal Fire Spread (Structure) is demonstrated by compliance with the relevant sections of Technical Guidance Document 'B', Section B3.

B.3.1. Fire Resistance Standard

[TGD'B' Clause 3.1.2]

The required fire resistance of load-bearing elements of the structure is defined in Table 3.1

Table B3.1: Minimum Fire Resistance of Loadbearing Elements.

Location	Height/Depth (m)	Design Reference	Minimum Period of Fire Resistance (mins)
Load-bearing Elements	<5m	TGDB, Table A2	60 mins
Compartment walls & floors	<5m	TGDB, Table A2	60 mins
Areas Generally	<5m	TGDB, Table A2	60 mins
Protected Shafts	<5m	TGDB, Table A2	60 mins
Protected Lobby/Corridor	<5m	TGDB, Table A1	30 mins
Place of Special Fire Risk	<5m	TGDB, Table A2	60 mins
Cavity Barriers	<5m	TGDB, Table A1	30 mins
Static Invertor rooms and sub systems.	Any	IS 3217 Clause 10.4	120 mins
Any enclosure containing any distribution boards, generator, communication equipment and any other equipment associated with life safety and fire protection systems	Any	BS 8519	120 mins

1. For compartment walls, compartment floors and separating walls – fire resistance is defined in terms of Stability (S), Integrity (E) and Insulation (I) when tested in accordance with EN 1366.

2. For structural frames, beams or columns – fire resistance is defined in terms of Load-bearing capacity only.

3. Method of exposure:

- i. Structural frame, beam or column – exposed faces.
- ii. Load-bearing walls – each side separately
- iii. Floors – from underside
- iv. External wall – each side separately.

B.3.2. Compartmentation

[TGD'B' Clause 3.2]

Compartmentation will be provided to help prevent the spread of smoke and fire and to help minimising the size of a fire. Details of compartmentation are given below.

B.3.2.1. Provision of Compartment Walls and Compartment Floors

[TGD'B' Clause 3.2.4]

As the building is single storey, hence compartment floors will not be required.

The maximum compartment acceptable by TGD'B' for assembly buildings is 1900m² floor area on any one storey and a volume of 21,000m³. The maximum floor area of the Biodiversity Centre Project is 260m² which is well below the maximum compartment sizes allowed. The building will comprise one compartment.

All junctions of compartment walls with compartment floors will be sealed to prevent the passage of fire products between compartments.

B.3.2.2. Fire Resistance of Timber Floor in Existing Buildings

[TGD'B' Clause 3.2.5.3]

As the Biodiversity Centre Project is a historic building with timber floors. Where required they will be upgraded to ensure compliance with the minimum fire resistance standard noted above.

B.3.2.3. Compartment walls

[TGD'B' Clause 3.2.5.4]

The compartment walls shall be constructed of materials of limited combustibility, apart from any wall surface complying with the requirements of B2, internal fire spread (linings).

B.3.2.4. Separating Walls

[TGD'B' Clause 3.2.5.5]

There will be no separating walls.

B.3.2.5. Accommodation of Services in Compartment Walls/Floors and Separating Walls

[TGD'B' Clause 3.2.5.7]

Where services pass through these compartment walls or floors, they will be contained in fire resistant ducts and the opening of the ducts protected and fire-stopped, in accordance with Clause 3.4 of TGD'B'.

No services will be allowed to breach the fire rating materials of the compartment wall. Any services mounted on a compartment wall will either be surface, accommodated in a services duct or service cavity created external to the unbreached linings of the fire compartment wall or floor.

B.3.2.6. Junction of Compartment Wall or Compartment Floor with Other Walls

[TGD'B' Clause 3.2.5.9]

Where a compartment wall/floor meets another compartment wall or external wall the junction will maintain the fire resistance of the compartmentation as noted above.

B.3.2.7. Junction of Compartment Wall and Roof

[TGD'B' Clause 3.2.5.11]

The junction, where any compartment walls meet the roof, shall be constructed to prevent the spread of fire between compartments. The gap between the top of the compartment wall and the roof structure shall be no greater than 50mm and shall be filled with a fire stopping material, to the rating of the wall, over the full width of the wall. Typical details are provided in Diagram 13 of TGD'B'.

B.3.2.8. Openings Between Compartments

[TGD'B' Clause 3.2.6]

All doors openings in a compartment wall will be protected by means of a fire door, with the appropriate fire resistance.

Openings for the passage of ducts pipes and other services will be protected in accordance with Clause 3.4 of the TGD'B'.

B.3.2.9. Protected Shafts

[TGD'B' Clause 3.2.7]

All service shafts will be enclosed in a minimum of 30 mins fire rated enclosure in accordance with Tables A1 and A2. Mechanical, electrical, telecommunications, and other breeches are to be appropriately dampered and/or patched with like fire resistance materials in accordance with Part B, Section 3.4.

Where the shafts penetrate compartment walls/floor they will be fire stopped at the floor level or the shaft will be fire rated through its entire height to the same rating as the compartment wall/floor.

The M&E risers will have minimum 60 mins fire rating or 120 mins where enclosing static inverters or associated emergency lighting system supply equipment.

Glazed elements that give at least 30 minutes fire resistance in terms of integrity only can be incorporated into part of the enclosure between the shaft and the corridor or lobby if the principles in Diagram 15 and the provisions of Table A4 of Appendix A are met.

B.3.3. Concealed Spaces (Cavities)

[TGD'B' Clause 3.3]

B.3.3.1. Provisions of Cavity Barriers[TGD'B' Clause 3.3.2 &
Clause 3.3.3]

Cavity barriers shall be provided in accordance with the recommendations of TGDB, Clause 3.3.2., Table 3.2. Cavity barriers shall be installed at a maximum of 20m apart along any voids.

B.3.3.2. Construction and fixing of Cavity Barriers[TGD'B' Clause 3.3.4 &
Clause 3.3.5]

Every cavity barrier shall be constructed to provide a minimum fire resistance of 30mins (Integrity) and 15mins (Insulation) when tested in accordance with BS 476.

Cavity barriers may be formed by:

Timber construction – minimum 38mm thick.

Steel construction – 0.5mm thick.

Cavity barriers shall be tightly fitted to rigid construction and mechanically fixed into position. The fixings shall ensure that the barrier is unlikely to be made ineffective due to movement of the building, collapse in a fire of any services penetrating them, failure in fire of their fixings or failure in fire of any material or construction to which they abut.

Openings in the cavity barriers shall be limited to those identified in TGDB, Clause 3.3.5.

B.3.4. Protection of Openings and Fire-Stopping

[TGD'B' Clause 3.4]

B.3.4.1. Protection of Openings

[TGD'B' Clause 3.4.1]

All penetrations for services shall be fire stopped to prevent the spread of fire by sealing using proprietary fire-stopping materials in accordance with TGDB, Clause 3.4. In particular service penetrations of the designated barriers are to be protected in accordance with the relevant recommendations of BS 8313: 1997 and BS 5588.

B.3.4.2. Opening for Pipes

[TGD'B' Clause 3.4.2]

Pipes passing through compartment walls or compartments floors will be installed to the provisions detailed in Alternatives A, B or C of TGD'B', Clause 3.4.2.

B.3.4.3. Venting Ducts

[TGD'B' Clause 3.4.3]

Where these ducts pass from one compartment to another, they shall be protected in accordance with the recommendations contained in BS 5588 Part 9 for ventilation and air conditioning ductwork and in this case rated to the fire requirements of the wall they are passing through.

B.3.4.4. Fire-Stopping

[TGD'B' Clause 3.4.5]

All service penetrations or openings shall be fire stopped in accordance with all the provisions of TGD'B', Clause 3.4.5.

B.3.5. Conclusion to Section B3

When the Biodiversity Centre Project is completed, it will comply fully with the requirements of Part B3, "Internal Fire Spread (Structure)" of the Second Schedule of the Building Regulations.

B4: EXTERNAL FIRE SPREAD (LININGS)

Requirements in relation to External Fire Spread is demonstrated by compliance with the relevant sections of Technical Guidance Document 'B', Section B4.

B.4.1. Construction of External Walls [TGD'B' Clause 4.1]

B.4.1.1. Fire Resistance Standard [TGD'B' Clause 4.1.2]

All external walls on the building are/will be constructed of Class B – s3, d2 (European) or Class 0 (National), non-combustible materials including masonry, metal cladding and glass.

They will not provide a medium for fire travel, and are in compliance with TGD'B', Table 4.1.

B.4.1.2. External Fire Spread [TGD'B' Clause 4.1.4]

External surfaces of the buildings have been constructed using materials with a Class B – s3, d2 (European) or Class 0 (National) rating where the external surface is less than 1m to the relevant boundary as building is less than 18m in height.

B.4.1.3. External Wall Construction [TGD'B' Clause 4.1.5]

The existing external walls which will remain and will not provide a medium for fire travel.

Over cladding of the building is not being proposed.

B.4.2. Space Separation [TGD'B' Clause 4.2]

B.4.2.1. Boundaries [TGD'B' Clause 4.2.2]

Boundaries for the Biodiversity Centre building are shown on Drawing No. F[58]-002.

B.4.2.2. External Walls 1m or More from the Relevant Boundary [TGD'B' Clause 4.2.8]

The external walls will remain as existing under this project and hence there will be no change to the external fire threat posed to the adjacent building, which are on the same site and ownership as the development.

Calculations were however undertaken based on BRE Report 187 and are shgown on drawings F[58]-300, 301 and 302.

All unprotected areas on the elevations are well within the distance to the relevant boundaries and are compliant.

B.4.2.3. Material Alteration of Existing Buildings [TGD'B' Clause 4.2.9]

Calculations, based on BRE Report 187, have however been undertaken and are shown on Drawings F[58]-300, 301 and 302.

B.4.3. Roof Covering [TGD'B' Clause 4.3]

B.4.3.1. Classification of Performance [TGD'B' Clause 4.3.3]

The roof covering for the Biodiversity Centre Project will be as defined in Table B4.3.1.

Table 4.3.1: Designation of Roof Covering.

Location	Minimum Designation Required ¹	
	European Class	National Class
All Roofs	B _{Roof} (t4)	AA, AB or AC

Notes on Table 4.3.1:

- ¹ Performance in terms of the resistance of roofs to external fire exposure is determined either by:
- (European Tests) Commission Decisions 2005/823/EC amending Decision 2001/671/EC of 22nd November 2005 establishing a classification system for the external fire performance of roofs and roof coverings and any subsequent amendments;
 - I.S.ENV 1187: 2002; or
 - (National Tests) BS 476, Part 3: 2004.

B.4.3.2. Plastic Rooflights [TGD'B' Clause 4.3.5]

Plastic rooflights will not be used in the redevelopment.

B.4.3.3. Glass in Rooflights [TGD'B' Clause 4.3.6]

Roof lights will be installed within the rear ramped area to provide nature daylight to this space. The roof light will be glazing will be rated to comply with Table B4.3.1 above.

B.4.4 Conclusion to Section B4

When the Biodiversity Centre Project is completed, it will comply fully with the requirements of Part B4, "External Fire Spread" of the Second Schedule of the Building Regulations.

B5: ACCESS AND FACILITIES FOR THE FIRE SERVICE

Requirements in relation to Access & Facilities for the Fire Service is demonstrated by compliance with the relevant sections of Technical Guidance Document 'B', Section B5.

B.5.1. Provisions of Internal Fire Mains

[TGD'B' Clause 5.1.2]

There will be no part of the building more than 20m above external ground level or greater than 10m below external ground and as such an internal fire main is not required.

B.5.1.2. Provisions of Hydrants

[TGD'B' Clause 5.1.7]

The building will not require to have on site hydrants as it does not have a floor area of more than 1000m².

There are existing street located hydrants which have been highlighted on the site and block plans.

B.5.2. Vehicle Access

[TGD'B' Clause 5.2]

B.5.2.1 Provisions of Vehicle Access

[TGD'B' Clause 5.2.2]

In accordance with Table 5.1 access should be provide to the building on the basis of 2.4m for every 90m² of ground floor. Assuming a floor area of 260m² then access will be required to 7.2m of the building perimeter by a pump appliance.

The front elevation of the building is approx. 14m and as such the building is therefore compliant.

B.5.2.2 Existing buildings

[TGD'B' Clause 5.2.3]

The main structure of the building is existing and as the development has a floor area of 260m² and is single storey then the pumping appliance can be located within 45m of the principal entrance.

B.5.2.2. Design of Access Routes and Hard-standings

[TGD'B' Clause 5.2.4]

Where access to the building is provided the following clearances would be required for a Pump Appliance:

- Minimum width of road between kerbs – 3.7m
- Minimum width of gateways – 3.1m.
- Minimum turning circle between kerbs – 16.8m.
- Minimum turning circle between walls – 19.2m
- Minimum clearance height – 3.7m.
- Minimum carrying capacity – 12.5 tonnes.

These dimensions have been shown on both Site and Block Plans F[58]-001 and 002.

B.5.3. Personnel Access to Buildings for Firefighting [TGD'B' Clause 5.3]

B.5.3.1. Provision of Firefighting Shaft [TGD'B' Clause 5.3.2]

No floor in the Biodiversity Centre is over 20m above ground level or 10m below ground and therefore firefighting shafts are not required.

B.5.4. Areas Requiring Special Considerations [TGD'B' Clause 5.4]

B.5.4.1. Boiler Rooms and Fuel Stores [TGD'B' Clause 5.4.1]

No Gas-fired equipment is proposed within the building.

B.5.4.2. High Voltage Discharge Lighting [TGD'B' Clause 5.4.2]

No high voltage discharge lighting is proposed within the building.

B.5.4.3. Ventilation of Heat and Smoke [TGD'B' Clause 5.4.3]

Not applicable.

B.5.5 Conclusion to Section B5

When the Biodiversity Centre Project is completed, it will comply fully with the requirements of Part B5, "Access and Facilities for the Fire Service" of the Second Schedule of the Building Regulations.

Drawing/Document Issue Sheet

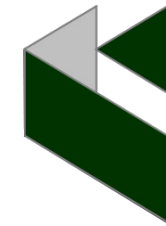
PROJECT: Cois Abhann Liffey Vale, Biodiversity Centre

JOB NO: 3365

DISCIPLINE: Fire Safety Certificate

PAGES: **PAGE 1 OF 1**

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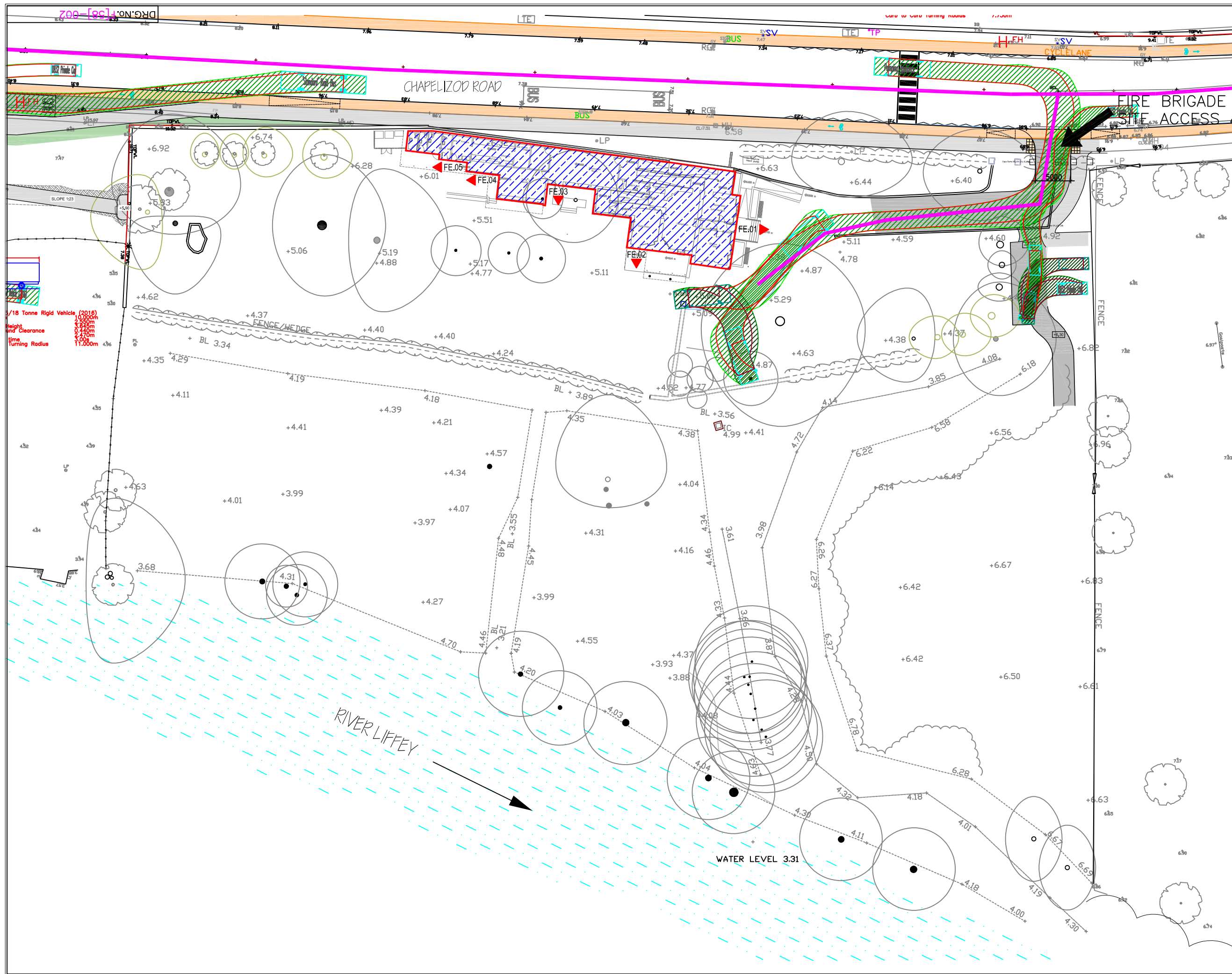
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Directors: Donald G Aiken BEng (Hons), CEng, MEI, AASHRAE, David H Robertson BSc (Hons), MSc, CEng, MCIBSE, MIET
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COIS ABHANN: Liffey Vale House & Gardens

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Drg Status PRELIMINARY				
Architect BLACKWOOD ASSOCIATES				
Contract COIS ABHANN LIFFEY VALE BIODIVERSITY CENTRE				
Title FIRE SAFETY CERTIFICATE APPLICATION SITE PLAN				
Dwn ADC	Date SEPT 2020	Chk DGA	Date	
Scale 1:1000 @ A3			(or as shown)	
Scale			Current Rev P1	
JOB No. 3365				
DRG. No. F[58]-001				


















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- NOTES
- KEY:
- SITE BOUNDARY
 - AREA BEING DEVELOPED
 - FIRE BRIGADE ROUTE
 - FINAL EXIT
 - HYDRANT

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Title FIRE SAFETY CERTIFICATE APPLICATION BLOCK PLAN				
Dwn ADC	Date SEPT 2020	Chk DGA	Date	
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JOB No. 3365				
DRG. No. F[58]–002				

FCSA	
DRIV 	Dry Riser Inlet Valve
DRLV 	Dry Riser Landing Valve
FIB 	Foam Inlet Box
FAP 	Fire Alarm Panel - Main
FARP 	Fire Alarm Panel - Repeater
MAIN 	Emergency Telephone - Main Unit
FIRE 	Emergency Telephone - Fire Brigade Use
LH 	Emergency Telephone - Lift Handset
DR 	Emergency Telephone - Disabled Refuge
DR 	Disabled Refuge - Min Dims 1,400mm x 900mm
	Emergency Hold Open Device
FE 	Final Exit
SE 	Storey Exit
	Travel distance (Direct Travel Distance in brackets)
	Exit Signage (Arrow Designating Direction of Escape)
<p>Width of a doorway:- is the clear width when the door or doors are open.</p> <p>Width of Escape Route:- is the width at 1500mm above floor level when defined by walls (handrails fixed to walls which do not intrude more than 100mm into this width may be ignored) or elsewhere the minimum width of passage available between any fixed obstructions.</p> <p>Width of a Stairway:- is the clear width between the walls or balustrades, (strings and handrails intruding not more than 30mm and 300mm respectively may be ignored).</p> <p>Emergency lighting shall be designed, installed and maintained in accordance with IS 3217.</p> <p>The building will be provided with a L3 automatic fire detection and alarm system, to be designed, installed and maintained in accordance with IS 3218.</p>	

FIRE RESISTANCE	
	Fire resisting doorset achieving 240 minutes fire resistance (integrity only) in accordance with EN 1634, Parts 1-3. Doors fitted with smoke seals to achieve a leakage rate not exceeding 3m3/m/hour (head and jams) when tested at 25 Pa.
	Fire resisting doorset achieving 120 minutes fire resistance (integrity only) in accordance with EN 1634, Parts 1-3. Doors fitted with smoke seals to achieve a leakage rate not exceeding 3m3/m/hour (head and jams) when tested at 25 Pa.
	Fire resisting doorset achieving 90 minutes fire resistance (integrity only) in accordance with EN 1634, Parts 1-3. Doors fitted with smoke seals to achieve a leakage rate not exceeding 3m3/m/hour (head and jams) when tested at 25 Pa.
	Fire resisting doorset achieving 60 minutes fire resistance (integrity only) in accordance with EN 1634, Parts 1-3. Doors fitted with smoke seals to achieve a leakage rate not exceeding 3m3/m/hour (head and jams) when tested at 25 Pa.
	Fire resisting doorset achieving 30 minutes fire resistance (integrity only) in accordance with EN 1634, Parts 1-3. Doors fitted with smoke seals to achieve a leakage rate not exceeding 3m3/m/hour (head and jams) when tested at 25 Pa.
	Fire resisting doorset achieving 60 minutes fire resistance (integrity only) in accordance with EN 1634, Parts 1-3.
	Fire resisting doorset achieving 30 minutes fire resistance (integrity only) in accordance with EN 1634, Parts 1-3.
	Fire resisting lift doors achieving 60 minutes fire resistance (integrity only) in accordance with EN 81-58 From Landing Side only. If machine roomless lift is installed, doors to be fitted with smoke seals.
	Fire resisting lift doors achieving 30 minutes fire resistance (integrity only) in accordance with EN 81-58 - From Landing Side only. If machine roomless lift is installed, doors to be fitted with smoke seals.
<p>The fire doors and fire ratings noted refers to the whole door assembly including, door leaf, frame, ironmongery etc. required to achieve the fire ratings when tested in accordance with EN 1634, Parts 1-3.</p> <p>Fire doors shall be fitted with automatic self closing devices capable of closing the door from any angle and against any latch fitted to the door.</p>	
<p>Cavity Barriers: shall be fitted to and within voids in construction and to openings around doors/windows or other penetrations to provide a fire resistance in accordance with TGD'B', Table A1 providing 30 minute Integrity / 15mins Insulation, constructed in accordance with Clause 3.3.4 and at distance no more than Table 3.3.</p>	

FIRE RESISTANCE	
	Compartment wall/floor achieving 240 minutes fire resistance (stability, integrity and insulation) in accordance with BS476: Parts 8, 20-24. Fire rated partitions to extend full height to underside of floor slabs.
	Compartment wall/floor achieving 120 minutes fire resistance (stability, integrity and insulation) in accordance with BS476: Parts 8, 20-24. Fire rated partitions to extend full height to underside of floor slabs.
	Compartment wall/floor achieving 90 minutes fire resistance (stability, integrity and insulation) in accordance with BS476: Parts 8, 20-24. Fire rated partitions to extend full height to underside of floor slabs.
	Compartment wall/floor achieving 60 minutes fire resistance (stability, integrity and insulation) in accordance with BS476: Parts 8, 20-24. Fire rated partitions to extend full height to underside of floor slabs.
	Compartment wall/floor achieving 30 minutes fire resistance (stability, integrity and insulation) in accordance with BS476: Parts 8, 20-24. Fire rated partitions to extend full height to underside of floor slabs.
	Smoke Curtain (Integrity Only)
	Fire Curtain (Coloured to Identify Rating)
	Fire Shutter (Coloured to Identify Rating)

FIRE EXTINGUISHERS	
	6 litre AFFF
	6kg Dry Powder
	5kg CO ₂
	Fire Blanket
Fire extinguishers will be provided to the requirements of IS EN 3-7 and IS 291.	

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NOTE

1. This drawing to be read in conjunction with all other fire strategy drawings and documents.

2. All dimensions in mm and show minimum required widths.

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FIRE SAFETY CERTIFICATE APPLICATION LEGEND				
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JOB No. 3365				
DRG. No. F[58]-010				

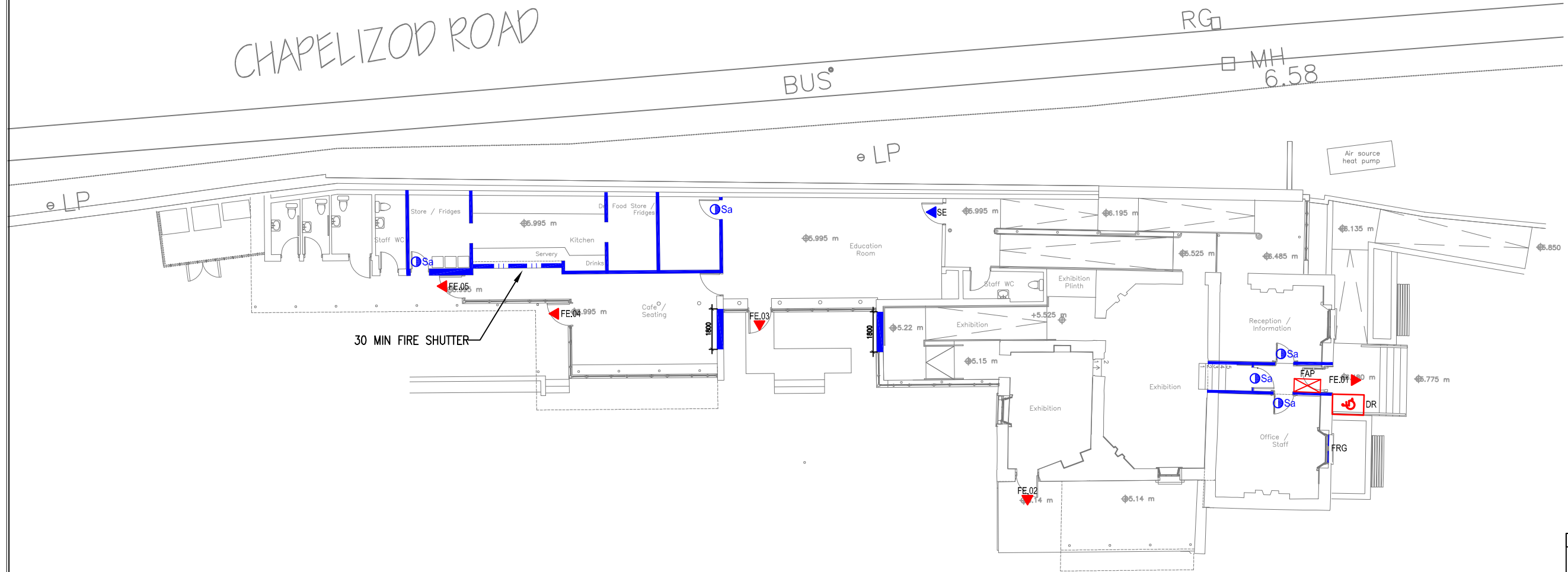
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Contract COIS ABHANN LIFFEY VALE BIODIVERSITY CENTRE				
Title FIRE SAFETY CERTIFICATE APPLICATION GROUND FLOOR COMPARTMENTATION				
Drm ADC	Date SEPT 2020	Chk DGA	Date	
Scale 1:200 @ A3 (or as shown)				Current Rev P1
JOB No. 3365				
DRG. No. F[58]-100				

NOTES

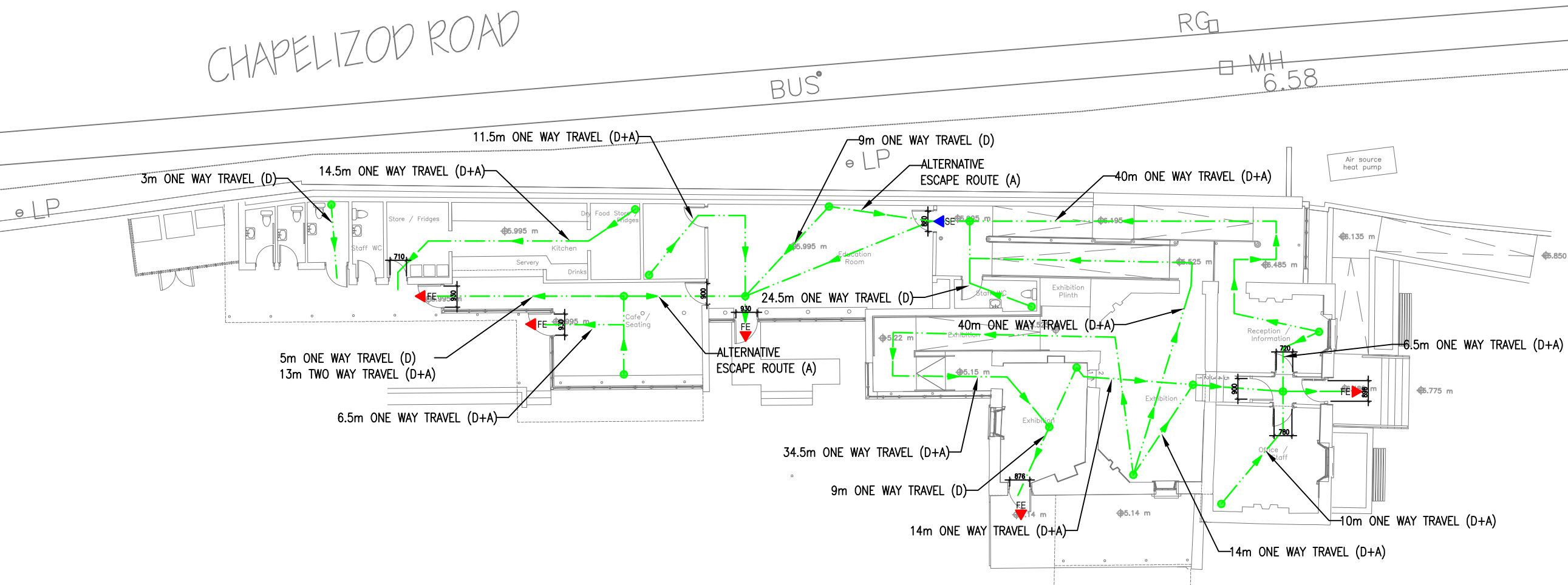
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CHAPELIZOD ROAD

BUS

RG

MH
6.58



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Contract COIS ABHANN LIFFEY VALE BIODIVERSITY CENTRE				
Title FIRE SAFETY CERTIFICATE APPLICATION GROUND FLOOR TRAVEL DISTANCES & ESCAPE WIDTHS				
Drm ADC	Date SEPT 2020	Chk DGA	Date	
Scale 1:200 @ A3 (or as shown)				Current Rev P1
JOB No. 3365				
DRG. No. F[58]-101				

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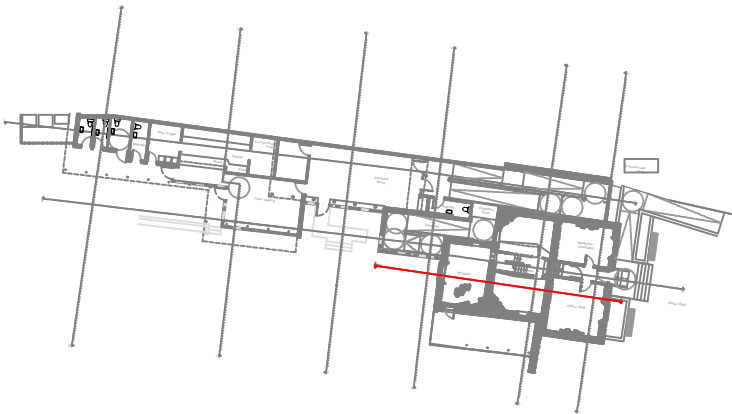
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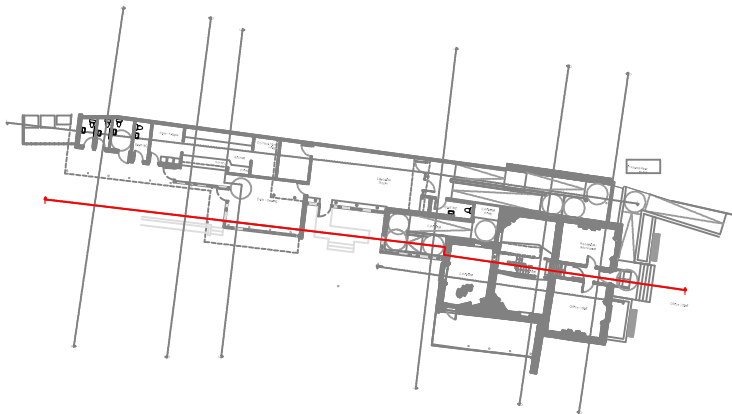
Section A-A



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Title				
FIRE SAFETY CERTIFICATE APPLICATION SECTION A-A				
Drn	ADC	Date	SEPT 2020	Chk DGA
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DRG. No. F[58]-200				



Section B-B

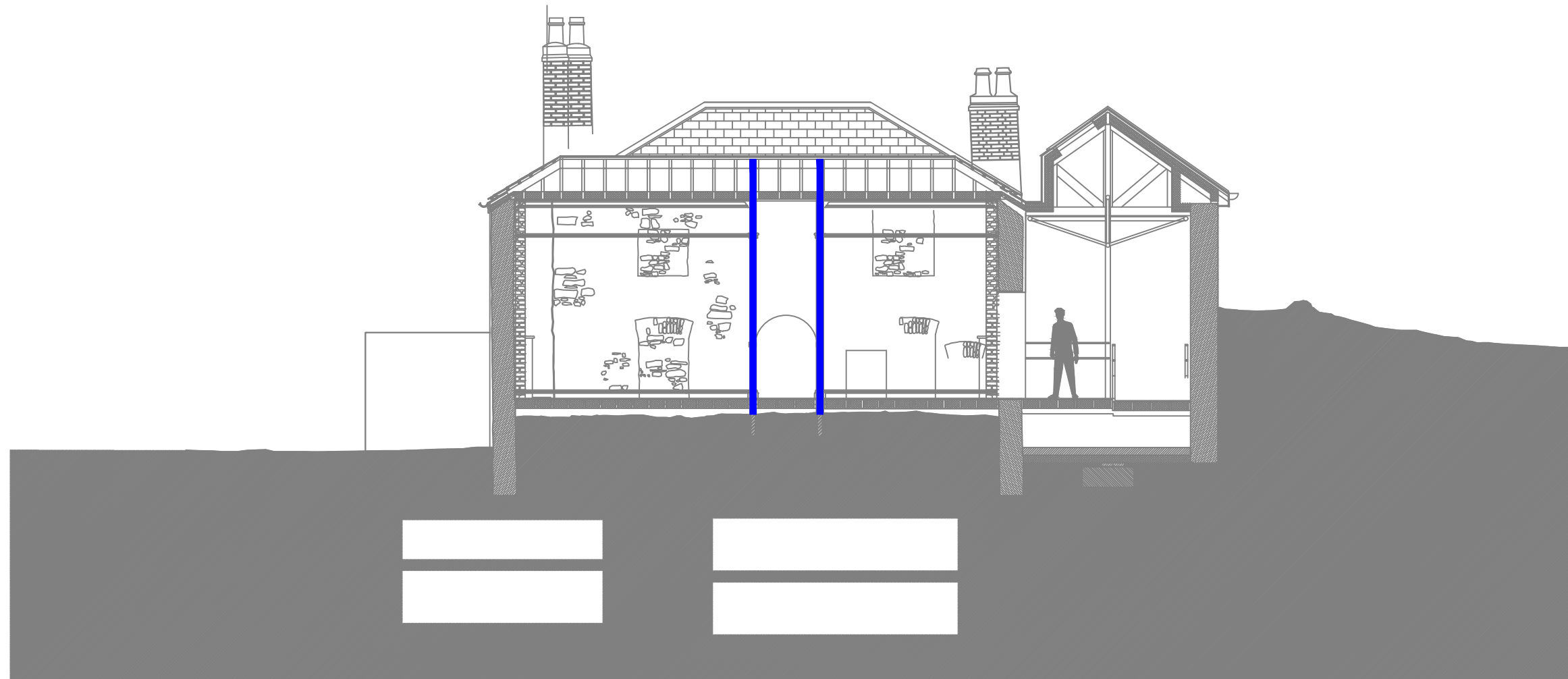


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Title				FIRE SAFETY CERTIFICATE APPLICATION SECTION B-B
Drm	ADC	Date	SEPT 2020	Chk DGA
Scale 1:125 @ A3				(or as shown) Current Rev P1
JOB No.				3365
DRG. No.				F[58]-201

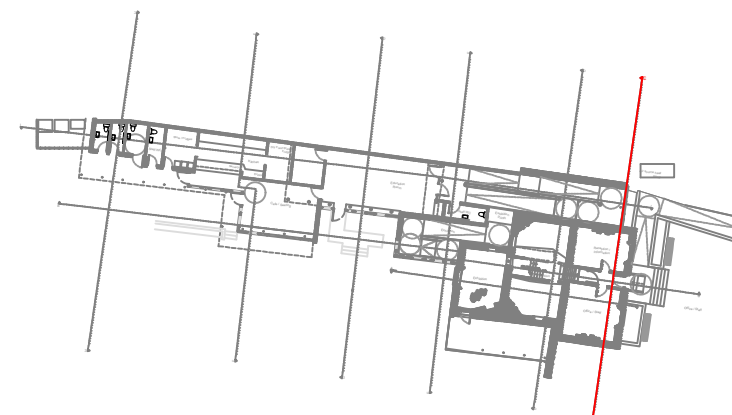
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Section C-C



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Contract COIS ABHANN LIFFEY VALE BIODIVERSITY CENTRE				
Title FIRE SAFETY CERTIFICATE APPLICATION SECTION C-C				
Drn ADC	Date SEPT 2020	Chk DGA	Date	
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JOB No. 3365				
DRG. No. F[58]-202				

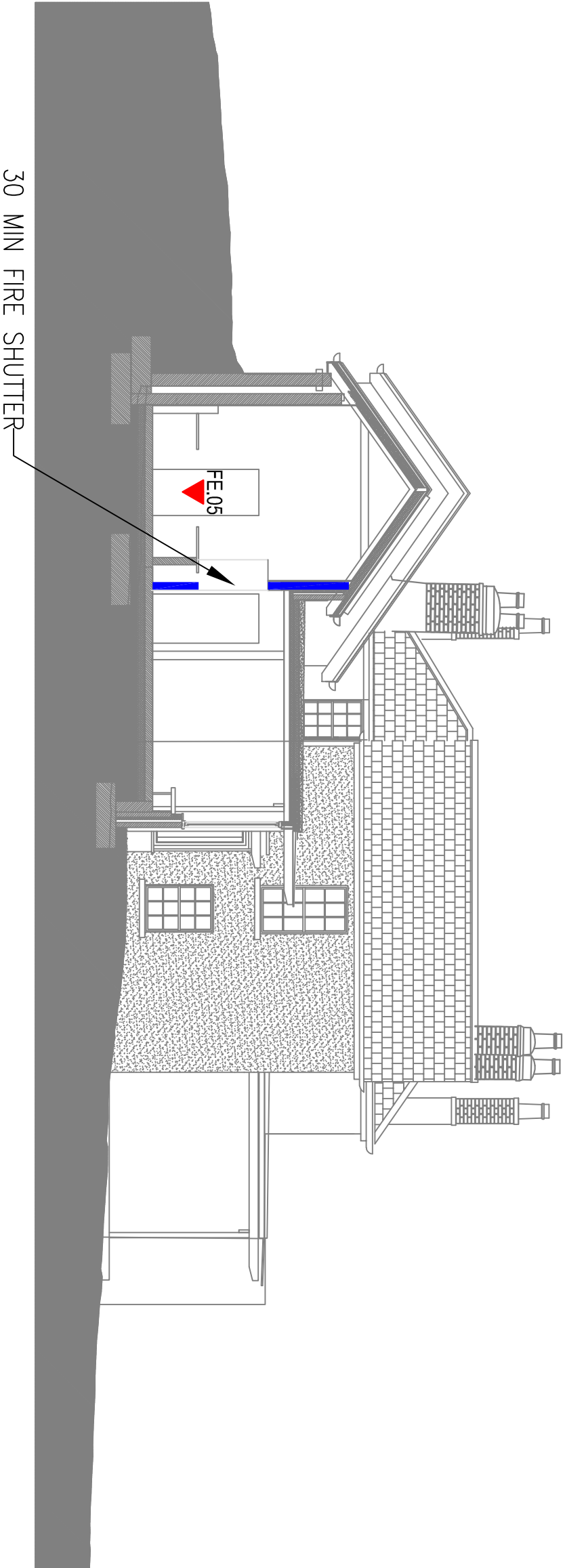
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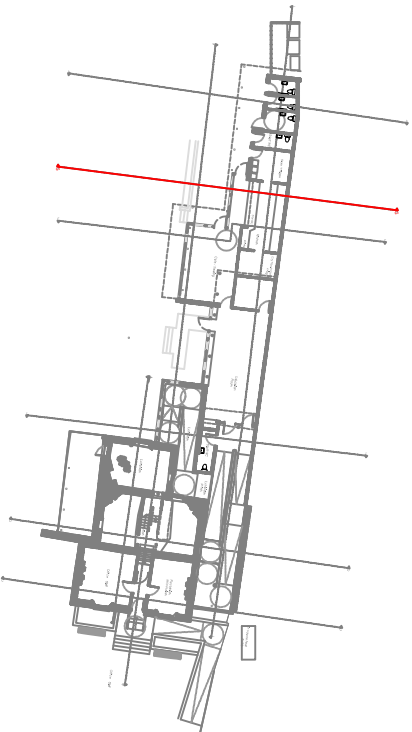
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Section G-G



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Contract COIS ABHANN LIFEEY VALE
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Title

FIRE SAFETY CERTIFICATE APPLICATION
SECTION G–G

Drm	Date	Chk	Date
ADC	SEPT 2020	DGA	
Scale	(or as shown)		
1:100 @ A3			

JOB No. 3365

DRG. No. F[58]–203

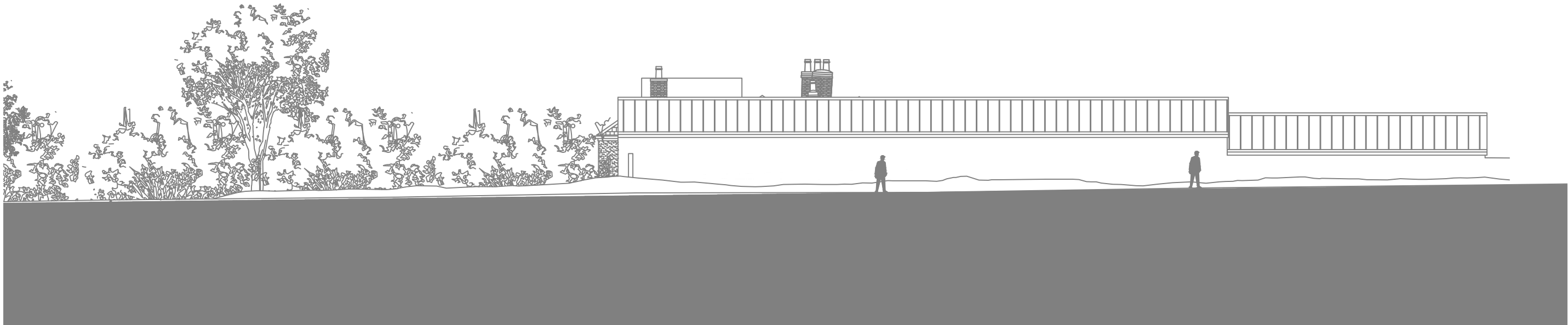
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North Elev

No unprotected areas.

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Title FIRE SAFETY CERTIFICATE APPLICATION NORTH ELEVATION				
Drn ADC	Date SEPT 2020	Chk DGA	Date	
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JOB No. 3365				
DRG. No. F[58]-300				

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South Elev

Total Area Unprotected = 54.9m²
Area of Enclosing Rectangle = 6H x 40W = 240m²
Percentage of Glazing = 22.9%
Using BR187 Table B and 30% = 2.5m to boundary required.
Available Distance to Relevant Boundary = 18.6m

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Architect				BLACKWOOD ASSOCIATES
Contract				COIS ABHANN LIFFEY VALE BIODIVERSITY CENTRE
Title				
FIRE SAFETY CERTIFICATE APPLICATION EAST ELEVATION				
Dwn ADC	Date SEPT 2020	Chk DGA	Date	
Scale 1:200 @ A3			(or as shown) Current Rev P1	
JOB No. 3365				
DRG. No. F[58]–302				

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NOTES

1. Notes and Legend For Drawings Are On Drawing No. F[58]-010.



East Elev

Total Area Unprotected = 14.83m² (includes FR glazing)
Area of Enclosing Rectangle = 6H x 12W = 72m²
Percentage of Glazing = 20.8%
Using BR187 Table B and 30% = 2m to boundary required.
Available Distance to Relevant Boundary = 41.5m

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GLASGOW · DUBLIN · AYR · INVERNESS				
Drg Status				PRELIMINARY
Architect				BLACKWOOD ASSOCIATES
Contract				COIS ABHANN LIFFEY VALE BIODIVERSITY CENTRE
Title FIRE SAFETY CERTIFICATE APPLICATION EAST ELEVATION				
Drm ADC	Date SEPT 2020	Chk DGA	Date	
Scale 1:200 @ A3 (or as shown)				Current Rev P1
JOB No. 3365				
DRG. No. F[58]-302				

APPENDIX D

**COIS ABHANN LIFFEY VALE
BIODIVERSITY CENTRE.**

**MECHANICAL & ELECTRICAL SERIVCES
STAGE 2 REPORT.**

BLACKWOOD ASSOCIATES.



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Site: Cois Abhann Liffey Vale
Project: Biodiversity Centre
Project No: 3365.
Client: Blackwood Associates.



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1.0 INTRODUCTION 4
2.0 BACKGROUND 4
3.0 MECHANICAL SERVICES..... 4
4.0 ELECTRICAL SERVICES 8
5.0 APPENDIX A – MECHANICAL DRAWINGS..... 10
6.0 APPENDIX B – ELECTRICAL DRAWINGS..... 17

ISSUE STATUS

Revision	Date	Prepared by	Checked by	Purpose
P1	04/03/2021	Donald Aiken	David Robertson	Stage 2 report

1.0 INTRODUCTION

FLN have been appointed as Mechanical and Electrical Engineers for the Biodiversity Project at Cois Abhann Liffey Vale. The following report has been based on the stage 1 report issued Sept 20 and updated to reflect design developments with regards to the M&E services installation within the Biodiversity Centre.

The services will be subject to further detailed design which may alter the approach taken to certain aspect of the project.

2.0 BACKGROUND

The Biodiversity Centre is located within ground on the northern banks of the River Liffey at Longmeadow’s along Chapelizod Road with access to the grounds from Chapelizod Road.

The existing House is a Georgian House and a protected structure.

The proposed Biodiversity Centre accommodation is spread over various levels through both existing derelict Georgian house and new visitor accommodation which will be connected by a serious of ramps to allow universal access to all areas.

In the main house the accommodation is split over three levels, with a meeting/office space and reception/introduction area at the entrance level, exhibition space at mid-level with access to outside veranda and at the lowest level a second exhibition space.

To the rear of the main house there is a ramped area, interconnecting the three-house level with the new building education centre and café.

The education centre comprises multipurpose education space, café, servery, stores, and externally accessed toilets.

The fabric of the existing house will be retained and sympathetically upgraded thermally where possible, while the new build will be of modern thermal construction.

To reflect the Biodiversity aspect of the building the M&E services will try, wherever possible, to reflect this ethos and reduce, carbon footprint, embedded energy and plastic products.

3.0 MECHANICAL SERVICES

The mechanical services will be based on the following design criteria which has been agreed with Blackwood Associates.

3365 – Liffey Vale House and Gardens – Design Criteria

External Temperature: Taken from CIBSE Guide A pdf – 039690_s

Dublin - 3°C

Internal Temperature: Taken from CIBSE Guide A table 1.5

Exhibition Halls	16-18 °C
Office/Meeting Room	23 °C
Multipurpose Room	23 °C
Café	21 °C
Kitchen (small commercial)	18 °C
Toilets	16-18 °C

Ventilation: Taken from CIBSE Guide A table 1.5

Natural Ventilation @ 1/20th Floor area or	
Occupied areas	15l/s fresh air supply
Kitchen	6ac/hr. plus 7000mm2 permanently open-air inlet having clear equivalent area.
Toilets	6ac/hr.

Air Permeability: Irish Regulations Blackwood Associates to advise level if applicable.

U Value: Calculated through IES

Existing Build:

External Wall (Ext Wall – FLN Existing)	– 0.861 W/m2K
Pitched Roof (Pitched – FLN Existing)	– 0.179 W/m2K (200mm insulation)
Internal Partition (Int Part - FLN Existing)	– 2.356 W/m2K
Solid Grd Floor	Build up required.
Suspended Grd Floor (Susp Flr – FLN Existing)	– 0.165 W/m2K (200mm insulation)
Windows (Triple – FLN Existing) – Triple glazed Doors	– 1.366 W/m2K Build up required.

New Build:

External Wall	
(Ext Wall Porotherm 300 – FLN New)	– 0.220 W/m2K
(Ext Wall Porotherm 365 – FLN New)	– 0.183 W/m2K
Pitched Roof (Pitched – FLN New)	– 0.179 W/m2K
Flat Roof (Flat – FLN New)	– 0.179 W/m2K
Internal Partition	
(Int Part Porotherm 115 – FLN New)	– 1.767 W/m2K
(Int Part Porotherm 175 – FLN New)	– 1.411 W/m2K
Solid Floor	Build up required.

Suspended Grd Floor – (Susp Flr – FLN New)	– 0.137 W/m ² K (250mm insulation)
Windows (Triple – FLN New) – Triple glazed	– 1.366 W/m ² K
Rooflight (Roof Light – FLN New) – Triple glazed Doors	– 1.765 W/m ² K Build up required.

Heating:

The new building will be highly insulated to meet or better current Building Regulations, to reduce the heat loss and hence heating load. The spaces will be heated in line with CIBSE temperatures and as agreed FLN design criteria as noted above.

The existing Georgian structure will be improved in terms of its thermal property but will not meet the current Building Regulations.

The front rooms which will be used as office or meeting area will be heated in line with CIBSE temperatures for these spaces.

The exhibition spaces will be provided with background / fabric heating only as they are transient areas and not design for sedentary occupancy. All in line with agreed FLN design criteria as noted above.

It is proposed that the spaces will be heated by either, underfloor heating, radiators or a combination of both where the heat loss and emitter require additional heating surface as shown on draft proposed heating layout drawing M[56]-100.

This approach has been taken as the size and number of radiators would have been excessive due to the flow and return temperatures being supplied from the proposed Air Source Heat Pump (ASHP).

The heat source proposed is an ASHP which will be located within the development gardens and will produce heating water at up to 45/40°C flow and return and heating for domestic hot water cylinder at 65/60°C flow and return. The ASHP will be selected to reduce noise, visual and space constraints.

The systems will be time and zone controlled as required to meet usage patterns envisaged of the building. The control system will be as simple as possible.

It is proposed to heat the externally access toilets off the underfloor heating system, but this manifold will be time controlled to ensure that the out with hours the heating is not being wasted. Consideration should also be given to self-closing door on the toilets to ensure that the door is not left open to atmosphere when unoccupied but when still heated.

Water Services:

Cold water supplies will be provided to all water appliances through a cold water storage tank located within the attic of the development. The tank will be fitted with twin booster pumps to allow the system to provide a pressurised supply to the appliances.

Hot water will be provided within the main building by means of a hot water cylinder and associated distribution circulation circuit to ensure outlet have immediate hot water within the kitchen area only. The hot water cylinder size will be dependent on both envisaged visitor numbers and the associated servery usage.

External toilet area will be provided with cold water supplies and a small unvented storage local electric water heaters which will each serve two toilet spaces. There should be a means of either shutting down the water supply in colder months or heat tracing and insulating the pipework and fittings.

This principle will also be used to supply hot and cold water to the internal staff toilet.

Due to the limited usage of the toilet small electric storage units were felt to be the most economic in terms of power and water usage.

Ventilation:

Ventilation will be provided to internal rooms to ensure air quality. Wherever possible this will be by natural means through openable windows or similar.

Areas of potential high solar gain may require additional mechanical ventilation or alternative means of excluding the solar gain from the space. Shading devices would have to be externally located as internal devices would not stop the heat from entering the space.

Toilets will be ventilated by mechanical means in line with Building Regulations, through a common extract system to the external toilets and a single extract fan in the staff toilet. Louvres will be positioned on the external wall to suit architect requirements. No penetrations are planned through the roof.

Servery/kitchen ventilation will comprise a heat recovery unit which will provide fresh supply air, with extracts being taken from areas having potential smells, heat or moisture. Currently it is envisaged that extract points will be fridge/freezer area, servery where dishwasher is located and bin area. Supply air will be to servery and dry good store.

The heat recovery unit may not be fitted with a heating coils as heat recovered from air should be capable of heating supply air to approx. 14°C., but the unit can be fitted with an electric heating coil if required.

Grilles will be ceiling mounted and louvres to outside mounted on external wall as noted above and coloured to match external wall finish.

Ventilation will be controlled locally through occupancy sensors, light switches or timers as appropriate.

Rainwater harvesting:

Due to the size and configuration of the roofs and rainwater goods on the building, rainwater harvesting may be limited in its ability to collect water effectively and would only supply the external toilet for flushing water purposes. This was felt to be uneconomic for the amount of water saved against expenditure of for the system.

Consider may still be given to whether collected rainwater would be suitable for irrigation systems or otherwise throughout the gardens, if this was the case then the toilet may be able to be served from the same system.

4.0 ELECTRICAL SERVICES

A new ESB supply will be taken into the main plantroom to serve the meter and a new main switchboard. This switchboard will serve local distribution boards throughout the building.

Local distribution boards shall be TP&N with mcb and rcbo's as required.

Sub-mains cabling shall be installed on cable containment located within ceiling voids or within the open ceiling void spaces. Routes shall be carefully planned and co-ordinated with other services and perhaps some form of architectural treatment or screening would be considered.

Lighting:

Lighting throughout the building shall be selected to suit individual area requirements. Generally lighting shall consist of LED fittings recessed in ceilings, mounted surface where ceilings are not accessible or suspended where ceilings are particularly high.

Where appropriate lighting installations shall be suitable for areas utilising visual display terminal and shall generally comply with CIBSE lighting guide LG3.

Lighting shall be controlled to switch off when areas are not occupied and to regulate (dim) when daylight provision is sufficient.

Final fitting selection shall be agreed with the client/architect but it is envisaged will contribute to the interior design of the building.

Lighting in exhibit areas shall be selected in conjunction with the exhibit designers to ensure lighting is sympathetic to the buildings use but is envisaged to consist of adjustable spotlights mounted on multi-circuit track.

Final circuits shall be wired in LSF insulated cable run in conduit and trunking containment within the building fabric.

Emergency lighting shall be provided to meet statutory requirements. An automatic testing system shall be installed.

External lighting shall be provided to all external areas of the building including the courtyard areas. The courtyard would be lit by a mixture of building and ground mounted lights. Lighting will be provided to the access road from the main entrance gate to the building. This will be by column mounted street light style fittings. No other external lighting will be provided in the grounds.

Small Power:

Small power shall be provided throughout the building to meet the user's requirements. Generally this shall consist of flush mounted wall sockets coordinated with exhibit locations.

Specific and specialist power installations will be required to suit the needs of particular areas such as plantrooms, Tea Preps and Kitchens.

Solar Photovoltaic System:

A solar photovoltaic system shall be provided consisting of panels mounted on the south facing roof above the kitchen. The system shall be rated at approximately 4 kWp and shall be connected into the buildings electrical system.

Fire Alarm System:

A new automatic fire detection and alarm system shall be installed.

The system shall be analogue addressable and in line with a type L3 system to IS 3218. The system shall consist of smoke detectors, heat detectors, manual call points and electronic sounders.

Devices shall be wired in standard fire resisting cable run on cable tray containment within ceiling voids.

Structured Cabling:

A structured cabling system shall be provided throughout the building with both voice and data outlets wired back to central comms cabinet.

The system shall be agreed with the client's IT and exhibition specialists and shall be a Cat 6a system.

The supply of electronic components, computer hardware or telephone equipment is out-with the scope of our works and will be provided directly by the client.

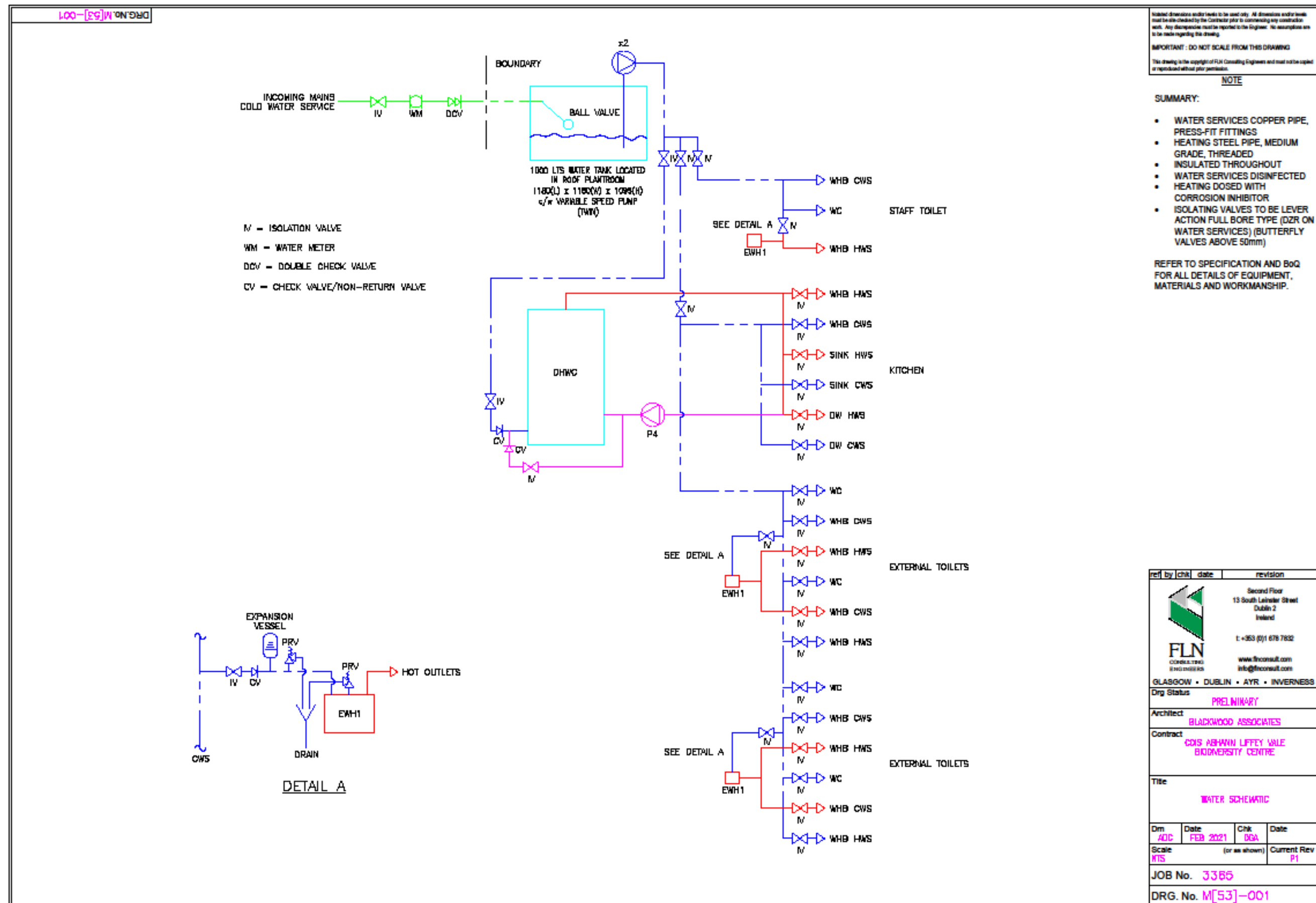
Specialist Installations:

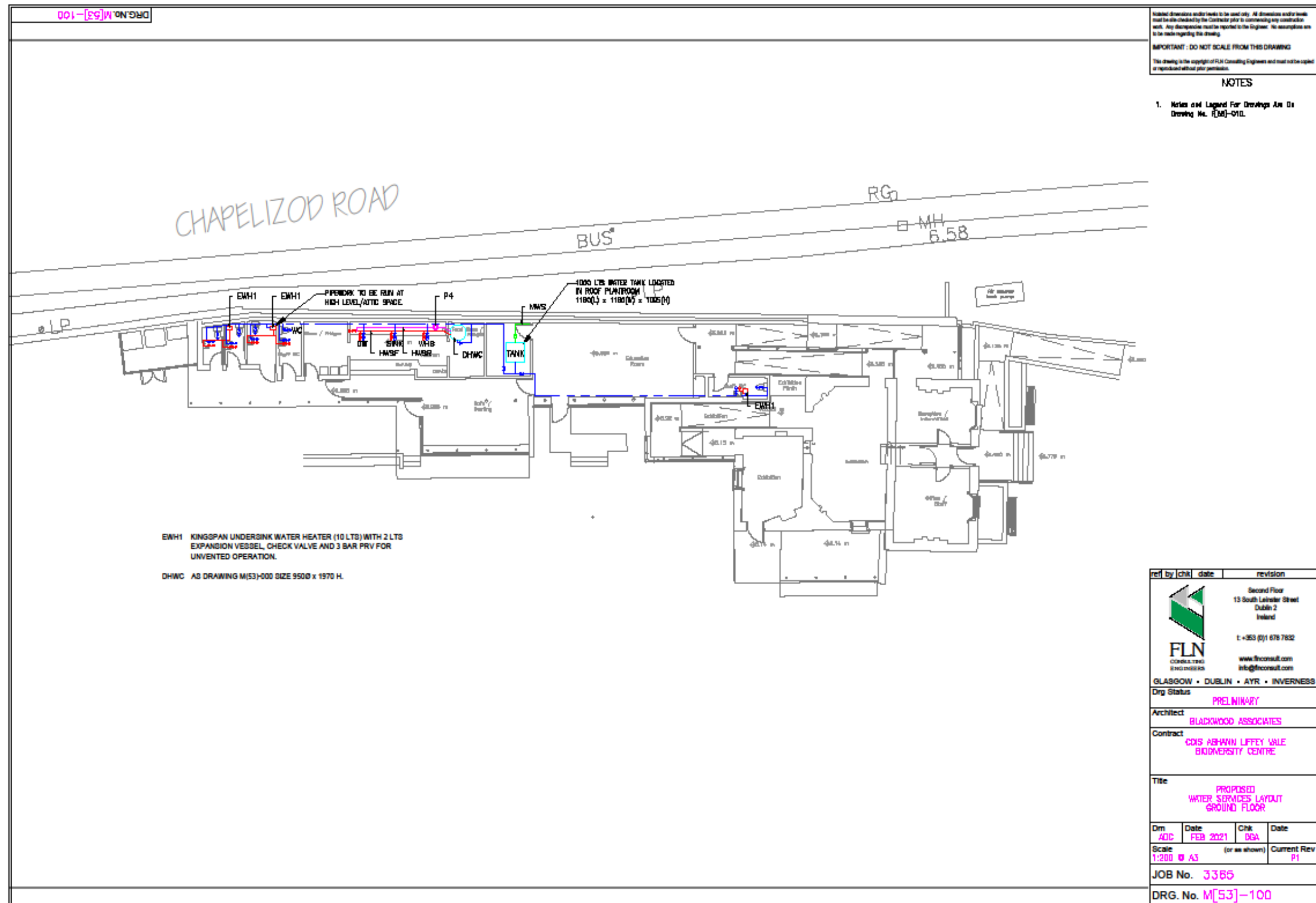
Various specialist installations may be required.

These could include access control, intruder alarm, CCTV etc. as required and in line with client's requirements for the buildings.

An induction loop shall be installed as required and to meet TGD Part M and any DIA requirements.

MECHANICAL DRAWINGS





DRG No. M[56]-001

PLANTROOM EQUIPMENT

Mark	Comments	Manufacturer	Description
DHWC	TFA 500 LITRE GLASS LINED STEEL DOMESTIC HOT WATER STORAGE TANK c/w INSULATION JACKET, ANODE PROTECTION, ALL NECESSARY MOUNTINGS	HIDROS	
EV01	HEATING EXPANSION VESSEL		
EV02	DOMESTIC WATER EXPANSION VESSEL		
P01	TWIN HEAD ELECTRONIC HIGH EFFICIENCY EMC PUMP	Yonos PN5/10	
P02	TWIN HEAD ELECTRONIC HIGH EFFICIENCY EMC PUMP		
P03	HIGH EFFICIENCY DHWS PUMP		
P04	SINGLE BRONZE ELECTRONIC HIGH EFFICIENCY DHWS PUMP		
PHE	PLATE HEAT EXCHANGER TO TRANSFER 42kW FROM PRIMARY AT 65/50 F&R TO SECONDARY AT 55/50 F&R AND INCLUDING MOUNTING FRAME	HASL	
PU	DEGASSER AND REFILL UNIT AS FLAMCO FLEXFILLER MIDI PLUS OR EQUAL BY SPIROTECH	Flamco	
TH801	TFF 1000 LITRE THERMAL STORE WITH MULTIPLE CONNECTION PORTS, SENSOR PORTS, INSULATION JACKET AND ALL NECESSARY MOUNTINGS		

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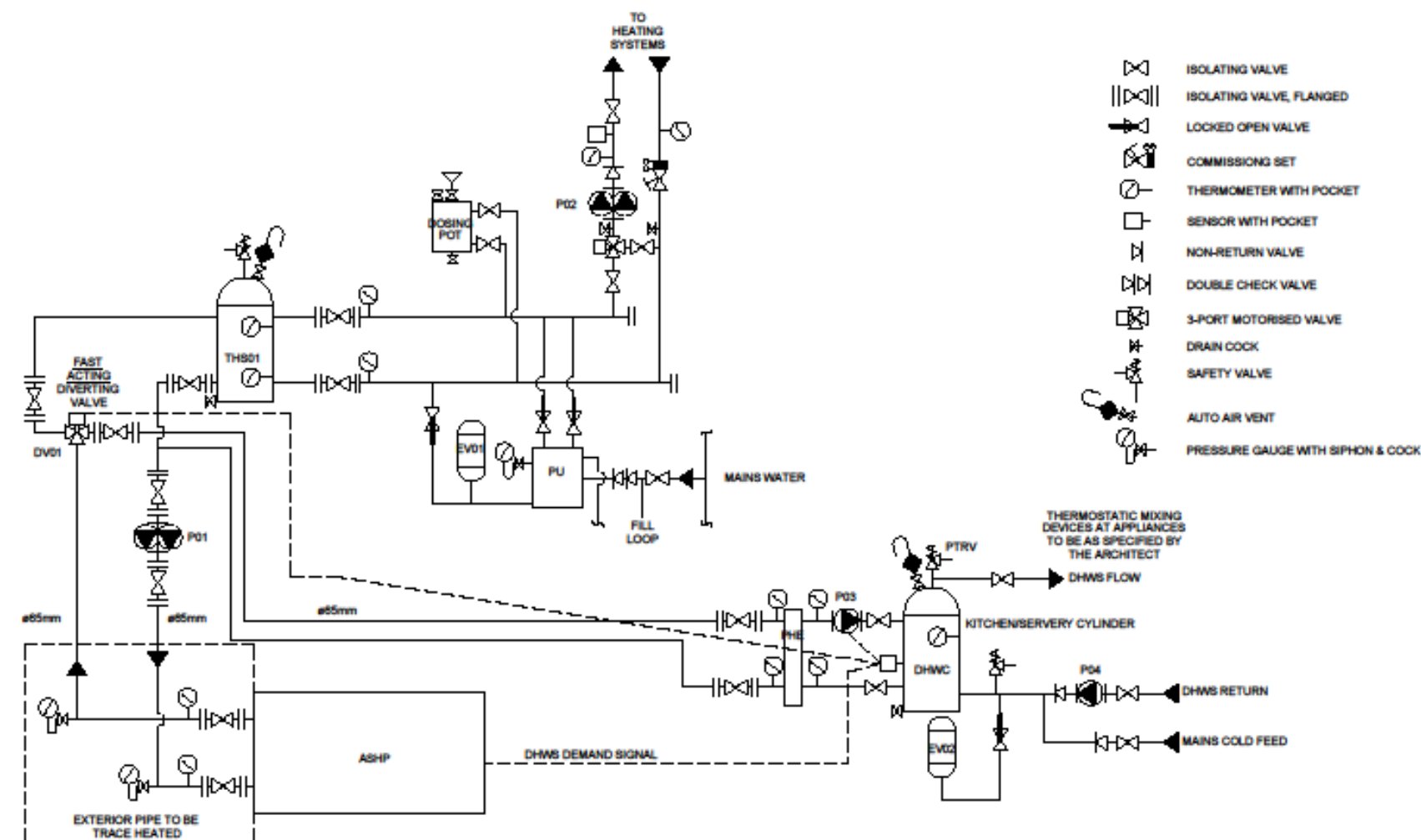
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NOTE

SUMMARY:

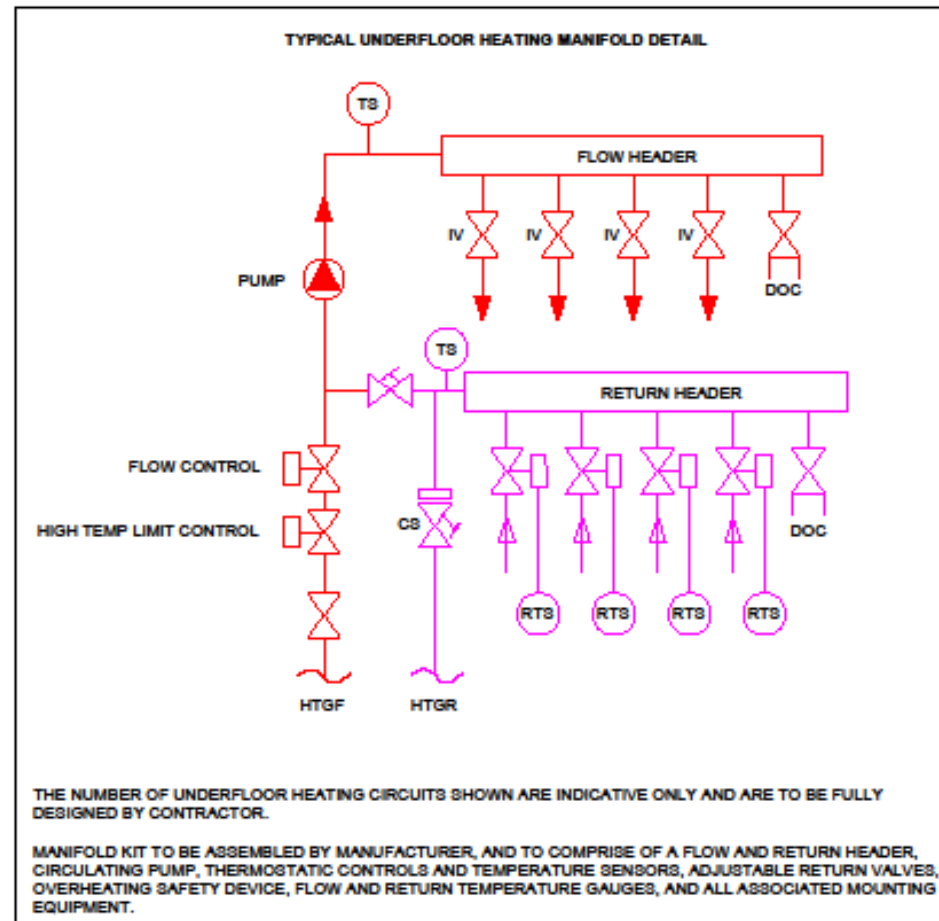
- WATER SERVICES COPPER PIPE, PRESS-FIT FITTINGS
- HEATING STEEL PIPE, MEDIUM GRADE, THREADED
- INSULATED THROUGHOUT
- WATER SERVICES DISINFECTED
- HEATING DOSED WITH CORROSION INHIBITOR
- ISOLATING VALVES TO BE LEVER ACTION FULL BORE TYPE (DZR ON WATER SERVICES) (BUTTERFLY VALVES ABOVE 50mm)

REFER TO SPECIFICATION AND BoQ FOR ALL DETAILS OF EQUIPMENT, MATERIALS AND WORKMANSHIP.

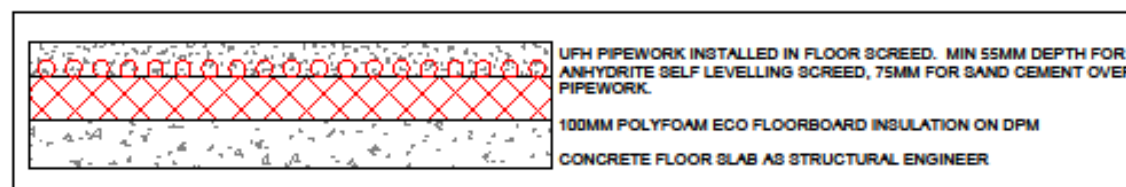


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Drp Status PRELIMINARY				
Architect BLACKWOOD ASSOCIATES				
Contract COIS ABHANN LIFFEY VALE BIO-DIVERSITY CENTRE				
Title HEATING SCHEMATIC				
Drn	ADC	Date	FEB 2021	Chk DGA
Scale	MTS	(or as shown)		Current Rev P1
JOB No. 3365				
DRG. No. M[56]-001				

DRG. No. M[56]-002



TYPICAL UNDERFLOOR HEATING MANIFOLD



TYPICAL UNDERFLOOR HEATING PIPEWORK DETAIL

UNDERFLOOR HEATING SYSTEM DESIGN CRITERIA.
(EXTERNAL DESIGN TEMP -2.0)

UFH AREA	ROOM TEMPERATURE (°C)	INFILTRATION RATE (AC/HR)
KITCHEN	24	1.00
OFFICES/RECEPTION	21	1.00
TOILETS	18	1.00
EXHIBITION	18	1.00
CAFE	21	1.00
CIRCULATION	18	1.00
STORES	15	1.00
EDUCATION	23	1.00

PROPOSED 'U' VALUES (W/M²K)

EXISTING EXTERNAL WALLS	0.861
FLOOR	TBA
SLOPING ROOF	0.179
WINDOWS / DOORS	1.366
SUSPENDED FLOOR	0.163
NEW EXTERNAL WALLS	0.220
PITCHED ROOF	0.179
FLAT ROOF	0.179
SOLID FLOOR	TBA
SUSPENDED FLOOR	0.137
WINDOWS	1.366
ROOFLIGHTS	1.763

LEGEND

DTB - DROP TO BELOW
RTHL - RISE TO HIGH LEVEL
UFH - UNDERFLOOR HEATING
RTS - ROOM TEMPERATURE SENSOR
IV - ISOLATING VALVE
NRV - NON RETURN VALVE
CS - COMMISSIONING SET
HTGF - HEATING FLOW
HTGR - HEATING RETURN

HTGF - - - - -
HTGR - - - - -
COLD WATER SUPPLY - - - - -
TO DRAIN - - - - -

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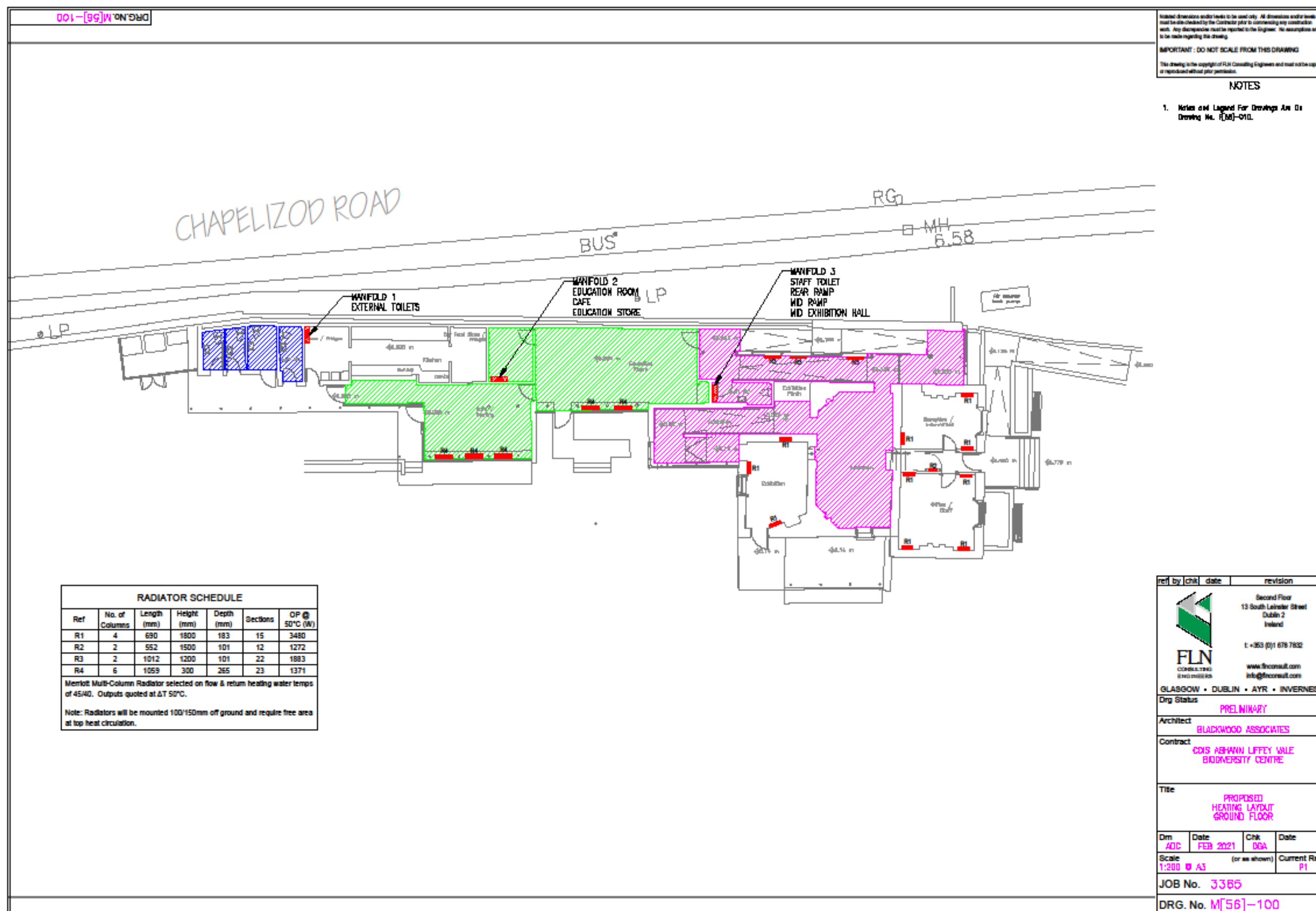
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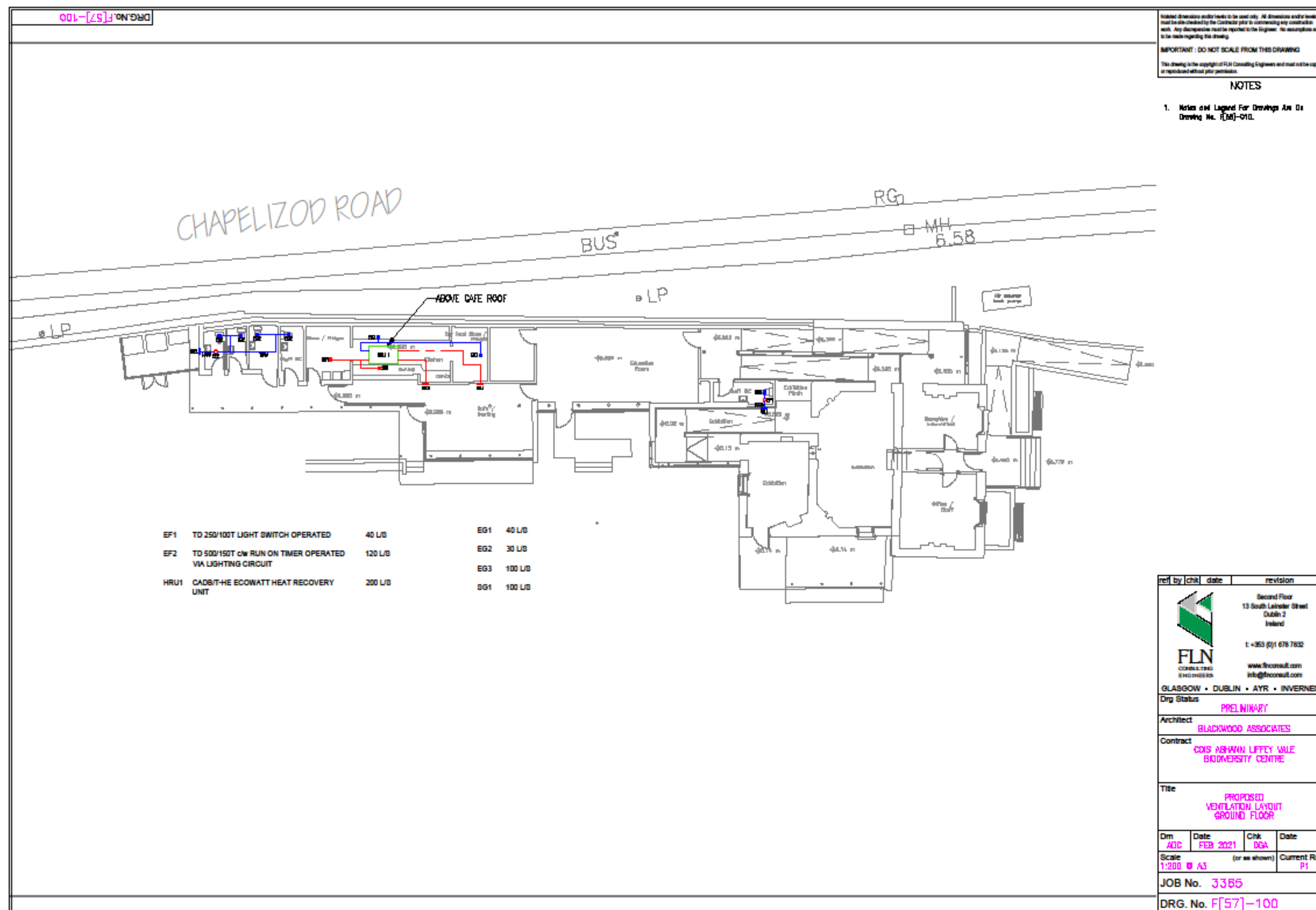
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NOTE

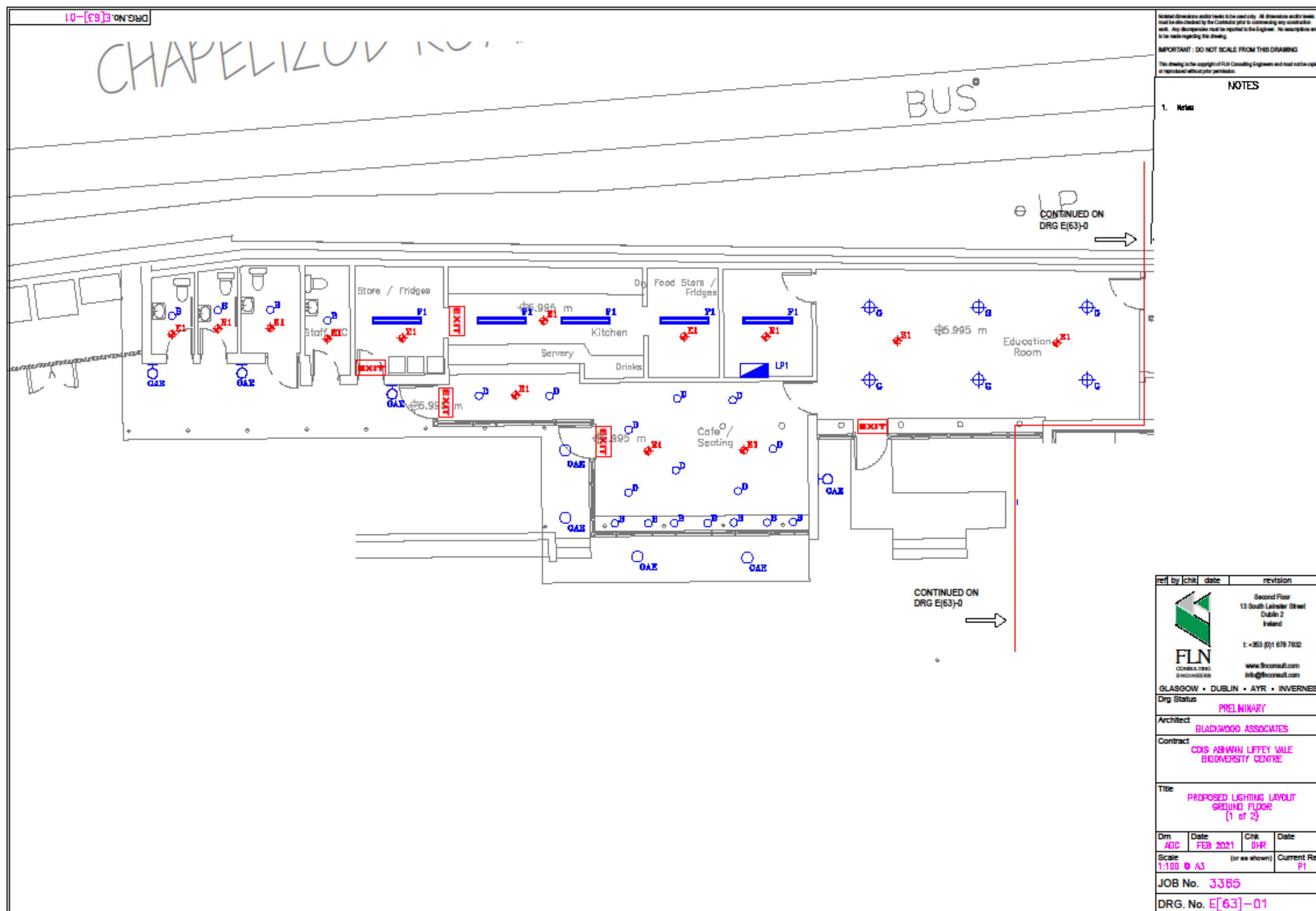
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2. DO NOT SCALE FROM THESE DRAWINGS.
3. THESE NOTES ARE A SUMMARY. REFER TO SPECIFICATION FOR FULL

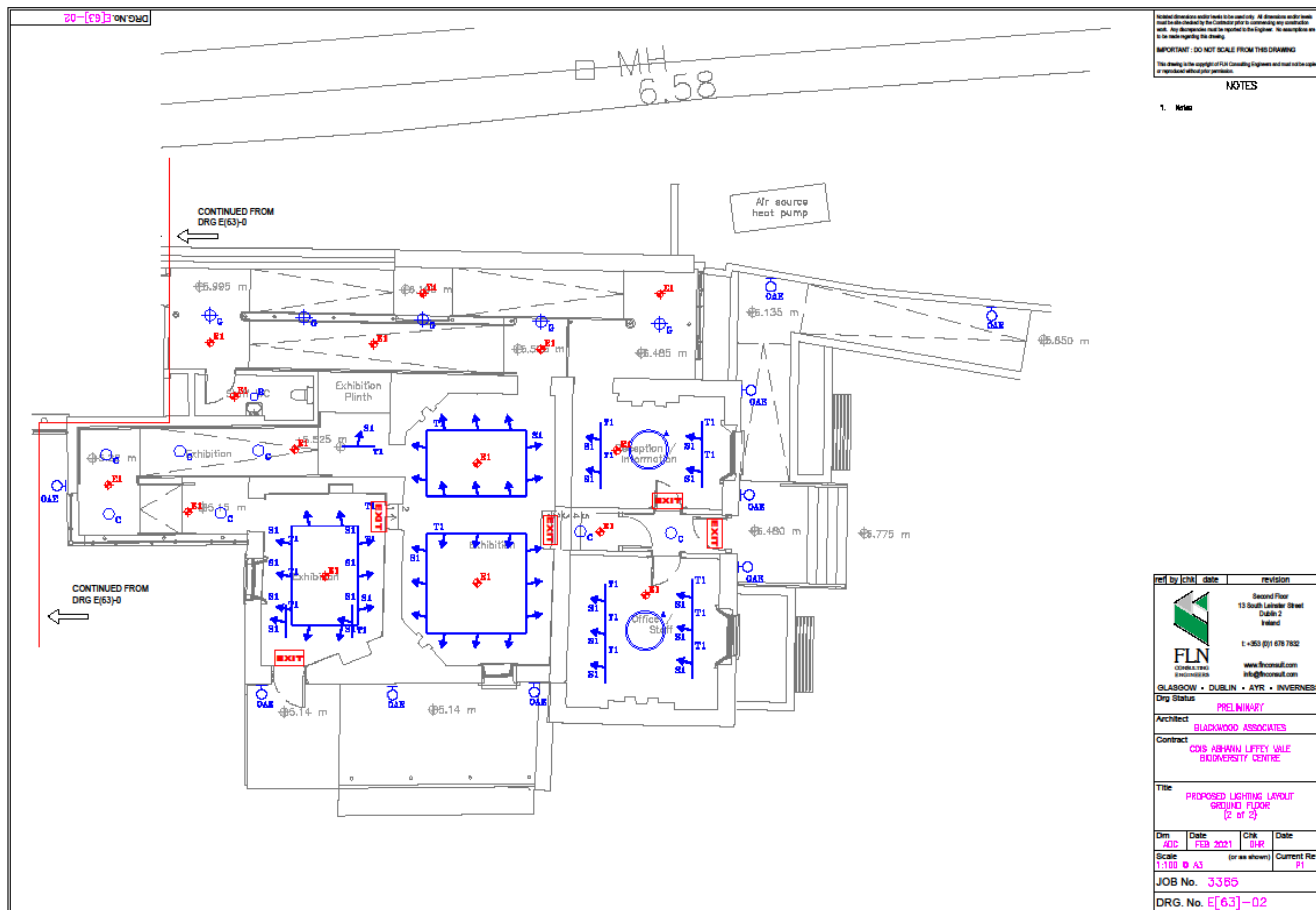
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Drg Status PRELIMINARY				
Architect BLACKWOOD ASSOCIATES				
Contract COIS ABHANN LIFFEY VALE BIODIVERSITY CENTRE				
Title HEATING SCHEDULES				
Drn	Date	Chk	Date	
ADC	FEB 2021	DGA		
Scale	(or as shown)			Current Rev
RTS				P1
JOB No. 3365				
DRG. No. M[56]-002				





ELECTRICAL DRAWINGS





APPENDIX F

LANDSCAPE DESIGN WORKBOOK

MITCHELL ASSOCIATES

Liffey Vale - Cois Abhann



LANDSCAPE DESIGN BOOK
March 2021

MITCHELL + ASSOCIATES

LANDSCAPE DESIGN STRATEGY

Contents

Introduction

Spatial Layout - Landscape Strategy

Landscape Masterplan

Tree Survey

Tree Strategy

Circulation and path hierarchy

Surface Water

External spaces to house - access and teaching and learning spaces

Front lawn - event space.

Orchard - teaching and learning spaces

Wild areas - restricted access and management

Pioneer woodland - coppice management

Meadow - calcareous grassland and events

Terraces

Elements and Materials

Colour

INTRODUCTION AND STRATEGY

Introduction

Mitchell + Associates were commissioned by Dublin City Council, as landscape architects as part of the design team led by Blackwood Associates Architects. Liffey Vale is a former residence set in a riparian landscape. The propose renaissance of this house and landscape is to restore its best assets and transform it in to a place that educates through a sustainable landscape approach.

This landscape design book should be read with the following drawings:

Landscape masterplan

LLIF018 – 100 Liffey Vale Landscape General Arrangement

LLIF018 – 100 Liffey Vale Building Curtilage

LLIF018 – 100 Liffey Vale Site Plan with Dept of Defence Land Extension

LLIF018 – 100 Liffey Vale Landscape Sections

LLIF018 – 100 Liffey Vale Landscape Details

Refer also to the Architectural and Ecology reports.

Strategy

The landscape at Liffey Vale - Cois Abhann - has, amongst its many elements, three characters; romantic dereliction in its unmanaged garden close to the house; wild in its regenerating riverside meadows; and coarse in its areas of spoil and invasive plants.

The landscape strategy aims to respond to these spaces and the proposed new uses by :

1. enhancing the romantic character and create an appropriate setting for the house with its proposed new educational spaces and café, adding terraces, and external teaching and learning spaces, and incidental play.

2. Managing the wild landscape to encourage appropriate regeneration of native species and habitats

3. Management of invasive species and sculpting of the former spoil to create a new riverside setting of meadow, groves and terraces. The landscape is further divided in to 8 key areas that are shown in the landscape strategy plan opposite.

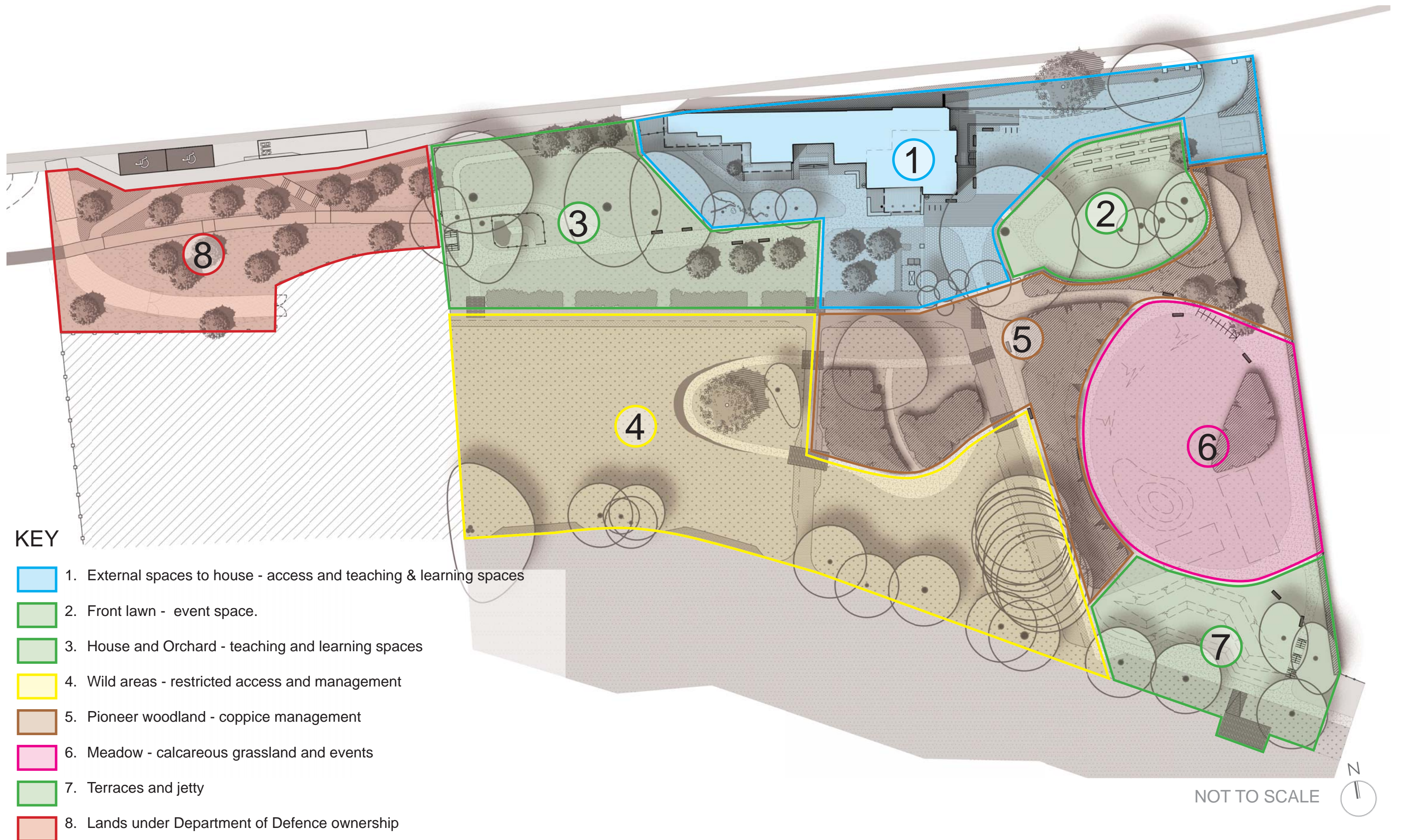
The management of the existing trees forms a key part of the ;andscape strategy, as does the introduction of a new path hierarchy that extends through the former Dept. of Defence land and connects westwards along the river. There is further potential for an eastward connection along the river.

The design is further expressed through the surface water strategy, that utilises the existing well and ditches as well as new features as an expression of sustainable surface water management (SuDS).

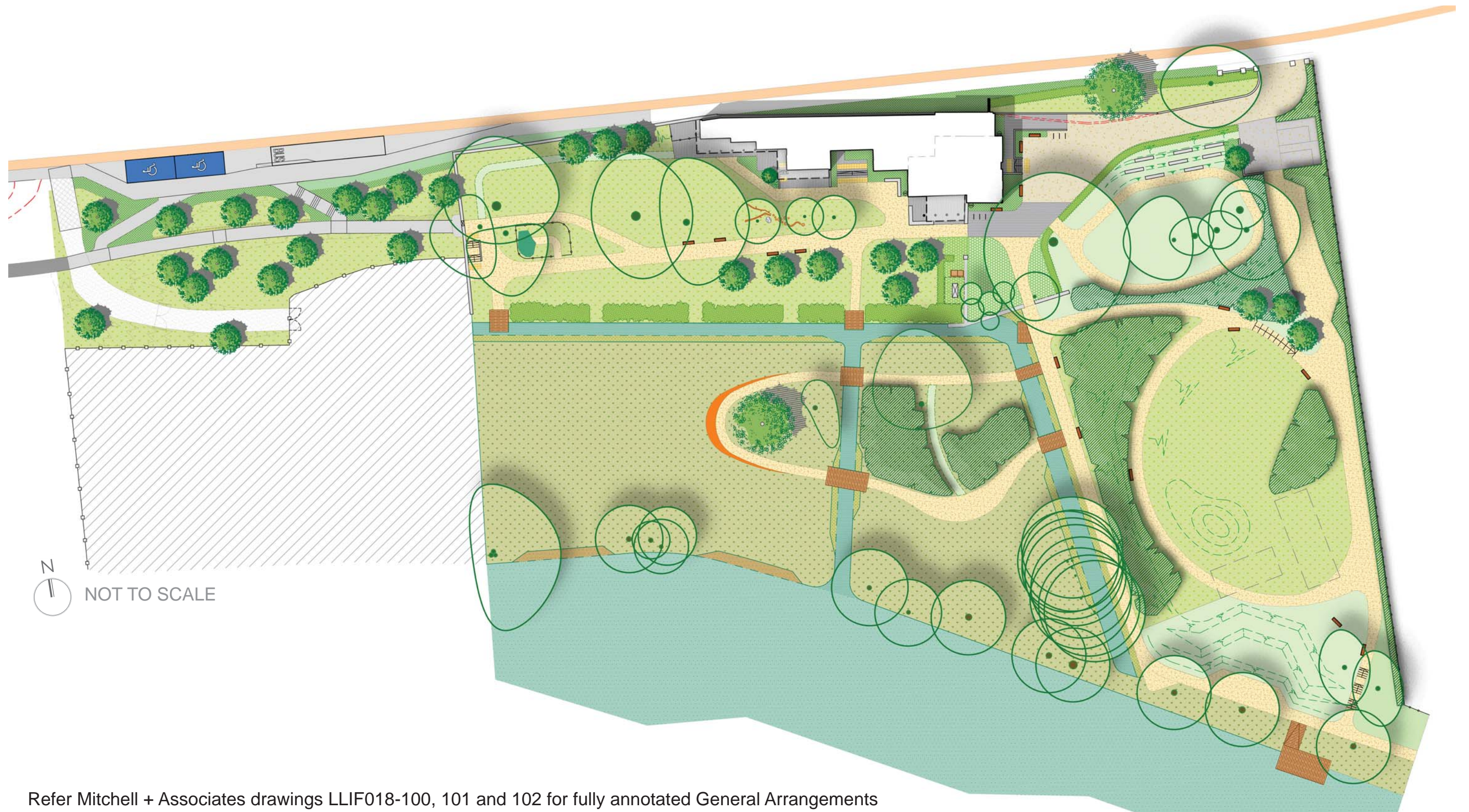


Liffey Vale house in its former front garden setting

SPATIAL LAYOUT - LANDSCAPE STRATEGY



LANDSCAPE MASTERPLAN



Refer Mitchell + Associates drawings LLIF018-100, 101 and 102 for fully annotated General Arrangements

TREE SURVEY



Refer Joe McConville Tree Report for full details

TREE STRATEGY

Tree Management Strategy

The trees on site are characterised as the legacy of the former gardens, and the newer spontaneous growth since it was last managed. Their significance on the site is as an asset that supports the proposed uses, with the tree management strategy informing the landscape strategy and design development.

A new layer in the evolution of the tree planting is now proposed, in two ways; new planting to enhance and mitigate the site proposals, particularly close to the house; and managing for spontaneous growth in the wilder areas, generally further from the house.

Some of the older trees are not in good condition and will need to be felled, especially once the site is to become public. This does not hold for all of the trees in poor condition, and more unusual management is being proposed. Two examples of this are as follows:

1. The Poplars to the north west of the grounds will be removed due to their condition. However approx. 3m of the trunk will remain standing, so there may be some re-growth that can be managed by pollarding from time to time, but primarily so that the decaying trunks can contribute to the biodiversity, notably for fungi and insects – and hence the birds that feed off them such as tree creepers.
2. The collapsed Willow would under normal circumstances be felled, however it is already a location for fungi appearing close to ground level along its twisted branches leaning reaching to the ground. The Willow is in the wilder part of the site, with less frequent public access, and people can be temporarily kept away if any branches become dangerous. Retaining the Willow therefore lends a dramatic feature to the wild area, and is a ready-made source of biodiverse interest at eye level.

Other tree management practices are also proposed. These include pruning of the existing fruit trees, and the selective coppicing of the proposed Hazels, and new boundary planting. Both of these operations occur in cycles of years, and can be used to demonstrate these practices to visitors. Standard tree management operations will also apply, such as wind-firming, tree tie adjustment, removal of stakes once trees are established, thinning whips, and the pruning of crossing branches. Recycling of material on site is also proposed, so that brash may be used for cover, chipping can be used for mulch, and other timber can be used for stacking or left as habitat as it decomposes. All of the above operations and practices are useful demonstrations of best practice that can inform visitors.



Liffey Vale viewed from the Chapelizod Rd - with poplars in the middle and background.

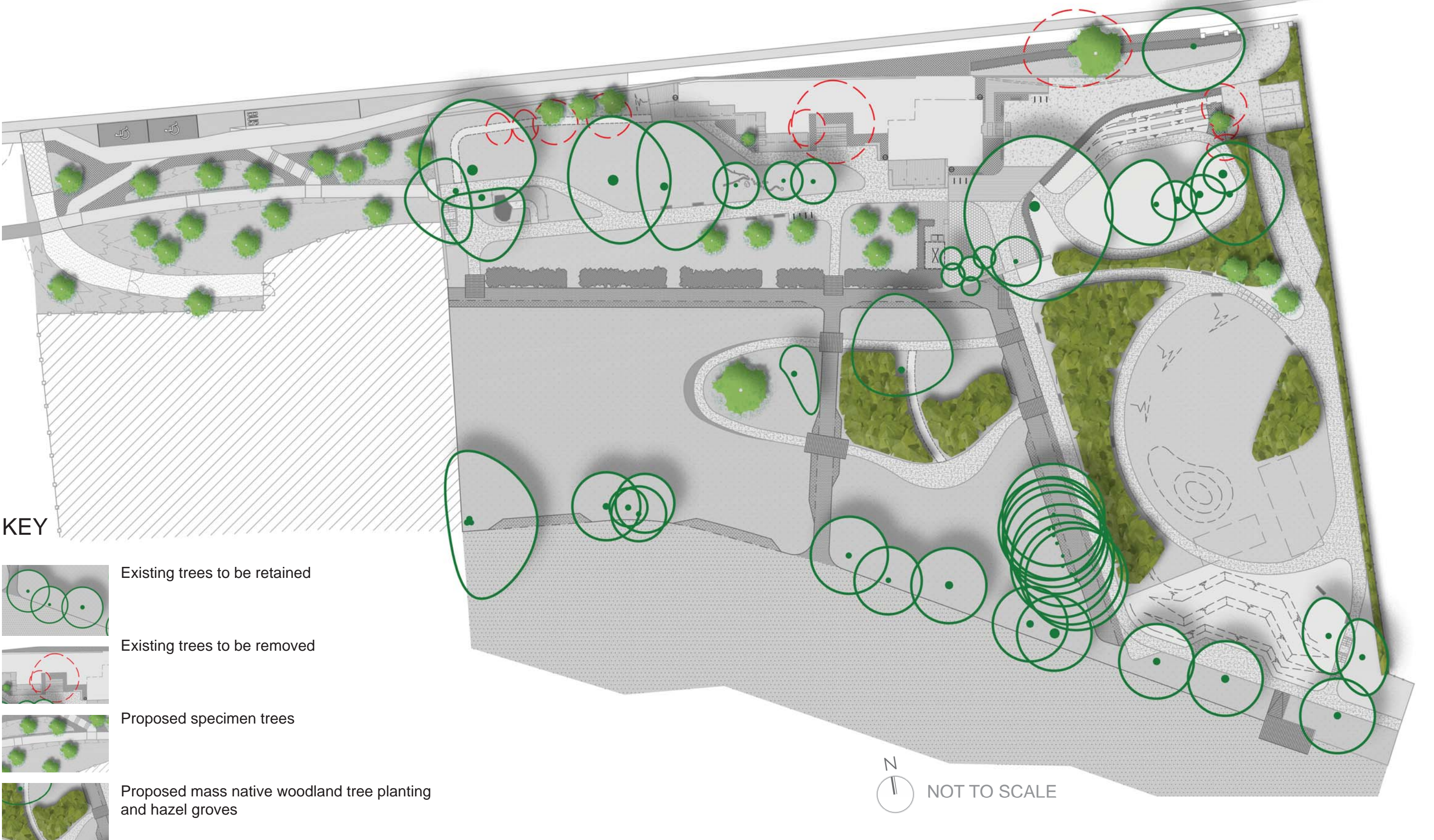


Fungus growing on a felled trunk

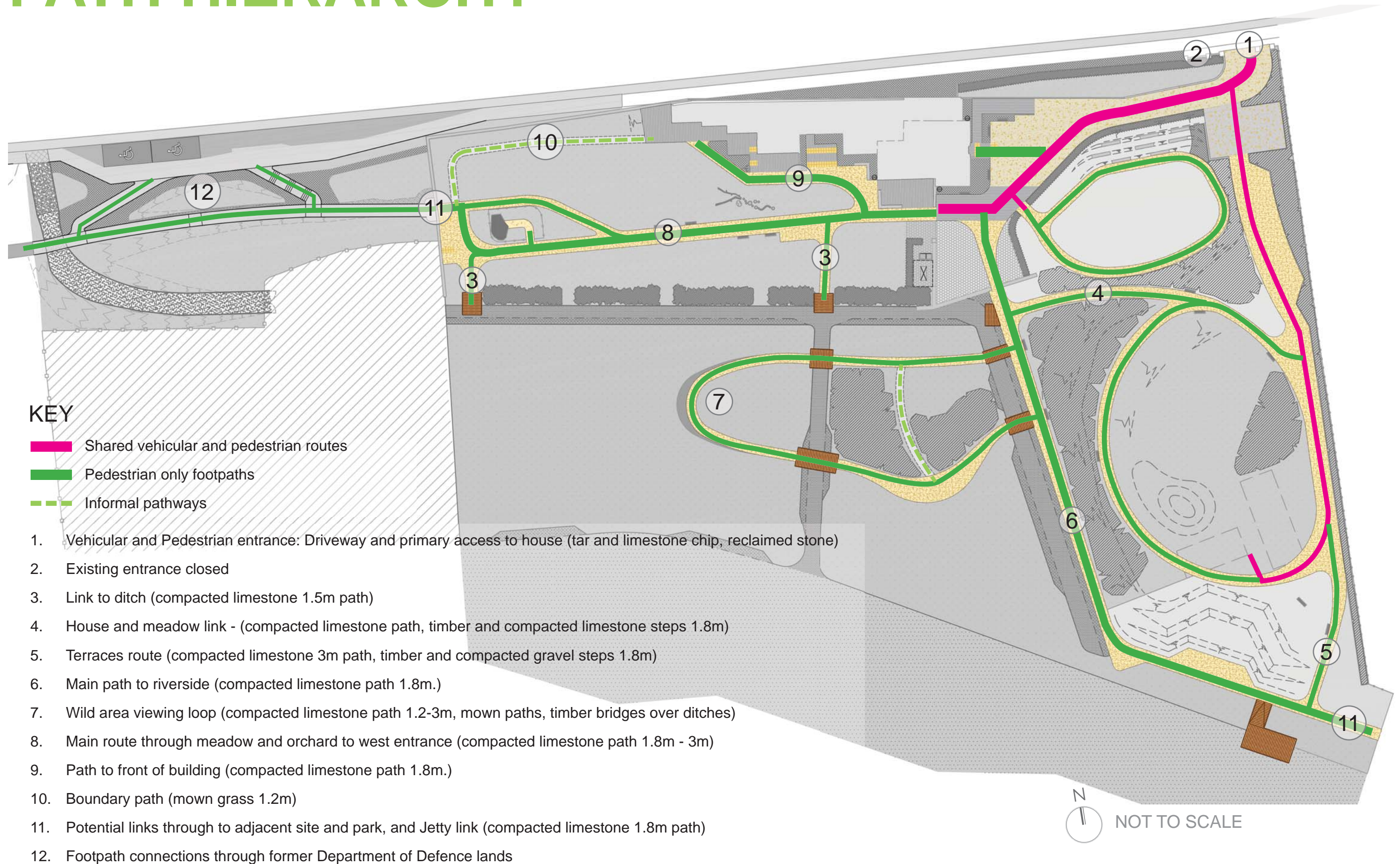


Damaged poplar trunks at Liffey Vale

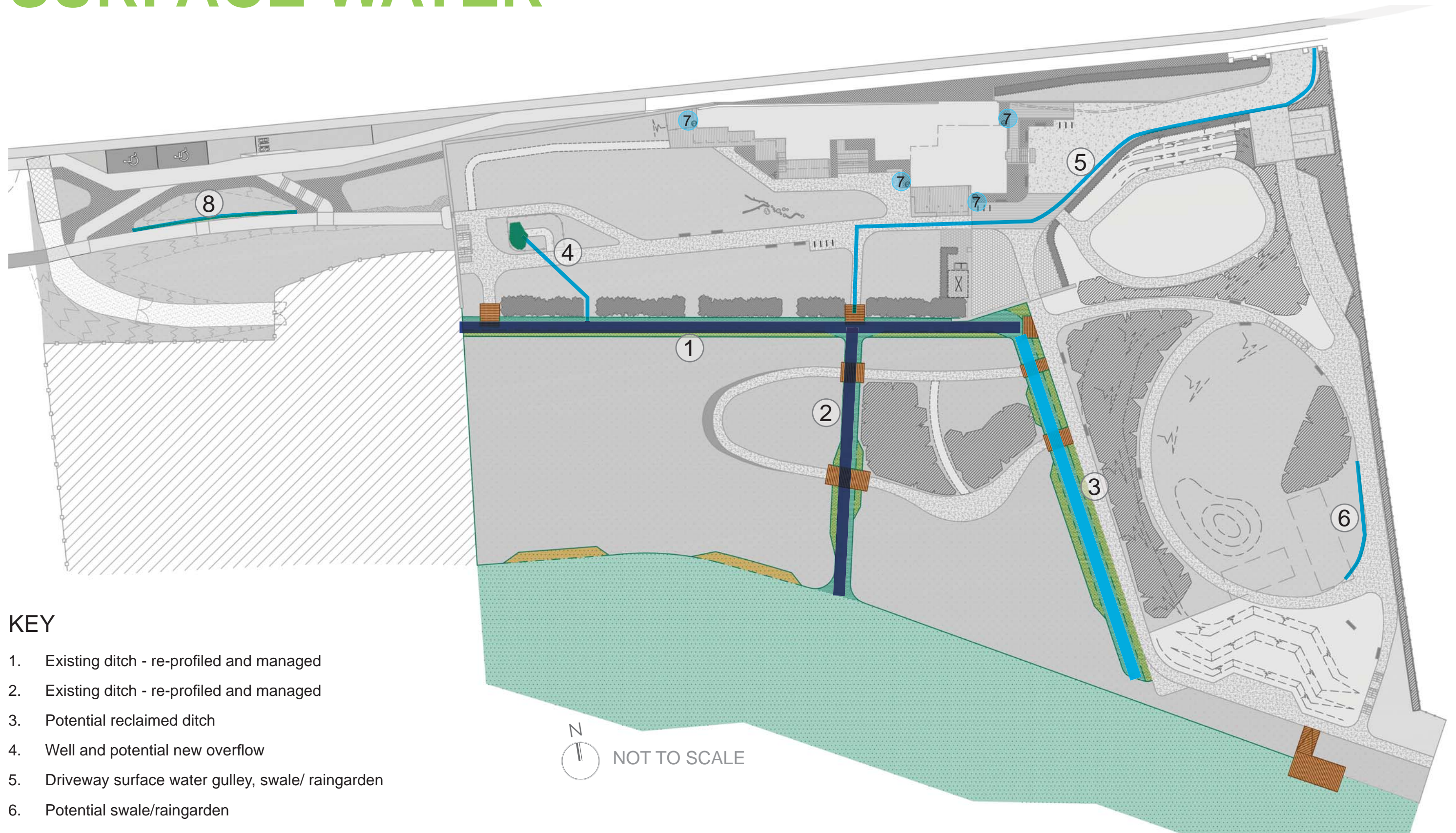
TREE STRATEGY



PATH HIERARCHY



SURFACE WATER



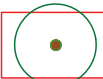



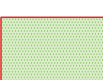



KEY

1. Existing ditch - re-profiled and managed
2. Existing ditch - re-profiled and managed
3. Potential reclaimed ditch
4. Well and potential new overflow
5. Driveway surface water gulley, swale/ raingarden
6. Potential swale/raingarden
7. Rainwater harvesting at house
8. Linear swale to capture water at base of slope

EXTERNAL SPACES TO HOUSE CONTINUED...

KEY




SOFT LANDSCAPE

-  Existing tree to be retained
-  Proposed standard tree planting
-  Pioneer woodland and coppice
-  Planting
-  Lawn
-  Reinforced grass
-  Rewilding
-  Managed Grassland

HARD LANDSCAPE

-  Tar & Chip Driveway
Chip to match compacted gravel footpaths
-  Compacted Gravel Paths
-  Flag Pavers
-  Tactile Paving
-  Cantilevered Deck

ACCESSORIES

-  Bench
Omos 's59.2' or equivalent approved
-  Cycle Parking
Furnitubes 'Sheffield Cycle Stands' - Stainless Steel or equivalent approved
-  Water Butt

FEATURES

1. Shared surface driveway
2. Main entrance to building
3. Steps
4. Accessible ramp
5. Retaining wall alignment adjusted
6. Cycle parking
7. Area of hard-standing and reinforced grass to facilitate fire-tender access and turning
8. Existing wall shortened to allow fire tender access
9. Dwarf hedge
10. Access to Event Lawn
11. Seating wall
12. Terrace
13. Natural play elements
14. Toilets
15. Composting station



SUMMARY

External spaces to house - access, and teaching and learning spaces

Entrance: Controlled gates (normally closed) with separate pedestrian gate (open during daylight hours) Combined entrance for house, closing existing access gates, piers relocated to new entrance.

Driveway: levels reconfigured to achieve accessibility. Surface: tar and chip with stone drainage gully. Shared surface with safe zone defined by surface gully.

Parking: Potential 2 disabled spaces and 2 staff spaces

Flanking walls: retain, rebuild and ensure crash protection to lower lawn.

Hedge: defining lawn and entrance drive, with pedestrian gate

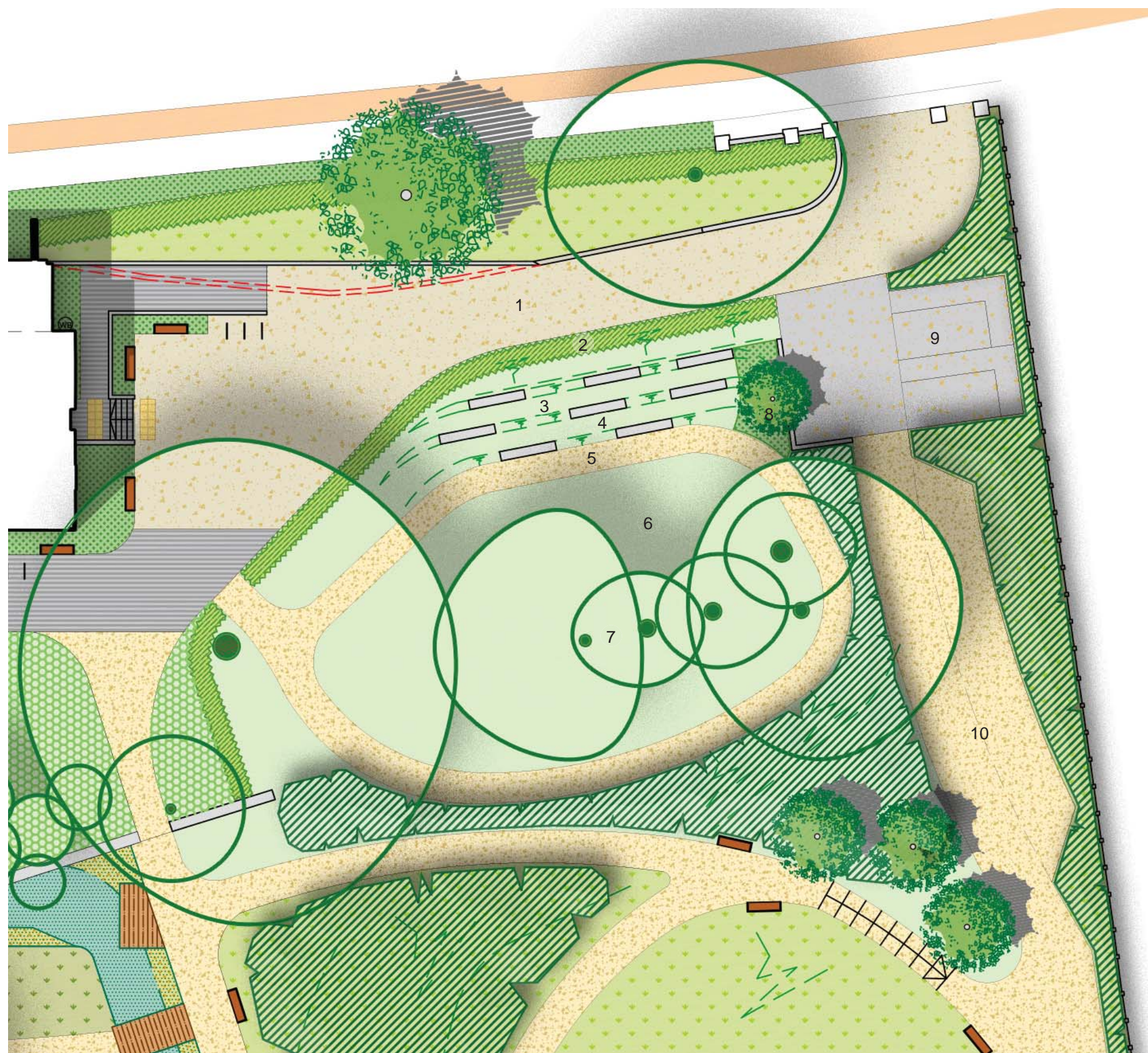
Teaching areas: growing plots, covered external working area, space for glasshouse.

Planting: Northern shrub boundary – laurel removed, reinstate with native evergreen boundary (Holly - Ilex aquifolium). Introduction of non native pollinator friendly flowering species.

Hedge– Field maple - Acer campestre

Existing walls – maintain and encourage wall species.

FRONT LAWN - EVENT SPACE



FEATURES

1. Shared driveway
2. Dwarf hedge
3. Seating terraces
4. Timber seats
5. Gravel footpath
6. Event lawn
7. Existing trees
8. Planted embankment
9. Disabled parking bays
10. Footpath to river terraces and jetty to the south

SUMMARY

Front lawn - event space.

Re-profiling of retaining wall to south facing terraced bank with seating

Re-profiling of eastern edge to merge levels

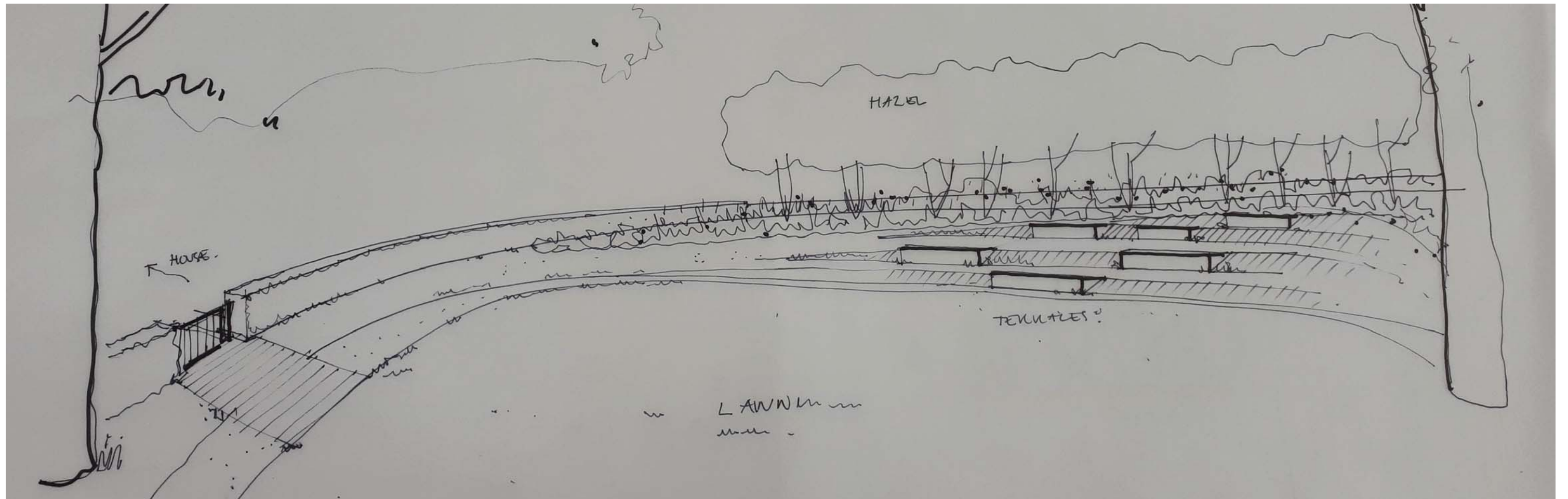
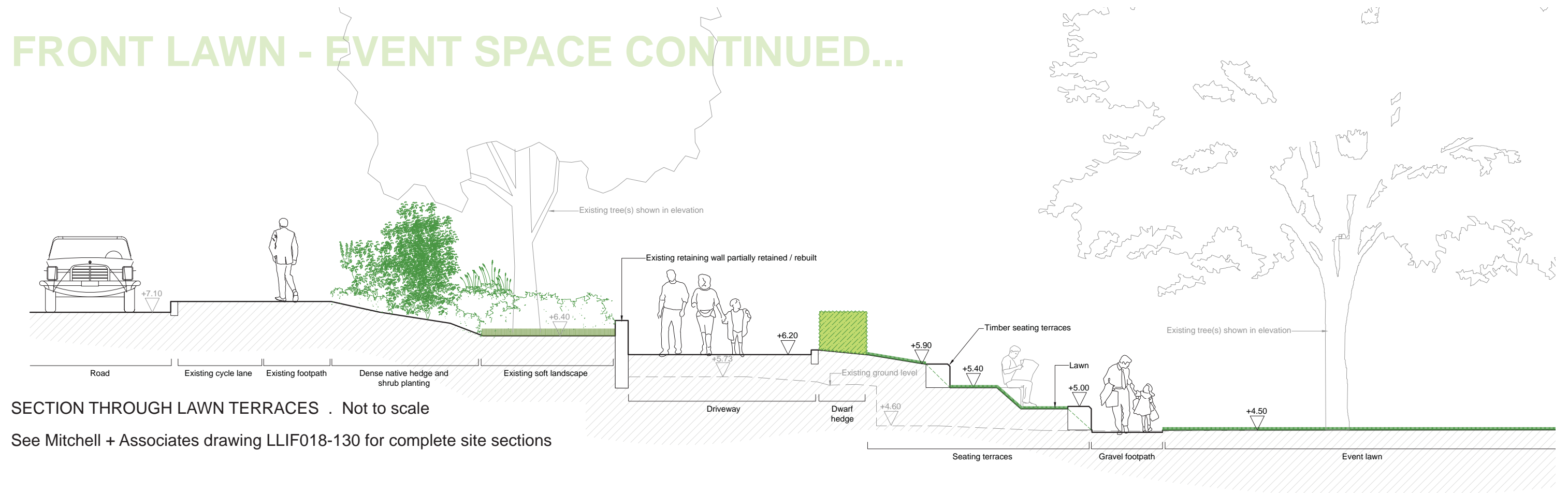
Contained space with access through picket gate from house

Circuit path

Herbaceous lawn potential



FRONT LAWN - EVENT SPACE CONTINUED...



SKETCH OF EVENT LAWN

ORCHARD

The Orchard is the garden area that engages directly with the existing house and proposed buildings. It is therefore the most intensively used area, and also where a relaxed informal garden atmosphere is created. The internal spaces spill out on to outdoor terraces and the Orchard which becomes a teaching and learning space with informal play.

The character to the south of the house, capturing external and covered teaching and learning spaces has the following elements:

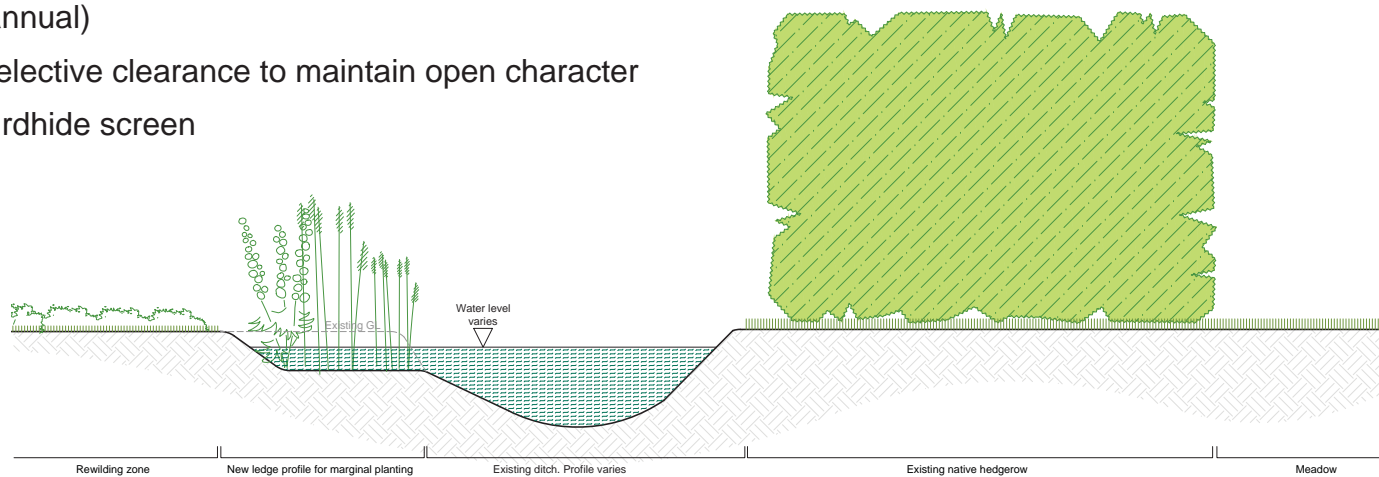
- Canopies
- Planting beds for food and colour
- Paved terraces
- Sustainable drainage management - raingarden and rainwater harvesting
- New orchard planting
- Orchard meadow
- Mown grass paths and teaching area
- Existing Well - a fenced area with supervised access
- Northern boundary wall – repaired and locally planted.
- Southern hedge boundary – reinstated with native species and gaps for viewing wild area
- Connectivity to park through former Dept of Defence lands.



WILD AREA

Wild Area

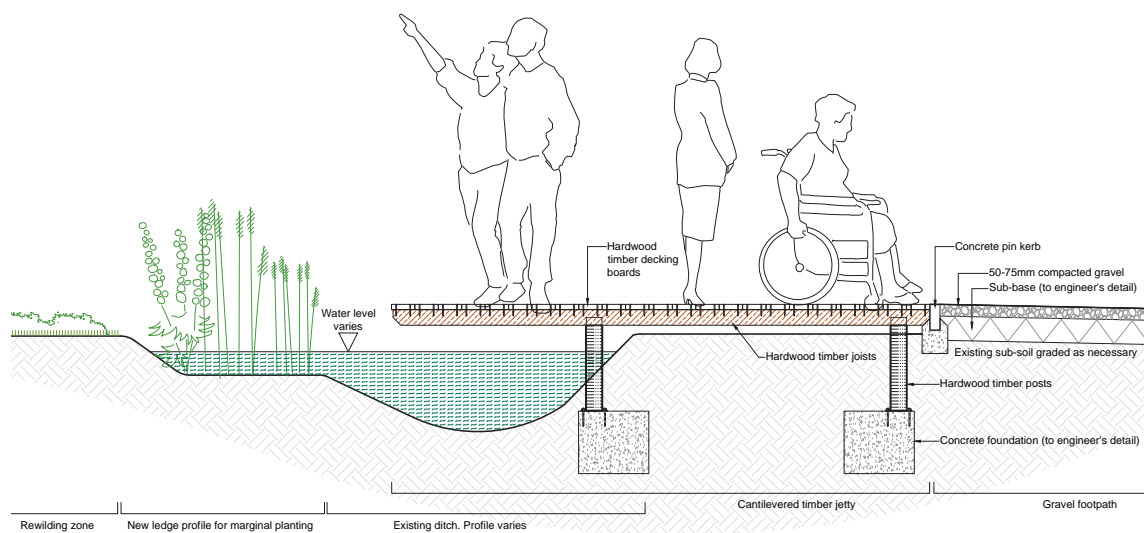
- Restricted access and management
- Ditches cleared and profiled for marginal planting.
- Ditch clearance on a 3 year rotating cycle.
- Silt removed to meadow area
- Ongoing Himalayan Balsam management
- (annual)
- Selective clearance to maintain open character
- Birdhide screen



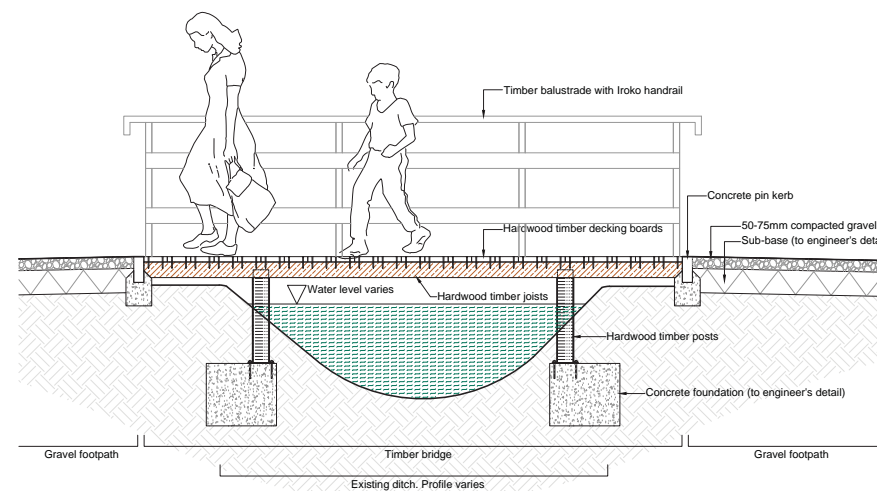
TYPICAL DITCH DETAIL . Not to scale



EXAMPLE OF A BESPOKE BIRDHIDE SCREEN



TYPICAL JETTY DETAIL . Not to scale



TYPICAL BRIDGE DETAIL . Not to scale

See Mitchell + Associates drawing LLIF018-131 for landscape details

PIONEER WOODLAND AND COPPICE

The tree strategy includes self-generating pioneer woodland, as well as new planting, including a Hazel grove with native understorey including bluebells.

- Pioneer woodland and coppice
- Coppice management (circa 8 year rotation)
- Tree Species: Willow, alder, birch and hazel
- Woodland understorey



MEADOW

Meadow

There are different areas of varying mowing regimes, from the Orchard, Front Lawn, and main Meadow. It is proposed to generate a low nutrient meadow that is capable of being used for informal play and events after mowing.

The earthforms help to frame the space, and add variety to the biodiversity through slope aspect and dryness.

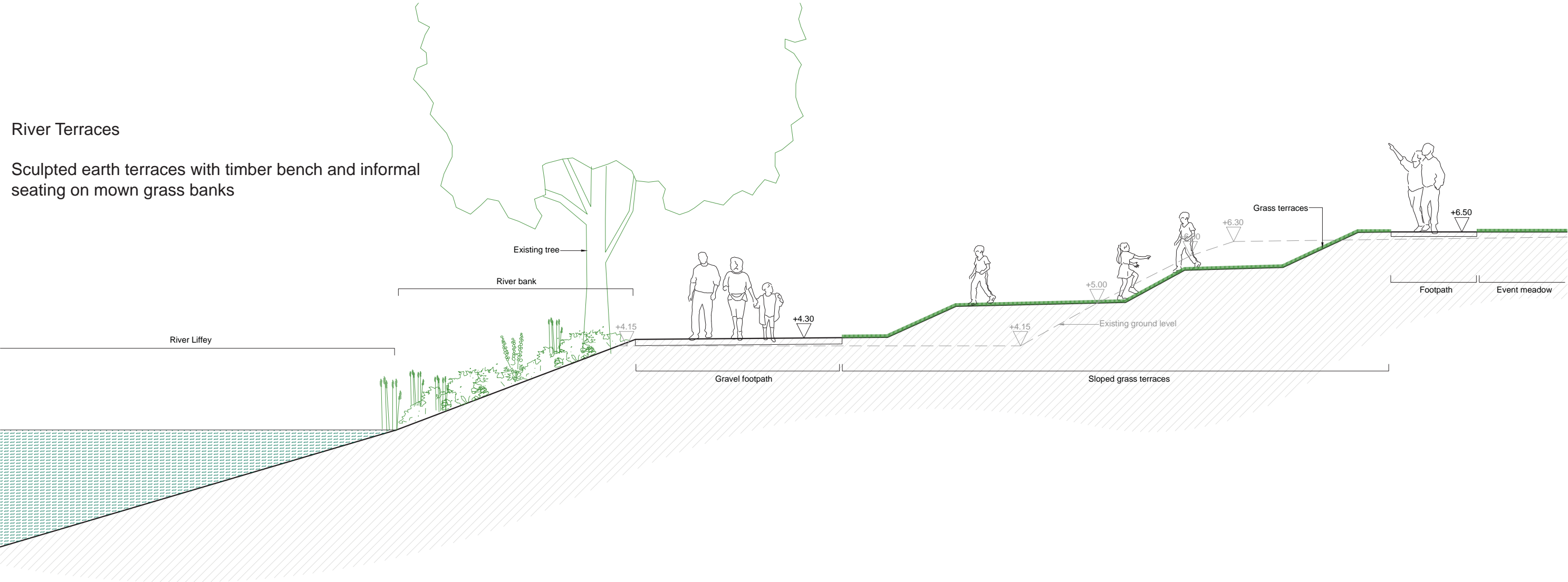
Mowing regime proposed is for mowing in mid June followed by 4-6 week cycle, or alternatively once once in late summer.



RIVER TERRACES

River Terraces

Sculpted earth terraces with timber bench and informal seating on mown grass banks



SECTION THROUGH RIVER TERRACES . Not to scale

See Mitchell + Associates drawing LLIF018-130 for complete site sections

ELEMENTS AND MATERIALS

Elements and Materials

The design intent with material selection is to achieve character that is in keeping with the setting with the use of natural materials - particularly timber and stone.

The elements are:

Bridges and platforms at ditches, for views along ditches

Jetty and container for equipment

Paths :

Reclaimed stone paving, setts and trims

Tar and limestone chip with flush kerb edges

Limestone compacted gravel ('maintenance') with timber and geotextile edges

Steps:

Timber sleeper steps with compacted limestone gravel infill. Timber handrails

Seating :

Solid timber benches with stainless steel fixings for arms and backs

Green oak sleeper benches with stainless steel fixings for arms and backs

Bridges – painted/stained timber

Fences – painted/stained timber

Signage – painted/stained timber



Compacted gravel for low intensity use.

COLOUR

Colour

The grounds at Liffey Vale will be verdant, with wild amorphous areas contrasting with limited areas of formal elements such as the entrance hedge at the front lawn and the river terraces. In order to highlight some elements and add focus to the landscape, assisting with wayfinding, identity and sense of place, it is proposed to use colour on some of the structures. Selected elements for colour focus and backdrop are:

- Bridges
- Shelter
- Wall panels
- Gates
- Signage and interpretation



APPENDIX F

Biodiversity at Liffey Vale: Preliminary Review and Preliminary Recommendations for Management for Biodiversity



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February 2021

1 River and immediate environs

1.1 Biodiversity Interest

It is good habitat for the native wetland trees particularly alder and willow which have appeared naturally. Before farming started the climax vegetation of the site (i.e. before human settlement) was extensive wet woodland dominated by willows and alder. Current trees near the river give you a slight impression of it.

River feeds wetland birds such as kingfisher, grey heron, mute swan and water hen. Margin is a potential nesting site for mallard (to be checked during the breeding season).

River is a corridor for migratory fish (salmon, trout and eels). The number of salmon within the Liffey has fallen since the 1990's due to overfishing and pollution but salmon still enter the river each year to spawn in the Rye (tributary which goes into the Liffey in Leixlip). Flying visitors to the river at this location include cormorants throughout the year, especially in winter where they often prey heavily on fish stocks including trout, salmon, eel and perch. Black-backed gulls are summer visitors to the area and are known to breed on the rooftops in the area of Heuston Station. In winter, herring gulls and black-headed gulls are regular visitors and also commute up and down the river to the bay.

It is an excellent habitat for eels. When river in the vicinity was dredged eels were seen in mud dumped beside the river. Guidelines recommended leaving mud on site for several hours to allow eels to return to water.

The river is also a habitat for non-native coarse fish which are prized by some fishermen such as pike, bream, rudd, roach and perch.

Probably feeds otter as they have been seen upstream in Palmerstown. No sign at Liffey Vale in the immediate locality probably due to disturbance by rowers/ or and competition from mink.

Otters require safe holts, in tall bankside vegetation, scrub, especially in trees overhanging the water or with good spreading roots such as ash and sycamore. They feed on fish, eels and other small animals.

River is a regular feeding area for Daubenton Bat which skim over the water (very distinctive flight) at dusk during calm summer weather feeding on insects. Other bat species are also common. Best seen/heard in summer on calm evenings at dusk by anyone with a bat detector.



1.2 Geodiversity interest

Pre ice age watercourse at this location. Instead of the Liffey heading straight out to sea at the end of the Ice Age it found its way to the sea via a pre ice age channel which is part of our site. Therefore there has been a watercourse at this location for c. 2 million years.

Due to ice melting after the Ice Age c 12,000 years ago Liffey was c. 100m deep at this location from top of banks of both sides of the valley i.e. top of hill in nearby Phoenix Park and top of bank on the southern side. Therefore the low hill/banks consist of sand and gravel brought by the river. There are signs of quarrying in all of them. Where river currents were fast a steep bank developed. Where the water was less powerful the land was more gently sloping. This explains the general topography of the Liffey landscape in the vicinity of Liffey Vale.

As the ice melted the land got higher (as ice had pressed down the land) and as less water was in the channel the width and depth of the river changed. The channel got narrower and shallower. The sequence of stages under which this occurred left a series of terraces north and south of the river. There were pauses which created these terraces including the land under the Chapelizod Road.

Ground water seeps out of this sand and gravel bank at the well.



The boundary between the dry orchard and wetter lower part of the site probably marked the final flood line where the river flooded naturally each winter and possibly summer. OS maps show a ditch at this location (still there).

However seasonal flooding no longer occurs. After the ESB dammed the Liffey (resulting in Blessington Lake) and power stations were built the regular flooding regime ceased. The flow is controlled to produce power for the electricity generating stations. One of the impacts for biodiversity is that there is less chance of coot and water hens nesting beside the river as their nests can be swept away. Of course a good result of flooding is that it produces fertile soils. While the river lacks a natural flood margin there is control over water levels for the Liffey Descent Canoe Race.

1.3 Human history

Big scale

Presence of Liffey explains site of Dublin (valuable fishery, shellfishery and shallow crossing points).

Liffey obvious source of water until quality deteriorated. Water not of drinkable quality now, although most of Dublin now gets its drinking water from the Liffey, upstream of the city and after chemical treatment.

Water quality is poor over 66% of the river Liffey. The only unpolluted stretches are in

Co. Wicklow. In the environs of Liffey Vale, water quality can be defined as moderately polluted. It does not always meet standards for drinking water, or salmonid fisheries, or bathing water as the water often contains too much nitrite, too little oxygen and too many faecal coliforms. Biological monitoring indicates that it can be defined as Q3, (moderately polluted). This poor quality of the water is due principally to the quality of the discharges from the sewage treatment plants at Osberstown and Leixlip.

Medium scale

Navigable at least to Chapelizod until weir put in at Islandbridge in 1210-20 when the monks of Kilmainham cut a 390m channel for a millrace and constructed a weir. As a result river is now only tidal to there. Pool below the weir traps some of the migrating salmon. Dublin & District Salmon Anglers Association set up to regulate fishing at this location. Probably very small membership now.

The river and its resources were particularly significant in medieval times. There are references to mills, houses, a fishery, weirs and sluices in 14th century accounts of Chapelizod. In 1380 the King regranted to the Priory the fishery at Chapelizod together with a weir and sluice.

Small scale

Liffey Vale site was originally part of the Phoenix Park. The construction of the Royal Hospital at Kilmainham in 1680 resulted in a reduction in the size of the park by sixtyfour acres along the south side of the river. At this stage the Chapelizod road ran through the park which resulted in the loss of many deer. This led to the construction of a new boundary wall on the south side of the park by Sir John Temple, Solicitor General of Ireland, which excluded all land south of the river. The narrow strip of land between the Chapelizod road and the river referred to as Long Meadows on Ordnance Survey maps, then became the property of the same Sir John Temple.

According to Ordnance Survey maps the pastures between the Liffey and Chapelizod road were known as the “Long Meadows”. Their consistent use for hay production was facilitated by the annual flooding of the river. The land was managed in several parcels as there were field boundaries on the 1838 and 1876 Ordnance Survey maps. The Liffey vale land was managed depending on location. Near the river were fields used for grazing. Nearer the house the land was managed for amenity. The lower ground in Liffey Vale is the original flooded river margin. The dry ground is underlain by sand and gravel left by a more swiftly flowing river. Alluvium gets deposited when flow rate is slow. At some stage soil was dumped beside the river east of Liffey Vale to create a football pitch. This also affected Liffey Vale and probably introduced the Knotweed.

1.4 Opportunities for management

The value of the river at this location has changed over the centuries. It is of huge importance to members of rowing clubs including the Municipal Rowing Club which is open to the public. Coaches race alongside the boats on their boat club bicycles. Liffey Vale site allows for close up views of rowing boats etc. which are common all year round.

Biodiversity and environmental quality are now the priorities for all agencies.

For example due to natural siltation vegetation expands from the banks and this needs

to be dredged regularly every 20 years as it interferes with rowing. This operation is supervised by an ecologist to ensure that it is done at the right time of year, does not interfere with nesting birds or rare species. When DCC participated in a EU funded research project to examine recreational impacts on natural areas the Liffey between Sarah Bridge and Chapelizod was chosen as their case study.

2 Abandoned fields, orchard and dry bank

2.1 Biodiversity baseline

If you categorise the land by habitat type (so called Fossitt classification sponsored by the Heritage Council in 2000) this are the habitats you find at Liffey Vale. If you want more technical descriptions look at the Fossitt book in the Heritage Council web site.
WS3 Ornamental /non-native scrub

WS1 Scrub (of natives)

WD5 Trees and parkland (orchard)

GS1 Dry calcareous and neutral grassland (old lawn)

GS2 Dry meadows and grassy verges (tall uncut grassland in the orchard)

GS4 Wet grassland (in the abandoned fields)

FW4 Drainage ditch

FP1 Calcareous spring? in orchard. Very rare habitat in the city.

WL2 Treelines (of Lombardy poplars)

ED2 and ED3 spoil and bare ground being revegetated

WN5 Riparian woodland beside the Liffey



Almost all are semi-natural types dominated by native species. Therefore there is an impressive diversity of native plants, herbs, shrubs and trees which have spread naturally as a result of rewilding. Some plants are unusual in Ireland but common in the Liffey Valley e.g. Ivy Broomrape *Orbanche hederaceae* common in woodlands. Shrubbery is suitable for nesting birds, a rare habitat in the city but common in the Phoenix Park. Mushrooms can be seen on decaying wood. Further surveys would reveal a great array very rare species.

These habitats are all important for native flora/birds = insects, food etc for birds and bats but nothing rare or protected (except for bats). Many trees are PBR's (potential bat roosts).

It is obvious that ash and alder are regenerating naturally.

The bird survey in October (not the best time) resulted in the following assessment:

Evidence of breeding robin in woodlands and jackdaw (in chimney)
The following may breed (needs more fieldwork):

Blackbird
Blackcap
Goldcrest
Blue tit
Great Tit
Wren
Jay possibly? Presence of Jay would be significant.

Frog was seen on our first site visit.

2.2 Rewilding

Site offers opportunity to direct rewilding through active management; remove nonnatives lilac, snowberry, privet, laurel and knotweed and establish an appropriate type of native habitat ideally woodland or biodiversity friendly shrubberies or grasslands. Management would demonstrate best practice.

Rewilding Wetlands

Could enhance wetland areas associated with the spring and drainage ditches to create wetland habitats missing from the environs of the river including wet woodland, the original climax woodland. Need to get more information on water quality in the well. Basically pH but ideally information on all the parameters I sent to DCC. Need to discuss wetland works with Inland Fisheries who would be reluctant to allow interference with banks but would not prevent it. Lots of conditions attached to this work.

Willow could be coppiced here.

Some rough grassland should be retained as gaps for birds and habitats for invertebrates. Species diversity might improve if managed appropriately. Mow after flowering and take away cuttings.

Rewilding grasslands

All the original grasslands should be managed to enhance their biodiversity value. They will only be mown after flowering and setting seed. All cuttings will be removed. After a good number of years native grassland biodiversity will improve. If we have new lawns suggest that they incorporate large numbers of crocus, snowdrops, bluebell, spring and autumn flowering cyclamen all of which should naturalise freely. Copy the style of Shackletons Mill gardens at Lucan.

Appropriate tree planting and woodlands

Ash hazel woodland on the dry soil. Managed by coppicing. Woodland should have species typically associated with dry native woodland such as bluebells, herb-robert, wood anemone, wild garlic, wood sanicle and goldilocks buttercup.

Highlight the old ash beside the house.

Any tree felling particularly of old mature ivy covered trees would be supervised by a bat specialist.

Lighting

Careful lighting design needed to avoid disturbing nocturnal wildlife i.e. bats.

Lighting must be planned to consider biodiversity. Dark zones need to be provided particularly along the river. Mercury vapour lamps should be used to attract insects = bat food.

3 Buildings and walls

3.1 Biodiversity baseline

Associated with the habitats BL3 (Buildings and artificial surfaces) and BL1 (Stone walls and other stonework) are the following features of biodiversity interest:
Soprano pipistrelle bat roost (4-5 in number) using the house.
Jackdaw nest in chimney
Specialised native flora growing on walls
Building might be used by swifts (to be checked in summer).



3.2 Management for biodiversity

Offers opportunity to construct a totally biodiversity friendly building and demonstrate this to visitors.

If restoration work is being planned it should be carried out when bats have left the building (autumn/winter).

The attic space should be designed to accommodate bat roosts and barn owl in two separate compartments. This could be rigged up with CCTV to check occupation.

Landscaping should provide creepers on the walls which are pollinator, bat and bird friendly. Where possible only plant locally sourced climbing plants such as ivy and

Dr Mary Tubridy

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honeysuckle on walls and Red Valerian on the ground. If non-natives are used then for north and west facing walls use plants tolerant of shade or partial shade. Specifically use *Pyracantha coccinea* and/or *P. rogersiana*. For east and south facing walls use *Pyracantha coccinea* and/or *P. rogersiana*. For ground cover plant *Lonicera pileata*. Mixed base of *Cotoneaster horizontalis* interspersed with *Lavandula spica* ‘hidcote’, Red Valerian *Centranthus ruber* or stonecrop *Sedum spectabile*. The perennials, especially the stonecrop, are highly attractive to butterflies.

Three different types of bird boxes could be installed in the exterior walls. Each wall should have at least three hole-entrance types (two 25mm, one 28mm) and one openfronted type (slit 50mm). Frequent users of artificial nest sites are coal tit, blue tit and great tit and to a lesser extent robin and starling. An owl box should also be provided on the exterior wall. Obviously all of these boxes need to be maintained and removed if not being used.

Dr Mary Tubridy

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APPENDIX G

**BIODIVERSITY MANAGEMENT /
LANDSCAPING STRATEGY**

DR. MARY TUBRIDY

Biodiversity Management/Landscaping Strategy for Liffey Vale

Dr Mary Tubridy, Mary Tubridy and Associates, February 2021

Rationale

Principle objective of the biodiversity/landscaping strategy is to retain and enhance the naturalness of the site, its cultural heritage and communicate this value to visitors of all ages who may or may not have a special interest.

Principles underpinning the approach to management are:

- Recognition of the relative naturalness of different parts of the site. The area subject to landfill is of least value. The orchard area is of medium value and lower part of the site which was part of the floodplain is of greatest value. All the site is being rewilded. The river and its boundary is particularly sensitive as works here could impact negatively on protected and high profile species i.e. salmonids.
- Major interventions will be carried out where 1) quality is being diminished due to presence of invasive alien species (knotweed and Indian balsam) and 2) where there is a need for management to improve the quality of a particular habitat which has potential to increase its biodiversity and cultural value.
- Intervention will remove garden plants of little value for biodiversity i.e. cherry laurel, snowberry and privet.
- Landscaping to demonstrate good practices, through managed rewilding, creating habitats of value for biodiversity (woodlands, hedgerows and grasslands), using only biodiversity friendly species and managing these habitats and species to maintain and enhance their biodiversity value (such as appropriate mowing regimes for grasslands etc).
- Development works will aspire to retaining materials and valuable species on site, such as relocating specimens of alder and willow to more suitable locations.

The site has been divided into different zones and the following table gives an indication of the works required in each section. See accompanying map in 5.3 Land Management Statement for location of the different zones.

Table 1 Proposed work programme in Liffey Vale

Zone	Current condition	Approach	Works
Zone One: Gardens & Orchard			
1A Boundary shrubbery / hedge	Overgrown shrubbery with many non-natives and too much bramble. Good biodiversity as a result of having some native trees, a good lilac near the house and bluebells in the ground flora.	Remove almost all vegetation with the exception of the good features; improve soil and then plant up with an ornamental shrubbery which is biodiversity friendly.	Prune the lilac at the appropriate time (after flowering for maintenance pruning) As the bed is very weedy it will need a good dig over and possibly some compost or well-rotted manure added prior to planting. Choose ornamental species for this area due to the closeness to the house and to give homeowners an idea what they can plant to support wildlife and biodiversity in their own gardens. Trailing species such as the aubrieta and candytuft can be planted at the edge of the bed to hang over the wall and soften it. See Appendix 1 for lists of suitable tree, shrub, and herb species.
1B Front lawn / garden	Herbaceous lawn which is shaded by trees and has an interesting old grassland. Grassland is being invaded by alders, cherries and hawthorn. Mix of good and bad features	Potential to improve grassland by introducing biodiversity friendly herbs, landscaping to make a feature of the veteran ash tree and improving bird biodiversity by planting a suitable shrubbery on the wall to the north.	Remove the first two of the poplars, all the laurels, buddleia and any other non-natives such as the snowberry. This will give more light. Keep the big cherry next to the remaining poplars. Salvage all alders and move to elsewhere on site. Remove some of the ivy by hand. Some of the bare areas of the lawn can be reseeded with a wildflower mix suitable for a shaded site (EC04 Hedgerow semi- shade or EC03 woodland (shade)) from wildflowers.ie) or planted with bulbs particularly near the trees (see Appendix 1 for list of bulbs). The ash tree should be enhanced by removing some of the bramble under it and planting with ground cover such as small leaved periwinkle and bulbs and foxgloves.

Zone	Current condition	Approach	Works
1C Area round the house	Currently a natural alder thicket where not paved	Establish interesting grassland to complement hedgerow. Relocate alders elsewhere on site. Ornamental planting to be established using pollinator friendly species.	Move some of the alder saplings and young trees to the re-wilding areas (area 8). Use Irish company wildflowers.ie and select seed mixes suitable for areas that are shaded or semi shaded (EC04 Hedgerow (semi- shade) or EC03 woodland (shade)).
1D Orchard area	Currently has a good old grassland (with bluebells), veteran apple trees, native elder and a well.	Improve biodiversity, provide for passive amenity and community horticultural use. Need to determine water quality and drainage regime in the orchard. Suspect well drains eastwards. Establish interesting grassland to complement replanted hedgerow (1E). Relocate alders elsewhere on site.	Clear all poplars and turn some of their timber into log piles (or use for bridge construction?). Make ground safe underfoot but not too urban. Near the house clear some alders (re-establish elsewhere on site with willows and tutsan), keeping the burdock and some brambles to provide site for raised beds. In the orchard remove some of the elder from the orchard and the purple plum. Check if the two cherries here are fruiting or ornamental. Keep if fruiting. Plant the plastered section of the boundary wall with variety of wildlife friendly climbers. See Appendix 1 for potential species. Pears on the sunnier parts. Install a water source for plants and planting in this area.
1E New hedgerow	Area currently has mix of shrubs of little value to wildlife. They also block light to adjacent drainage ditch.	Replace with a linear shrubbery /hedgerow which has gaps to allow viewing of rewilded area (Zone 2B & 2C).	Establish hedgerow structure defined by the presence of a tree species (mountain ash) planted along its length in combination with a mixture of other trees and shrubs commonly found in hedgerows (listed in Appendix 1). Create gaps by planting with shrubs only in particular sections.

Zone	Current condition	Approach	Works
Zone Two: Wilderness			
2A The Drainage Ditches	Drainage ditches currently of little value for biodiversity due to lack of light and low water level.	Manage drainage ditches to improve wetland biodiversity and restore a feature which was important to the functioning of the site as a working farm.	To improve wetland biodiversity in drainage ditches deepen ditches by removing silt and reprofiling to provide a bank for wetland species to establish. Remove opportunity for undesirable Indian balsam by planting up with suitable wetland species (see Appendix 1).
2B The Wilderness West Actively managed rewilded area	Abandoned wet grassland dominated by native species	Priority is to maintain and enhance naturalness by keeping Indian balsam under control and improving drainage ditch. No planting here.	Drainage ditch deepened and planted up with native wetland species. Indian balsam kept under control
2C The Wilderness East Actively managed rewilded area	Abandoned wet grassland dominated by native species	Priority is to maintain naturalness by keeping Indian balsam under control, improving drainage ditch and planting alders relocated from elsewhere within the site to create an alder dominated woodland.	Drainage ditch deepened and planted up with native wetland species. Alders and willow relocated from elsewhere on the site. Indian balsam kept under control
2D Riverbank	Natural riverbank	Retain in undisturbed	No actions

Zone	Current condition	Approach	Works
Zone Three: Reclaimed Land			
3A New woodland habitat on steep bank	Currently a mix of good and bad. Bad where covered in knotweed and other non-natives, snowberry, laurel and privet. Good where vegetation dominated by native shrubs and the herb ivy leaved broomrape (a Liffey Valley specialty which is commonly found wherever ivy is common).	Take out the bad, ensuring knotweed buried deep in this area. Establish new woodland habitat, retaining good native vegetation.	Keep all native shrubs here including most of the bramble. Establish native woodland, adjacent to native shrubbery, adjacent to native grassland. Woodland could be hazel coppice (plus oak, crab tree and spindle). Make ground safe underfoot but not urban. Use appropriate wildflower mix from wildflowers.ie to establish grassland in bare patches.
3B Meadow: grassland habitat	As 3A above	Take out the bad, ensuring knotweed buried deep in this area. Establish / enhance native grassland habitats here linking to a native hedgerow along eastern boundary	Establish native grassland adjacent to native shrubbery, adjacent to native woodland. Establish mowing regime to encourage native species, as well as mown areas for public access.
3C Boundary hedge, microwoodland & specimen trees	As 3A above	Take out the bad, ensuring knotweed buried deep in this area. Establish native hedgerow / shrubbery with specimen native trees along eastern boundary	Establish native shrubbery / hedge adjacent to native grassland, adjacent to native woodland. Establish management to encourage dense growth.
3D Terraces overlooking river	Has bare ground and native vegetation	Leave riverbank (2D) alone. Landscape sitting out area.	Establish small trees/shrubs (see Appendix 1) or native grassland in the sitting out area.

Appendix 1

Small trees and shrubs suitable for Zones 1A - E

Snowy mespil also called serviceberry (*Amelanchier canadensis*)
Dwarf Russian cherry (*Prunus tenella*)
Winter flowering cherry (*Prunus autumnalis*)
Halberd willow ‘wehrhahnii’ (*Salix hastata* ‘Wehrhahnii’)
Cornelian cherry (*Cornus mas*)
Beautyberry (*Callicarpa bodinieri* var. *Giraldii*)
Oregon grape (*Mahonia* species)
Sweet box (*Sarcococca confusa* or *S. hookeriana*)
Purple honeysuckle (*Lonicera x purpusii*)
Winter-flowering honeysuckle (*Lonicera fragrantissima*)
Darwin’s barberry (*Berberis darwinii*)
Japanese quince (*Chaenomeles* species)
Hebe (*Hebe* species)
St. John’s wort (*Hypericum* species)
Skimmia (*Skimmia japonica*)
Lavender (*Lavendula angustifolia*, *L x intermedia*, *L. stoechas*)
Rosemary (*Rosmarinus* species)
Catmint (*Nepeta* species)
Thyme (*Thymus* species)
Sage (*Salvia* species)

Climbing or wall plants suitable for Zones 1B and 1D

Common ivy (*Hedera helix*)
Virginia creeper,
Climbing hydrangea
Pyracantha sp

Herbaceous perennials suitable for zones 1A, 1B and 1D

Michaelmas daisies (*Aster* species and hybrids)
Japanese anemones (*Anemone japonica*)
Chrysanthemum (*Chrysanthemum* species and hybrids)
Sage (*Salvia* species)
Alpine rock cress (*Arabis alpina* subsp *caucasia*)
Sea thrift (*Armeria maritima*)
Aubrieta (*Aubrieta* species)
Gold dust (*Aurinia saxatilis*)
Elephants ears (*Bergenia* species)

Hellebores (*Heleborus* species and hybrids)
Perennial candytuft (*Iberis sempervirens*)
Lungwort (*Pulmonaria* species)
Yarrow (*Achillea* species)
Columbine (*Aquilegia* species)
Lesser calamint (*Calamintha nepeta*)
Purple knapweed (*Centaurea atropurpurea*)
Mealy knapweed (*Centaurea dealbata*)
Tickseed (*Coreopsis* species)
Globe thistle (*Echinops* species)
Cranesbill (*Geranium* species)
Avens (*Geum* species)
Helen’s flower (*Helenium* species)
Button snakewort (*Liatris spicata*)
Bergamot (*Monarda didymium*)
Coneflower (*Rudbeckia* species)
Garden scabious (*Scabiosa caucasica*)
Iceplant (*Sedum spectabile*)
Culver’s foot (*Veronicastrum virginicum*)
Grass (*Stipa* ‘Ponytails’)
Daylilies (*Hemerocalis* ‘Stella d’Or’)
Foxglove (*Digitalis purpurea*)

Bulbs or bulb like structures for lawns Zones 1B, 1C and 1D

Winter and spring flowering crocus (*Crocus* species)
Winter aconite (*Eranthis hyemalis*)
Common snowdrop (*Galanthus nivalis*)
Armenian grape hyacinth (*Muscari armeniacum*)
Common star of Bethlehem (*Ornithogalum umbellatum*)
Ornamental alliums (*Allium* species)
Native bluebells (*Hyacinthoides non-scripta*)
Bowden Cornish lily (*Nerine bowdenii*)
Snakeshead lily (*Fritillaria mealeagris*)
Cyclamen (*Cyclamen coum*, *C. hederifolia*)
Pasque flower (*Pulsatilla vulgaris*)
Reticulated iris (*Iris reticulata*)

Hedgerow species (zones 1E and 3C near eastern boundary fence)

Trees

Birch (*Betula pendula*),
Hazel (*Corylus avellana*)
Holly (*Ilex aquifolium*)
Crab apple (*Malus sylvestris*)
Spindle (*Euonymus europaeus*)
Guelder rose (*Viburnum opulus*)
Wild cherry (*Prunus avium*)
Bird cherry (*Prunus padus*)
Mountain ash (*Sorbus aucuparia*),

Shrubs

Blackthorn (*Prunus spinosa*)
Gorse (*Ulex europaeus*)
Hawthorn (*Crataegus monogyna*),
Elder (*Sambucus nigra*)
Dog rose (*Rosa canina*)
Field rose (*R. arvensis*)
Honeysuckle (*Lonicera periclymenum*)

Herbs

Woodruff (*Galium odoratum*)
Wood sage (*Teucrium scorodonia*)
Tutsan (*Hypericum androsaemum*)
Ferns (e.g. *Dryopteris* sp., *Polystichum setiferum*)
Foxgloves (*Digitalis purpurea*) can be planted along the base of the hedgerow along with tall grasses and other hedgerow flowering species.

Wetland herbs (drainage ditches Zone 2A)

Kingcup (*Caltha palustris*)
Purple loosestrife (*Lythrum salicaria*)
Wild angelica (*Angelica sylvestris*)
Brooklime (*Veronica beccabunga*)
Lady’s smock (*Cardamine pratense*)
Marsh bedstraw (*Galium palustre*)
Opposite leaved golden saxifrage (*Saxifraga oppositifolium*)
Creeping jenny (*Lysimachia nummularia*)
Water mint (*Mentha aquatica*)
Marsh woundwort (*Stachys palustris*).

Shrubs and herbs in Zone 3D

Eared willow (*Salix aurita*)
Purple willow (*Salix purpurea*)
Snowy mespil (*Amelanchier canadensis*),
Dwarf Russian cherry (*Prunus tenella*)
Winter flowering cherry (*Prunus autumnalis*)
Halberd willow ‘wehrhahnii’ (*Salix hastata* ‘Wehrhahnii’)
Birch (*Betula pendula*)
Rowan (*Sorbus aucuparia*)
Winged spindle (*Euonymus alatus*)
Darwin’s barberry (*Berberis darwinii*)
Mock orange (*Philadelphus* species)
Tutsan (*Hypericum androsaemum*)
Hidcote st. John’swort (*Hypericum hidcote*)
Lavender (*Lavendula angustifolia*)
Rosemary (*Rosmarinus officinalis*)
Thyme (*Thymus* species)
Oregano (*Oregano* species)
Catmint (*Nepeta* species)
Russian Sage (*Perovskia atriplicifolia*)
Blue star (*Amsonia* species)
Coral bells (*Heuchera* species)
Lemon balm (*Melissa officinalis*)
Bergamot (*Monardia* sp.)
Chives (*Allium schoenoprasum*)
Mint (*Mentha* species)
Bugle (*Ajuga reptans*)
Bugle (*Ajuga reptans* ‘Burgundy Glow’,
Ajuga reptans 'Black Scallop')
Wormwood (*Artemisia schmidtiana* 'Silver Mound')
False goat’s beard (*Astilbe* 'Amber Moon')
Siberian bugloss (*Brunnera macrophylla* 'Emerald Mist')
Siberian bugloss (*Brunnera macrophylla* 'Jack Frost')
Cantebury bells (*Campanula* species and *C.* 'Dickson's Gold')
Black snakeroot (*Cimicifuga ramosa* 'Hillside Black Beauty')
Bleeding heart (*Dicentra* 'Pink Diamonds')
Bishop’s hat (*Epimedium* 'Pink Champagne')
Small leaved periwinkle (*Vinca minor*)
Purple loosestrife (*Lythrum salicaria*)
Knapweed (*Centaurea nigra*)
Reticulated iris (*Iris reticulata*)
Bearded iris (*Iris germanica*)
Michaelmas daisies (*Aster* species and hybrids)
Japanese anemones (*Anemone japonica*)
Aubrieta (*Aubrieta* species)
Lungwort (*Pulmonaria* species)

Yarrow (*Achillea* species)
Purple knapweed (*Centaurea atropurpurea*)
Mealy knapweed (*Centaurea dealbata*)
Tickseed (*Coreopsis* species)
Avens (*Geum* species)
Cardoons (*Cynara cardunculus*)
Scabious (*Knautia macedonica*)
Yarrow (*Achillea* species)
Lily of the valley (*Convallaria majalus*)
Woodruff (*Galium odoratum*)
Burnet (*Sanguisorba officinalis* var. *microcephala* 'Little Angel')
Cranesbill (*Geranium* species)
Coneflower (*Rudbeckia* species)
Iceplant (*Sedum spectabile*)
Blue fescue grass (*Festuca glauca* 'Blue Whiskers')
Shasta Daisy (*Leucanthemum superbum*)
Anise hyssop (*Agastache*)
Peruvian lily (*Alstromeria*)
Black-Eyed Susan (*Rudbeckia fuldiga*)
Spike Speedwell (*Veronica*)

APPENDIX H

Biodiversity Aspects of Liffey Vale Development: Management of Invasive Alien Plant Species



Japanese knotweed in Liffey Vale September 2019

Dr Mary Tubridy, Mary Tubridy and Associates

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1 Introduction

As the site is of high ecological sensitivity guidelines have been produced concerning the impact of the invasive alien species Knotweed and Himalayan balsam. This brief report contains background information on these species: (ecology and control), describes their current status at Liffey Vale and environs, provides guidelines for treatment and control and a specification for a tender requesting quotes for various treatment options to deal with Knotweed.

2 Approach

Control of invasive alien species has become a biodiversity priority globally and nationally due to their effects on habitat integrity, the consequent economic impacts on agriculture, fisheries, tourism, the human health implications and expense associated with their control.

On September 29th, 2014, the European Council adopted a Regulation on the prevention and management of the introduction and spread of invasive alien species [2013/0307 (COD)]. The Regulation, that is a binding legal tool for all Member States, entered into force on January 1st 2015. The Regulation lays down rules to prevent, minimise and mitigate the adverse impacts of the introduction and spread, both intentional and unintentional, of invasive alien species on biodiversity and the related ecosystem services, as well as other adverse impact on human health or the economy.

Relevant legislation in Ireland is the Birds and Habitats Regulations (2011) particularly Regulations 49 and 50. Regulation 49 prohibits the introduction and dispersal of certain species. It places restrictions on the introduction of any plant species listed in Part 1 of the Third Schedule. A person shall be guilty of an offence if they: plant, disperse, allow or cause to disperse, spread or cause to grow the plant in the Republic of Ireland.

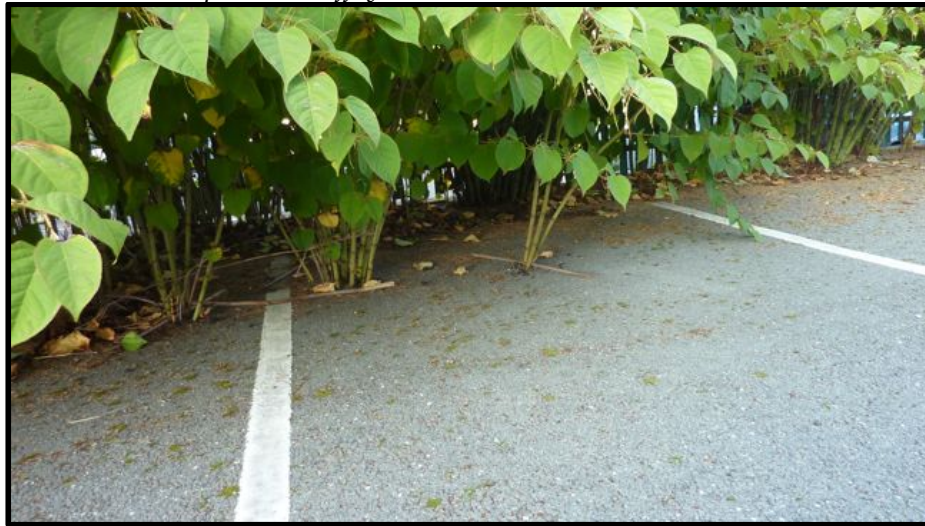
Appendix 1 lists species covered by this regulation including Knotweeds and Himalayan balsam.

Under the regulations a licensing system is proposed to cover the management of the movement of parts of these plants and vectors (i.e. soil) which could aid their dispersal.

Prosecution can occur if a license is not obtained. The implications of the Regulations are that developers should determine if these species are present and measures to control the movement and spread of the invasive species need to be incorporated in development plans. Negative impacts can occur directly through moving the plants or indirectly through disturbing soil containing parts (seeds etc) from which regrowth can occur.

Status of knotweed

The most widespread invasive plant in terrestrial habitats near urban areas is Knotweed, of which three species occur in Ireland. The most common is Japanese knotweed or, *Fallopia japonica* (Houtt.) (with the synonyms *Reynoutria japonica* and *Polygonum cuspidatum*). It is a member of the Polygonaceae (docks and rhubarb family), native to Japan and northern China and was introduced to Western Europe by gardeners in the 18th century.



Japanese Knotweed damaging a car park in Dublin

Giant knotweed (*Fallopia sachalinensis*) is not as common. Hybrids between Japanese knotweed (*Fallopia japonica*) and giant knotweed are known as (*Fallopia X bohemica*).

Knotweeds typically occur along roadsides and waste ground. It is particularly common along the Dodder in Dublin City, west of Clonskeagh Bridge. During the winter, the brown stalks remain standing even though the plant dies back to the rootstock.

Dispersal typically occurs not through seeds (as Knotweed found in Ireland do not produce seeds) but through fragments (as much as a thumbnail) of stems, leaves or roots being transported in soil by humans or to a lesser extent, through passive mechanical means such as in floodwaters. All these parts of the plant are capable of growing into a complete plant. Its growth is undesirable as it causes a range of problems due to its prolific and dense growth habit including blocking sightlines on roads, damage to paving and structures, erosion of riverbanks and flood defence structures, damage to archaeological sites, loss and displacement of native habitats and species.

Status of Himalyan balsam

In contrast Himalyan balsam (*Impatiens glandulifera*) is an annual.



Himalyan balsam

It is a native to the western Himalayas and was introduced to Europe as a garden plant as it produces large attractive pink flowers. It is now invasive in many parts of
Mary Tubridy and Associates September 27th 2019

continental Europe. In Britain, Himalyan balsam is regarded as one of the top-ten most wanted species that have caused significant environmental impact. In contrast to Knotweeds it produces seeds. It is very common along the Liffey where it has displaced native wetland species. As it is an annual it does not have the drastic impacts on structures which are associated with Knotweed. Its growth is undesirable as it displaces native habitats and species. However as it is an annual it may not persist in the areas which have been colonised.

Control of Invasives

Within Ireland, concerned interests and statutory agencies have promoted research and best practice for management. This is accessible through the website www.invasivespeciesireland.com. This is based on protocols developed in the UK which are regularly updated by the Environment Agency and are communicated through: <http://www.innsa.org/information/sector-information/item/162-new-environment-agency-updated-japanese-knotweed-code-of-practice.html>.

Best practice guidance in Ireland has been developed by the National Roads Authority (based on UK experience) and contains survey and control protocols:

<http://www.nra.ie/environment/environmental-construction-guidelines/Management-of-Noxious-Weeds-and-Non-Native-Invasive-Plant-Species-on-National-Road-Schemes.pdf>

Control measures depend on the timescale for development. Knotweed control requires herbicide applications over several years to reduce plant vitality. If development does not allow that timescale then a combination of spraying and plant removal is required. This involves very careful removal and disposal of all living plant parts. As Himalyan balsam is an annual which spreads by seeds the removal of plants before this occurs is both effective and the most environmentally form of control. Balsam bashing is commonly done as a Citizen Science project in Ireland.

If possible control measures should be carried out over several years to ensure invasives are successfully eradicated.

The approach to site survey at Liffey Vale reflects best practice in carrying out habitat and invasive species surveys. Prior to survey work at Liffey Vale desk based research was carried out (examining unpublished reports, aerial photographs and the National Biodiversity Data Centre data base) to obtain information on the distribution of target species. This suggested that Japanese knotweed and Himalyan Balsam might be present.

Dr Mary Tubridy and an assistant then visited the site and its environs on September 16th 2019. Habitats were identified using the Irish Habitat Classification system (Fossitt, 2000).

Where invasives were identified the following information was collected:

- Species name
- GPS (at the centre of the population)
- Extent of area /m²
- Photographic record
- Notes on accessibility and terrain to assist with treatment.

Results

Liffey Vale comprises principally abandoned dry and wet grassland some of which is now covered in scrub (WS1). Two invasive plant species are present, Japanese knotweed and Himalayan balsam. Fig 1 shows the approximate locations of Knotweed populations. Table 1 summarises the results of the assessment.



Knotweed sites at Liffey Vale

Table 1 Invasive Species Assessment

Site Name
Liffey Vale and environs
Date(s)
September 16th
Name of Surveyor
Dr Mary Tubridy and Assistant
Fieldmap
1:2,500 + Google Aerial photography
Habitats present at Liffey Vale and environs
FW2 Depositing/ lowland river WS1 Scrub WS3 Ornamental / Non-native scrub GS2 Dry meadows and grassy verges BL3 Buildings and artificial surfaces WL2 Treelines WD5 Scattered trees and parkland
Current site management
No management
Invasive Species Present
<i>Fallopia japonica</i> also called <i>Reynoutria japonica</i>

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Impatiens glandulifera (Himalayan balsam)

Location of invasives

Knotweed Population One

On both sides of the fence bordering Liffey Vale and the football pitch

Grid reference (ITM) is 0711378 / 0734139

Area 4mX 12m in Liffey Vale, 12mX 15m in the football pitch

Knotweed Population Two

On a steep bank c20m from the Liffey

Grid reference (ITM) is 0711354 / 0734093

Area 5mX 8m

Himalayan balsam is scattered throughout the site where it has been subject to flooding by the Liffey.

Description of knotweed stands

Population One is growing inside and outside the boundary with the football pitch. Within Liffey Vale it is present in a scrub (WS1) dominated by the natives Alder, Dog rose and Brambles. Outside the site this population is in tall unmanaged grassland (GS2) and may have been sprayed. Population Two is less accessible on the steep bank in scrub.

Description of Himalyan balsam

No dense stands were seen. The population is represented by scattered individual plants within that part of the site which is subject to occasional flooding.

Proposed Control Measures

Knotweed control will be required if there are plans to disturb the site within 10m of the plants. Measures required will depend on the timescale for development. The control of Himalayan balsam could be carried out as a regular (yearly) citizen science project by recruiting volunteers to pull up the plants before they set seed. Appendix 2 contains a sample specification to obtain quotes for a project to control knotweed. The choice of options will depend on the timescale for development at the affected sites.

References

Fossitt, J. (2000) A Guide to Habitats in Ireland, Heritage Council, Ireland.

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Appendix 1

European Communities (Birds and Natural Habitats) Regulations (S.I. No. 477 of 2011): Regulations relevant to invasive species

The plant species to which the regulations apply are presented in the table following the text. The vector materials are also listed in the table.

Section 49. Prohibition on the introduction and dispersal of certain species.

Section 49 of the act states:

(1) Save in accordance with a license granted under paragraph (7), any person who breeds, reproduces or releases or allows or causes to disperse or escape from confinement, any animal which—

(a) is not—(i) ordinarily resident in or is not a regular visitor to the State in a wild state, or (ii) of a kind that is domesticated or that is in the normal course the subject of human husbandry,

(b) is included in Part 2A of the Third Schedule in any place specified in relation to such animal in the third column of Part 2A of the Third Schedule, or

(c) is included in Part 2B of the Third Schedule in any place specified in relation to such animal in the third column of Part 2B of the Third Schedule, shall be guilty of an offence.

(2) Save in accordance with a license granted under paragraph (7), any person who plants, disperses, allows or causes to disperse, spreads or otherwise causes to grow in any place specified in relation to such plant in the third column of Part 1 of the Third Schedule, any plant which is included in Part 1 of the Third Schedule, shall be guilty of an offence.

(3) Subject to paragraph (4), it shall be a defence to a charge of committing an offence under paragraph (1) or (2) to prove that the accused took all reasonable steps and exercised all due diligence to avoid committing the offence.

(4) Where the defence provided by paragraph (3) involves an allegation that the commission of the offence was due to the act or default of another person, the person charged shall not, without leave of the court, be entitled to rely on the defence unless, within a period ending 28 days before the hearing, he or she has served on the prosecutor a notice giving such information identifying or assisting in the identification of the other person as was then in his or her possession.

(5) (a) In this Regulation, an animal or plant listed in the Third Schedule shall mean such an animal or plant or a hybrid of any such animal or plant or any breed, strain, sport, variety, cultivar or other intraspecific taxon of such plant or animal in relation to the entire State or, where limited for such an animal or plant, the particular areas set forth in the Third Schedule for each such animal or plant.

(b) For the avoidance of doubt, an animal or plant of a species to which the Third Schedule refers shall include specimens of such species under any scientific synonym, vernacular name or trade name by which it may be referred to.

(6) In this Regulation, “confinement” means a place in which an animal is secure from escaping and from which its eggs, larvae, young, any life stage or resting stage, or any part from which an adult of the animal could develop are secure from being dispersed or escaping.

(7) (a) One or more persons may make an application for a license, under this paragraph, for the purposes of complying with the requirements of paragraph (1) or (2).

(b) The Minister may seek from the applicant any information that he or she considers necessary for consideration of the application.

(c) The Minister may grant or refuse to grant, or revoke, such a license, and shall give reasons for his or her decision and for any conditions imposed under subparagraph (f).

(d) In making a decision under subparagraph (c), the Minister shall take account of the requirements of the Habitats Directive and the Birds Directive and in particular the requirements of Article 22(b) of the Habitats Directive, and he or she shall take account of such advice or information as he or she considers appropriate in relation to any animal or plant to which the license application relates.

(e) The Minister shall grant a license under this paragraph only if he or she is satisfied that the grant of the license will not pose a threat to the objectives of the Birds Directive or the Habitats Directive.

(f) A license granted under this paragraph shall be subject to such conditions, restrictions, limitations or requirements as the Minister considers appropriate.

(g) Any conditions, restrictions, limitations or requirements to which a license under this paragraph is subject shall be specified in the terms of the license.

(h) Paragraphs (1) and (2) do not apply to anything done under and in accordance with the terms of a license granted by the Minister under subparagraph (c).

(8) For the purposes of this Regulation, “the State” includes the territorial waters of the State and the exclusive economic zone of the State.

(9) For the avoidance of doubt, the Minister may develop threat response plans under Regulation 39 for the purposes of this Regulation and, generally, for the purposes of addressing the exclusion, eradication or control of species referred to in the Third Schedule and any other species that the Minister considers poses a threat to the habitats or species protected under these Regulations.

(10) Where the Minister considers that a species poses a threat to the objectives of the Birds and Habitats Directives, including the protection of European Sites, of habitats, and of species of flora and fauna, including birds, he or she may authorise the destruction by appropriate means including, where appropriate, by shooting, of any of the animals referred to in paragraph (1)(a), or listed in Part 2 of the Second Schedule.

(11) Where an animal that is of a species referred to in Part 2B of the Third Schedule, or that is a hybrid of such a species, is one of a herd that is being farmed for slaughter for commercial meat production, it shall not be an offence under this Regulation to transport the animal from one place of enclosure to

Invasive Plant Species at Liffey Vale
another for farming purposes or to transport the animal for sale or for slaughter for commercial meat production.

(12) For the purposes of paragraph (11), “slaughter” does not include the killing of an animal during or following hunting.

Table 1 List of Invasive Plants in 2011 Regs

Common name	Scientific name	Geographical application
American skunk-cabbage	<i>Lysichiton americanus</i>	Throughout the State
A red alga	<i>Grateloupia doryphora</i>	Throughout the State
Brazilian giant-rhubarb	<i>Gunnera manicata</i>	Throughout the State
Broad-leaved rush	<i>Juncus planifolius</i>	Throughout the State
Cape pondweed	<i>Aponogeton distachyos</i>	Throughout the State
Cord-grasses	<i>Spartina</i> (all species and hybrids)	Throughout the State
Curly waterweed	<i>Lagarosiphon major</i>	Throughout the State
Dwarf eel-grass	<i>Zostera japonica</i>	Throughout the State
Fanwort	<i>Cabomba caroliniana</i>	Throughout the State
Floating pennywort	<i>Hydrocotyle ranunculoides</i>	Throughout the State
Fringed water-lily	<i>Nymphoides peltata</i>	Throughout the State
Giant hogweed	<i>Heracleum mantegazzianum</i>	Throughout the State
Giant knotweed	<i>Fallopia sachalinensis</i>	Throughout the State
Giant-rhubarb	<i>Gunnera tinctoria</i>	Throughout the State
Giant salvinia	<i>Salvinia molesta</i>	Throughout the State
Himalayan balsam	<i>Impatiens glandulifera</i>	Throughout the State
Himalayan knotweed	<i>Persicaria wallichii</i>	Throughout the State
Hottentot-fig	<i>Carpobrotus edulis</i>	Throughout the State
Japanese knotweed	<i>Fallopia japonica</i>	Throughout the State
Large-flowered waterweed	<i>Egeria densa</i>	Throughout the State
Mile-a-minute weed	<i>Persicaria perfoliata</i>	Throughout the State
New Zealand pigmyweed	<i>Crassula helmsii</i>	Throughout the State
Parrots feather	<i>Myriophyllum aquaticum</i>	Throughout the State
Rhododendron	<i>Rhododendron ponticum</i>	Throughout the State
Salmonberry	<i>Rubus spectabilis</i>	Throughout the State
Sea-buckthorn	<i>Hippophae rhamnoides</i>	Throughout the State
Spanish bluebell	<i>Hyacinthoides hispanica</i>	Throughout the State
Three-cornered leek	<i>Allium triquetrum</i>	Throughout the State
Wakame	<i>Undaria pinnatifida</i>	Throughout the State
Water chestnut	<i>Trapa natans</i>	Throughout the State
Water fern	<i>Azolla filiculoides</i>	Throughout the State
Water lettuce	<i>Pistia stratiotes</i>	Throughout the State
Water-primrose	<i>Ludwigia</i> (all species)	Throughout the State
Waterweeds	<i>Elodea</i> (all species)	Throughout the State
Wireweed	<i>Sargassum muticum</i>	Throughout the State

Table 2 Nature of Vector Material listed in 2011 Regulations

Vector material	Species referred to	Geographical application
Blue mussel (<i>Mytilus edulis</i>) seed for aquaculture taken from places (including places	Mussel (<i>Mytilus</i>	Throughout the State

Invasive Plant Species at Liffey Vale

outside the State) where there are established populations of the slipper limpet (<i>Crepidula fornicata</i>) or from places within 50 km. of such places	edulis) Slipper limpet (<i>Crepidula fornicata</i>)	
Soil or spoil taken from places infested with Japanese knotweed (<i>Fallopia japonica</i>), giant knotweed (<i>Fallopia sachalinensis</i>) or their hybrid Bohemian knotweed (<i>Fallopia x bohémica</i>)	Japanese knotweed (<i>Fallopia japonica</i>) Giant knotweed (<i>Fallopia sachalinensis</i>) Bohemian knotweed(<i>Fallopia x bohémica</i>)	Throughout the State

Appendix 2 Sample Tender Specification for Knotweed Control at Liffey Vale

Request for tender for Removal of Knotweed in the grounds of Liffey Vale, Chapelizod

? on behalf of Dublin City Council

Proposals are invited for the treatment of two stands of Knotweed in the environs of Liffey Vale, Chapelizod. The approximate location is shown in Fig. 1. Further details are in Table 1. Two stands require treatment. The larger stand is on both sides of the fence between Liffey Vale and adjacent football pitch. The smaller population is totally within Liffey Vale on a steep bank nearer the river.



Fig. 1 Approximate location of knotweed stands.

Table 1 Knotweed stands

Stand No	GPS (ITM)	Extent	Habitat	Sensitivity
1	0711378/0734139	228m2	Scrub and tall grassland	Medium sensitivity as knotweed growing with native vegetation.

Stand 2	0711354/0734093	40m2	Scrub (WS1)	Medium sensitivity as knotweed growing with native vegetation.
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Costs are required for the following treatment options

- A On-site treatment with a herbicide; over three calendar years.
- B Excavation of plant material and all infected soil to an on site bund for treatment and monitoring over 3 years.

Employer may provide plant and attendances (digger, digger driver, dumper etc.).

- C Excavation and removal of plant material and all infected soil to a licensed landfill. Employer may provide plant and attendances (digger, digger driver, dumper etc.) for on-site excavations. Quote to include for cost of removal off site to a licensed landfill facility.

The proposal should include:

- Cost
- Full details of the method used and their relationship to best practice guidelines (refs below).

Following completion of the works a validation statement should be produced.

Prior to the commencement of works the client will inform the contractor about safety procedures.

The proposal should be sent to ? at ? by ?.

References for spec.

Best practice guidelines (Ireland, UK, Scotland and Wales)

<https://www.gov.uk/government/publications/japanese-knotweed-managing-on-development-sites>

Invasive Plant Species at Liffey Vale


<http://www.tii.ie/technical-services/environment/construction/Management-of-Noxious-Weeds-and-Non-Native-Invasive-Plant-Species-on-National-Road-Schemes.pdf>

https://www.property-care.org/wp-content/uploads/2015/04/Code-of-Practice-for-the-Management-of-Japanese-knotweed_v2.7.pdf


https://www.sepa.org.uk/media/154142/onsite_mangaement_of_-japanese_knotweed_associated_soils.pdf

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APPENDIX I



Japanese Knotweed Management Options
Liffey Valley



Date: April 2020

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1. INTRODUCTION

At the request of Darragh Cunningham, Dublin City Council (DCC), INVAS Biosecurity Ltd. (INVAS) was commissioned to draw up a number of management options for the eradication of Japanese knotweed from their site at Liffey Valley.

1.1. Project Background

DCC intend to restore the property and grounds at this site. To date, 7th April 2020, no work, groundworks, or soil removal has taken place. A large stand of Japanese knotweed has been detected on the north-east perimeter of the site.

1.2. Legal Requirements and Implications for Management

Japanese knotweed is subject to restrictions under Regulations 49 and 50 (the latter not currently commenced) of the European Communities (Birds and Natural Habitats) Regulations 2011 (SI No. 477), being listed in the Third Schedule (Part 1) of this legislative Act. Soil taken from a place that is infested with Japanese knotweed (vector material) is also restricted under Part 3 of this Third Schedule. The law relating to Japanese knotweed is primarily contained in Regulation 49 (2), which states that it is an offence to ‘allow or cause to disperse’ plants listed in the Third Schedule, of which Japanese knotweed is one. As such, any Japanese knotweed plant material or contaminated soil that is to be removed from an infested site can only be done so under a licence issued by the National Parks and Wildlife Service (NPWS).

1.3. Objectives

The aim of this document is to present a number management options and recommendations for the control or eradication of Japanese knotweed on the Liffey Valley site.

2. SURVEY RESULTS

2.1. Survey

On the occasion of the initial site visit (29th October 2019), a large stand of mature Japanese knotweed was recorded at the north-east corner of the site (Figure 2.1). Himalayan balsam was also identified on the site.

A detailed survey will be required to be carried out on the site to map and quantify the extent of these infestations, and any other invasive species that may be present on the site. The survey will also supply information on the approximate volumes of soil that will be required to be moved to achieve good management / eradication of the Japanese knotweed. A more detailed ground survey will be necessary to determine soil depths, which will ultimately provide the feasibility of the deep burial option (see Section 4.1.3).

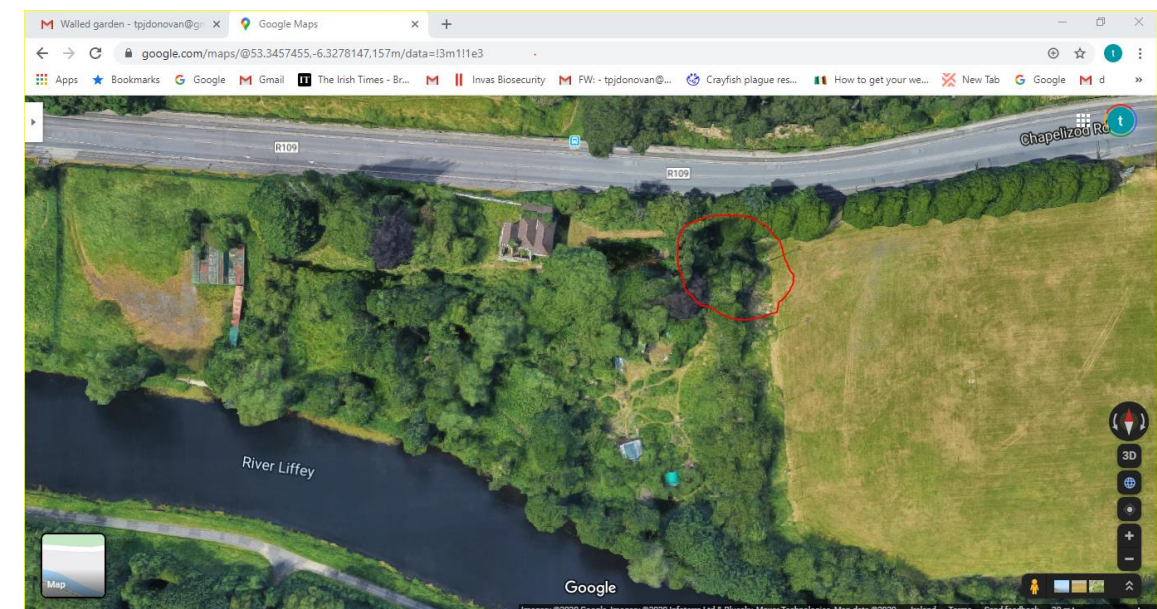


Figure 2.1: The location of the Japanese knotweed infestation at Liffey Valley, based on an initial site visit.

3. SPECIES DESCRIPTION

3.1. Japanese knotweed

Japanese knotweed is a non-native and highly invasive perennial plant that spreads rapidly *via* rhizome growth and fragmentation. Only female plants have been recorded in Ireland and, although the plant can produce seeds, they rarely survive. The plant overwinters as an extensive and intricate underground rhizome matrix. The rhizome system may achieve a depth of 2 metres and can extend up to 7 metres from the visible parent plant. Japanese knotweed rhizomes have extremely high regenerative potential and a fragment as small as 1 cm in length can produce a new population. Rhizomes may remain dormant for many years.

The robust and extensive woody rhizomes of Japanese knotweed are capable of penetrating asphalt, cracked foundations, walls, land drainage works and other built structures, causing significant structural damage. By eliminating native vegetation on roadsides and river banks, the plant can also cause seriously damaging subsidence. Failure to manage Japanese knotweed will result in its spread and proliferation in the infested area.

3.2. Himalayan balsam

Himalayan balsam is a non-native invasive riparian plant species that is widespread throughout Ireland. An individual plant may produce up to 2,500 viable seeds. When seed pods have fully matured they explosively split open, propelling the contents a few meters from the parent plant which, in large stands, can lead to densities of up to 6,000 seeds per square metre. Seeds can also float, leading to dispersal throughout watercourses. The plant species is frequently found as dense monocultures in riparian zones and moist woodlands or floodplains in close proximity to watercourses. Himalayan balsam plants can reach up to 2.5 metres in height. It can outcompete native vegetation by shading, leading to severe impacts on local biodiversity. When parent plants die back in winter they leave river banks exposed and vulnerable to erosion. This can lead to siltation and the further dispersal of seeds downstream.

A control/eradication plan for Himalayan balsam can be prepared whenever required by DCC.

4. CONTROL OPTIONS AND RECOMMENDATIONS

4.1 Control Options for Japanese knotweed at Liffey Valley

Below is a description of the proposed control options for Japanese knotweed at Liffey Valley, with a table outlining the suitability of each method in relation to this project. For the clients preferred control option, a management plan and a RAMS outlining the specific actions for each stage of the operation will be provided.

4.1.1 Excavation & Bunding

Bunding provides a cost-effective option for Japanese knotweed control where sufficient suitable land is available. A bund is an area of ground that is cordoned off and where the contaminated soil is placed on top of a proprietary root barrier membrane, to a depth not exceeding 1 metre. The root barrier membrane is a reinforced, impermeable, polyethylene membrane that has a life expectancy of at least 50 years. The aim of this disposal method is to isolate contaminated soil and encourage Japanese knotweed regrowth, which can then be treated with approved herbicides.

A tracked excavator should be used to remove the soil and plant material from the infested areas, to a depth of at least 1.8 metres (or a depth agreed with the invasive species expert on site) below ground level. The area required for bunding will be equal to the cubic tonne volume. This will be determined by a detailed ground survey. The soil and plant material should be carefully loaded onto biosecure trucks that will transport the material to the location of the bund site. Strict biosecurity protocols must be adhered to at all times during this process and a long-term herbicide management plan must be put in place for the bunded area. A protective fence must be placed around the bund and fitted with appropriate warning or information signage. This fence may be put in place before or after the bund construction operation. Access to the completed bund must be restricted to authorised persons. The bunded area must be clearly and accurately mapped, for future reference.

The bunded area may be used for small tree planting; however, access to the surrounding areas must be preserved for ongoing herbicidal treatment of Japanese knotweed regrowth.



Bund construction



Depositing contaminated Japanese knotweed soil in bund



Bund filled to 1 metre height

4.1.2 Excavation and disposal off-site at a licenced landfill

This requires site operations to excavate all Japanese knotweed plants and associated contaminated soil and remove all this material off-site. The soil and plant material must be carefully loaded onto biosecure trucks that will transport the contaminated material to the appropriate disposal location. Strict biosecurity protocols must be adhered to at all times during this process. It is deemed prudent to remove soil in the infested areas to a depth of at least 1.8 metres (or a depth agreed with the invasive species expert on site) and 7 metres from the last visible plant in order to be certain that no rhizomes remain in the soil following excavation operations. The material is disposed of at a landfill that is licenced to receive Japanese knotweed contaminated soil. Transport of Japanese contaminated soil is subject to acquiring a licence from NPWS. Detailed records of all soil removal operations must be maintained by throughout the project. This specifically focuses on the exact areas to be excavated, the method of excavation, the depth of excavation, the volume of material (as numbers of truck loads) removed, an inventory of personnel and equipment entering and leaving the Japanese knotweed-demarcated areas, and the biosecurity operation facilities (for cleaning and disinfecting PPE and machinery) provided at each area. Any problems encountered during the operation must also be recorded.



Excavating Japanese knotweed-contaminated soil from a development site



Excavated area post-works

4.1.3 Excavation and disposal on-site

Deep burial in an on-site containment cell is an effective disposal option, in certain circumstances. Excavation must remove all Japanese knotweed rhizome material and be carried out in the same manner as for the ‘Excavation and disposal off-site at licenced landfill’ option (see Section 4.1.2). The site selection for the containment cell must take into account services, landscaping, transport routes within the site, possibility of erosion and the future use of the site. The distance for contaminated material to be transported through the site should be minimised, with the site located as close as possible to the site of infestation. If the burial site is located in a different area to the infestation, biosecurity measures must be put in place, including decontamination facilities and designated work and haulage areas. Prior to excavation, the invasive plant material should be treated with a non-persistent herbicide and left *in situ* for up to three weeks.

The disposal site will require the construction of a containment cell, to a minimum of 3 metres deep, that is lined with a proprietary root barrier membrane. The area required for deep burial

will be dependent on the depth of the excavation. This will be determined by a detailed ground survey. Once filled with Japanese knotweed-contaminated material, the cell must be sealed and buried beneath 2 metres of inert backfill or uncontaminated soil.

The location of the burial site must be accurately mapped and recorded to prevent future potential disturbance and re-infestation.



Preparation of deep burial site



Depositing contaminated soil in deep burial site

4.2 Recommendations for Japanese knotweed at Liffey Valley

Table 4.1 presents the control options available for Japanese knotweed disposal at Liffey Valley and outlines the suitability of each method for this project. This aims to provide guidance to DCC in the selection of an appropriate control and disposal methods for the Japanese knotweed infestations. For the clients preferred control option, a method statement outlining the specific actions for each stage of the operation will be provided.

It is possible to consider a combination of the three methodologies to maximise efficiencies and reduce costs.

Table 4.1: Control options for Japanese knotweed at Liffey Valley

Treatment method	Suitability (Yes/No)	Why	Expected start date
4.1.1 Excavation and bunding	Yes	This will be dependent on land availability	
4.1.2 Excavation and disposal off-site	Yes	This will guarantee Japanese knotweed eradication from the site	
4.1.3 Excavation and deep burial on-site	Yes	This will be dependent on land availability and depth of subsoil	



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APPENDIX J

Arboricultural Assessment
(Tree survey)

To assess the trees

On the site at

Liffey Vale
Chapelizod Road
Dublin 8

February 2020

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PART ONE – ARBORICULTURAL ASSESSMENT

Introduction

The purpose of this report is to set out the findings following the inspection of trees on site at, Liffey Vale, Chapelizod, Dublin 8 and set out their condition. The survey work was undertaken 10th February 2020 by the undersigned a qualified arboricultural consultant. The term of reference for the report is a planning application on the site. The following categories have been used within the tree report tables and, where appropriate, the criterion used to define each category is defined.

- **Tree No.** : refers to the identification tag attached to a tree [also identified as such on the accompanying survey drawings]
- **Species** : refers to the common and scientific name given to the tree.
- **Stem diameter** : refers to the diameter of the tree stem in millimetres, as measured at 1.5 metres above ground level and above the root flare for multi-stemmed trees.
- **Height** : refers to the total height of the tree in metres. (Heights measured with a TruPluse© 200)
- **Crown spread** : refers to the width of the crown in metres, measured at each cardinal point on the compass.
[Dimensions marked with # are estimates as per 4.4.2.6 c) – BS5837:2012]
- **Condition** : refers to the physiological condition of the tree as a whole described as:
Good – Full healthy canopy but possibly including some suppressed or damaged branches
Fair – Slightly reduced leaf cover, minor dead wood or isolated major dead wood
Poor – Overall sparse leafing or extensive dead wood
- **Age** An estimation of the age of the tree described as;
V- Veteran, trees, which by recognized criteria, show features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to individuals surviving beyond the typical age range for the species concerned.
OM – Over Mature, trees reaching the end of their life, in decline and senescent.
M – Mature, fully grown, with only small annual increments.
EM – Early Mature, one-third to two thirds of total life expired.
Y – Young, recent planting, with up to one third of total life expired.
- **Remarks** : Descriptive comments about the health (physiological) or form (structural) of the tree, its environment or external influences and may include preliminary management recommendations.

Category grade

- **U -** Those trees in such a condition that any existing value would be lost within 10years and which should be in the correct context, be removed for reasons of sound arboricultural management.
- **A -** Those trees of a high quality and value in such a condition as to be able to make a substantial contribution.
- **B -** Those trees of a moderate quality and value in such a condition as to be able to make a significant contribution.
- **C-** Those trees of a low quality and value currently inadequate condition to remain until new planting could be established, or young trees with a stem diameter below 150mm
- **Estimated remaining contribution in years (ERC):** Expressed as less than 10, 10+, 20+, more than 40

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Glossary of terms used:

Basal: The base of the tree close to the ground, (basal shoots are those emanating from the base).

Crown (canopy): The leaves and branches of a tree.

Co-dominant: Stems or branches of near equal diameter, often weakly attached.

Decay: Degradation of wood by fungi and/or bacteria.

Defect: Any feature of a tree which detracts from the uniform distribution of mechanical stress, or which makes the tree mechanically unsuited to its environment.

Dieback: The death of part of a plant, usually starting from a distal point and often progressing in stages.

Epicormic: Pertaining to shoots or roots, which are initiated on mature woody stems; shoots may form in this way from dormant buds or they may be adventitious.

Dysphotic zone: A zone within the canopy which does not have enough light to carry out photosynthesis.

Included Union: bark of adjacent parts of a tree (usually in forks, acutely angled branches or basal flutes), which is in face-to-face contact, so that there is weakness due to the lack of a woody union.

Lean: Departure of the trunk from the vertical.

Scaffold limbs: The branches, which form the main framework of the crown of a tree with a decurrent growth habit.

Shoot: A shoot derived from a dormant or adventitious bud on the main stem or branch.

Stub/peg: A short section of a branch, which may have, been left after previous pruning or storm damage.

Wound: Injuries on the surface of a trunk or branch.

Full: A canopy, which extends to the ground or nearly to the ground

Natural suppressed deadwood: Deadwood in conifers, which died as the crown height extended and the lower branch no longer have a function in the production of foliage.

Pathogens: Fungal and /or bacterial infections, which degrade the wood and render trees liable to failure

Wound wood: Wood with atypical anatomical features, formed in the vicinity of a wound or the occluding tissue around a wound

Hazard Limb: An upwardly curved part in which strong internal stresses may occur, cause wood to crack

Burr: Woody protuberances, especially those derived from the mass proliferation of adventitious buds.

Root protection area (RPA): layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.

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Survey Results

Tree no.	Species	Height (m)	Stem dia. (mm)	Spread (m)	Condition	Age	ERC	Remarks	Grade
								The survey starts in the north east corner. The boundary to the site along the eastern boundary is a chain link fence, vegetation has been cleared away from this area.	
								This part of the site is elevated and has been used as an encampment by rough sleepers.	
								Vegetation that remains is grass land with seedling common alder (<i>Alnus glutinosa</i>), Buddleia, Elder, Bramble and there are stands of Japanese knot weed.	
								On the embankment to the river side are two Sycamore.	
5976	Sycamore <i>Acer pseudoplatnaus</i>	15.0	700	N 6.0 S 6.0 E 4.0 W 4.0	Fair	EM	20+	A tree with multiple scaffolds, it has dense ivy and has a good vigour.	C
5977	Sycamore <i>Acer pseudoplatnaus</i>	16.8	600	N 6.0 S 6.0 E 4.0 W 4.0	Fair	EM	20+	A tree with a dense branch structure, it has multiple scaffold branches and has good vigour.	C

Tree no.	Species	Height (m)	Stem dia. (mm)	Spread (m)	Condition	Age	ERC	Remarks	Grade
								Along the riverbank are three common Alder and a White willow. They are in decline, with poor form and dense ivy cover. Set back from the river bank is a small Alder with a distorted stem and a larger twined tree. The mature trees appear to be infected with Phytophthora.	
G 1	Alder <i>Alnus glutinosa</i>	14.5	200-300	16.0	Poor	EM	20+	This is a stand of trees at the base of the embankment growing at the edge of a ditch. They have multiple stem, some of which have collapsed. Many have significant vertical wounds on the stems, with good wound wood. They have basal suckers and scattered deadwood in their crowns.	C
								Along the rivers edge are three clumps of alder, they have poor form, with very dense ivy cover and have significant crown die back.	
5978	Willow <i>Salix alba</i>	20.0	700	N 15.0 S 4.0 E 8.0 W 7.0	Poor	M	10+	A tree with a leaning stem and one sided crown. It has very dense ivy cover and is carrying large diameter deadwood. It has suffered storm damage and has poor shape and form. Beside is a small stump and then the remains of a larger Willow which has partially collapsed. It has a rip wound on its stem and shattered branches. East is the remains of an other collapsed Willow, it has reiterative suckers on its collapsed stem.	U

Tree no.	Species	Height (m)	Stem dia. (mm)	Spread (m)	Condition	Age	ERC	Remarks	Grade
								<p>The site is divided by a water course, to the west there are clumps of Alder, Elder and Willow in the wet grassland. There is a large collapsed Willow with reiterative sucker growth.</p> <p>Along the rivers edge are clumps of Alder in poor condition with dense ivy, poor form and significant crown die back, one is 90% dead.</p>	
5979	Willow <i>Salix alba</i>	16.0	600 500 600	N 10.0 S 12.0# E 11.0 W 4.0	Poor	M	10+	<p>Located at the west end of the site by the rivers edge this tree has three main stems with very dense ivy cover. The stems are leaning and it has a one sided crown with scattered deadwood.</p> <p>Close by is a collapsed Willow.</p> <p>The southern part of the site is separated from the northern side, which appears to be an area of derelict informal gardens, by a wet ditch and an overgrowth hedge of Privet and Cherry-laurel.</p> <p>To the west of the derelict house are three over mature and unmanaged fruit trees with dense ivy and poor form with Elder growth through the canopies.</p>	C

Tree no.	Species	Height (m)	Stem dia. (mm)	Spread (m)	Condition	Age	ERC	Remarks	Grade
5980	Copper Beech <i>Fagus sylvatica purpurea</i>	18.0	900	N 10.0 S 10.0 E 10.0 W 4.0	Fair	M	40+	This tree has a main stem and a sub-dominant lateral branch form its crown. The union is weak, but the canopy has good natural bracing. There is expansion growth below the union. It has a one sided canopy to the east being suppressed by the adjoining Ash. It has moderate ivy cover and minor scattered deadwood.	B
5981	Ash <i>Fraxinus excelsior</i>	23.0	1300	N 10.0 S 10.0 E 9.0 W 7.0	Fair	M	20+	A tree with a decurrent canopy, it has dense ivy cover on its lower stem. It bifurcates at 1.58 metres. It has multiple scaffolds with reiterative suckers and scattered deadwood.	C
5982	Sycamore <i>Acer pseudoplatnaus</i>	12.1	600	N 5.0 S 8.0 E 2.0 W 8.0#	Fair	M	20+	This tree has a one sided crown to the west, it has a branch structure with some deadwood and truncated branches. It has dense ivy cover.	C
5983	Sycamore <i>Acer pseudoplatnaus</i>	18.5	700	N 1.0 S 10.0 E 6.0 W 6.0	Fair	M	20+	A tree with a one sided crown to the south, being suppressed by tree 5984. It has long laterals in its lower crown. It has dense ivy cover on its stem with some scattered deadwood.	C
5984	Sycamore <i>Acer pseudoplatnaus</i>	23.2	1300	N 11.0 S 6.0 E 10.0 W 8.0#	Fair	M	20+	A large specimen, it has a slight line to its lower stem, it has a multiple scaffolds and a large sub-dominant branch on the east side. It has dense ivy at its base, it has a dense canopy with scattered deadwood.	B

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Tree no.	Species	Height (m)	Stem dia. (mm)	Spread (m)	Condition	Age	ERC	Remarks	Grade
5985	Lombardy poplar <i>Populus nigra italica</i>	28.3	700	N 3.0 S 2.0 E 2.0 W 2.0	Poor	M	10+	A tall specimen, with a form typical of its species, it has dense ivy. It has basal stem decay and has scattered deadwood in its canopy.	U
5986	Lombardy poplar <i>Populus nigra italica</i>	28.0	700	N 3.0 S 2.0 E 2.0 W 2.0	Poor	M	10+	A tall specimen, with a form typical of its species, it has dense ivy. It has large stem decay with extensive reaction wood and has scattered deadwood in its canopy.	U
5987	Lombardy poplar <i>Populus nigra italica</i>	29.2	700	N 4.0 S 3.0 E 4.0 W 3.0	Poor	M	10+	A tall specimen, with a form typical of its species, it has dense ivy. It has basal stem decay and has scattered deadwood in its canopy.	U
5988	Lombardy poplar <i>Populus nigra italica</i>	28.5	900	N 4.0 S 3.0 E 4.0 W 3.0	Poor	M	10+	A tall specimen, with a form typical of its species, it has dense ivy. It has basal stem decay and has scattered deadwood in its canopy.	U
								After the Lombardy poplars is a weak Cherry which is in decline.	
5989	Cherry <i>Prunus avium</i>	10.6	500	N 7.0 S 6.0 E 6.0 W 7.0	Poor	M	10+	A tree with poor form, it has an open canopy with crossing and rubbing branches. It has long extended laterals with scattered deadwood, and large truncated branch stub. It has dense ivy and has an Elder growing through its canopy.	C

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Tree no.	Species	Height (m)	Stem dia. (mm)	Spread (m)	Condition	Age	ERC	Remarks	Grade
5990	Ash <i>Fraxinus excelsior</i>	18.5	900	N 6.0 S 5.0 E 10.0 W 7.0	Poor	M	10+	Growing on the top of the bank on the road side boundary. It has very dense ivy cover throughout and has extensive crown die back, with large diameter deadwood and is infected with bacterial ash canker.	U
5991	Sycamore <i>Acer pseudoplatnaus</i>	14.0	600	N 6.0 S 7.0 E 8.0 W 8.0	Fair	M	20+	Located by the entrance gate, it has a distorted stem with bifurcates to form three main scaffolds. It has an open canopy with some deadwood and old cavities and some large diameter deadwood.	C
5992	Ash <i>Fraxinus excelsior</i>	23.0	1300	N 11.0 S 15.0 E 12.0 W 11.0	Fair	M	20+	A large specimen with a wide decurrent canopy, it has very dense ivy cover, and has large long laterals with reiterative suckers. The dominant leader has lost its upper section. It has old cavities at branch failure points, and has scattered deadwood. To the west of the Ash is an old poor quality Cherry, which is in decline, around it are cherry suckers.	C
5993	Cherry <i>Prunus avium</i>	15.0	500	N 7.0 S 6.0 E 3.0 W 8.0	Fair	M	20+	A tree with dense ivy cover, it has long laterals with deadwood and storm damaged truncated branches.	C

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Tree no.	Species	Height (m)	Stem dia. (mm)	Spread (m)	Condition	Age	ERC	Remarks	Grade
5994	Lombardy poplar <i>Populus nigra italica</i>	34.0	800	N 3.0 S 3.0 E 3.0 W 4.0	Fair	M	20+	A tall specimen, with a form typical of its species, it has dense ivy. It has extended surface roots. It has scattered deadwood.	C
5995	Lombardy poplar <i>Populus nigra italica</i>	34.0	800	N 3.0 S 3.0 E 3.0 W 3.0	Fair	M	20+	A tall specimen, with a form typical of its species, it has moderate ivy. It has extended surface roots. It has scattered deadwood. It has decay on the surface buttress roots.	C
5996	Copper Beech <i>Fagus sylvatica purpurea</i>	18.5	700	N 8.0 S 8.0 E 8.6 W 6.0	Fair	M	40+	A tree with very dense ivy cover, it appears to have no apical leader. It has small basal suckers. The base appears sound. It has a wide spreading crown.	B
5997	Lombardy poplar <i>Populus nigra italica</i>	33.0	1000	N 3.0 S 3.0 E 4.0 W 3.0	Fair	M	20+	A tall specimen, with a form typical of its species, it has moderate ivy. It has extended surface roots. It has scattered deadwood.	C
5998	Lombardy poplar <i>Populus nigra italica</i>	30.0	900	N 2.0 S 2.0 E 3.0 W 3.0	Fair	M	20+	A tall specimen, with a form typical of its species, it has dense ivy. It has extended surface roots. It has scattered deadwood and some large diameter deadwood.	C

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Tree no.	Species	Height (m)	Stem dia. (mm)	Spread (m)	Condition	Age	ERC	Remarks	Grade
5999	Lombardy poplar <i>Populus nigra italica</i>	30.0	800	N 2.0 S 2.0 E 2.0 W 2.0	Fair	M	20+	A tall specimen, with a form typical of its species, it has moderate ivy. It is suppressed by the adjoining trees. It has extended surface roots. It has scattered deadwood and some major deadwood.	C
6000	Lombardy poplar <i>Populus nigra italica</i>	32.0	1000	N 4.0 S 3.0 E 4.0 W 3.0	Fair	M	20+	A tall specimen, with a form typical of its species, it has moderate ivy. It has extended surface roots. It has scattered deadwood.	C

Assumptions and Limitations

This tree survey was carried out from the ground, no invasive or destructive evaluation techniques were used; all findings observations and recommendations are based on the knowledge and experience of the undersigned a qualified Arboriculturalist. Information contained in this report covers only those items that were examined and reflects the condition of those items at the time of the inspection.

Findings are based on a visual report from ground level only and it should be borne in mind it is subject only to faults visible at the time of inspection, certain pathogens only produce seasonal fruiting bodies and consequentially may not have been noted during this assessment.
All trees should be monitored on a regular basis for signs of defects and should be reported to a person qualified to diagnose them and to recommend treatment.

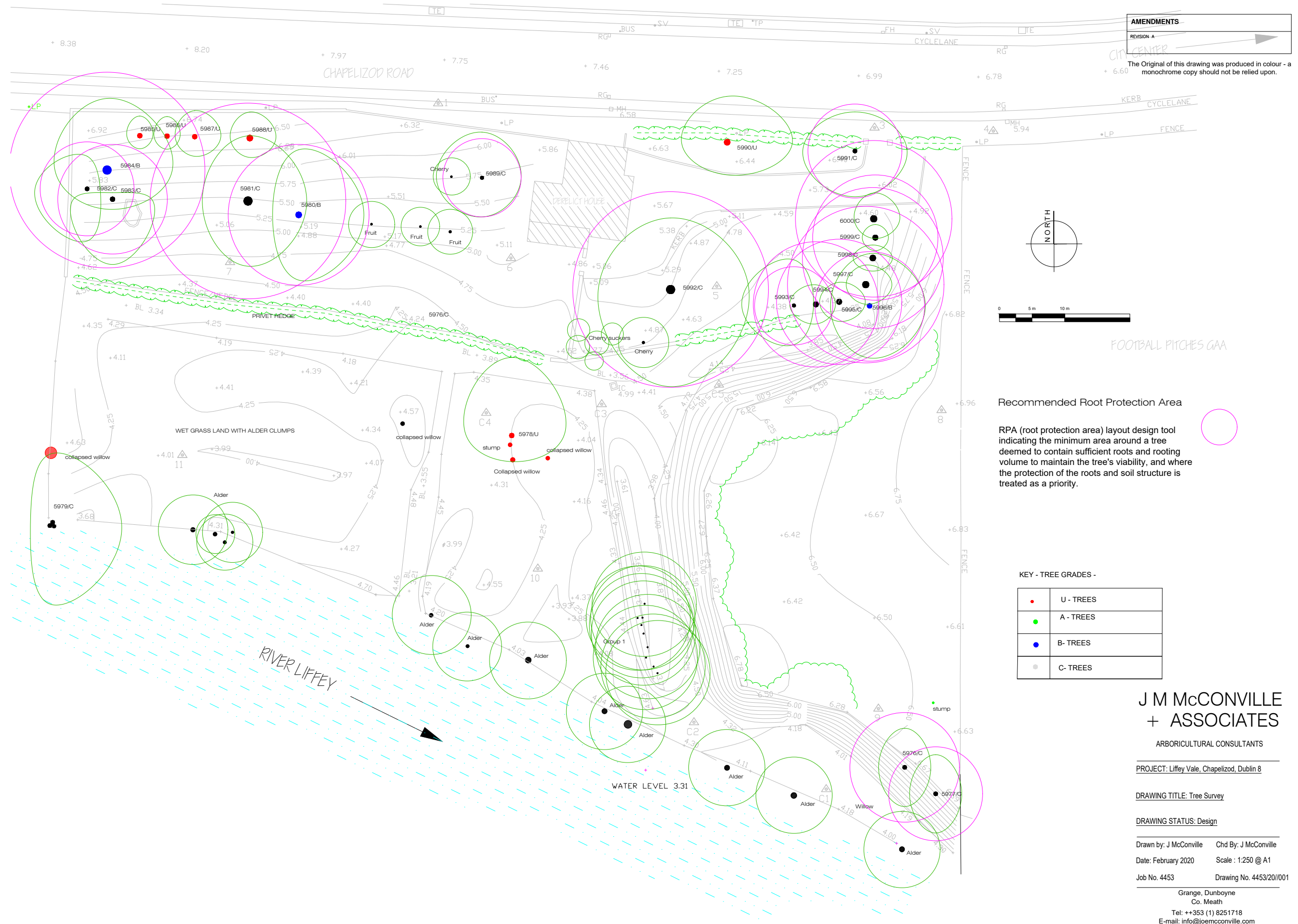
In the event of adverse weather conditions, there is the possibility of any tree, despite having a good report, falling over or suffering crown damage. In the event of a falling tree causing damage to residential or non residential buildings in their proximity, or to any person, any property public or private, or any mechanical vehicle or otherwise no liability will attach to this firm.

There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the trees in question may not arise in the future. The author takes no responsibility for any actions taken by the landowner or their agents by reasons of this report unless subsequent contractual arrangements are made.

This report is intended solely for the benefit of the parties to whom it is addressed and no responsibility is extended to any third party for the whole or any part of its contents. All trees mentioned in this report should be subject to reassessment every two years to assess physiological and environmental changes.

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ARBORICULTURAL CONSULTANTS





APPENDIX K



ARCHAEOLOGICAL DESK REPORT ON A SITE AT LIFFEY VALE,
CHAPELIZOD ROAD

On behalf of Dublin City Council

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August 2020

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1.1.1 Introduction

This report is a desktop assessment of the archaeological potential of a site at Liffey Vale on the north side of the Liffey at Chapelizod Road. The site lies between the Chapelizod Road (R109) at a gentle bend in the river, diagonally opposite the War Memorial Gardens at Islandbridge. The report has been prepared on behalf of Dublin City Council, who propose to reuse the site as a public amenity park, with emphasis on rewilding amid strong environmental concerns.

The report consists of an archaeological and historical appraisal of the location, with a summary of archaeological work completed in the immediate location. The report recommends suitable mitigation measures for any ground-moving operations on the site.

In the immediate area, the burial grounds at Kilmainham/ Islandbridge are the location of the richest collection of Norse graves uncovered to date outside of Norway.

1.1.2 Layout of the report

An archaeological and historical account of the immediate environs of the site is given. A brief site visit was undertaken. A summary of all licensed work in the area is given. An appraisal of the archaeological significance of this site rates it high.

1.1.3 Prehistoric period

The prehistoric period is well attested from this part of Dublin. Prehistoric burial was found at the mound at Knockmary in the Phoenix Park north of Chapelizod (DU018-007011) where inhumations were succeeded by a series of cremations accompanied by food vessels of the early Bronze age. This site was excavated in 1838. A possible henge site, DU018-00707, has been identified at the southern side of the Phoenix Park.

Archaeological work by the writer at a large development site north- east of the Royal Hospital, Kilmainham (Heuston South Quarter) uncovered six cremation pits, which would have been covered by an earthen mound. Amongst the finds were a vase food vessel, and three pygmy cups, one of which contained three beads. Adult cremation remains were recovered with the food vessel.

Part of the mound of a fulacht fiadh was excavated at Hammond Lane, Dublin 7 and dated to the early Bronze age, with a C14 date range of 1938-1744. At Clancy Barracks, on the east side of the South Circular Road, an extensive riverside revetment, of post- and wattle construction, was excavated. This extended for 130m, and radiocarbon dates indicated it was constructed in the late Bronze age- early Iron age. However, a felling date from the structure gave a date of AD595.

A complex of ringforts and possibly associated enclosures and field systems has been recognized from aerial photography at the south side of the park, near Chapelizod, itself an early foundation with a ninth century expansion. This is represented by a series of enclosures, DU018-0-7021-3) identified from a 2007 aerial photograph along the southern bluff of the Park, by staff of National Monuments.

A stone- built headrace, mill site and tail race of a vertical undershot watermill was excavated by the writer at a site in Chapelizod in 2002 (DU-018-027-005). The mill was of probable 8th

century date. Later development on the site indicates a laid- out urban settlement of rectangular houses (pre-ceramic) of probable Norse origin.

The large corpus of finds of Scandinavian origin uncovered in the late 19th and early 20th centuries (see below) includes sherds of crude pottery which may well represent disturbed burials of the prehistoric period (information from Dr Stephen Harrison).

A Norse burial in the Phoenix Park is a single grave. This is in contrast to the extensive cemetery groups from Kilmainham/ Islandbridge and Inchicore. The location of the grave, which was discovered in the mid- 19th century, is unknown, but Harrison and O'Floinn posit a location on the bluff overlooking the main Kilmainham- Islandbridge complex.

The site lies approximately half way between Islandbridge and Chapelizod, both fording points on the river Liffey. Today, the weir at Islandbridge is the highest tidal point of the Liffey, but de Courcy (1995,16) believed that in the Viking age spring tides would have flowed up nearly as far as Chapelizod. In this context, a reference in *The Triads of Ireland* to Kilmainham as one of the three places in Ireland to alight at' may be seen, but Harrison and O' Floinn note that the term used, tairleimn, is more commonly used in horse or chariot riding, a reference perhaps to the importance of the routeway to Dublin.

A ford over the Liffey at Kilmainham is posited by most writers, derived from Cell Mo Shamoc, the Church of Mo-Shamog. The location of the church is posited close to the Magazine Fort. At least one battle was fought at the ford in the early 10th century, often called the "Battle of Dublin", of 919.

O' Brien (1998) indicates the possible location of a 9th century ford on the Liffey at the west end of Mill Island, which she speculates may be the original Ath Cliath. No supporting evidence for this early activity, indeed not a single piece of medieval pottery, was forthcoming from the extensive archaeological works undertaken on Mill Island in 2000 (Walsh 2001).

Other writers have speculated that the ford lies upriver of the University Boat Clubhouse. A collection of artefacts was dredged from this location in the 1890s, including material dating to the latter half of the 9th century, along with more modern material.

In contrast to Islandbridge, there is little annalistic evidence for an early crossing point over the Liffey at Chapelizod.

1.1.4 Early Medieval Kilmainham

The early seventh century monastic foundation of Cell Maignenn (Kilmainham) is attributed to St Magnenn (Gwynn and Hadcock 1988). Nothing remains above ground of this foundation, and the precise location is speculative. A granite cross shaft in Bully's Acre probably dates to this foundation, comparing with 9th- 11th century crosses (Kenny 1995, 27). The monastery may have occupied the high level ground where the Royal Hospital is sited although the cross shaft and a well, St John's well, to the west of the hospital, also contend for the site of the earlier foundation. Burials probably associated with this early foundation were uncovered by construction work in the 19th and early 20th centuries (O' Brien 1998, 35), while a second cemetery lay approx. 800m west of this, in the War Memorial Park. These burials may represent two distinct cemeteries, and significantly suggest the proximity of a 9th century Norse settlement in the vicinity. The location of this settlement is unknown, and is the subject of some dispute (O' Floinn in Clarke et al, 1998). More recent work by Harrison and O' Floinn (2014) has identified the siting of the War Memorial Graves, and state that 'graves in the burial complex were arranged in distinct clusters with specific relationships to the local topography' (2014, 4). Several sites of finds occur within the vicinity of the War Memorial Park, including Wilde's Great Gravel Pit, and a group found in 1933-4 which formed a small discreet cemetery, (referred to as Inchicore, to distinguish it from Kilmainham/ Islandbridge).

There is only one explicit reference to the monastery in the pre- Norman Irish annals, which is the death of 'Lergus, grandson of Fidhcain, the sage of Cell Maignenn, recorded in the Annals of Ulster for AD 787. The less reliable Cogafh Gaedhel re Gallaibh states that Brian Borumha, having stayed there in 1013, burnt the site on the eve of the Battle of Clontarf in 1014.

Harrison and O' Floinn (2014) posit the location at Bully's Acre, and suggest a curve indicated on Rocques map, at the west end of the Avenue leading to the Royal Hospital. The burials lie outside the posited D- shaped enclosure.

1.1.5 Norse Kilmainham

The triangular area of land between the Camac and the Liffey confluence is considered by many scholars to be the site of the Viking "longphort", recorded as established in Dubhlinn in 841A.D. Scholars hold this longphort to be the pre- urban Viking settlement of Dublin, which was abandoned in 902A.D. following the expulsion to England of the Viking ruling elite. Others (such as Clarke, 1998, 348) strongly refute this suggestion, preferring a site at Usher's Island as a location for the ninth century longphort.

Following the former theory, the town proper was refounded at the Poddle/ Liffey confluence further down stream (whose topography mirrors somewhat that of the Camac/ Liffey confluence), when the Viking rulers returned in 917. Recent excavations in Essex St West, however have shown conclusively that the site of Dubhlinn was settled from at least the mid-ninth century onwards, which necessitates some revision of the accepted settlement models.

O'Brien (1998, 217) interprets the ninth century Norse burials at Kilmainham/ Islandbridge as those of a settled community of Vikings who were living in a defended longphort settlement close by, or at, the monastery of Kilmainham, and suggests that the original Ath Cliath may have been in this area. The weapons recovered from the Viking graves reflect the presence of warriors, but other artefacts such as sickles, shears, tongs, pincers, weighing scales, weights, spindle whorls and needle cases also indicate a range of activities from farming to trading to cloth and garment making.

The scattered distribution of Viking burials, with at least four Viking graveyards in the Dublin area as discussed by O'Floinn (1998,133) may reflect a dispersed ninth century settlement, with several nuclei along the Liffey estuary. It is apparent that such a settlement, of uncertain

form and location, existed at Kilmainham. It is also likely that a similar settlement existed at Chapelizod.

Limited archaeological excavations in 1999 along the rerouting of Con Colbert Road in Inchicore uncovered no further burials, but pits in the vicinity of the War Memorial Park which contained artefacts which date from the 9th- 10th centuries, are consistent with the Viking Age burials uncovered in the 19th- 20th century (Healy 1990, 20). That excavation noted that extensive quarrying of the natural gravel ridge in the modern period had truncated the archaeological remains, which survived to a maximum depth of 0.80m below subsoil.

1.1.6 Location of the Islandbridge Graves

Harrison and O' Floinn (2014) describe the burial complex as a series of discrete burial clusters rather than a single continuous burial ground, or even a pair of cemeteries, as has been earlier described by O' Brien (1998a and b).

Discoveries of the Islandbridge/ Kilmainham group took place over a period from c. 1785 to 1879, with a single discovery in 2008. Most were found between 1845 (digging for the Railway) and 1869. Harrison and O' Floinn hold that the terms Kilmainham and Islandbridge are interchangeable, representing parts of one very large burial complex.

Islandbridge lies within what Harrison and O'Floinn refer to as the Western Zone, which had evidence for a minimum of fifteen graves. The overall burial pattern is essential linear, extending from the Liffey floodplain near the modern weir to the west of Heuston Station. The earliest acquisition of Viking material from this area was in 1860, but the bulk of the material comes from 1866, deriving from the 'great gravel pit'. The 'great gravel pit' that produced the majority of the Islandbridge finds of 1866 and 1869 lay immediately west of the South Circular Road: this pit is shown on the 1875 map.'The geographical spread of the Islandbridge acquisition groups appears to have been more restricted than Kilmainham..the finds were all made in and around the same gravel pit' (Harrison and O' Floinn 2014, 421). This, according to Harrison and O' Floinn, is part of the Kilmainham group, lying closer to these than to the finds discovered in the War Memorial Park amphitheatre in 1933-4 (see below). The 2008 find was made immediately to the north-west of this extraction pit, and was oriented north- south. The artefacts were found in direct association with burials, at a depth of 45-60cm beneath the then ground level. At least eight-five objects were recovered from this gravel pit. A minimum of fifteen Viking graves, ten of them male, four female, and one gender- neutral, is represented from this group, which constituted the best furnished graves in the burial complex.

Between 1933 and 1934, during the excavation for the amphitheatre in the War Memorial Gardens, a total of 5 Viking graves were uncovered. All were extended burials, three were male, and two were gender- neutral. They were furnished with weaponry, and two (gender-neutral) had deliberately placed animal remains as accompaniments. Additionally, a substantial number of unfurnished inhumations were uncovered at Inchicore, indicative of an indigenous secular, Christian cemetery. A contemporaneous account of the Inchicore discoveries indicated that the furnished graves were oriented north- south, while the unaccompanied burials were oriented east- west in the Christian fashion. Another grave was found during excavations south- east of the Park amphitheatre in 1989 (DU018-020272). At least 485m separated the location of this graveyard from the main complex,

The detailed evidence given for the locations of furnished Viking graves by Harrison and O'Floinn concludes that the 'great gravel pit' immediately west of the village of Islandbridge is the western limit of the Kilmainham/ Islandbridge group, and that the Inchicore group lies much further south- west, beneath and south of the Amphitheatre of the War Memorial Park. No acquisitions or discoveries are known from the quarrying at the northern limit of the War Memorial Park. It appears that this location lies outside either cemetery.

1.1.7 Medieval period

The principle landowner of the area from Kilmainham to Chapelizod in the medieval period was the priory of St John the Baptist (DU018020 285/286). The priory was founded for the Knights Hospitallers at Kilmainham in 1174 by Richard Fitz Gilbert (Strongbow) on the site of the church of St Maignenn (Gwynn and Hadcock 1988, 334). It became the chief house of the hospital of St John of Jerusalem in Ireland, and received many grants and endowments. It was exempt from all ordinary jurisdiction, and was also a hospital and almshouse for the sick. The priory occupied a strategic position on an elevated site to the west of the city.

On dissolution, the buildings at Kilmainham were considered to be among the best in the kingdom. The house, mansion and buildings, church gardens and orchard, were surrounded by stone walls with four towers, and there was a fortified gatehouse with other buildings. The priory also held over 10,000 acres of land throughout the country, with manors, castles, mills and other possessions. The priory held many mills on the Liffey, including that on Mill Island, Islandbridge, and several on the river Camac.

1.1.8 Medieval Mills at Kilmainham

The island appears to have been used as the site of a mill since at least the 12th century by the monks of Cill Maighnainn, and thereafter by the Knights Hospitallers of Kilmainham (Gwynn and Hadcock 1980). The grant to the Knights of 1169 mentions the existence of a mill and weir at Islandbridge. The weir is likely to be in the same location as the modern weir, at the west end of the island.

The weir, fishery and mills remained in the possession of the Knights of Kilmainham until dissolution, when they passed into secular ownership. The location of the medieval mill/s on the island is on the upper end of the mill headrace, that is, close to Sarah Bridge and the main road of Islandbridge.

In 1641, the mills, then known as the island mills, were worth an annual rent of £200, and were the principal means of supplying the army with corn. They were described then as two double mills and a single mill. The property was in disrepair in 1641, when it was owned by Mr Francis McAvoy (de Courcy 1996, 206).

Following the Restoration (1660) the mills were let to Sir Maurice Eustace. In 1664, John Wolfenden conveyed to William Hawkins 'the great island situate within the waters of Avon Liffey beyond Saint James his Gate Dublin and the houses and buildings thereon' (de Courcy 1996, 206). Silts containing sherds of 17th- 18th century pottery were uncovered in test trenching on the island undertaken by the writer in late 2002- these are the earliest archaeological deposits uncovered on the island to date. Up to twenty houses and cottages are recorded at Islandbridge in the 17th century, amongst the inhabitants a miller called John Harris (Ball 1899).

The bridge across the Liffey at Islandbridge probably existed as early as 1261, and 'arguably was located near Kilmehanoc Ford just upstream of Sarah Bridge' (de Courcy 1996, 204). The bridge is first mentioned in 1534, and again in the following year (Ball 1899).

A stone bridge was constructed here in 1577, on the orders of Sir Henry Sidney. This bridge is illustrated on both the Down and Civil Survey maps. It is referred to as the bridge at Kilmainham

thus 'On Kilmainham there stands the ruins of a large castle; a street of good habitable houses; two double mills and a single mill in repair, and an arched stone bridge across the River Liffey' (Civil Survey vii, 287, 292). The collapse of the bridge in 1787 was due to a great flood in the river. The foundation stone for Sarah Bridge was laid in 1791, and the structure was complete by 1793. The east side of the site is formed by the abutments of this structure, which was at the time of it's construction praised as a 'monument of national taste'.

The bridge at Chapelizod appears to have been first constructed in the later part of the 17th century, as 'ford' is marked in this location on the Down Survey map of the mid-17th century.

1.1.9 The Deer Park

Following the Restoration in 1660, the Duke of Ormonde, then Lord Lieutenant, initiated the Deere or Phoenix Park on the north side of the Liffey. The park originally included most of the former lands of the Knights Hospitallers, north and south of the river Liffey, and the enclosing wall of the park is depicted on Thomas Taylor's (1671) map of the park. The wall is depicted on Brooking's 1728 map and Rocque's (1756) map. William Dodson, described by Ball (1890) as the Government Contractor, was architect of the first enclosure of the Phoenix Park, and built an inferior wall, sections of which collapsed soon after construction.

A mansion, called the Phoenix, was constructed after 1609 at Thomas Hill by Sir Edward Fisher (DU018-007013). The house, depicted on the Down Survey map, replaced the residence of the Viceroy at Kilmainham until around 1665. It was demolished in 1734 to make way for the Magazine Fort (DU018-007019). The Magazine Fort held all the powder and munitions to serve the Dublin barracks. It continued in use until the mid- 20th century.

1.1.10 The Royal Hospital

In 1670-80 Charles II consented to the erection of a retirement home for old soldiers of the Irish forces, to be modelled on the Hotel des Invalides in Paris. The Royal Hospital is without doubt the finest and best sited building of that period in the city.

In 1679, the site of Kilmainham priory, by then unused and in decay, was chosen as it's location. At the time, these lands were part of the Phoenix Park. The new buildings, designed by William Robinson, do not visibly incorporate any of the buildings of the medieval foundation, although some stonework from the medieval foundation was exposed during restoration work of the complex (Kenny 1995, 43). The Royal Hospital appears to have been built on a site to the east of the older complex, and much of the stone from the medieval foundation was reused in the late 17th century building. By 1698, there were no visible remains of the medieval foundation. Indeed, the letters patent of Charles II in relation to the Royal Hospital declare that the medieval chapel was the source of stone for the chapel of the Royal Hospital. The Robinson work was completed in 1701, and the building was used as a hospital until 1927.

1.1.11 18th century/19th century Islandbridge

In 1738, the mills were offered for sale, with the island and salmon weirs. The advertisement for sale states that the mills were then provided with French and other stones for grinding corn and preparing flour (Ball 1899).

The property was purchased by the Corporation in 1741, for the purpose of supplementing the city water supply. De Courcy (1986, 206) points out that one of the consequences of the construction of the weir at Islandbridge was to provide the Priory at Kilmainham with a constant supply of clean, potable water (the tide prevented from going further upriver). Whether this was deliberate or not on the part of the Knights Hospitallers is uncertain, but the fact was exploited later by the Corporation of Dublin to improve the water supply to the north side of the city, which was then undergoing rapid expansion.

The island was considered unprofitable, and leased further to a series of tenants in the later 18th century. A litany of occupiers is recorded for the 18th century. Mill Island is depicted on Rocque's map of 1773, however only a single building is shown towards the east end of the island. A lease of 1774 mentions dwelling house and stables, together with mills, mill races, weirs floodgates and sluices and sandbanks. The buildings were clustered at the eastern end of the island (Place's drawing of 'Dublin from Phoenix Park' (1698/9) and a lease map of 1783 (Dublin City Archive, AR/ 179) ; a building is also indicated on Rocque's (1773) map of county Dublin. The sluices to the weir, and the ruins of buildings at the western end of the modern weir, are extant.

The island at Islandbridge historically had two mill complexes in the 19th century, a calico print works east of Islandbridge House, which later became the Bellevue Malt mills. A second mill, known as Manders Flour mills, was located towards the Sarah Bridge.

1.1.12 Cartographic evidence

Kilmainham/ Islandbridge and the Phoenix House are depicted in some detail on the 1654-6 Down Survey map. No features are shown on the south side of the river Liffey. De Gomme's map of 1673 does not extend to any detail of this area.

The area lies outside of John Rocque's detailed 1756 map of Dublin, (with some later alterations to c. 1769). It is however shown in some detail on his 1760 map of county Dublin. No buildings are shown on or close to the subject site. The salmon pool is indicated, as is the Magazine Fort, having replaced Phoenix House.

Duncan's map of 1821 indicates the contours of Islandbridge and the Phoenix Park. Again there are no features on the Liffey meadows.

The series of maps of the Ordnance Survey indicate the varying locations of gravel quarries at Islandbridge. The work of Harrison and O ' Floinn indicates that the majority of the finds came from the large quarry at Islandbridge village in the 1860s, and no finds appear to have originated from the quarry closest to the subject site, as depicted on the 1880-1911 25inch map.

The ridge at Phoenix Park is a preferred location for scenes of the city. The 1699 painting by Thomas Bate shows the start of the millrace, and a slightly odd arrangement at the weir. Joseph Tudor's painting from a similar location shows the weir, with some buildings on the eastern end of Mill Island. William Ashford's 179508 painting of the same scene shows the weir with some small islets, much as it is today, with pasture on the Islandbridge side.

1.1.13 Potential of the site from archaeological work in the area

The possibility of encountering some form of early river shore activity in this area exists. Test trenches on the site of the former Bellevue Malt Mills, undertaken by the author, indicate that much of the substratum of the west end of Mill Island is a massive sandbank, which has been artificially raised by up to 4m since the 18th century. Test excavation and limited excavation at Manders Flour Mills has indicated less of an artifical build up, with subsoil exposed at a relatively high level close by the bridge abutments.

The gravel pits at the north side of the Islandbridge War Memorial Amphitheatre, on the 1880-1913 Ordnance Survey map, located to the west of the Dublin University Boat Club, do not appear to have been the site of any finds of Viking burials, according to the recent work of Harrison and O' Floinn.

Monitoring of the road realignment in Phoenix Park did not uncover any finds or features of archaeological significance, apart from the mid- 20th century concrete bunker.

1.1.14 Predicted impact

Amongst the proposals which are most likely to impact any archaeological deposits which may be present are the following:

Conservation of Liffey Vale House, and limited new building: all groundworks will require archaeological monitoring. It would be preferable to test the designated areas in advance, so that contracts with builders etc are not interrupted.

The remainder of the proposals would not appear to impact negatively on any subsurface features. Due to the incline on the site, areas of proposed paths may need to be tested, when detailed plans are available. Similarly, areas where new hedge planting to define zones within the lands will require testing. As will new drainage.

The works will require a licence from National Monuments. Allowance for four weeks for this to be processed will need to be taken into account. The works can be combined with any required Ground Investigation works.

2.1 Synopsis of Sites on the Record of Monuments and Places

DU018-020272, Burial, uncovered in 08E0693.

DU018-029, house 16th- 17th century

DU018-020277, mill unclassified

DU018-020276, watermill, unclassified

DU018-020278, watermill, unclassified

DU018-020274. Bridge, Islandbridge.

DU018-020282. Ritual site- holy well

DU018-027001. Church. Located in Chapelizod village and backed to the N by the Phoenix Park. According to the Book of Howth a chapel was founded here in 519 A.D. apparently associated with the legendary Isolde from which the village derives its name (Kissane 1994,9). In 1228 King Henry III granted the advowson (the right to nominate a church living) to the prior of the Order of St John of Jerusalem at Kilmainham documenting the presence of a church in existence here in the early 13th century. After the Dissolution the church was granted to various lay owners and in 1597 the college of the Holy Trinity was granted some of it's possessions (Ball 1903, 176). According to the Civil Survey (Simington, 1945) the church is described as then being a "chaple in repayre" but all that now survives of the medieval church is the medieval stone tower with semi-engaged stair tower. The attached nave of the Church of Ireland, Church of St. Lawrence, which extends eastwards from the tower is dated to 1859. Excavations at St. Martins Row in 1992 showed that the medieval graveyard extended to the NW of the present boundary wall as burials were uncovered which pre-dated a ditch dated on the basis of pots herds to the 13th-14th century (King 1993, 15).

DU018-007011. Burial mound, Knockmary.. Situated on a natural ridge overlooking the Liffey Valley, inside the Chapelizod gate at Phoenix Park. Known as 'Cnoc-Maraidhe' or 'Hill of the Mariners'. In the early 19th-century a mound stood on the site. Excavations exposed the central cist containing two crouched skeletons accompanied by a shell necklace, flint knife and bone toggle. Four small cists were also discovered, containing cremated bones and food vessels, two of which were bowls (Wood-Martin 1895, 281, Fig.74; Waddell 1970, 115; Waddell 1990, 81). All that survives today of this cemetery mound is the central megalithic cist comprising a flat slab lying on two boulders set into concrete. There are holes in the face of the stones. Ryan (1981, 142) and Brindley and Lanting (1989-90) classify this monument as a Linkardstown-type burial of Late Neolithic date.

DU018-027003. Bridge at Chapelizod.

DU018-028001The Civil Survey (1654-6) mentions 'a ffayre Mansion House' at Chapelizod (Simington 1945, 223). According to Ball (1903, 167) the 'Kings House' at Chapelizod was a brick building erected by Lord Valentia in the first half of the 17th century. It had an entrance gateway and courtyard and according to the Civil Survey, an orchard, two gardens and a grove of ash trees set for ornament. There were some traces of the building up until the 19th-century (Craig 1982, 140). Excavations (Licence No. 92E0040) in 1992 failed to identify any trace of the dwelling (Hayden 1993f, 14-15).

DU018-028004. House, 17th century. This house is located at a corner on the eastern side of the triangular market square of Chapelizod with an address at 39 Main Street. It is a square, two bay, two storey building with a slate roof, pitched to the E and hipped to the W, with paired square chimney-stacks in the SE corner of the roof. The house is entered from the N façade through a flat headed doorway. Its lintel lies below the level of the respective ground floor window lintel. Distinctively the corner of the building closest to market square has been chamfered at ground floor level to a rounded corner supporting the upper floor by an angled timber post. The windows with replacement timber sashes lying flush to the wall surface are arranged in an asymmetric fashion. Window opes are flat headed save for the S first floor window which is arched segmentally. The roof rises above an eaves cornice

with dentils on edge apparent on the N façade but obscured on the W façade. The wall surface has a rough pebble dash render. Between the first floor windows of the N façade is a recessed armorial plaque (DU018-028008-) with a lion rampant and a motto/date above which is obscured by over-painting.

DU018-00713, house 16th/ 17th century. Phoenix house. Formerly located on a commanding eminence within Phoenix Park. In 1611 Sir Edward Fisher erected a country house in a prominent location at Thomas's hill where the Magazine Fort stands (Litton-Falkiner 1901, 470). In 1618 Fisher surrendered his position to the king who acquired the house and surrounding land for the kings representative in Ireland (Falkiner 1904, 48-50). From 1617 onwards it was known as His majesty's House at Kilmainham and called the Phoenix. In the 1650's Henry Cromwell resided at the Phoenix. He added a large wing, several stories high. In 1661 a chapel and hall were added (Ball 1906, 180-182). The Down Survey (1655-6) of the parish of Kilmainham shows a large gabled building with three chimneys. The house was demolished when the Magazine Fort was built in 1734. This was commented on by Swift who remarked 'Behold a proof of Irish Sense/here Irish wit is seen/when nothings left that's worth defence/They build a magazine' (Falkiner 1904, 52).

DU018-007019, bastioned fort. The Phoenix House (DU018-007013-) was demolished in 1734 to make way for the building of the Magazine Fort (McCullen 2009, 37) which was used as the distribution centre for powder and munitions to serve the Dublin barracks. The fort is quadrilateral in plan with four demi-bastions surrounded by a dry moat: the entrance was via a drawbridge on its east side. Later modified c. 1760 and again in 1801 when the triangle of brick buildings were erected in front of the entrance (ibid., 38), it continued in use until the mid-20th century. The fort was successfully raided at the start of the Easter Rising in 1916 as the signal for the rebellion to commence. It was raided again in 1939 when a large amount of guns and munitions were taken: these were later retrieved (ibid., 309). The fort has been immortalised by Dean Swift (1667-1745) in the following satirical verse: 'Behold a proof of Irish sense / here Irish wit is seen, / when nothings left that's worth defence / they build a magazine.' (ibid., 38)

DU018-007021, enclosure, shown on 2007 aerial photograph

DU018-007022, enclosure, shown on 2007 aerial photograph

DU018-007023, enclosure, shown on 2007 aerial photograph

DU018-007010, road, the 'Highway to Mannothe', (Maynooth) as shown on the Down Survey map.

DU018-457. Enclosure. Situated in the SE quadrant of the Phoenix Park, 60m N of artillery batteries associated with an 18th century bastioned fort (DU018-007019-) 310m to SE. The batteries and the Magazine Fort are depicted on the 1837 ed. OS 6-inch map. Cropmark of circular-shaped enclosure (approx. int. diam. 30m) visible on various Google Earth aerial photographs. The faint outline of this enclosure is visible on Digital Globe aerial imagery. A grove of trees are depicted at this location on the 1837 ed. OS 6-inch map. The cropmark may be the remains of a tree-ring or designed landscape feature of post-1700 date but this is uncertain. The circular cropmark appears to be located within the SE quadrant of a formal garden the cropmark of which is visible on Google Earth orthophoto taken 07/05/2017.

DU018-458. Ditch barrow. Situated in the S quadrant of the Phoenix Park. Cropmark of circular-shaped area (approx. int. diam. 15m) defined by a ditch visible on Google Earth orthophotograph taken 28/01/2017.

DU018-459. Ditch barrow. Situated in the S quadrant of the Phoenix Park. Cropmark of circular-shaped area (approx. int. diam. 15m) defined by a ditch visible on Google Earth orthophotograph taken 28/01/2017.

3.10 Results from excavations in the vicinity

E472. Testing of the route of the Con Colbert road uncovered recent pits relating to market gardening activity in the 19th century, and a ditch of early medieval period. Retrieval of some Viking finds, most ex situ.

96E169. Mill Island. No archaeological significance.

99E0674, Mill Island, Industrial remains of later 18th- 19th century. Also monitoring of new access road through part of the War Memorial Park with negative results.

00E0271 Dublin University Boat Club. Two trenches on the site of a proposed extension to the late 19th century boat club did not uncover any material of archaeological significance. Depth to boulder clay was less than 500mm.

01E0990 Neptune Rowing Club, Long Meadows. Demolition of an existing building and construction of a new two storey building required an archaeological assessment. Modern fill overlay subsoil, which was reached at 1300-1700mm.

02E0243. St John of Gods Daycare Centre. Test excavation in the possible location of Viking finds uncovered garden soils to a depth of 500mm over subsoil. No archaeological significance.

02E1471. Test excavation at the industrial premises at the east end of Mill Island uncovered lower soils of 17th century date. Subsoil at 1900mm below pgl. Some archaeological significance.

02E1866. St John of Gods Daycare Centre. Excavation at the perimeter of the existing swimming pool uncovered an infilled quarry pit, extending to over 2800mm below pgl. Elsewhere, market garden soils with an average depth of 500mm overlay subsoil.

04E0175. Monitoring at the Old Coach House, on the Chapelizod road, no archaeological significance.

04E0243. 717-727 South Circular Road, no archaeological significance, former gravel pit.

05E0430. Municipal Boat Club, no archaeological significance.

07E1172. Islandbridge Gate Lodge, Phoenix Park. No archaeological significance.

07E0261, Clancy Barracks. Test excavation on the northern part of this site uncovered at 4m below present ground level (approx. 0m OD) a 25m wide (north- south), 600mm thick, deposit of dark organic silt which contained some worked timbers and wattle strands. A dendrochronological date for two of the timbers yielded a date of AD595.

08E0693, War Memorial Gardens. An archaeological excavation by staff from the National Museum of Ireland took place on foot of the discovery of a Viking burial during relaying of electricity cables to the gate lodge in the War Memorial gardens. An iron sword, iron spearhead, copper alloy objects, and partial remains probably from a Viking warrior, were found.

08E0739. Zoo road realignment, no archaeological significance apart from a mid 20th century concrete bunker.

10E0128. Dart Underground, Con Colbert Road, no archaeological significance.

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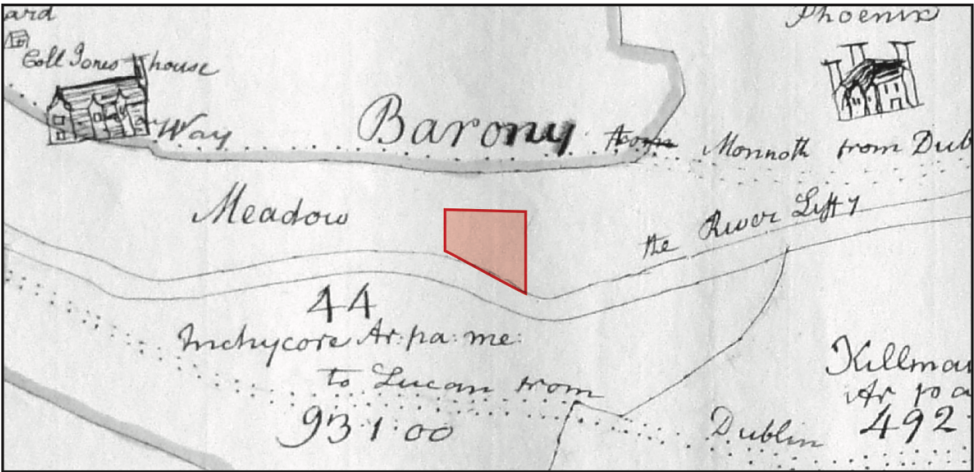


FIGURE 2. SITE LOCATION ON DOWN SURVEY 1654-6

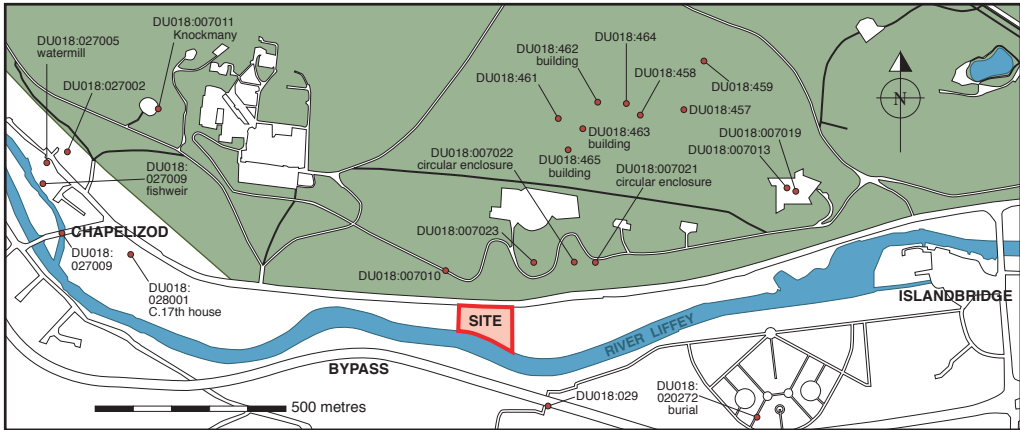


FIGURE 1. SITE LOCATION IN RELATION TO RMP MAP, NATIONAL MONUMENTS.



FIGURE 3. SITE LOCATION ON ROCQUE'S MAP OF COUNTY DUBLIN 1760.

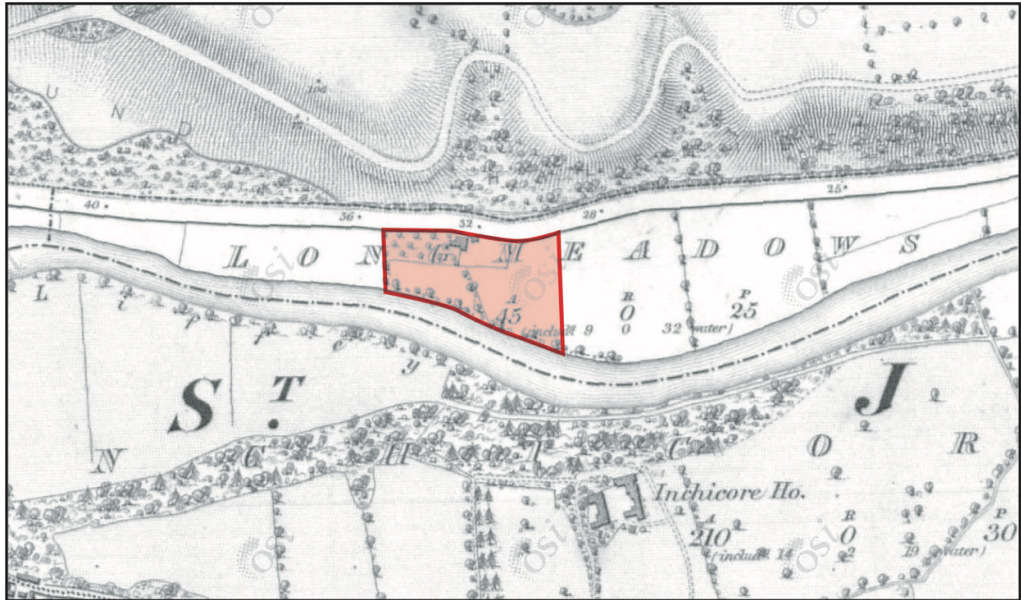


FIGURE 4. SITE LOCATION ON FIRST EDITION ORDNANCE SURVEY.

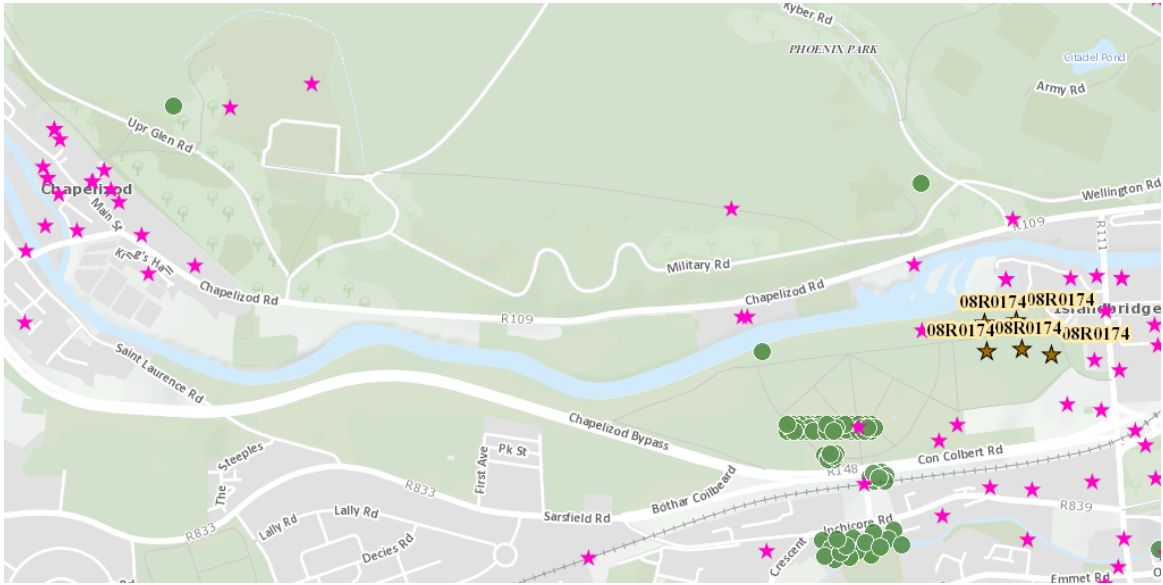


FIGURE 6. LOCATION OF EXCAVATIONS IN VICINITY.

EIA & AA SCREENING REPORTS

APPENDIX L

Environmental Impact Assessment Screening Report

for proposed

Regeneration of Liffey Vale House

At

Chapelizod Road, Co. Dublin

for:

Dublin City Council

Civic Offices
Wood Quay
Dublin 8



by:

CAAS Ltd.

1st Floor
24-26 Ormond Quay
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3RD MARCH 2021

Document Control

	Author/Reviewer	Date
prepared by	Paul Fingleton and Clare O'Doherty	Various dates to 3 rd March 2021
checked by	Conor Skehan	3 rd March 2021
status	Final, subject to comments from DCC	

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Appendices

- Appendix I – Standard Descriptions of Effects
- Appendix II – Competency of Author

1. Introduction

CAAS has been appointed by Dublin City Council to prepare this Environmental Impact Assessment Screening Report for the proposed regeneration of Liffey Vale House, located on Chapelizod Road, Dublin. This report has been prepared to form an opinion as to whether or not the proposed development should be subject to Environmental Impact Assessment (EIA) and if so, whether an Environmental Impact Assessment Report (EIAR) should be prepared in respect of it.

The screening assesses the proposed development with reference to the EIA legislation¹ including the EIA Directive, and Planning and Development legislation. It also has regard to relevant parts of *EIA Guidance for Consent Authorities regarding sub-threshold development*, 2003, Department of the Environment, Heritage and Local Government and *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment*, 2018, Department of Housing, Planning and Local Government and relevant EU Guidance including *Interpretation of definitions of project categories of annex I and II of the EIA Directive*, 2015, EU and *Environmental Impact Assessment of Projects - Guidance on Screening*, 2017, EU.

The consideration of potential impacts covers all significant direct, indirect and secondary impacts as relevant, with reference to the guidance and in compliance with the legislation, including the criteria for determining whether certain development types should be subject to EIA, and which are grouped into these categories in the Directive:

- (i) Characteristics of the proposal
- (ii) Location of the proposal
- (iii) Characteristics of potential impacts

Where used, descriptions of impacts follow the statutory EPA (draft) *Guidelines on the information to be contained in Environmental Impact Assessment Reports* (2017). For ease of reference, these standardised descriptions are reproduced in Appendix I of this report.

Information on the development has been obtained from Blackwood Associates Architects on behalf of Dublin City Council, including a written description and relevant drawings.

The following sections of this report cover:

- The proposed development (s2)
- The legislative basis for EIA (s3)
- Screening considerations (s4)
- Conclusion (s5)

An overview of the author's competency is provided in Appendix II.

¹ see section 3 for details

2. The proposed development

2.1 Overview of the development

The proposed development comprises the regeneration of Liffey Vale House, a Georgian house and listed Protected Structure, situated on the North side of the Liffey on the R109 (Chapelizod Road). Dublin City Council wish to regenerate the House and grounds, which are both currently derelict and inaccessible to the public, by developing it as an exemplar centre for best practice in biodiversity and re-wilding, which will be open to the public offering a place to spend time in nature and learn about animals, plants and ecological systems.

2.2 Project details

The proposed development includes:

- Regeneration and restoration of the old Georgian Liffey Vale House to provide an exhibition area, staff area and entrance.
- Provision a multi-purpose learning space, a small café and public toilets. It is stated that additional elements are designed in a manner that respects the existing scale of the house and its relationship to the site, with additional features being both complimentary and sympathetic to the original structure.
- Provision of pathways to allow access through the grounds including a range of habitats such as woodlands, wetlands and the river edge.
- Provision of a lay-by bus stop in lands directly West of Liffey Vale House, providing access to the grounds.
- Provision of two disabled parking spaces in lands directly West of Liffey Vale House.
- Re-wilding of the grounds of Liffey vale house by a team of ecologists and archaeologists who will encourage optimal conditions for flora and fauna to thrive in the land to replicate the habitats which would have been present over a hundred years ago.

The proposed site area is approx. 1.28ha in size.



Figure 1 - Site location map

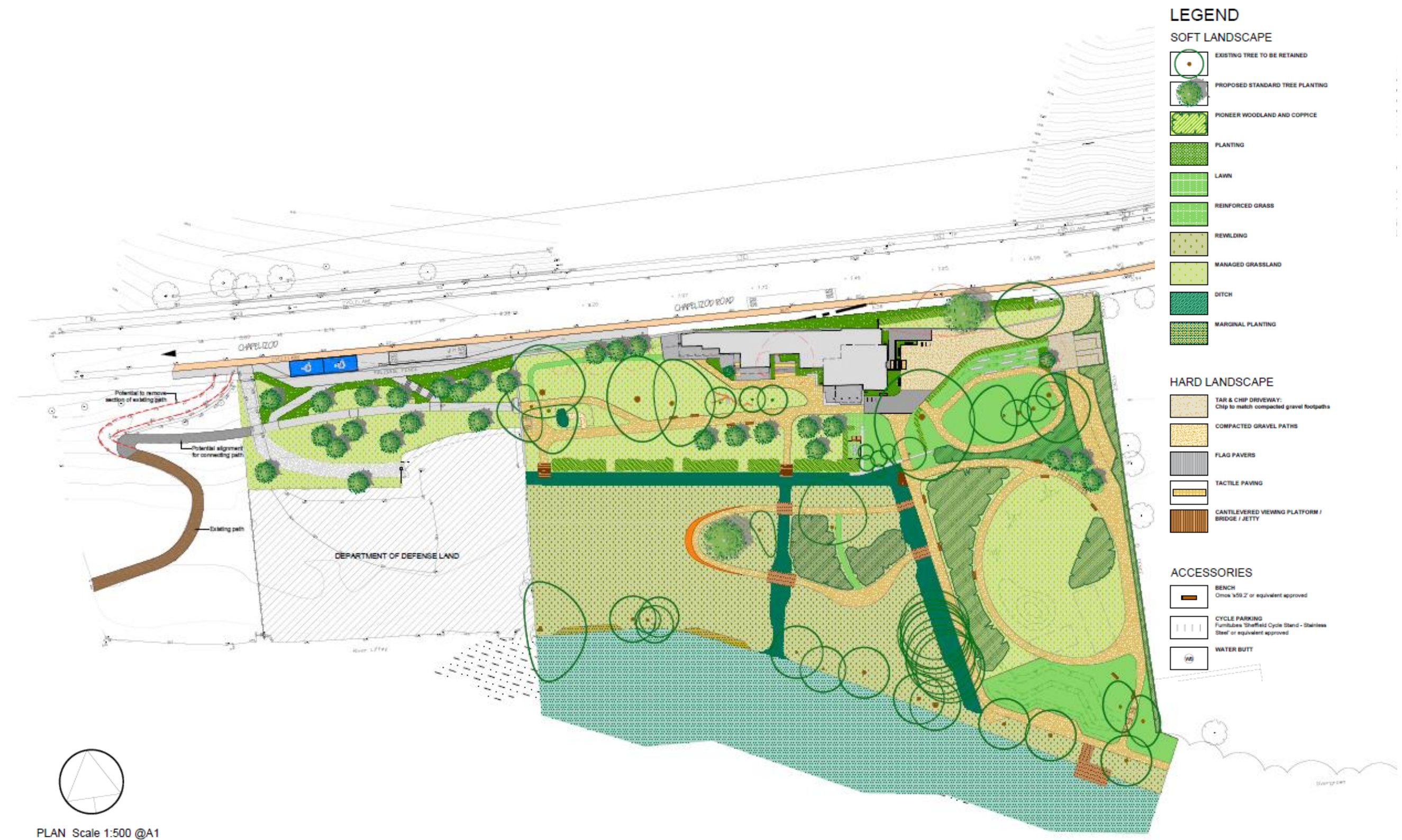


Figure 2 – Proposed site plan

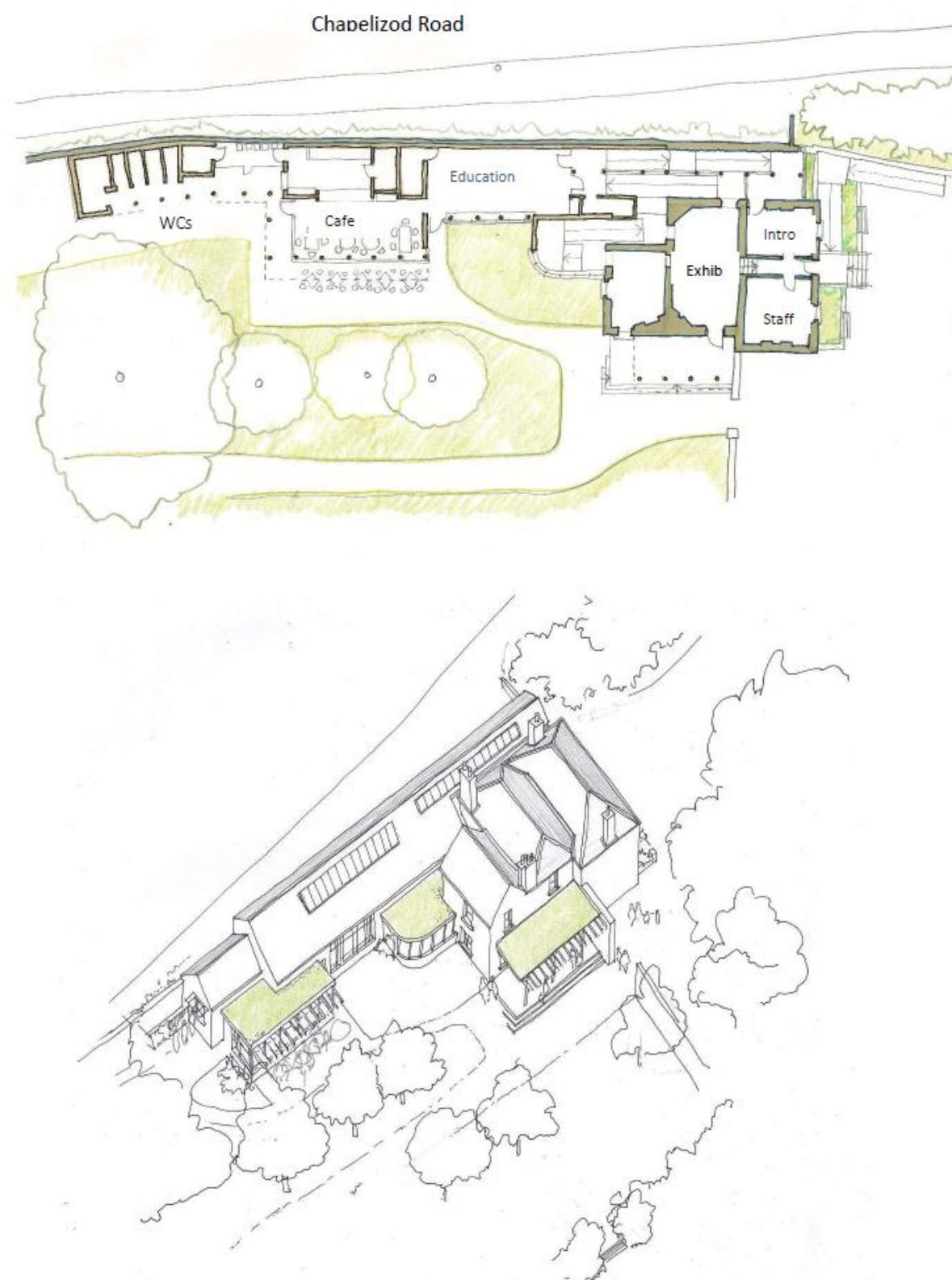


Figure 3 - Artist's sketch of proposal

3. Legislative basis for EIA

EIA requirements derive from EU Directive 2011/92/EU (as amended by Directive 2014/52/EU) on the assessment of the effects of certain public and private projects on the environment. The Directive has been transposed into various Irish legislation of which the following are the most relevant to this development.

- The Planning and Development Acts 2000-2020 (Part X), as amended by, *inter alia*, the:
 - Planning and Development Regulations 2001 (S.I. 600/2001)
 - European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018) (S.I. 296/2018)

Part 1 of Schedule 5 of these regulations lists projects included in Annex I of the Directive which automatically require EIA.

For projects included in Annex II of the Directive, Part 2 of Schedule 5 provides thresholds, above which EIA is required.

4. Screening considerations

4.1 Project type

In the first instance it is necessary to determine whether the project is of a type that requires EIA.

Potentially relevant project types prescribed for EIA purposes in the Planning and Development legislation are listed in the table below, with commentaries of their applicability to the proposed development. Criteria prescribed in the legislation for changes or extensions are included.

Project type / criteria	Comment	Is EIA required on this basis?
Planning and Development legislation S.I. 600/2001, Schedule 5, Pt 2		
Project type 10. <i>Infrastructure projects (b) (iv)</i>		
<i>Urban development which would involve an area greater than 2 hectares in the case of a business district, 10 hectares in the case of other parts of a built-up area and 20 hectares elsewhere.</i> <i>(In this paragraph, “business district” means a district within a city or town in which the predominant land use is retail or commercial use.)</i>	Commission guidance ² lists a range of projects, stating that these or other projects with similar characteristics can be considered to be ‘urban development’. These include: <ul style="list-style-type: none"> • Shopping centres • Bus garages • Train depots • Hospitals • Universities • Sports stadiums • Cinemas • Theatres • Concert halls • Other cultural centres • Sewerage or water supply networks The proposed project does not correspond to or have similar characteristics to any of the above listed project types.	No

² Interpretation of definitions of project categories of annex I and II of the EIA Directive, 2015, EU

Project type / criteria	Comment	Is EIA required on this basis?
<i>Project type 13. Changes, extensions, development and testing</i>		
<i>(a) Any change or extension of development which would:-</i> <i>(i) result in the development being of a class listed in Part 1 or paragraphs 1 to 12 of Part 2 of this Schedule, and</i> <i>(ii) result in an increase in size greater than-</i> <ul style="list-style-type: none"> - 25 per cent, or - an amount equal to 50 per cent of the appropriate threshold, whichever is the greater 	The changes covered by the proposed development will not result in: (i) the development being of a listed class* * In this context <i>class</i> refers to the type <u>and</u> scale of the project. As it does not correspond to any listed class, neither of the expansion scale criteria given in (ii) are applicable.	No

4.2 Subthreshold development

Article 92 of the Regulations of 2001, as amended defines ‘sub-threshold development’ as:

development of a type set out in Part 2 of Schedule 5 which does not equal or exceed, as the case may be, a quantity, area or other limit specified in that Schedule in respect of the relevant class of development.

Annex III of the EIA Directive (2011/92/EU, as amended) as transposed into Schedule 7 of the Planning and Development Regulations - sets out criteria for review of sub-threshold projects to determine if they should be subject to EIA. These criteria include characteristics, location and potential impacts.

As the proposed development does not fall into any project type prescribed in Part 2 of Schedule 5, it is not considered to comprise ‘sub-threshold development’. Therefore, it is not required to review it against the Annex III / Schedule 7 criteria.

4.3 Cumulative Effects

As the proposed development does not fall within any project type prescribed in Schedule 5 and as explained in s4.2 there is no need to review it against the Annex III/Schedule 7 criteria, it is not necessary to take account of cumulative effects which could arise in-combination with environmental effects of other plans and projects.

5. Conclusions

It is considered that the proposed regeneration of Liffey Vale House does not need to be subject to Environmental Impact Assessment and no Environmental Impact Assessment Report is required for it.

This conclusion is based on an objective review of the proposed development, including its characteristics, location and the likelihood of it causing significant environmental impacts. The screening has followed the relevant legislation and has had regard to the relevant guidance.

Appendix I – Standard Descriptions of Effects

(from *Guidelines on the information to be contained in Environmental Impact Assessment Reports*, 2018 draft, EPA)

Quality of Effects It is important to inform the non-specialist reader whether an effect is positive, negative or neutral	Positive Effects A change which improves the quality of the environment (for example, by increasing species diversity; or the improving reproductive capacity of an ecosystem, or by removing nuisances or improving amenities).
	Neutral Effects No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.
	Negative/adverse Effects A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem; or damaging health or property or by causing nuisance).
Describing the Significance of Effects “Significance” is a concept that can have different meanings for different topics – in the absence of specific definitions for different topics the following definitions may be useful (also see <i>Determining Significance</i> below.).	Imperceptible An effect capable of measurement but without significant consequences.
	Not significant An effect which causes noticeable ² changes in the character of the environment but without significant consequences.
	Slight Effects An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
	Moderate Effects An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
	Significant Effects An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.
	Very Significant An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.
	Profound Effects An effect which obliterates sensitive characteristics
Describing the Extent and Context of Effects Context can affect the perception of significance. It is important to establish if the effect is unique or, perhaps, commonly or increasingly experienced.	Extent Describe the size of the area, the number of sites, and the proportion of a population affected by an effect.
	Context Describe whether the extent, duration, or frequency will conform or contrast with established (baseline) conditions (is it the biggest, longest effect ever?)

Describing the Probability of Effects Descriptions of effects should establish how likely it is that the predicted effects will occur – so that the CA can take a view of the balance of risk over advantage when making a decision.	Likely Effects The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented.
	Unlikely Effects The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.
Describing the Duration and Frequency of Effects 'Duration' is a concept that can have different meanings for different topics – in the absence of specific definitions for different topics the following definitions may be useful.	Momentary Effects Effects lasting from seconds to minutes
	Brief Effects Effects lasting less than a day
	Temporary Effects Effects lasting less than a year
	Short-term Effects Effects lasting one to seven years.
	Medium-term Effects Effects lasting seven to fifteen years.
	Long-term Effects Effects lasting fifteen to sixty years.
	Permanent Effects Effects lasting over sixty years
	Reversible Effects Effects that can be undone, for example through remediation or restoration
	Frequency of Effects Describe how often the effect will occur. (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually)
Describing the Types of Effects	Indirect Effects (a.k.a. Secondary Effects) Impacts on the environment, which are not a direct result of the project, often produced away from the project site or because of a complex pathway.
	Cumulative Effects The addition of many minor or significant effects, including effects of other projects, to create larger, more significant effects.
	'Do-Nothing Effects' The environment as it would be in the future should the subject project not be carried out.
	'Worst case' Effects The effects arising from a project in the case where mitigation measures substantially fail.
	Indeterminable Effects When the full consequences of a change in the environment cannot be described.

	Irreversible Effects When the character, distinctiveness, diversity or reproductive capacity of an environment is permanently lost.
	Residual Effects The degree of environmental change that will occur after the proposed mitigation measures have taken effect.
	Synergistic Effects Where the resultant effect is of greater significance than the sum of its constituents, (e.g. combination of SOx and NOx to produce smog).

Appendix II - Competency of Author

The lead author, Paul Fingleton, has an MSc in Rural and Regional Resources Planning (with specialisation in EIA) from the University of Aberdeen. Paul is a member of the International Association for Impact Assessment as well as the Institute of Environmental Management and Assessment. He has over twenty-five years' experience working in the area of Environmental Assessment. Over this period, he has been involved in a diverse range of projects including contributions to, and co-ordination of, numerous complex EIARs and EIA screening reports. He has also contributed to and supervised the preparation of numerous AAs and AA screenings.

Paul is the lead author of the current EPA Guidelines³ and accompanying Advice Notes⁴ on EIARs. He has been involved in all previous editions of these statutory guidelines. He also provides a range of other EIA related consultancy services to the EPA. Paul is regularly engaged by various planning authorities and other consent authorities to provide specialised EIA advice.

³ *Guidelines on the information to be contained in Environmental Impact Assessment Reports*, EPA, 2017 (Draft)

⁴ *Advice notes on current practice in the preparation of Environmental Impact Assessment Reports*, EPA, 2003

Appropriate Assessment Screening Report

for proposed

Regeneration of Liffey Vale House, Chapelizod Road

in accordance with the requirements of
Article 6(3) of the EU Habitats Directive

for:

Dublin City Council

Civic Offices
Wood Quay
Dublin 8



by:

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4TH MARCH 2021

Document Control

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Appendix II	Qualifying interests of SACs that have undergone assessment including summaries of current threats and sensitivities

Appendix III Special Conservartion Interests of SPAs that have undergone assessment including vulnerabilites of the QI / SCIs

1 Introduction

1.1 Background

CAAS has been appointed by Blackwood Associates Architects on behalf of Dublin City Council to prepare this AA Screening Report (*Stage One AA*) to support the Council’s AA procedures by determining whether or not a Natura Impact Statement (NIS) (*Stage Two AA*) is required for the proposed regeneration of Liffey Vale House, Chapelizod Road, in accordance with the requirements of Article 6(3) of Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (as amended) (hereafter referred to as the “Habitats Directive”).

1.2 Report Structure

This report aims to provide legislative context supporting the overall assessment process being undertaken with respect to relevant guidelines and highlight the experience and qualifications of the author. The report then details the proposed scheme and the works associated with this which are then interrogated to identify any possible effects which may be ecologically relevant. Following this, the metrics for the assessment of ‘significance’ of these effects are explained and applied to each of the European sites identified to be ecologically connected to the proposed scheme area. This assessment is undertaken in view of the conservation objectives and known sensitivities of the qualifying interests and special conservation interests for each European site. Other plans and projects are then considered to identify any likely in combination effects which may result in significant adverse effects to the ecological integrity of the European sites.

1.3 Legislative context

The Habitats Directive provides legal protection for habitats and species of European importance. The overall aim of the Habitats Directive is to maintain or restore the “favourable conservation status” of habitats and species of European Community Interest. These habitats and species are listed in the Habitats and Birds Directives (Habitats Directive as above and Directive 2009/147/EC on the conservation of wild birds) with Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) designated to afford protection to the most vulnerable of them. These two designations are collectively known as European sites. Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects likely to affect such sites. Article 6(3) establishes the requirement for AA. These requirements are implemented in the Republic of Ireland by the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) and the Planning and Development Act 2000 (as amended).

Article 6(3) of the Habitats Directive States:

‘Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site’s conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it

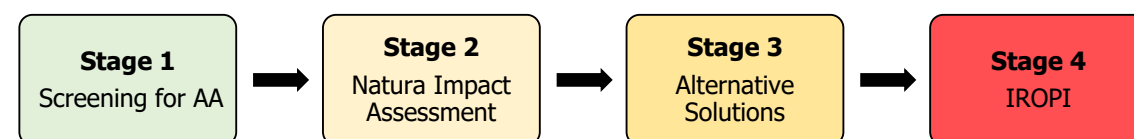
will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public’.

AA is an assessment of the likely significant effects arising from a plan or project, either individually or in combination with other plans or projects, to assess if the plan or project will adversely affect the integrity of the European site concerned including implications in view of the European site's conservation objectives. These sites consist of SACs and SPAs and provide for the protection and long-term survival of Europe's most valuable and threatened species and habitats. The AA process is concluded by the relevant competent authority in the formation of a determination in accordance with article 6(3) of the Habitats Directive.

1.4 Overview of the Habitats Directive and Appropriate Assessment Process

The Habitats Directive itself promotes a hierarchy of avoidance, mitigation and compensatory measures. This approach aims to avoid any effects on European sites by identifying possible effects early in the plan or project making process and avoiding such effects. Second, the approach involves the application of mitigation measures, if necessary, during the AA process to the point where no adverse impacts on the site(s) remain. If potential significant effects on the integrity of European sites remain, and no further practicable mitigation is possible, the approach requires the consideration of alternative solutions. If no alternative solutions are identified and the plan or project is required for imperative reasons of overriding public interest, then compensation measures are required for any remaining adverse effects.

This is represented by the four stages of the AA process which are as follow:



Stage One: Screening

The process that identifies the likely impacts upon a European site of a project or plan, either alone or in combination with other projects or plans and considers whether these impacts are likely to be significant.

Stage Two: Natura Impact Assessment

The consideration of the impact on the integrity of the European site of the project or plan, either alone or in combination with other projects or plans, with respect to the site's structure and function and its conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts. If adequate mitigation is proposed to ensure no significant adverse impacts on European sites, then the process may end at this stage. The details of stage two assessments are formalised in Natura Impact Statements (NIS) reports which support the overall AA process. However, if the likelihood of significant impacts remains, then the process must proceed to Stage Three.

Stage Three: Assessment of alternative solutions

The process that examines alternative ways of achieving the objectives of the project or plan that avoids adverse impacts on the integrity of the European site.

Stage Four: Assessment where no alternative solutions exist and where adverse impacts remain

An assessment of compensatory measures where, in the light of an assessment of imperative reasons of overriding public interest (IROPI), it is deemed that the project or plan should proceed.

1.5 Approach

This AA screening is based on best scientific knowledge and has utilised ecological and hydrological expertise. In addition, a detailed online review of published scientific literature and 'grey' literature was conducted. This included a detailed review of the National Parks and Wildlife website including mapping and available reports for relevant sites, in particular qualifying features (qualifying interests or special conservation interests) and their conservation objectives. The EPA Envision map viewer (www.epa.ie) and available reports were also reviewed, as was the NPWS (2019) publication *"The Status of Protected EU Habitats and Species in Ireland"*.

The ecological desktop study completed for the AA screening of the proposed measures comprised the following elements:

- Identification of European sites within 15km¹ of the site with identification of potential pathways to specific sites (if relevant) greater than 15km from the proposed project boundary;
- Review of the NPWS site synopses and conservation objectives for European sites within 15km and for which potential pathways from the proposed site have been identified; and
- Examination of available information on protected species.

Source-Pathway Receptor Model

Ecological impact assessment of potential effects on European sites is conducted following a standard source-pathway-receptor model, where, in order for an effect to be established all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism is sufficient to conclude that a potential effect is not of any relevance or significance.

- Source(s) – e.g. pollutant run-off from proposed works;
- Pathway(s) – e.g. groundwater connecting to nearby qualifying wetland habitats and
- Receptor(s) – qualifying aquatic habitats and species of European sites.

In the interest of this report, receptors are the ecological features that are known to be utilised by the qualifying interests or special conservation interests of a European site. A source is any identifiable element of the proposed development that is known to interact with ecological processes. The pathways are any connections or links between the source and the receptor. This

¹ While the actual zone of impact is likely to be much smaller, the default 15km zone extent has been applied on a precautionary basis

report provides information on whether direct, indirect and cumulative adverse effects could arise from the proposed development.

Guidance

The AA Screening exercise has been prepared taking into account legislation including the aforementioned legislation and guidance including the following:

- *Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities*, Department of the Environment, Heritage and Local Government, 2010
- *Managing Natura 2000 sites - The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC*, European Commission 2018.
- *Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*, European Commission Environment DG, 2002.
- *Managing Natura 2000 sites: The Provisions of Article 6 of the Habitats Directive 92/43/EEC*, European Commission, 2000.

1.6 Author details

Karen Dylan Shevlin is an Ecologist with over 7 years' experience working in multiple capacities in ecology in Ireland and international research organisations, and holds a MSc degree in Biodiversity and Conservation from Trinity College Dublin (2013). Karen has undertaken stage 2 AAs, NISs, and EIARs for a number of large and local development projects ranging from smaller facilities upgrades projects, to major wind turbine sites. Karen has significant skills in leading ecological surveys of bats, birds, insects, habitats and mammals and data analysis, mapping and compiling reports. Karen is also a specialist in ecological theory and the impacts/effects that altering natural dynamics may have on the surrounding environment. This combination of skills and knowledge provides the backbone of the assessment process, and ensure that all of the baseline and detailed data gathered in the field is interpreted in a manner that is grounded in best scientific knowledge.

Andrew Torsney is a Senior Ecologist with 8 years' experience working on national, regional and local scale projects. Andrew graduated from University College Dublin in 2011 with a B.Sc. degree in Zoology and obtained Master's degree in Biodiversity and Conservation from the University of Leeds in 2012. He has a range of ecological skills which include habitat mapping, ecological surveying, data interpretation and report writing. Andrew holds 4 national protected species licences. He is also a bat specialist with experience in acoustic surveying and monitoring of bats. Throughout Andrews's career he has worked on a number of large-scale multifaceted projects such as the Killaloe to Dublin water supply project NIS. For this work, Andrew designed and oversaw all ecological field work relating to the Environmental Impact Assessment and AA.

2 Description of proposed development

2.1 Overview of the proposed development

The proposed development comprises the regeneration of Liffey Vale House, a Georgian house and listed Protected Structure, and the establishment of a biodiversity park and learning centre in currently disused land. The site is directly bordered on the north by the R109 road running between Chapelizod and Islandbridge, and the River Liffey on the south (Figure 1). Parkland areas border the site to the east and west. In the wider surroundings, the Phoenix Park is to the north, and Kilmainham to the south. Dublin City Council plan to regenerate the House and grounds, which are both currently derelict and inaccessible to the public, by developing it as an exemplar centre for best practice in biodiversity and re-wilding, which will be open to the public offering a place to spend time in nature and learn about animals, plants and ecological systems. The proposal aims to retain the current ecological value of the site, and enhance the biodiversity on site and natural features (e.g., retaining floodplain as a wilderness area) (Figure 2). A parcel of land to the north west of the site was added to the proposed site in early 2021 (Figure 4). This parcel is also disused land. It will serve as link between the proposed biodiversity park and the existing Liffey Valley Park to the west.

2.2 Details of proposed features

The proposed features include (Figure 2):

- Regeneration and restoration of the old Georgian Liffey Vale House to provide an exhibition area, staff area and entrance.
- Provision a multi-purpose learning space, a small café and public toilets. It is stated that additional elements are designed in a manner that respects the existing scale of the house and its relationship to the site, with additional features being both complimentary and sympathetic to the original structure.
- Provision of pathways to allow access through the grounds including a range of habitats such as woodlands, wetlands and the river edge.
- Provision of a lay-by bus stop in lands directly West of Liffey Vale House, providing access to the grounds.
- Provision of two disabled parking spaces in lands directly West of Liffey Vale House.
- Re-wilding of the grounds of Liffey vale house by a team of ecologists and archaeologists who will encourage optimal conditions for flora and fauna to thrive in the land to replicate the habitats which would have been present over a hundred years ago.

The proposed site area is approx. 1.28ha in size.



Figure 1 Proposed Liffey Vale House project location

by CAAS for Dublin City Council

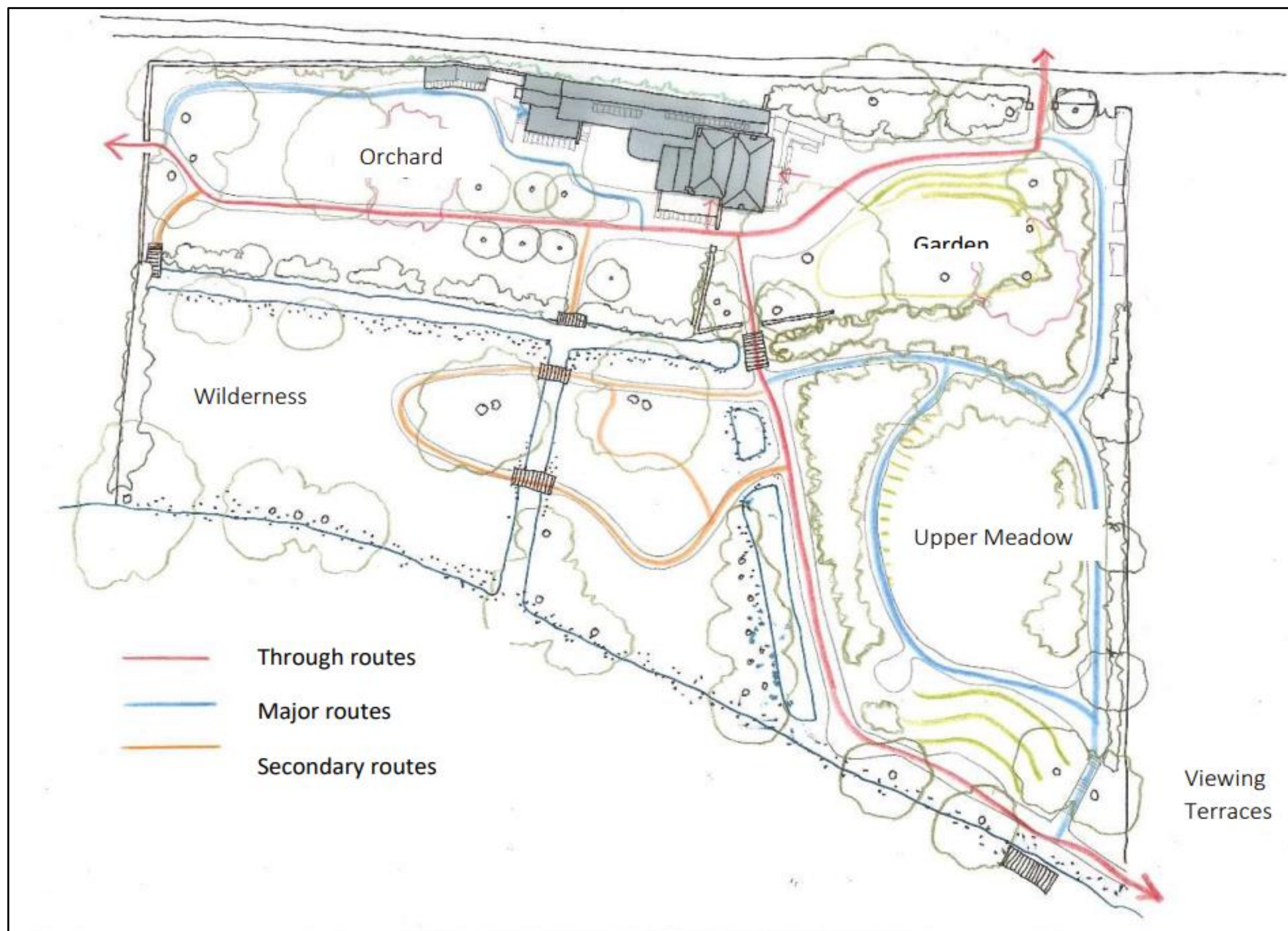


Figure 2 Proposed Liffey Vale House project site plan

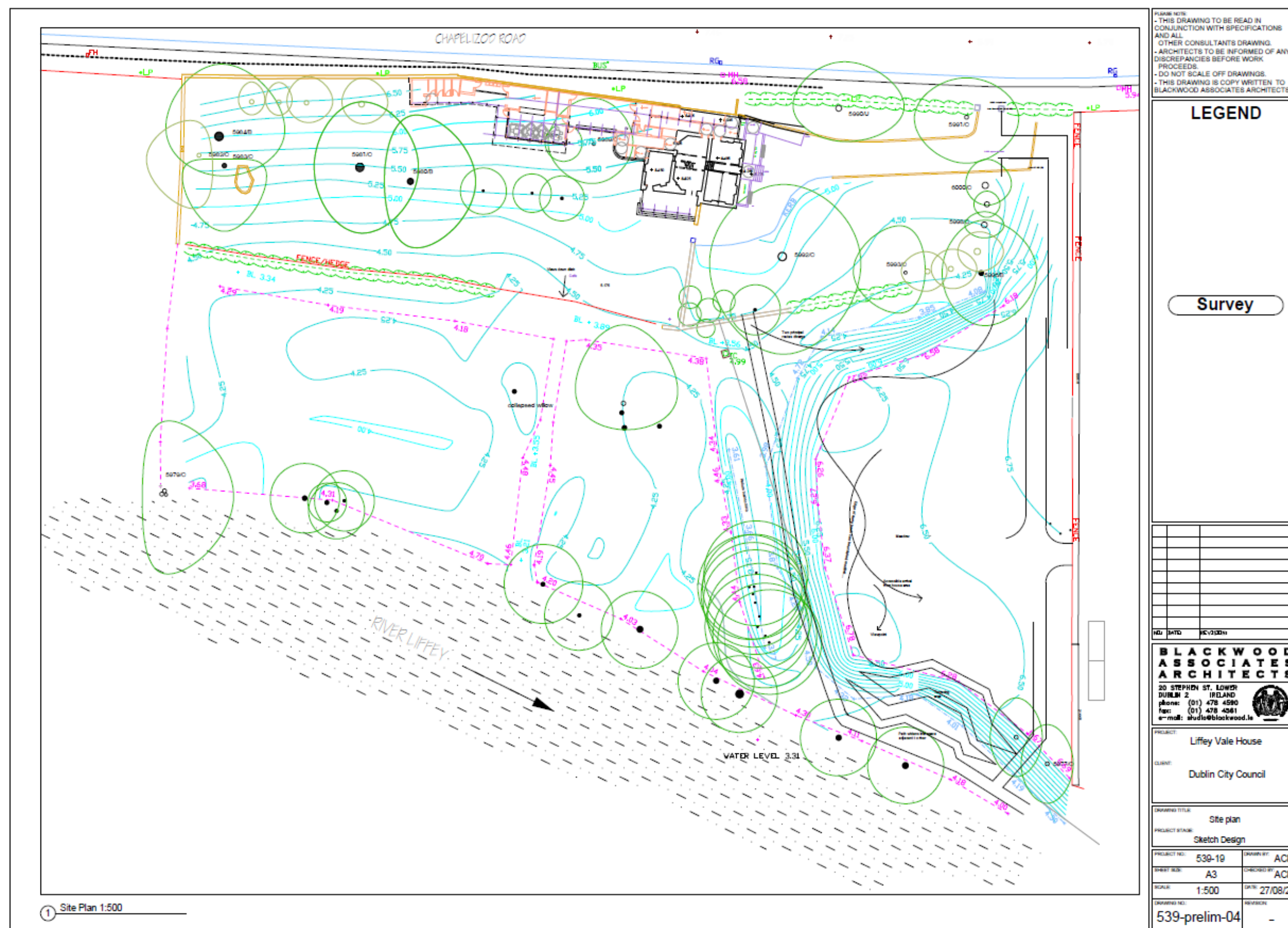


Figure 3 Proposed site plan (Drawing No. 539-prelim-04)

by CAAS for Dublin City Council

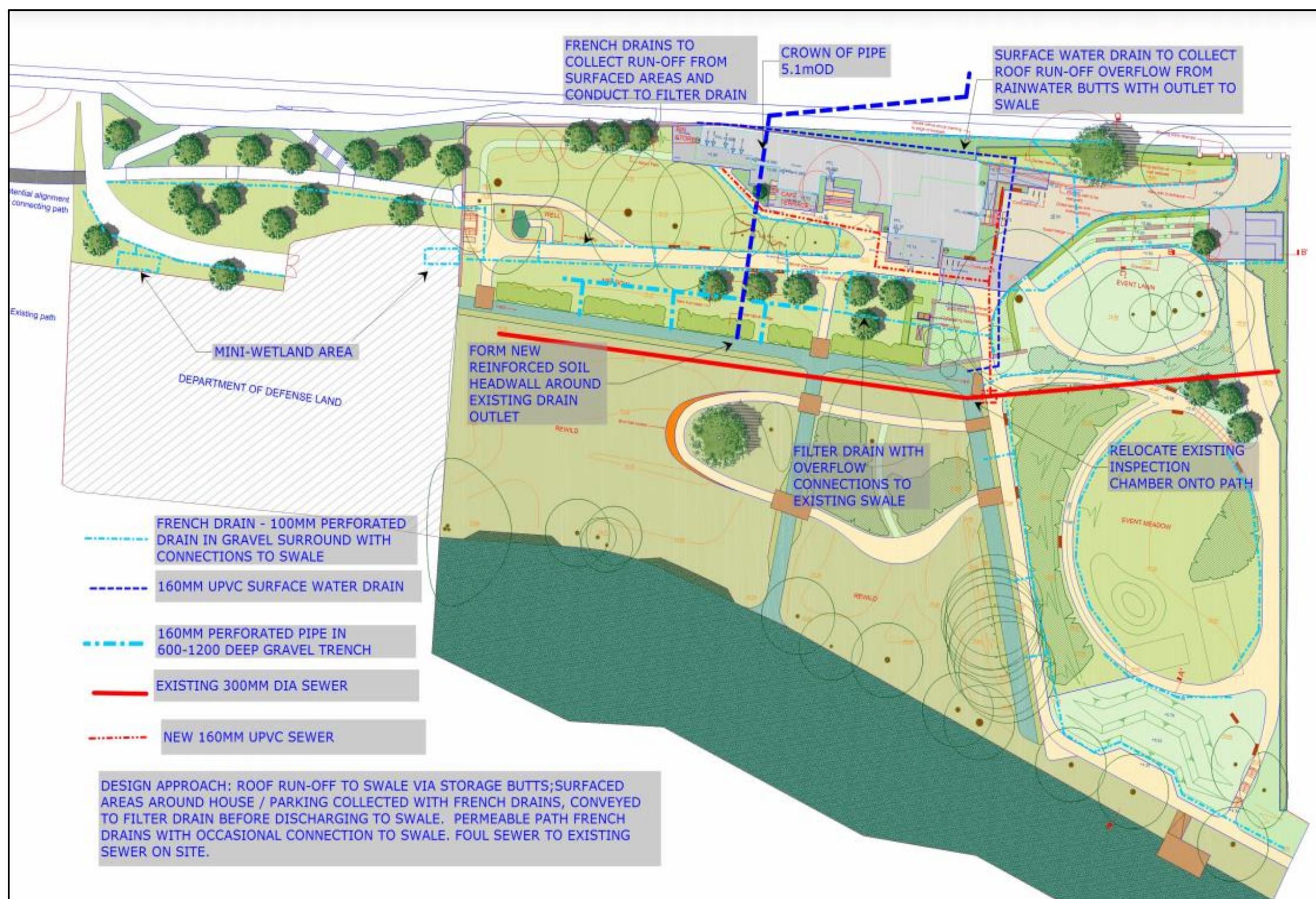


Figure 4 Proposed site plan - with additional lands - and drainage scheme

3 Screening for Appropriate Assessment

3.1 Introduction

This stage of the process identifies any likely significant effects on European sites from a project or plan, either alone or in combination with other projects or plans. A series of questions are asked in order to determine:

- Whether a plan or project can be excluded from AA requirements because it is directly connected with or necessary to the management of a European site.
- Whether the project will have a potentially significant effect on a European site, either alone or in combination with other projects or plans, in view of the site's conservation objectives or if residual uncertainty exists regarding potential impacts.

An important element of the AA process is the identification of the “conservation objectives”, “Qualifying Interests” (QIs) and/ or “Special Conservation Interests” (SCIs) of European sites requiring assessment. QIs are the habitat features and species listed in Annexes I and II of the Habitats Directive for which each European site has been designated and afforded protection. SCIs are wetland habitats and bird species listed within Annexes I and II of the Birds Directive. It is also vital that the threats to the ecological / environmental conditions that are required to support QIs and SCIs are considered as part of the assessment.

Site-Specific Conservation Objectives (SSCOs) have been designed to define favourable conservation status for a particular habitat or species at that site. According to the European Commission interpretation document ‘Managing Natura 2000 sites: The provisions of Article 6 of the Habitats Directive 92/43/EEC’, paragraph 4.6(3):

“The integrity of a site involves its ecological functions. The decision as to whether it is adversely affected should focus on and be limited to the site's conservation objectives.”

Favourable conservation status of a habitat is achieved when:

- its natural range, and the area it covers within that range, are stable or increasing;
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future; and
- the conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats;
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future; and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

3.2 Identification of relevant European sites

This section of the screening process describes the European sites which exist within the Zone of Influence (ZOI) of the site. The Department of the Environment (2009) Guidance on AA recommends a 15km zone to be considered for AAs of plans. On a precautionary basis this radius has been adopted for this AA. A review of all sites within the ZOI has allowed a determination to be made that in the absence of significant hydrological links, the characteristics of the proposed development will not impose effects beyond 15km.

European sites that occur within 15km of the proposed development are listed in Table 1 and illustrated in **Error! Reference source not found.** below. Details on the specific QIs and SCIs of each European site are also identified in Appendix I as well as site-specific threats and vulnerabilities of each of the sites.

In order to determine the potential effects of the proposal, information on the qualifying features, known vulnerabilities and threats to site integrity pertaining to any potentially affected European sites has been reviewed. Background information on threats to individual sites and vulnerability of habitats and species that was used during this assessment included the following:

- Ireland's Article 17 Report to the European Commission “*Status of EU Protected Habitats and Species in Ireland*” (NPWS, 2019);
- Site Synopses²; and
- NATURA 2000 Standard Data Forms².

The assessment takes consideration of the SSCOs of each of the sites within the ZOI. Since the conservation objectives for the European sites focus on maintaining the favourable conservation condition of the QIs/SCIs of each site, the screening process has concentrated on assessing the potential effects of the proposed development against the QIs/SCIs of each site. The conservation objectives for each site have been consulted throughout the assessment process.

² NPWS (2019); NPWS Database of protected site data and associated documents for each European site; available at <https://www.npws.ie/protected-sites>

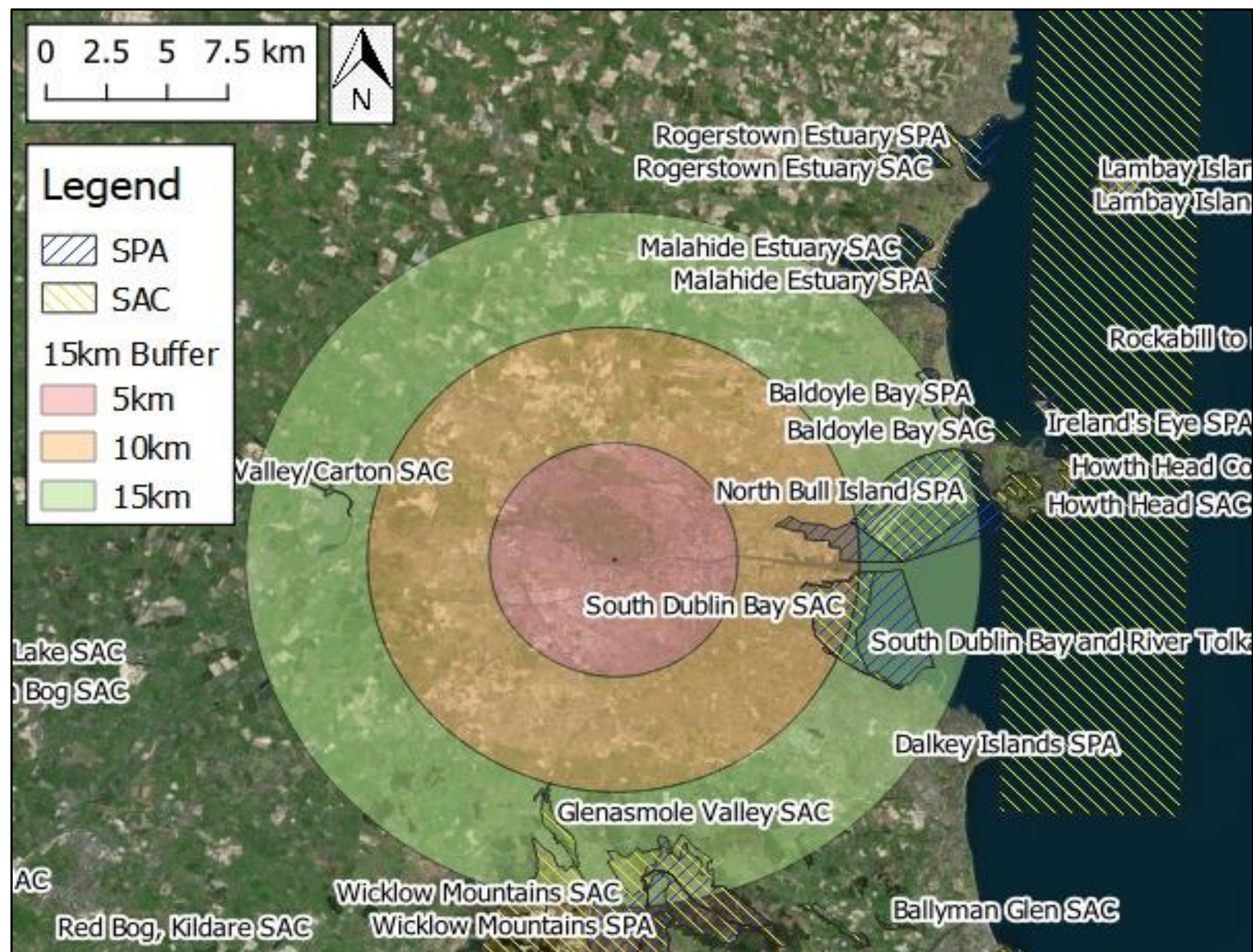


Figure 5 European sites within 15km of the development area

3.3 Assessment criteria

Is the development necessary to the management of European sites?

Under the Habitats Directive, plans or projects that are directly connected with or necessary to the management of a European site do not require AA. For this exception to apply, management is required to be interpreted narrowly as nature conservation management in the sense of Article 6(1) of the Habitats Directive. This refers to specific measures to address the ecological requirements of annexed habitats and species (and their habitats) present on a site(s). The relationship should be shown to be direct and not a by-product of the plan/project, even if this might result in positive or beneficial effects for a site(s).

The primary purpose of the proposed development is not the nature conservation management of the sites, but generally to provide a public square with multi-purpose nature education and awareness centre, cafe, toilets, planting and seating and other amenities. Therefore, the proposed development would not be considered by the Habitats Directive to be directly connected with or necessary to the management of European designated sites.

Elements of the proposed development with potential to give rise to effects

This screening assessment process identifies whether the changes brought about by the proposal are likely to cause any direct, indirect or secondary effects (either alone or in combination with other plans or projects) on the European sites. During this assessment a number of factors have been taken into account including the sites' conservation objectives and known threats. The overall aim of the assessment is to attempt to predict the consequences that can be reasonably foreseen by implementation of the proposed development.

Elements of the proposed development that could potentially give rise to effects on European sites are listed in s2.2 and summarised as follows:

- Alteration and expansion of existing buildings at Liffey Vale House and gardens;
- Provision of pathways to allow human access through sections of the proposed gardens;
- Resurfacing of parts of the existing area with pathways to allow access for the general public;
- Provision of access features such as lay-by bus stop and two disabled parking spaces in area west of the proposed Liffey Vale House.
- Augmented natural features in the garden such as planted areas of high native biodiversity and features to encourage usage by native fauna, and recreational amenities that are in keeping with the semi-natural surroundings;
- Drainage alterations that will utilise existing drainage on site. Liffey Vale house and additional café and toilets will collect run off at points along the existing drain outlet. There will also be reinforcement of existing drain walls and run off points into a swale filter on site (Figure 4).

These features of the development require physical augmentation of existing infrastructure. However, all work will be undertaken on existing built/cleared surfaces to minimise disturbance of the semi-natural habitats already present on site. The proposed works are in keeping with the biodiversity and natural systems already existing within the site. In addition, the works to the

existing buildings will be carried out with respect to its original structure and frame, with minimal additions and alterations. All works are identified as small scale and are expected to be low in source emissions due to the characteristics of the development. The construction works and alteration of the site's landscape will have temporary sources for effects. However, given the aim of the plans to develop the site to allow access for the general public while preserving and enhancing the intrinsic quality of the existing natural systems on this site, the operational phase of the project can be anticipated to co-exist with existing conditions and not contribute to any additional sources for effects to the ecological integrity of European sites downstream of the proposed development.

Identification of potential effects and screening of sites

This section documents the final stage of the screening process. It uses the information collected on the sensitivity of each European site and describes any potential effects on the integrity of European sites resulting from the proposed development. This assumes the absence of any controls, conditions, or mitigation measures. In determining the potential for effects, a number of factors have been taken into account. Firstly, the sensitivity and reported threats to the European site. Secondly, the individual elements of the proposed development and the potential effects they may cause on the site were considered. The elements of the proposed development with potential to affect the integrity of European sites are presented in Table 1 below.

Sites are screened out based on one or a combination of the following criteria:

- Where it can be shown that there are no significant pathways such as hydrological links between activities of the proposed development and a site;
- Where a site is located at such a distance from proposed development area that effects are not foreseen; and
- Where known threats or vulnerabilities of a site cannot be linked to potential impacts that may arise from the proposed development.

3.4 Characterising potential significant effects

This section of the report explains the metrics used when assessing if the potential effects (previously identified) will have significant implications for European sites. The following parameters are described when characterising impacts (following guidance from the Chartered Institute of Ecology and Environmental Management, Environmental Protection Agency and National Roads Authority):

Direct and Indirect Impacts - An impact can be caused either as a direct or as an indirect consequence of a proposed development.

Magnitude - Magnitude measures the size of an impact, which is described as high, medium, low, very low or negligible.

Extent - The area over which the impact occurs – this should be predicted in a quantified manner.

Duration - The time for which the effect is expected to last prior to recovery or replacement of the resource or feature.

- Temporary: Up to 1 Year;
- Short Term: The effects would take 1-7 years to be mitigated;
- Medium Term: The effects would take 7-15 years to be mitigated;
- Long Term: The effects would take 15-60 years to be mitigated; and
- Permanent: The effects would take 60+ years to be mitigated.

Likelihood – The probability of the effect occurring taking into account all available information.

- Certain/Near Certain: >95% chance of occurring as predicted;
- Probable: 50-95% chance as occurring as predicted;
- Unlikely: 5-50% chance as occurring as predicted; and
- Extremely Unlikely: <5% chance as occurring as predicted.

The Chartered Institute of Ecology and Environmental Management (CIEEM) guidelines for ecological impact assessment (2018) define: an ecologically significant impact as an impact (negative or positive) on the integrity of a defined site or ecosystem and/or the conservation status of habitats or species within a given geographic area; and the integrity of a site as the coherence of its ecological structure and function, across its whole area, which enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified.

The Habitats Directive requires the focus of the assessment at this stage to be on the integrity of the site as indicated by its Conservation Objectives. It is an aim of NPWS to draw up conservation management plans for all areas designated for nature conservation. These plans will, among other things, set clear objectives for the conservation of the features of interest within a site.

SSCOs have been prepared for a number of European sites. These detailed SSCO aim to define favourable conservation condition for the qualifying habitats and species at that site by setting targets for appropriate attributes which define the character habitat. The maintenance of the favourable condition for these habitats and species at the site level will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

Favourable conservation status of a species can be described as being achieved when: *‘population data on the species concerned indicate that it is maintaining itself, and the natural range of the species is neither being reduced or likely to be reduced for the foreseeable future, and there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.’*

Favourable conservation status of a habitat can be described as being achieved when: *‘its natural range, and area it covers within that range, is stable or increasing, and the ecological factors that are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and the conservation status of its typical species is favourable’.*

Generic Conservation Objectives for cSACs have been provided as follows:

- To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected.

One generic Conservation Objective has been provided for SPAs as follows:

- To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA.

EC guidance³ outlines the types of effects that may affect European sites. These include effects from the following activities:

- Land take
- Resource Requirements (Drinking Water Abstraction Etc.)
- Emissions (Disposal to Land, Water or Air)
- Excavation Requirements
- Transportation Requirements
- Duration of Construction, Operation, Decommissioning

In addition, the guidance outlines the following likely changes that may occur at a designated site, which may result in effects on the integrity and function of that site:

- Reduction of Habitat Area
- Disturbance to Key Species
- Habitat or Species Fragmentation
- Reduction in Species Density
- Changes in Key Indicators of Conservation Value (Water Quality Etc.)
- Climate Change

The elements detailed above were considered with specific reference to each of the European sites identified below.

³ Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, European Commission Environment DG, 2001

Table 1 Screening assessment of the potential effects arising from the proposed development

Site Code	Site Name	Distance (km)	Qualifying Feature (Qualifying Interests & Special Conservation Interests)	Potential Effects (refer also to Sections 3.3 and 3.4 above, and Figures 3 and 4))	Pathway for Significant Effects	Potential for In-Combination Effects
004024	South Dublin Bay and River Tolka Estuary SPA	6.66	Mediterranean gull (<i>Larus melanocephalus</i>) [A176], Eurasian curlew (<i>Numenius arquata</i>) [A160], Great cormorant (<i>Phalacrocorax carbo</i>) [A017], Roseate tern (<i>Sterna dougallii</i>) [A192], Arctic tern (<i>Sterna paradisaea</i>) [A194], Great crested grebe (<i>Podiceps cristatus</i>) [A005], Red knot (<i>Calidris canutus</i>) [A143], Ringed plover (<i>Charadrius hiaticula</i>) [A137], Red-breasted merganser (<i>Mergus serrator</i>) [A069], Mew gull (<i>Larus canus</i>) [A182], Ruddy turnstone (<i>Arenaria interpres</i>) [A169], Sanderling (<i>Calidris alba</i>) [A144], Grey plover (<i>Pluvialis squatarola</i>) [A141], Eurasian oystercatcher (<i>Haematopus ostralegus</i>) [A130], Common redshank (<i>Tringa totanus</i>) [A162], Black-headed gull (<i>Larus ridibundus</i>) [A179], Bar-tailed godwit (<i>Limosa lapponica</i>) [A157], Common tern (<i>Sterna hirundo</i>) [A193]	<p>Direct effects:</p> <p>Potential for effects from drainage from construction works and plumbing alterations during construction and operation.</p> <p>However due to the localised nature of the sources identified, the distance of over 6.5 kilometres from the nearest European site, the lack of any direct hydrological pathways between the site and the SPA, the scale and nature of the works, and plumbing and drainage schemes already in place, no significant effects are foreseen.</p> <p>Indirect effects:</p> <p>Hydrological pathways identified but the dilution effect of the Irish sea and the scale of works and temporary nature of the constructions phase being proposed ensure that there will be no significant adverse effect to the ecological integrity of the SPA.</p> <p>There are no operational phase effects identified as the project is for a small-scale nature education facility that will be consistent with the existing natural context of the site.</p>	No	No
000210	South Dublin Bay SAC	7.62	Mudflats and sandflats not covered by seawater at low tide (N/A) [1140], Shifting dunes (Embryonic shifting dunes) [2110], <i>Salicornia</i> and	<p>Direct effects:</p> <p>Potential for effects from drainage from construction works and plumbing</p>	No	No

			other annuals colonizing mud and sand (N/A) [1310], Annual vegetation of drift lines (N/A) [1210]	<p>alterations during construction and operation.</p> <p>However due to the localised nature of the sources identified, the distance of over 6.5 kilometres from the nearest European site, the lack of any direct hydrological pathways between the site and the SAC, the scale and nature of the works, and plumbing and drainage schemes already in place, no significant effects are foreseen.</p> <p>Indirect effects:</p> <p>Hydrological pathways identified but the dilution effect of the Irish sea and the scale of works and temporary nature of the constructions phase being proposed ensure that there will be no significant adverse effect to the ecological integrity of the SAC.</p> <p>There are no operational phase effects identified as the project is for a small-scale nature awareness and education facility that will be consistent with the existing natural context of the site.</p>		
004006	North Bull Island SPA	9.77	Mallard (<i>Anas platyrhynchos</i>) [A053], Northern shoveler (<i>Anas clypeata</i>) [A056], Black-headed gull (<i>Larus ridibundus</i>) [A179], Common greenshank (<i>Tringa nebularia</i>) [A164], Ruff (<i>Philomachus pugnax</i>) [A151], Ringed plover (<i>Charadrius hiaticula</i>) [A137], Sanderling (<i>Calidris alba</i>) [A144], Northern pintail (<i>Anas acuta</i>) [A054], Bar-tailed godwit (<i>Limosa lapponica</i>) [A157], Common redshank (<i>Tringa totanus</i>) [A162], Red-breasted merganser (<i>Mergus serrator</i>) [A069], Red knot (<i>Calidris canutus</i>) [A143], Eurasian curlew (<i>Numenius arquata</i>) [A160], Eurasian teal (<i>Anas crecca</i>) [A052],	<p>There are no direct effects foreseen due to the localised nature of the sources identified and the distances between the sites.</p> <p>There are indirect hydrological pathways identified but the dilution effect of the Irish sea, the scale of works, the temporary nature of the construction phase being proposed, and the nature of the development proposed, ensure that there will be no significant adverse effect to the ecological integrity of the SPA.</p>	No	No

			Ruddy turnstone (<i>Arenaria interpres</i>) [A169], Eurasian oystercatcher (<i>Haematopus ostralegus</i>) [A130], Mew gull (<i>Larus canus</i>) [A182], Grey plover (<i>Pluvialis squatarola</i>) [A141], Short-eared owl (<i>Asio flammeus</i>) [A222], European golden plover (<i>Pluvialis apricaria</i>) [A140], Common shelduck (<i>Tadorna tadorna</i>) [A048], Eurasian wigeon (<i>Anas penelope</i>) [A050]	There are no operational phase effects identified as the project is for a small-scale nature awareness and education facility that will be consistent with the existing natural context of the site.		
000206	North Dublin Bay SAC	9.78	Humid dune slacks (N/A) [2190], Fixed coastal dunes with herbaceous vegetation (“grey dunes”) (N/A) [2130], <i>Salicornia</i> and other annuals colonizing mud and sand (N/A) [1310], Mudflats and sandflats not covered by seawater at low tide (N/A) [1140], Annual vegetation of drift lines (N/A) [1210], Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (“white dunes”) (N/A) [2120], Atlantic salt meadows (Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>)) [1330], Shifting dunes (Embryonic shifting dunes) [2110], Petalwort (<i>Petalophyllum ralfsii</i>) [1395]	<p>There are no direct effects foreseen due to the localised nature of the sources identified and the distances between the sites.</p> <p>There are indirect hydrological pathways identified but the dilution effect of the Irish sea, the scale of works, the temporary nature of the construction phase being proposed, and the nature of the development proposed, ensure that there will be no significant adverse effect to the ecological integrity of the SAC.</p> <p>There are no operational phase effects identified as the project is for a small-scale nature awareness and education facility that will be consistent with the existing natural context of the site.</p>	No	No
001209	Glenasmole Valley SAC	9.83	Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (* important orchid sites) (N/A) [6210], Petrifying springs with tufa formation (<i>Cratoneurion</i>) (N/A) [7220], Molinia meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinia caeruleae</i>) (N/A) [6410]	There are no effects foreseen due to the absence of pathways between the areas covered by the proposed project and SAC.	No	No
001398	Rye Water Valley/Cartron SAC	10.21	Narrow-mouthed whorl snail (<i>Vertigo angustior</i>) [1014], Petrifying springs with tufa formation (<i>Cratoneurion</i>) (N/A) [7220], Desmoulin’s whorl	There are no effects foreseen due to the absence of pathways between the areas covered by the proposed project and SAC,	No	No
				as it is over 10 kilometres upstream of the proposed development.		
004040	Wicklow Mountains SPA	12.02	Wood warbler (<i>Phylloscopus sibilatrix</i>) [A314], Merlin (<i>Falco columbarius</i>) [A098], Peregrine falcon (<i>Falco peregrinus</i>) [A103]	There are no effects foreseen due to the absence of pathways between the areas covered by the proposed project and SAC.	No	No
002122	Wicklow Mountains SAC	12.08	Western acidic oak woodland (Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles) [91A0], Siliceous scree of the montane to snow levels (<i>Androsacetalia alpinae</i> and <i>Galeopsietalia ladani</i>) (N/A) [8110], Alpine and Boreal heaths (N/A) [4060], Species-rich Nardus grasslands, on siliceous substrates in mountain areas (and submountain areas in Continental Europe) (N/A) [6230], European dry heaths (N/A) [4030], Northern Atlantic wet heaths with <i>Erica tetralix</i> (N/A) [4010], Oligotrophic waters containing very few minerals of sandy plains (<i>Littorelletalia uniflorae</i>) (N/A) [3110], Blanket bogs (* if active bog) (N/A) [7130], Calaminarian grasslands of the <i>Violetalia calaminariae</i> (N/A) [6130], Natural dystrophic lakes and ponds (N/A) [3160], Calcareous rocky slopes with chasmophytic vegetation (N/A) [8210], Siliceous rocky slopes with chasmophytic vegetation (N/A) [8220], Otter (<i>Lutra lutra</i>) [1355]	There are no effects foreseen due to the absence of pathways between the areas covered by the proposed project and SAC.	No	No
000199	Baldoyle Bay SAC	14.02	Mudflats and sandflats not covered by seawater at low tide (N/A) [1140], Atlantic salt meadows (Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>)) [1330], <i>Salicornia</i> and other annuals colonizing mud and sand (N/A) [1310]	<p>There are no direct effects foreseen due to the localised nature of the sources identified and the distances between the sites.</p> <p>There are indirect hydrological pathways identified but the dilution effect of the Irish sea, the scale of works, the temporary nature of the construction phase being proposed, and the nature of the development proposed, ensure that there will be no significant adverse effect to the ecological integrity of the SAC.</p>	No	No

				There are no operational phase effects identified as the project is for a small-scale nature awareness and education facility that will be consistent with the existing natural context of the site.		
004016	Baldoyle Bay SPA	14.45	Northern lapwing (<i>Vanellus vanellus</i>) [A142], Eurasian curlew (<i>Numenius arquata</i>) [A160], Ringed plover (<i>Charadrius hiaticula</i>) [A137], Bar-tailed godwit (<i>Limosa lapponica</i>) [A157], Ruddy turnstone (<i>Arenaria interpres</i>) [A169], Grey plover (<i>Pluvialis squatarola</i>) [A141], Eurasian oystercatcher (<i>Haematopus ostralegus</i>) [A130], Red knot (<i>Calidris canutus</i>) [A143], Mallard (<i>Anas platyrhynchos</i>) [A053], Red-breasted merganser (<i>Mergus serrator</i>) [A069], Northern pintail (<i>Anas acuta</i>) [A054], Eurasian teal (<i>Anas crecca</i>) [A052], Common greenshank (<i>Tringa nebularia</i>) [A164], Common shelduck (<i>Tadorna tadorna</i>) [A048], Common redshank (<i>Tringa totanus</i>) [A162], Great crested grebe (<i>Podiceps cristatus</i>) [A005], Sanderling (<i>Calidris alba</i>) [A144], European golden plover (<i>Pluvialis apricaria</i>) [A140]	<p>There are no direct effects foreseen due to the localised nature of the sources identified and the distances between the sites.</p> <p>There are indirect hydrological pathways identified but the dilution effect of the Irish sea, the scale of works, the temporary nature of the construction phase being proposed, and the nature of the development proposed, ensure that there will be no significant adverse effect to the ecological integrity of the SPA.</p> <p>There are no operational phase effects identified as the project is for a small-scale nature awareness and education facility that will be consistent with the existing natural context of the site.</p>	No	No

3.5 Other plans and projects

Article 6(3) of the Habitats Directive requires an assessment of a plan or project to consider other plans or projects that might, in combination with the plan or project, have the potential to adversely affect European sites.

As part of this assessment each plan or project is considered within a radius of the red line boundary of the proposed area as defined by the ecologist. The distance of this radius works from a standard 200m, but can be extended if the ecologist deems it necessary depending on whether certain characteristics are present, such as:

- Direct or indirect connectivity to European sites;
- In close proximity to European sites;
- The proposal is of a substantial scale relative to the conditions and/or current works taking place in the surrounding landscape.

These factors are considered particular to each proposal for each particular location and specification. Considering the overall positive long-term effects that this project will have on the surrounding area, the radius of 200m for examining other plans and projects is deemed sufficient in this case.

Plans of relevance to this proposal:

- Dublin City Development Plan 2016-2022; and
- Dublin City Biodiversity Action Plan 2015-2020.

Projects of relevance to this proposal:

As this is an area where the immediate surroundings consist of semi-natural walkways and recreational areas along the Liffey River, there are very few planning applications over the past 5 years within the receiving area. Nevertheless, a review of the DCC planning database for projects within the project area over the past 5 years identified two small scale works relating to the alterations of existing structures. Sources of effects arising from the construction and operational phases of the proposed projects are consistent with the existing conditions at Liffey Valley/Chapelizod. Proposed works within the project area will be undertaken on existing natural infrastructure and will use non intensive methods such as landscaping, path construction, etc. The largest sources for effects identified relate to the demolition works which will introduce temporary dust emissions; however, these are identified to be localised due to the short temporal and spatial scales of the construction, and the aim of the development to either maintain of enhance the existing natural environment already existing the site. On this basis, guidance (CIEEM, 2018) indicates that there is no need to consider in-combination effects. However, taking a precautionary approach, relevant plans and projects (as listed above) have nonetheless been reviewed and assessed (see Table 2 for full list of projects).

Considering that the proposed development is designed with enhancement of local biodiversity as a key feature, that construction phase effects are local and short term and consistent with the current conditions of the local suburban landscape, and that the closest European site is over 6.6km away, it is not foreseen that the proposed project will have any significant in-combination effects with the above plans and projects.

Table 2 Local planning applications within the receiving environment of Liffey Vale House project

Plan or Project	Status	Overview	Possible significant effects from plan or project	Is there a risk of in-combination effects	Possible Significant in-combination effects
3801/16	Refused	Planning permission is sought for demolition of existing garage and open sheds and front boundary wall. Planning permission is sought for the erection of 5 no. 2 storey 3-bedroom, terraced dwellings and 2no. 3 bedroom, semi-detached, 2 storey dwellings. Open space for recreation use and car parking for dwellings, access to site through existing entry. Services to connect to existing and all associated sit works.	N/A	No	No
4014/18	Granted	Planning permission is sought for demolition of the existing single storey extension to the rear of dwelling and the construction of a new two storey extension to the rear incorporating three roof lights to front elevation and an increased ridge height.	This is a small-scale project with a temporary construction phase and the operation phase will have localised effects that have negligible interactions with the environment.	No	No

4 Conclusion

This stage one screening for AA of the proposed Liffey Vale House project shows that the development is not likely to have significant effects on any European site.

At its closest point, the proposed project is more than 6 and a half kilometres from the nearest European sites (South Dublin Bay and River Tolka Estuary SPA 004024 and South Dublin Bay SAC 000210). However, the proposal is enhancement of a semi-natural area for biodiversity, with a historical built feature that will be updated to with a sustainable and eco-friendly design throughout, both which will form a buffer between the surrounding suburban landscape and European sites. The AA screening process has considered potential effects which may arise during the construction and operational phases, of the features included in the project description. The features included in the project will require alterations to existing infrastructure on site. However, all work will be undertaken on existing built open areas within the site to reduce impact to the semi-natural features also present within the site. Due to the nature of the proposed project, the regeneration of the existing building will have dust and noise emissions during the construction phase; however, these are identified as small-scale temporary effects. Given the disused and sub-urban nature of the site, and the nature of the proposed work to enhance the biodiversity and ecological value of the site; the operational phase of the project will co-exist with existing conditions of the surrounding sub-urban landscape, and will not contribute any additional sources for effects to the ecological integrity of European sites downstream of the Liffey River. Therefore, following the source-pathway receptor model, the ecological integrity of the European sites is not foreseen to be significantly affected by the implementation of the project.

Given the nature of the proposed work, the scale and the localised and temporary nature of the potential effects, the proposed project will not lead to any significant effects in-combination with effects arising from any other plans or projects.

It is concluded that the project is not foreseen to give rise to any significant adverse effects on any designated European sites, alone or in combination with other plans or projects⁴. This evaluation is made in view of the conservation objectives of the habitats or species for which these sites have been designated. Consequently, a Stage Two AA (NIS) is not required.

⁴ Except as provided for in Section 6(4) of the Habitats Directive, viz. There must be:
a) no alternative solution available,
b) imperative reasons of overriding public interest for the plan to proceed; and
c) Adequate compensatory measures in place.

Appendix I Background information on European sites

European sites within 15km of the development area including the Qualifying features (Qualifying Interests or Special Conservation Interests) and Site-Specific Threats or Vulnerabilities

Site Code	Site Name	Qualifying Feature	Pressures Codes	Known Threats and Pressures
000199	Baldoyle Bay SAC	Atlantic salt meadows (Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>)) [1330], Salicornia and other annuals colonizing mud and sand (N/A) [1310], Mudflats and sandflats not covered by seawater at low tide (N/A) [1140]	K02.03, D01.02, G01.02, F02.03.01, I01, E01, K03.06, G01.01.02, E03, G02.01, F03.01, J02.01.02, X	Eutrophication (natural), Roads, motorways, Walking, horse-riding and non-motorised vehicles, Bait digging or collection, Invasive non-native species, Urbanised areas, human habitation, Antagonism with domestic animals, Non-motorized nautical sports, Discharges, Golf course, Hunting, Reclamation of land from sea, estuary or marsh, No threats or pressures
000206	North Dublin Bay SAC	Humid dune slacks (N/A) [2190], Fixed coastal dunes with herbaceous vegetation ("grey dunes") (N/A) [2130], Mudflats and sandflats not covered by seawater at low tide (N/A) [1140], Annual vegetation of drift lines (N/A) [1210], Atlantic salt meadows (Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>)) [1330], Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ("white dunes") (N/A) [2120], Shifting dunes (Embryonic shifting dunes) [2110], Salicornia and other annuals colonizing mud and sand (N/A) [1310], Petalwort (<i>Petalophyllum ralfsii</i>) [1395]	E03, A04, G05.05, E01, G01.02, G02.01, G01.01, J01.01, E02, I01, K03.06, H01.09, H01.03, F02.03.01, F02.03	Discharges, Grazing, Intensive maintenance of public parks or cleaning of beaches, Urbanised areas, human habitation, Walking, horse-riding and non-motorised vehicles, Golf course, Nautical sports, Burning down, Industrial or commercial areas, Invasive non-native species, Antagonism with domestic animals, Diffuse pollution to surface waters due to other sources not listed, Other point source pollution to surface water, Bait digging or collection, Leisure fishing
000210	South Dublin Bay SAC	Mudflats and sandflats not covered by seawater at low tide (N/A) [1140], Annual vegetation of drift lines (N/A) [1210], Salicornia and other annuals colonizing mud and sand (N/A) [1310], Shifting dunes (Embryonic shifting dunes) [2110]	D01.02, K02.02, J02.01.02, E03, E02, K02, M01, G01.01.02, G01.02, D01.01, H03, E01, G01.01, F02.03.01	Roads, motorways, Accumulation of organic material, Reclamation of land from sea, estuary or marsh, Discharges, Industrial or commercial areas, Biocenotic evolution, succession, Changes in abiotic conditions, Non-motorized nautical sports, Walking, horse-riding and non-motorised vehicles, Paths, tracks, cycling tracks, Marine water pollution, Urbanised areas, human habitation, Nautical sports, Bait digging or collection
001209	Glenasmole Valley SAC	Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (* important orchid sites) (N/A) [6210], Petrifying springs with tufa formation (Cratoneurion) (N/A) [7220], Molinia meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>) (N/A) [6410]	A03, A03.03, H01.05, A04, H01.08, D01.03, B01.01, A04.02.01, A04.02.02, H02.07, A08, D01, J02, A04.02.03, F02.03, B01.02, B02.01.02, B02.02, C01.03, E01.02, I01	Mowing or cutting of grassland, Abandonment or lack of mowing , Diffuse pollution to surface waters due to agricultural and forestry activities, Grazing, Diffuse pollution to surface waters due to household sewage and waste waters, Car parks and parking areas, Forest planting on open ground (native trees), Non intensive cattle grazing, Non intensive sheep grazing, Diffuse groundwater pollution due to non-severed population, Fertilisation, Roads, paths

				and railroads, Human induced changes in hydraulic conditions, Non intensive horse grazing, Leisure fishing, Artificial planting on open ground (non-native trees), Forest replanting (non-native trees), Forestry clearance, Peat extraction, Discontinuous urbanisation, Invasive non-native species
001398	Rye Water Valley/Carton SAC	Petrifying springs with tufa formation (<i>Cratoneurion</i>) (N/A) [7220], Narrow-mouthed whorl snail (<i>Vertigo angustior</i>) [1014], Desmoulin's whorl snail (<i>Vertigo moulinsiana</i>) [1016]	A04, D01.02, E01.03, E01.01, A08, J02.05.02, B, A10.01	Grazing, Roads, motorways, Dispersed habitation, Continuous urbanisation, Fertilisation, Modifying structures of inland water courses, Silviculture, forestry, Removal of hedges and coppices or scrub
002122	Wicklow Mountains SAC	Western acidic oak woodland (Old sessile oak woods with Ilex and Blechnum in the British Isles) [91A0], Oligotrophic waters containing very few minerals of sandy plains (<i>Littorelletalia uniflorae</i>) (N/A) [3110], Siliceous rocky slopes with chasmophytic vegetation (N/A) [8220], Calcareous rocky slopes with chasmophytic vegetation (N/A) [8210], Blanket bogs (* if active bog) (N/A) [7130], European dry heaths (N/A) [4030], Natural dystrophic lakes and ponds (N/A) [3160], Otter (<i>Lutra lutra</i>) [1355], Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe) (N/A) [6230], Siliceous scree of the montane to snow levels (<i>Androsacetalia alpinae</i> and <i>Galeopsietalia ladani</i>) (N/A) [8110], Alpine and Boreal heaths (N/A) [4060], Northern Atlantic wet heaths with <i>Erica tetralix</i> (N/A) [4010], Calaminarian grasslands of the <i>Violetalia calaminariae</i> (N/A) [6130]	G05.07, A04, D01.01, G05.06, B02.05, G05.01, G01, J01.01, G05.09, C01.03, G01.03.02, B06, I01, L05, F03.02.02, F04.02, E03.01, G04.01, K01.01, G05.04, G01.02, G01.04, E01, A05.02, F03, G02.09, K04.05	Missing or wrongly directed conservation measures, Grazing, Paths, tracks, cycling tracks, Tree surgery, felling for public safety, removal of roadside trees, Non-intensive timber production (leaving dead wood or old trees untouched), Trampling, overuse, Outdoor sports and leisure activities, recreational activities, Burning down, Fences, fencing, Peat extraction, Off-road motorized driving, Grazing in forests or woodland, Invasive non-native species, Collapse of terrain, landslide, Taking from nest (e.g. falcons), Collection (fungi, lichen, berries etc.), Disposal of household or recreational facility waste, Military manoeuvres, Erosion, Vandalism, Walking, horse-riding and non-motorised vehicles, Mountaineering, rock climbing, speleology, Urbanised areas, human habitation, Stock feeding, Hunting and collection of wild animals (terrestrial), Wildlife watching, Damage by herbivores (including game species)
004006	North Bull Island SPA	Common redshank (<i>Tringa totanus</i>) [A162], European golden plover (<i>Pluvialis apricaria</i>) [A140], Short-eared owl (<i>Asio flammeus</i>) [A222], Mew gull (<i>Larus canus</i>) [A182], Eurasian oystercatcher (<i>Haematopus ostralegus</i>) [A130], Northern shoveler (<i>Anas clypeata</i>) [A056], Red-breasted merganser (<i>Mergus serrator</i>) [A069], Eurasian curlew (<i>Numenius arquata</i>) [A160], Sanderling (<i>Calidris alba</i>) [A144], Mallard (<i>Anas platyrhynchos</i>) [A053], Grey plover (<i>Pluvialis squatarola</i>) [A141], Black-headed gull (<i>Larus ridibundus</i>) [A179], Bar-tailed godwit (<i>Limosa lapponica</i>) [A157], Northern pintail (<i>Anas acuta</i>) [A054], Eurasian wigeon (<i>Anas penelope</i>) [A050], Red knot (<i>Calidris canutus</i>) [A143], Eurasian teal (<i>Anas crecca</i>) [A052], Ruddy turnstone	G01.02, E01.04, D03.02, E02, G01.01, D01.02, E03, F02.03.01, G02.01, D01.05, E01.01, G03	Walking, horse-riding and non-motorised vehicles, Other patterns of habitation, Shipping lanes, Industrial or commercial areas, Nautical sports, Roads, motorways, Discharges, Bait digging or collection, Golf course, Bridge, viaduct, Continuous urbanisation, Interpretative centres

Appendix II Qualifying Interests of SACs that have undergone assessment including Summaries of Current Threats and Sensitivities

Qualifying Interests	Current threats to Qualifying Interests	Sensitivity of Qualifying Interests	
Alpine and Boreal heaths	[4060]	Abandonment; overgrazing; burning; outdoor recreation; quarries; communication networks; and wind farm developments.	Changes in management. Changes in nutrient or base status. Moderately sensitive to hydrological change.
Annual vegetation of drift lines	[1210]	Grazing; sand and gravel extraction; recreational activities; coastal protection works.	Overgrazing and erosion. Changes in management.
Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>)	[1330]	Overgrazing; erosion; invasive species, particularly common cordgrass (<i>Spartina anglica</i>); infilling and reclamation.	Marine and groundwater dependent. Medium sensitivity to hydrological change. Changes in salinity and tidal regime. Overgrazing, erosion and accretion.
Blanket bogs (*if active bog)	[7130]	Land reclamation, peat extraction; afforestation; erosion and landslides triggered by human activity; drainage; burning and infrastructural development.	Surface and groundwater dependent. Highly sensitive to hydrological changes. Inappropriate management.
Calaminarian grasslands of the <i>Violetalia calaminariae</i>	[6130]	Land reclamation, afforestation; drainage; and infrastructural development.	Surface and groundwater dependent. Highly sensitive to hydrological changes. Inappropriate management.
Calcareous rocky slopes with chasmophytic vegetation	[8210]	Overgrazing; extractive industries; recreational activities and improved access.	Erosion, overgrazing and recreation.
Embryonic shifting dunes	[2110]	Natural erosion processes exacerbated by recreation and sand extraction. Coastal protection interfering with natural processes.	Overgrazing, and erosion. Changes in management.
European dry heaths	[4030]	Afforestation, over burning, over-grazing, under-grazing and bracken invasion.	Moderately sensitive to hydrological change. Changes in management. Changes in nutrient status.
Fixed coastal dunes with herbaceous vegetation (grey dunes)	[2130]	Recreation; overgrazing and inappropriate grazing: non-native plant species, particularly sea buckthorn (<i>Hippophae rhamnoides</i>).	Overgrazing, and erosion. Changes in management.
Humid dune slacks	[2190]	Agricultural improvement; overgrazing and inappropriate grazing; forestry; recreational activity.	Overgrazing, and erosion. Changes in management. Sensitive to hydrological change.

Otter (<i>Lutra lutra</i>)	[1355]	Decrease in water quality: Use of pesticides; fertilization; vegetation removal; professional fishing (including lobster pots and fyke nets); uniting; poisoning; sand and gravel extraction; mechanical removal of peat; urbanised areas; human habitation; continuous urbanization; drainage; management of aquatic and bank vegetation for drainage purposes; and canalization or modifying structures of inland water course.	Surface and marine water dependent. Moderately sensitive to hydrological change. Sensitivity to pollution.
Molinia meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>)	[6410]	Agricultural intensification; drainage; abandonment of pastoral systems.	Surface and groundwater dependent. Moderately sensitive to hydrological change. Changes in management. Changes in nutrient status.
Mudflats and sandflats not covered by seawater at low tide	[1140]	Aquaculture, fishing, bait digging, removal of fauna, reclamation of land, coastal protection works and invasive species, particularly cord-grass; hard coastal defence structures; sea-level rise.	Surface and marine water dependent. Moderately sensitive to hydrological change. Moderate sensitivity to pollution. Changes to salinity and tidal regime. Coastal development.
Natural dystrophic lakes and ponds	[3160]	Nutrient alterations; management shifts in the associated peatland habitat, afforestation; waste water; invasive alien species; sport and leisure activities.	Surface and groundwater dependant. Highly sensitive to hydrological changes. Highly sensitive to pollution
Northern Atlantic wet heaths with <i>Erica tetralix</i>	[4010]	Reclamation, afforestation and burning; overstocking; invasion by non-heath species; exposure of peat to severe erosion.	Surface and groundwater dependent. Highly sensitive to hydrological changes. Inappropriate management.
Old sessile oak woods with Ilex and Blechnum in the British Isles	[91A0]	The introduction of alien species; sub-optimal grazing patterns; general forestry management; increases in urbanisation and human habitation adjacent to oak woodlands; and the construction of communication networks through the woodland.	Changes in management. Changes in nutrient or base status. Introduction of alien species.
Oligotrophic waters containing very few minerals of sandy plains	[3110]	Nutrient enrichment; afforestation; waste water; invasive alien species; sport and leisure activities.	Surface and groundwater dependant. Highly sensitive to hydrological changes. Highly sensitive to pollution.
Petalwort (<i>Petalophyllum ralfsii</i>)	[1395]	There are no significant impacts affecting this species.	None identified.
Petrifying springs with tufa formation (<i>Crotoneurion</i>)	[7220]	Ground water interactions, on site management activities.	Surface and groundwater dependant. Highly sensitive to hydrological changes. Highly sensitive to pollution.

Salicornia and other annuals colonising mud and sand	[1310]	Invasive Species; erosion and accretion.	Marine water dependent. Medium sensitivity to hydrological change. Changes in salinity and tidal regime. Infilling, reclamation, invasive species.
Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (* important orchid sites)	[6210]	Land reclamation, afforestation; drainage; and infrastructural development.	Surface and groundwater dependent. Highly sensitive to hydrological changes. Inappropriate management.
Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes)	[2120]	Recreation and coastal defences, which may interfere with local sediment dynamics.	Overgrazing, and erosion. Changes in management.
Siliceous rocky slopes with chasmophytic vegetation	[8220]	Pressures associated with the non-native invasive species New Zealand willowherb (<i>Epilobium brunnescens</i>).	Erosion, overgrazing and recreation.
Siliceous scree of the montane to snow levels (<i>Androsacetalia alpinae</i> and <i>Galeopsietalia ladani</i>)	[8110]	Overgrazing, under grazing and succession were recorded as medium-importance pressures in this reporting period, and Structure and functions were again assessed as Inadequate, the trend is considered to be stable rather than improving. This change is due to improved knowledge and the habitat is considered to have been stable since before the last assessment.	Erosion, overgrazing and recreation.
Species-rich Nardus grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe)	[6230]	Bracken encroachment, succession, inappropriate grazing, afforestation; drainage; and infrastructural development.	Erosion, overgrazing and recreation.
Narrow-mouthed Whorl Snail (<i>Vertigo angustior</i>)	[1014]	Loss of riverside and canalside habitat; exploitation of esker sites and drainage of wetlands, and sheep grazing and overexploitation of dune sites.	Changes to ground vegetation condition, groundwater dependent and is highly sensitive to hydrological changes.
Desmoulin's Whorl Snail (<i>Vertigo moulinsiana</i>)	[1016]	Loss of riverside and canalside habitat; exploitation of esker sites and drainage of wetlands, and sheep grazing and overexploitation of dune sites.	Changes to ground vegetation condition, groundwater dependent and is highly sensitive to hydrological changes.

Appendix III Special Conservation Interests of SPAs that have undergone
Assessment including vulnerabilities of the SCIs

Special Conservation Interests	Vulnerabilities of Special Conservation Interests
Great crested grebe (<i>Podiceps cristatus</i>) [A005] Great cormorant (<i>Phalacrocorax carbo</i>) [A017] Common shelduck (<i>Tadorna tadorna</i>) [A048] Eurasian wigeon (<i>Anas penelope</i>) [A050] Eurasian teal (<i>Anas crecca</i>) [A052] Mallard (<i>Anas platyrhynchos</i>) [A053] Northern pintail (<i>Anas acuta</i>) [A054] Northern shoveler (<i>Anas clypeata</i>) [A056] Red-breasted merganser (<i>Mergus serrator</i>) [A069] Merlin (<i>Falco columbarius</i>) [A098] Peregrine falcon (<i>Falco peregrinus</i>) [A103] Eurasian oystercatcher (<i>Haematopus ostralegus</i>) [A130] Ringed plover (<i>Charadrius hiaticula</i>) [A137] European golden plover (<i>Pluvialis apricaria</i>) [A140] Grey plover (<i>Pluvialis squatarola</i>) [A141] Northern lapwing (<i>Vanellus vanellus</i>) [A142] Red knot (<i>Calidris canutus</i>) [A143] Sanderling (<i>Calidris alba</i>) [A144] Ruff (<i>Philomachus pugnax</i>) [A151] Bar-tailed godwit (<i>Limosa lapponica</i>) [A157] Eurasian curlew (<i>Numenius arquata</i>) [A160] Common redshank (<i>Tringa totanus</i>) [A162] Common greenshank (<i>Tringa nebularia</i>) [A164] Ruddy turnstone (<i>Arenaria interpres</i>) [A169] Mediterranean gull (<i>Larus melanocephalus</i>) [A176] Black-headed gull (<i>Larus ridibundus</i>) [A179] Mew gull (<i>Larus canus</i>) [A182] Roseate tern (<i>Sterna dougallii</i>) [A192] Common tern (<i>Sterna hirundo</i>) [A193] Arctic tern (<i>Sterna paradisaea</i>) [A194] Short-eared owl (<i>Asio flammeus</i>) [A222] Wood warbler (<i>Phylloscopus sibilatrix</i>) [A314]	<ul style="list-style-type: none">• Bird species are particularly vulnerable to direct disturbance due to noise and/or vibration. These effects are localised, and disturbance effects are foreseen to be low at distances beyond 2km.• Direct habitat loss is a serious concern for bird species, as well as the reduction in habitat quality. Habitat degradation could occur through effects such as local enrichment due to agricultural practices or damage to habitat through activities such as trampling.• Prey species diversity and availability is a key element of species conservation. Community dynamics and ecosystem functionality are complex concepts and require site specific information. The site synopsis and conservation objectives for the SPAs identified within the ZOI were used to identify any specific prey sensitivities.• Vegetation composition, structure and functionality.
Wetland and Waterbirds [A999]	Direct land take is a common vulnerability to all sites; as well as significant water quality effects. The conservation objective of all SPAs designated for Wetland and Waterbirds is to maintain the favourable conservation condition of the wetland habitat as a resource for the regularly occurring migratory waterbirds using it.

APPENDIX M

13th
December
2019

LIFFEY VALE HOUSE AND
GARDENS REGENERATION



Prepared on Behalf of



Situation Analysis

Prepared by



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Appendices

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Introduction

Dublin City Council (DCC) Parks Department has appointed a multi-disciplinary team lead by Blackwood Associates Architects - to develop and oversee the implementation of proposals for the regeneration of pre-1756 Liffey Vale House and the surrounding grounds, comprising 1.18 hectares.

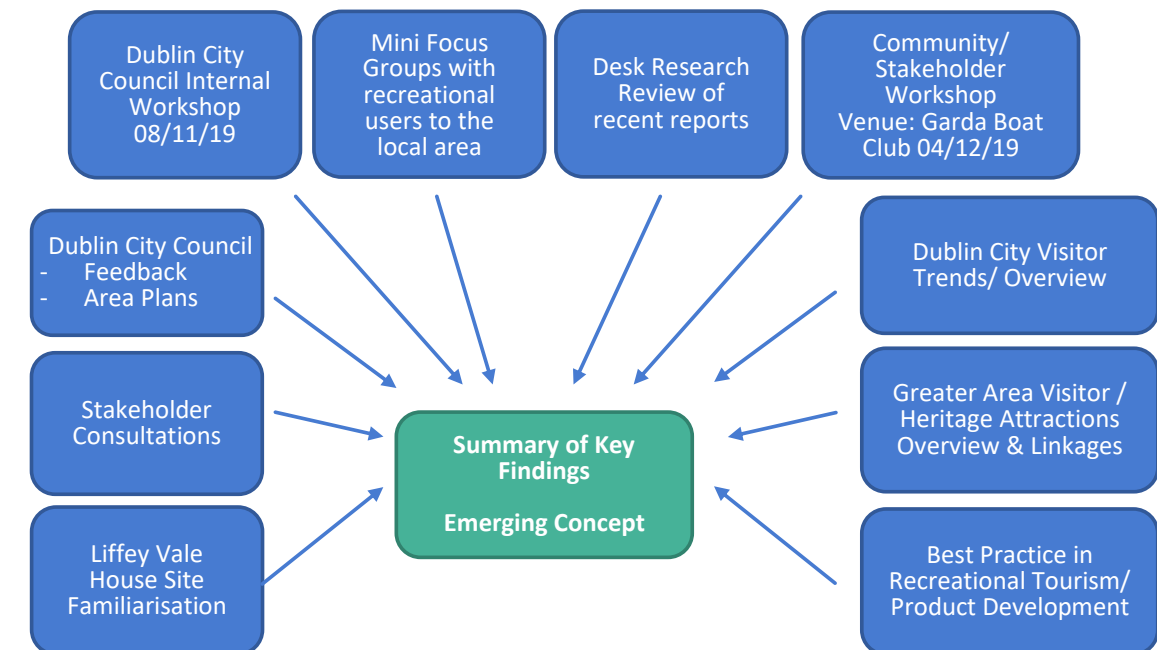
The present document represents the Situation Analysis report prepared by Tourism Development International (TDI) on the Liffey Vale House and Gardens development and design as a component of the Stage One programme of work, the overall aim of which is for the multi-disciplinary project team to identify a sustainable function and management model for the building and site, given the environmental, social and economic circumstances of the area. The conclusion of Stage One will be that an agreed brief is established and approved by the Council, on the basis of which the design team will proceed to the design stage of the project.

TDI's work undertaken through the 4 month period September – December 2019, comprised nine elements, as illustrated below, geared to fine tuning the emerging concept for the development of the site (as outlined in the Council's September 2019 briefing note to Councillors¹). This exercise involved assessing and evaluating the possible options for the restoration of the House and rehabilitation of the gardens, covering:

1. examination of the national, regional and local policies, strategies and plans that have relevance to the site,
2. market characteristics and potential for use of the site,
3. the competitive environment for leisure, recreation and tourism (LRT) attractions and activities in the catchment area,
4. the key principles of leisure, recreation and tourism (LRT) product development, and
5. a wide-ranging series of consultations with national and regional agencies, stakeholders, and DCC executives, as well a workshop at which 32 representatives of stakeholder groups and the local community participated (See appendix B).

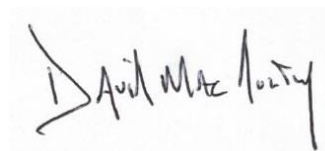
¹ Dublin City Council – Liffey Vale Area Committee. Liffey Vale House and Gardens, briefing note, September 2019 – See appendix A.

Situation Analysis Work Programme – September – December 2019



Based on the findings of the multi-strand programme of investigations, this Situation Analysis report presents an assessment to fine-tune the emerging hypothesis that the Liffey Vale House and Gardens should developed as a site focused on the riverine environment and the wetland and woodland area close by, possibly featuring inter alia a café, bus drop off point and educational outdoor space, with the aim of establishing it as a focal hub for a planned wider valley park route².

Based on the widespread programme of research and consultation undertaken by TDI, including the community/stakeholder workshop, we conclude that the emerging project outline presented in the DCC briefing note, reproduced in Appendix A, has extensive support across all groups consulted and is fully in line with national, regional and local development strategies and policies.



David Mac Nulty
Director/Partner
Tourism Development International,
December 2019

² Dublin City Council briefing note, op cit.

1. Context for the Study

1.1. National and Regional Plans for Leisure, Recreation and Tourism (LRT)

The preparation of the Liffey Vale House and Gardens Development Plan is viewed in the context of the following national, regional and local policy directions:

- Increasing natural environment protection and public awareness of such resources,
- Public sector support in the provision of increased leisure, recreation and tourist attractions and facilities in both urban and rural areas, with a particular focus on waterways
- Associated encouragement of outdoor leisure activities consistent with improving health standards of the population
- Continuing efforts to increase both inbound and domestic tourist flows and activities

1.1.1. Natural Environment

The Government of Ireland's Climate Action Plan 2019 sets the course for a wide-ranging programme of actions geared to protecting the natural environment through measures to reduce carbon emissions, adopt energy consumption practices less harmful to the environment (and the population) and lead to society's a better appreciation of biodiversity.

The Department of Arts, Heritage and the Gaeltacht's National Biodiversity Plan, 2011-2016, biodiversity states that 'biodiversity provides us with clean air, water, food, materials, medicines, health and recreation. It supports pollination and soil fertility, regulates climate and protects us from extreme weather.'

The 2016 Barometer Survey, commissioned by the Heritage Council, on consumer awareness, understanding and interest in biodiversity found that there is a real shift in awareness which is particularly evident in Dublin and urban areas generally. Nationally, awareness and understanding of biodiversity grew from 18% in 2010 to 31% in 2016, albeit this level is lower than the 44% of EU citizens as a whole.

The Environmental Protection Agency's report Ireland's Environment 2016 – An Assessment concluded that:

'Ongoing collaborative efforts to increase public awareness of biodiversity must be continued and augmented. Public awareness and appreciation of biodiversity and its intrinsic link to everyday life is vital if measures to protect our environment are to succeed.'

The Dublin City Parks Strategy 2016 provides an overall strategic framework and vision directing parks, landscape development and future management within Dublin City. Within this framework and vision, Dublin City Council is following a '**greening strategy**' for the different areas it covers i.e. Liberties, North East Inner City to date. Such a strategy is a combination of: proposals for new green spaces, enhancement of key streets and civic spaces; refurbishment and enhancements to existing green spaces, greening measures for streets **and measures to improve linkages and legibility through the area.**

It is clear that any regeneration for Liffey Vale House and Gardens should adhere to the principles and imperatives in respect of the natural environment specified in National and local policies.



Wandering deer in adjoining Phoenix Park

1.1.2. Nature-based Recreation, Leisure and Tourist Attractions and Facilities

The Outdoor Recreation Plan for Public Lands and Waters in Ireland 2017-2021 states that:

*'Collectively, Ireland's State bodies own 15% of total land area in the country, with more than 1,000 km of inland waterways, over 100,000 ha. of fishing rights on inland fisheries, 3,000 km of waymarked trails for walking and cycling and more than half a million hectares of open-access lands. **Managed effectively, outdoor recreation on publicly-owned lands and waterways has the potential to deliver significant tangible economic, social health and wellbeing benefits to the Irish people for generations.'***

Ireland's waterways are recognised as a key natural resource that can provide a wide range of both recreational and leisure activities catering for the full spectrum of hard and soft activity enthusiasts. Waterways Ireland is charged with the management, maintenance, development and restoration of seven inland navigable waterways on the island of Ireland, principally for recreational purposes.

In November 2018, the Government announced €8 million in funding for 18 strategic projects under the 2018 Outdoor Recreation Infrastructure Scheme, part of the Government's Action Plan for Rural Development providing funding for the development of new outdoor recreational infrastructure and the maintenance, enhancement and promotion of existing outdoor recreational infrastructure in Ireland.

The principle of public funds to finance and/or kick start and maintain recreational facilities in Ireland's natural areas is thus well-established.

1.1.3. Expanding Recreation and Leisure Activities > Raising Health Standards>Raising Environmental Awareness and Knowledge

In announcing the package of measures in the Outdoor Recreation Infrastructure Scheme, Minister Ring stated that:

'the continued development of our recreational infrastructure will not only support Ireland's rural tourism potential, but will also provide a diverse range of recreation options for local communities to support their own health and fitness and enjoy the countryside with their families.'

This observation can be applied equally to the Liffey Vale House and Gardens site situated just a few kms from the centre of Dublin, yet in a setting far removed from the intensity of buildings and traffic that surround the Liffey in its progress from Islandbridge to the sea.

Waterways specifically fulfil Minister Ring's claim. The Waterways Ireland 2016 report Valuing Ireland's Rural and Urban Inland Waterways lists among the benefits and services:

'Waterways and towpaths form part of the "natural health service" – encouraging and supporting physical and healthy outdoor activity – and a catalyst for social cohesion – a built environment that encourages healthy rural and urban communities.'

The report Ireland's Environment – An Assessment 2016 suggests that:

'spending time in blue spaces – rivers, canals, lakes and coastline – reduces physical stress and enhances mental wellbeing'
and that
'doctors in Ireland are starting to hand out blue prescriptions, encouraging people to walk, run and spend time in nature'.

Another important development is the creation of environmental learning environments where the public – in particular school groups – can understand how things like the biodiversity works and climate change affects the environment. Examples of new projects of this type in Dublin itself include the DCC'S own Bull Island project and the Science Museum at Trinity College where science and art combine in the presentations using innovative "hands-on" techniques.

The links between increased outdoor recreational pastimes and both health and environmental awareness are fully recognised by public authorities in Ireland, a clear opportunity area in the regeneration of Liffey Vale House and Gardens.

1.1.4. Stimulating Increased Tourism

Tourist activity is a major contributor to the Irish economy – both from international markets and by residents of the island of Ireland. Recognition of its economic importance has led to major marketing efforts to increase tourism.

Tourism Ireland is the agency responsible for marketing the country in overseas markets. It uses the market segments identified as through Failte Ireland as the most promising i.e. Culturally Curious, Great Adventurers and Social Energisers. The first two of these segments have attitudinal and behavioural characteristics to which the development of the Liffey Vale House and Gardens could appeal, namely³:

³ Taken from Failte Ireland Growing International Sales: Global Segmentation Toolkit

Culturally Curious:

- Interested in all a place has to offer
- Enjoy connecting with nature and getting off the beaten track
- Likely to engage in gentle exploration of the place – walking, cycling, pleasure boating
- Prepared to pay more for environmentally friendly features

Great Adventurers:

- Like to get physical, and connect, with nature, particularly in more remote areas
- Likely to engage both in exploring more remote and exciting places on foot or by bicycle AND/OR in gentle exploration of the place – walking, cycling, pleasure boating

The opportunity could exist to offer access to the developed Liffey Vale House and Gardens attraction as a component of these tourist segments visit to Dublin.

Domestic tourism is a core component of tourism in Ireland and is vital to the overall viability of the tourism industry, providing the opportunity to operate year round, thereby growing and maintaining employment. Again, Failte Ireland has identified three target market segments i.e. Connected Families, footloose Socialisers and Indulgent Romantics.

Characteristics with possible relevance to the developed Liffey House and Gardens attraction are identified as for the first two of these segments are:

Connected Families:

- Enjoy a holiday that offers a variety of things to see and do in a place that feels special
- Parents love to see their children do and enjoy the same simple things they did

Footloose Socialisers:

- Like to share experiences with people they can relax and be themselves with
- Believe it is good to get off the beaten track to try out different places

Once the regeneration features of the Liffey Vale House and Gardens have been finalised, we believe that there are opportunities both in international markets and with domestic tourists for the attraction to feature as part of their visit to Dublin, most likely in association with a visit to Phoenix Park.

1.2. Existing and Planned Water-based Leisure, Recreation and Tourism (LRT) Developments

The extensive network of rivers, canals and other waterways in Ireland are being developed as major features for recreational activity, both on the water and along the banks.

Ireland uses twin concepts to identify, develop and market its rural trails: Greenways and Blueways. They are complementary to each other, with Greenways having been developed throughout the country over the past decade starting with the Great Western Greenway using abandoned railway track in Mayo.

Waterways Ireland uses both denominations for the waterways it manages. Greenways is used for waterways that run through extensive rural areas. It has developed the Grand Canal Greenway with the business case submission made to the Department of Transport, Tourism and Sport for the remaining presently undeveloped 98 km aligning its case with the DTTAS Strategy for the Future Development of National and Regional Greenways and linking it to Failte Ireland's Existing and Potential Cycling Hubs.

Waterways Ireland focuses marketing on Blueways - a network of multi-activity recreational trails, based on or alongside lakes, canals and rivers. They provide scenic routes into the heart of rural Ireland by canoe, bike or on foot. It has developed (or is in the process of developing) and maintains recreational facility programmes in seven major waterways: Barrow Navigation, Erne System, Grand and Royal Canals, Lower Bann Navigation, and Shannon Erne Water.

It sees the Blueways as presenting valuable opportunities for rural communities by providing recreational opportunities to attract more visitors, thereby stimulating local businesses and regenerating local areas. As such, Blueways are seen by Waterways Ireland as representing an effective model of partnership between private, community, and voluntary sectors and relevant state bodies.

In August 2019, Failte Ireland and Waterways Ireland signed the Strategic Partnership Programme (SPP), focused on delivery of a programme of works to improve the quality of the visitor and user experience along Waterway Ireland's waterways in Ireland. Initiating the SPP, Failte Ireland CEO stated that:

'The waterways are a key part of the tourism offering in rural Ireland and the Dublin region.'

Its River Liffey location provides the opportunity for the Liffey Vale House and Gardens regeneration to benefit from the strong focus being made on the creation of recreational activities on the country's waterways.

1.3. Key Planning Priorities for Dublin City

The Dublin City Development Plan 2016-2022 lays out clear and detailed strategies aimed at 'protecting the environment, heritage and amenities of the city and in mitigating against the impacts of climate change' based on the 'principals of sustainable communities, enterprise and creativity.' Central to these aims is the conviction that 'a green city is a healthy city'. The opening paragraphs of Chapter 10 Green Infrastructure, Open Space & Recreation affirms that:

'Protecting and enhancing open spaces for both biodiversity and recreational use has benefits for the city's sustainability and attractiveness as a place to live, work and visit...A coherent plan for the future recreation and open space needs of citizens that at the same time ensures the adequate protection of natural assets including open spaces, landscapes and biodiverse areas is essential in creating a clean, green, well-connected city.'

It is within this context that the emerging regeneration plan for the Liffey Vale House and Gardens is being prepared, and adherence to the Dublin City Development Plan's strategic priorities is of paramount importance in the design of the features of the site plan.



A view across to the opposite side of the site

1.4. Existing and Planned Tourism Attractions and Activities in Dublin

Tourism in Dublin is guided by the Destination Dublin: A Collective Strategy for Tourism Growth to 2020. Prepared in 2013/2014 by the Growth Dublin Taskforce, the strategy identified a new tourism proposition:

'Dublin is the vibrant capital city bursting with a variety of **surprising experiences** – where city living thrives side by side with the **natural outdoors**' NB emphasis added.

Dublin now operates with the marketing tagline of **Surprising by Nature**.

Faite Ireland has provided public sector funding for a range of tourism initiatives, from which Dublin benefits – or can benefit in future. It has invested directly in tourism projects in Dublin amounting to in excess of €16 million, a level that was tripled through private sector and other investment. Failte Ireland recently initiated a number of Visitor Experience Development Plans across the country, including one for the Dublin Docklands. It has commissioned a Visitor Orientation Strategy to facilitate visitors getting around the City and county. Its Destination Towns initiative is open for application to develop towns as tourism hubs. Failte Ireland's new four-year capital investment programme under the Government's Project Ireland 2040 strategy amounts to €150 million. It targets 'platforms' which can grow tourism in the country. The first 'platform' is Immersive Heritage and Cultural Attractions. The goal is to develop world class attraction projects of scale (i.e. €2.5 million and over) designed to appeal to overseas visitors looking for hands on experiences⁴.

In its November 2019 Dublin Industry Update, Failte Ireland states:

In 2020 we will publish our 5-year Regional Development Plan for Dublin 2020-2024, which will set out how we aim to grow the visitor economy in a sustainable way, that will be of benefit to all. We have a number of key programmes in place...which aim to grow the tourism contribution by driving visitor numbers and revenues in areas of the city with untapped tourism potential. We announced new capital investment programmes in 2019 and we will continue to work closely to support businesses to deliver the best possible visitor experience by improving storytelling and audience engagement.

The increased focus in the development and marketing of Dublin's tourism on nature, and the funding and other initiatives of Failte Ireland indicate possible opportunities from which the Liffey Vale House and Gardens plan may benefit.

⁴ Failte Ireland – Developing Tourism in Dublin

1.5. Pattern and Performance of Leisure, Recreation and Tourism in Dublin City

As the country's principal gateway and destination, Dublin attracts the majority of both international and domestic visitors. Fáilte Ireland estimates that in 2019 Dublin will have attracted 6.3 million overseas visitors who spent €2.1 billion in the area and supported 65,000 jobs⁵. While these levels represent records, there is apprehension that growth may not be maintained because of uncertainty of the British market and its withdrawal from the European Union.

Irish residents generated 1.7 million trips to the capital city in 2018, with expenditure of €343 million⁶.

While tourist patterns of behaviour in Dublin are largely focused on the established tourist attractions and sites, increased efforts are being made to spread their time more widely across the city i.e. through initiatives such as Fáilte Ireland's grant scheme Surprising Stories (of People and Place) for attractions.⁷

Levels of engagement of the Irish people in what the Irish Sports Monitor calls Broader Physical Activity (i.e. other than sports) are rising. The rise in the proportion that is 'highly active' is recorded at almost a third – 32.6% - achieving the minimum level of activity set out by the National Physical Activity Guidelines. The increase in the proportion that engage in 'recreational walking' rose from 63.6% to 66.2% between 2015 and 2017, equivalent to almost 100,000 additional Irish people going for regular walks. The 45 to 54 age group has the highest level of participation in recreational walking at 71.3% in 2015, with the strongest increase between 2015 and 2017 in the 25 to 34 age group. This level of participation translates into almost 2.5 million people walking for recreation each week. Those participating in recreational walking took on average 4.6 walks over the previous week⁸.

Visiting gardens is growing in appeal with overseas tourists, the overall number more than doubling between 2009 and 2017 when 31% of the total to Ireland chose this activity i.e. 2.8 million in total. In a 2013 Fáilte Ireland survey, almost three-out-of-four overseas holidaymakers to Dublin expressed an interest in 'exploring the countryside close to Dublin', with 46% putting this desire into practice.

The 707 ha Phoenix Park, one of Dublin's principal attractions – and of relevance to the Liffey Vale House and Gardens development in view of its close proximity to the site – received an estimated 1.8 million visitors at its visitor centre over the past year. Over 2,300 sporting events take place in the intensive recreation zone each year.

⁵ Fáilte Ireland - Dublin Industry Update November 2019

⁶ Fáilte Ireland – Key Tourism Facts 2018

⁷ Fáilte Ireland – Dublin's Surprising Stories Toolkit

⁸ Sport Ireland – Irish Sports Monitor, annual report 2017

About 30% of the Park is tree-covered and there is a wide variety of deer, mammals and other wildlife in wildlife habitats such as the Furry Glen, a managed conservation area.

The Park is managed by the Office of Public Works which has undertaken a Strategic Review of Visitor Experience in the Park, to explore questions such as:

- What are the Park's constituent parts?
- How do they relate to one another?
- How can they be made more beautiful?

One of the three objectives of the Review was to consider the future development potential of the Park, to be consistent with the stated principal vision of the 2011 Phoenix Park Conservation Management Plan, namely:

To protect and conserve the historic landscape character of the Phoenix Park and its archaeological, architectural and natural heritage whilst facilitating visitor access, education and interpretation, facilitating the sustainable use of the Park's resources for recreation and other appropriate activities, encouraging research and maintaining its sense of peace and tranquillity.

In considering the development potential, four development quarters are identified in the draft of the Review, one being a Biodiversity Quarter situated at the western end through Knockmarron Gate. The draft of the review outlines a series of next steps, including in respect of the Biodiversity Quarter:

- Knockmarron Entrance – consider the provision of a welcome area, facilities and building for visitors
- Potential of Quarter – undertake a feasibility study to explore the educational, recreational and leisure potential of the quarter

The draft also considers actions to increase and improve access to the Park, including the pedestrian bridge crossing to the War Memorial Gardens and the possible re-opening of the existing gate along Chapelizod Road.⁹

It is clear that the upsurge in outdoor recreational activities augurs well for the Liffey Vale House and Garden site, located as it is on the banks of the Liffey facing the War Memorial Park and across the way from Phoenix Park, already a major location for walking, cycling, running, family play experiences of wildlife and fresh air. With one of the goals of the Phoenix Park Strategic Review being to examine possibilities for the 'development of new linkages, greenways and circulation routes', there exists a prima facie opportunity for the site to be one of these such linkages, offering the added value to Phoenix Park of access to the Liffey.

⁹ Denis Byrne Architects – The Phoenix Park Visitor Experience. Executive Summary. Draft. October 2018

2. Principles of LRT (Leisure, Recreation, Tourism) Product Development

2.1. Location and Access

Two of the fundamental principles to be considered in the development of any attraction, activity and associated facilities aimed at the discretionary time and income of users are **location** and **access** i.e.:

- Its location vis-à-vis centres of population – and, thus, potential users, and
- The means and ease of accessing the site of the LRT feature i.e. what can be termed its 'getatability'.

The site's location (i.e. urban - rural, natural and manmade features, proximity to centres of population) defines sets the broad parameters of what can be developed at the site; while its access (i.e. transportation routes and services, parking) is a major determinant of the likely volumes of users of the site.

2.2. Differentiation vis-à-vis Competitive Attractions and Activities

For a new development targeting LRT users its juxtaposition against other features in the catchment area is an important consideration in determining the type of development that can attract significant levels of demand.

Duplication of what is already on offer will only work if the quality of what is developed is superior to the existing features. At the same time, a development on a site in isolation from current things to see and do in the catchment area faces a difficult task in building up a significant level of usership.

On one hand it is necessary to offer something different from other attractions/activities/facilities in the catchment while, at the same time, complementing these other features so that their patrons will consider an add on to the new development.

2.3. Product: Market Matching

The Handbook on Tourism Product Development¹⁰ states that 'products and markets are mirror images of each other.' While focused on the development of destinations targeting tourist markets, the principles are equally valid when considering individual sites focused on the wider LRT set of markets. In order to establish a comprehensive analysis and understanding of the present situation in the area, the Handbook advocates that the starting point in any product development planning should involve:

- A comprehensive assessment of the destination's overall situation, and
- An audit/inventory of resources and assets – natural, cultural and historical – and existing products in the catchment area

A range of alternative development options can be reviewed examining each according to:

- Appropriateness to the resources of the site
- The market segments to which the alternatives would appeal, and the strength of such appeal
- The extent to which the options would be differentiated from other attractions/activities in the catchment area

2.4. Hub and Spoke, Cluster and Trail Development

The Handbook makes the salutary point that investment of substantive financial resources cannot be justified where the attraction/activity is:

- Not significant in its own right, is
- Difficult to find/travel to, and is
- Isolated from other possible attractions, in that they do not form part of an established or prospective cluster or circuit.

Cluster development can be:

- Linked to a flagship on a hub and spoke principle,
- A grouping of attractions and activities in a geographic area that is on a readily accessible route
- A bundling of attractions and activities that are linked through a common theme or interest

¹⁰ The European Travel Commission (ETC)/United Nations World Tourism Organization (UNWTO). Handbook on Tourism Product Development, 2011.

Product clusters are typically delivered, and promoted, as clusters or trails. Most would not occur without some form of public sector initiative in order to:

- Group multiple stakeholders to cooperate with each other, and
- Support the development of the cluster through direct intervention to create facilities and amenities that travellers on the route might need

Product bundling of combinations of visitor experiences and facilities in an area can serve to hold visitors for longer in the area, thereby increasing their spend and benefit to the local community.

2.5. Collaboration and Co-opetition

Developing clusters of attractions and recreational trails depends on the operators of the various attractions/activities featured working with each other, recognising that, by joining forces in terms of facilitation and marketing, there can be increased benefits to all as compared to operating in isolation. Visitors make decisions based on the totality of the experiences offered in a destination area – the more there are and the ease of moving between them are vital factors in this decision-making process.

2.6. Key Principles of Leisure, Recreation and Tourism (LRT) Product Development

Tourism product developments should be 'sustainable' in the sense of:

- being authentic and indigenous reflecting the unique attributes of the destination,
- having the support of the host community
- respecting the natural and socio-cultural environments by not damaging these in any way
- being differentiated from competitors
- being of a sufficient scale to make a significant economic contribution but not so large as to create high economic leakage through requiring to bring in personnel and supplies from outside the catchment area

THEREBY meeting the three criteria of:

1. generating economic benefit
2. minimising environmental impact
3. mitigating socio-cultural disruption of local communities¹¹.

¹¹ Handbook on Tourism Product Development, op cit

3. Primary and Desk Research Programme

3.1. National and Regional Consultations

To further inform the concept development for the Liffey Vale House and Gardens Regeneration project, Tourism Development International undertook consultations with Failte Ireland, Dublin Zoo, Office of Public Works, Irish Tourist Industry Confederation (ITIC), Rowing Ireland, and Inland Fisheries Ireland.

Interestingly, from a Failte Ireland perspective, the market positioning for Dublin City has changed quite dramatically from the previous Georgian door theme to “**Surprising by Nature**” – Dublin City's new marketing tagline.

Failte Ireland are also very much aware that the City can benefit by a focus on the many trails that visitors can undertake in order to get a real sense of the city.

The OPW are highly active in a tourism sense and have a masterplan now in place for the Phoenix Park which adjoins the Liffey Vale House and Gardens site. OPW are very keen to strengthen their cooperative marketing approach with neighbouring attractions such as Liffey Vale House and Gardens. The exciting new plans for the commemorative bridge will allow for a clustering up of the War Memorial Gardens offer with Liffey Vale House and Gardens and the Phoenix Park.

Inland Fisheries Ireland are very much in favour of an emerging project for Liffey Vale and Gardens that respects, protects and safeguard the river Liffey angling product/experience for the local community and visitors alike.

Dublin Zoo are encouraging a managed rewilding dimension to Liffey Vale House and Gardens, as such an approach would best capitalise on this site's environmental potential and thus would be a natural cooperative marketing partner for the zoo.

3.2. Stakeholder Consultations

Other stakeholder consultations undertaken by Tourism Development International included Trinity College Biology Department, Dublin Salmon Anglers, Joycean Scholar Senator David Norris, Abbey Theatre Actor Barry McGovern (resident of Chapelizod). The consensus view was that an environmentally sensitive approach to the regeneration of the Liffey Vale House and Gardens with the emphasis on minimalism and biodiversity education etc. The concept of a Liffey Vale riverside walking trail that is **not suburbanised** is a most welcome one.

Liffey Vale House and Gardens, it is thought, can also sit well amongst the literary trails of Dublin with its Joycean association/connection with Chapelizod.

3.3. Dublin City Council Executives Workshop

A workshop was held with 13 DCC executives on 8 November 2019 at which outline presentations were made about the overall project by Blackwood Associates Architects and about the situation analysis programme of work by TDI. The discussions focused on five broad areas, namely:

- Perception/Observation of the Site as at Present
- Travel/Transport Observations to the Site
- What is Needed at the Site – from 1. Residents' Viewpoint, and 2. Visitors' Viewpoint
- Successful Outcome Measurements
- Concerns

The main findings are presented in Appendix, with the key points summarised as follows:

Liffey Vale Site at Present: lacks connectivity with surrounding landscape/river, and suffers from being inaccessible to the public YET it is a unique site in terms of untouched biodiversity with potential as both an outdoor nature classroom for schools and a recreational amenity.

Travel/Transport: Chapelizod Road is a hostile environment for walkers/cyclists so the creation of a safe walking and cycling route, properly signposted, will be key as well as a public bus service /hop on hop off bus connection. Recognition that access will be increased with the development of the proposed new bridge across the Liffey.

Residents' Needs: equally important for the regeneration of the site to protect its biodiversity by providing a reconnection with nature through an outdoor classroom and to provide much improved pedestrian and cycling access.

Visitors' Needs: ease of access is paramount with connectivity to the city centre, Dublin Bikes, city bus tours etc promoting an ecotourism attraction showcasing the river with a coffee shop.

Success Measurements: vital to have the support of, and represent a benefit for, the local community but must attract sufficiently large volumes of visitors to justify its development and be recognised internationally as an outstanding biodiversity-themed recreational and waterside park and educational centre. How successful the site can be in terms of increased visitor flows will be determined by the creation of a physical link with Phoenix Park and the War Memorial Gardens which will lead to heightened visitor experiences.

Concerns: protection of the natural environment, making the project sustainable given the access and transport difficulties and failure to gain local residents buy-in.

3.4. Community/Stakeholder Workshop

The workshop was attended by 33 participants. It was introduced with a presentation on the project purpose and objectives and leading into the role of TDI in preparing an analysis of the present situation regarding the context of the project and a broad assessment of possible development alternatives for the site.

The ensuing discussions covered five main topics, namely:

- Perceptions/Observations of the Present State of the Site
- Travel/Transport Observations
- Priority Needs at the Site in the Context of the Wider Area
- Successful Outcome Measurements
- Concerns about the Development of the Site

The main findings, along with key verbatim statements from participants, are presented in Appendix D, with the main points arising summarised below:

Liffey Vale Site at Present: sense of disappointment that the house and gardens have been neglected over a long period of time and are in a poor state of repair shared by the great majority of participants. However, there is widespread recognition that the site has a unique landscape with a riverside environment with great biodiversity education potential.

Travel/Transport: strong support for the development of a cycling & walking pathway with lighting and building on the bike hire scheme, thereby creating a riverbank connection to Chapelizod village.

Second priority to establish a bus connection/stop/shuttle means of access to the site. The proposed bridge from the War Memorial Gardens would increase access to Phoenix Park, especially if the presently closed gate was re-opened.

Needs in the Context of the Wider Area: key need is for the creation of a well-managed biodiversity hub focusing on the river and the flora and fauna of the gardens through a programme of environmental education. Equal support for making the site accessible to other attractions in the area for 'soft' adventure activities. Recognition of the need for tea rooms/café and toilets on site.

Success Measurements: Protection and conservation of the natural and cultural heritage of the house and gardens. Well-managed and viable facility.

Strong community involvement, including through volunteers from the population of the area, leading to strong local pride in the development, thus fulfilling the statement of one participant:

“To be well known to Dubliners, spoken well of by all, a success and benefit to all.”

Concerns: the development will not succeed without:

- Adequate development funds,
- Good management,
- Strong communication with, and involvement of, the local community,
- High levels of protection of the site (from vandalism, litter etc),
- Improved access without creating large car parks.

The risk of over-commercialisation was also a concern for a number of the participants at the Workshop.



Looking out on to the River from the Liffey Vale site

3.5. Recreational User Mini Focus Groups

During the month of November 2019, Tourism Development International undertook 8 mini focus group discussions amongst recreational users of the War Memorial Gardens, many of whom reside in the surrounding neighbourhood.

A brief overview of these discussions are outlined below:

Couple Mid 20s – on holidays from Venezuela

- Read about War Memorial Gardens when visiting Kilmainham Gaol
- Would love to be able to cross Liffey on to Liffey Vale site and then into Phoenix Park
- Very interested in history/war
- Keep development 'minimalist', leave nature untouched/leave natural
- Tea/coffee facilities/Toilets most welcome

Residents of the neighbourhood (Age 60+)

- Welcome bridge to link both sides of river
- Enjoys watching the rowing on the river
- Improve paths/more bins needed
- Liffey Vale House – Keep small/needs to blend in with environment
- Tea rooms/Toilets needed

Special Needs Assistant to Wheelchair User – St John of Gods

- Bridge would be fantastic from War Memorial Gardens to other side
- Love gardens
- Could Liffey Valley consider adopting a “Sensory garden” approach
- War Memorial Gardens are extremely popular with people of special needs who require fresh air and an outdoor experience
- Paths need to be improved and developed alongside river
- Tea/coffee area/toilets – most welcome
- More benches – nowhere to sit

3 Local Residents - Sarsfield Road (Age 60+)

- Fix paths by river
- Bridge is a priority
- More park benches
- Coffee shop at Liffey Vale House would be a welcome addition to local facilities
- Can be a lot of anti-social behaviour in park

4 colleagues – Rialto (Age 50s)

- Love walking the dog in the War Memorial Gardens
- Concerned about anti-social behaviour, scramblers/motorbikes etc. – believe bridge might encourage more bad behaviour
- Area is rich in biodiversity and needs to be managed and protected
- Biodiversity themed café at Liffey Vale would be nice – could story boards be used?

3 adults – Ballyfermot (Age 60+)

- More benches
- Better park management
- More paths/trails by river
- Need for toilets
- Bridge may attract a lot of anti-social behaviour if not managed and supervised

3 adults – Residents Hyde Square (Age 50s)

- Toilets needed
- Rowing club will benefit by having access to both sides of river with new bridge – that's very good. Big question is will bridge every happen – it's been talked about for years!
- Develop trails/walks around Liffey Vale House and Gardens
- Keep development minimalist

Resident – Sarsfield Road (Age 50s)

- Welcomes the regeneration of Liffey Vale House and Gardens
- Facilities for House might include:
 - Exhibition space (calendar of events)
 - Tea house
 - Toilets
- Centre could host photography exhibitions etc.
- A bridge linking up the attractions would be great
- Great history – Viking settlement

3.6. Analysis of, and Lessons Learned from, Best Practice Examples

In order to gain examples of best practice that can serve as a guide for the regeneration of the Liffey Vale House and Gardens, examination was made of the following types of recreational attractions/activities located on the outskirts of large urban areas and in smaller settlements and semi-rural areas:

- 'Rewilding' Attractions
- Riverside recreation and environmental learning parks
- River-based activities, and walking and cycling trails/paths along waterways (in full or part)
- Pedestrian bridges over waterways
- Outstanding riverside cafes, and
- Single attractions that have been built into a trail, significantly increasing the visitor flow.

Rewilding Attractions - The aim of rewilding is to restore damaged ecosystems (through managed rewilding) or provide the conditions for them to recover naturally. It encourages a balance between people and the rest of nature where each can thrive. It provides opportunities for communities to diversify and create nature-based economies; for living systems to provide the ecological functions on which we all depend; and for people to re-connect with wild nature¹².

Many rewilding projects are on a large, regional scale, bringing animals back to the area where they were previously found (e.g. beavers in the River Tay in Scotland, water buffalo and konik horses in the Danube delta) but there are successful examples of individual sites that have been transformed through rewilding. Knepp, an estate in West Sussex, was an intensive farm devoid of wildlife until its owners let wildlife reclaim the land resulting in a wide-ranging biodiversity, supporting species that had been lost to other parts of the UK e.g. turtle dove, nightingale, cuckoo. It remains a working farm but now offers wildlife safaris and glamping¹³.

¹² <https://www.rewildingbritain.org.uk/rewilding/>

¹³ Knepp Wildland: Rewilding in West Sussex. <https://knepp.co.uk/home>

Riverside Recreation and Environmental Learning Parks - The primary focus of environmental learning parks (ELPs) is to connect people to the natural environment, providing opportunities for both children and people from all socio-economic strata, to learn about the features of the park and to enjoy it through activities such as walking, cycling, canoeing, bird watching and gardening.

The location of an ELP can vary, with rivers being a frequent choice. It is important to have some ELPs closely linked to the community, and ideally there should be a chain of ELPs in an area providing a variety of sites and uses, and forming a web of environments, users and opportunities.

Stuyvesant Cove Park, New York, is located on a narrow two-acre piece of land on the East River. It is managed by a non-profit company which provides maintenance to the site in exchange for the operation of an environmental education centre on the site. There is an esplanade along the river and pedestrian and cycle paths that connects the park with the larger trail system around the edge of Manhattan. The park also contains the first solar powered building in New York City¹⁴.

The Dublin City Development Plan 2016-2022 states as objective GIO22:

To promote and upgrade visitor facilities at North Bull Island to raise awareness of biodiversity and promote nature conservation and manage recreation sustainably

This represents a model, albeit in a different type of location, which can guide the LVH and G regeneration project. The 27 November 2019 Steering Meeting was informed that:

1. 30,000 students a year take biosphere tours on Bull Island. Entry to the Discovery Centre is free of charge but guided tours are paid for.
2. There are calls from primary school teachers in the area for places to take their pupils to learn about the environment.

River-based Activities and walking and cycling trails/paths along waterways (in full or part) - While all rivers that flow through cities provide various forms of on-river activities, the areas on the outskirts of urban areas can offer activities in a generally more tranquil setting. This is certainly the case of the River Liffey with the five rowing clubs on the northern close to the Liffey Vale House and Gardens.

¹⁴ Environmental Learning Parks. Garret Devier.
http://depts.washington.edu/open2100/pdf/2_OpenSpaceTypes/Open_Space_Types/environmental_learning_parks.pdf

Major UK rivers pass through a range of countryside, small villages and towns and major conurbations. Extensive water-based activities, including regattas, take place in the built-up areas and in established major centres like the National Watersports Centre at Holme Pierrepont on the River Trent, but in other less-populated areas the principal activities are fishing, canoeing and swimming.

All rivers and canals in the UK provide walking and – usually – cycling paths. The UK Rivers Network and Inland Waterways Association websites list numerous examples, most long distance in nature, but with opportunities to undertake smaller sections between sites offering facilities and amenities. Ireland, too, has seen a major push on walking and cycling routes along canals and rivers e.g. Great and Royal Canals, Rivers Erne, Barrow and Shannon. The impetus created by these developments leads to an exponential growth in people looking for, and participating in, walking and cycling recreation.

Pedestrian Bridges Over Waterways - A pedestrian bridge provides a safe mode of passage for cyclists and walkers, linking and providing access between two locations otherwise accessible only by road or a circuitous route. In many cases, the design has been spectacular and often enriches the area. A successful design must be a safe mode of transit for pedestrians that doesn't interfere with other traffic on roads or waterways. In the case of the River Liffey it is important that the bridge should be in keeping with the natural setting and, to the maximum degree possible, unobtrusive.

Examples that can be examined as potential models include:

- the Moses Bridge which crosses over a moat at Fort de Roovere, Halsteren, in the Netherlands, is constructed of wood, so that it is invisible from a distance, blending into the water and the surrounding landscape
- the 96 metre S-shaped wooden bridge over the River Neckar at Neckartenzlingen in south west Germany
- the Anaklia-Ganmukhuri wooden pedestrian footbridge that spans the River Enguri and connects the Georgian resort of Anaklia and the neighbouring town of Ganmukhuri

Outstanding Riverside Cafes - There is a significant difference between a riverside restaurant that focuses on its food offering which it combines with its setting by the river to attract its customers and a café/snack bar that caters for users of the river towpath or recreational park by the river. For the former, the restaurant is the prime purpose for the visit while for the latter the café has a service function secondary to the reason why the visitor came to the river. In the case of the Liffey Vale House and Gardens regeneration, the establishment of a specialist restaurant is not a realistic option but the provision of a café /snack bar will be a necessity to provide refreshments for walkers/cyclists, educational groups and visitors to events. While the range of items offered may be limited and simple, there will be the opportunity to provide fresh food and drink items that feature locally-produced ingredients.

The models followed in many of the UK's National Trust sites represents a good model in this respect e.g. Mottistone Gardens on the Isle of Wight¹⁵. Its Tea-Garden, situated on the old tennis court of Mottistone Manor, changes its menu seasonally, reflecting the produce that is available at the time of year. All food is freshly made and, when available, uses ingredients grown in Mottistone's organic kitchen garden by its team of gardeners and volunteers e.g. in the autumn, its apple and blackberry scones are made with apples grown in the orchard. It uses many locally grown products e.g. Isle of Wight Tomato Stall tomatoes in its dishes and milk from the Island in teas and coffees. Such an approach is entirely consistent with the concept of developing the Liffey Vale House and Gardens site as a recreational and environmental learning park based on rewilding its natural flora and fauna.

Attractions Developed Independently but Incorporated into, and Multiplying the Appeal of, a Trail/Circuit of Tourist Attractions - While many recreational attractions and activities are developed with the aim of being viable according to the objectives of the developer/operator as stand-alone ventures, it is often the case that as more such features are developed in an area, so the appeal of the destination to prospective visitors/users can increase exponentially. Two examples are cited by way of illustration.

Connemara - The Connemara National Park opened to the public in 1980 with visitor numbers growing steadily until three developments combined to result in a significant rise in the level to in excess of 250,000 a year with an increase in 2019 of nearly 5%¹⁶. The Visitor Centre acts as the hub and distribution point for the various trails (Diamond Trail) developed in the Park, while the inclusion of the Park in the regional Wild Atlantic Way programme has served to boost awareness and visitation. This strong growth in visitor numbers has led the Park to remain open year-round, the first time in its history. Key to the initial success was linking the Visitor Centre to the newly developed trails and cooperative marketing with Kylemore Abbey. Liffey Vale has the potential to do likewise with the OPW/Phoenix Park.

Totnes - A small historic town set on the banks of the River Dart in Devon. It has historical buildings and presentations of its heritage over the centuries, access to scenic countryside and riverside. While none of the period buildings or other features are major draws in their own right, they are all within walking distance of each other and the town has developed a walking trail - see Town Trail walking map¹⁷ - which combines all there is to see in the town and has been instrumental in almost half a million day visitors a year being attracted to the town¹⁸.

¹⁵ Mottistone Gardens National Trust Tea Garden.

<https://www.nationaltrust.org.uk/mottistone-gardens/features/a-relaxing-bite-to-eat-in-mottistone-gardens>.

¹⁶ <https://www.advertiser.ie/Galway/article/109753/year-round-opening-for-connemara-national-park-announced>

¹⁷ <https://www.visittotnes.co.uk/see-and-do/town-trail/>

¹⁸ Totnes Tourism Summary 2014.

http://www.totnestowncouncil.gov.uk/_UserFiles/Files/TIC%20and%20Tourism/Totnes%20Tourism%20Data.pdf

From the Old Steamer Quay, now the centre for local river cruises to and from Dartmouth, six miles downstream, the Town Trail leads into Fore Street which features both the Elizabethan House Museum and the The Timehouse and goes up into the centre of the town, passing under the Tudor period East Gate Arch. It continues to the High Street with the covered pavement arcade known as Butterwalk, built in Tudor times to protect dairy stalls from the weather, with the covered Poultry Walk opposite sheltering poultry stalls. This is the location of the 16th-century Bogan House which houses the Totnes Fashion and Textiles Museum. Going on past the Castle, the Narrows – a collection of individual shops leads to Rotherfold Square, once a cattle market. Leechwell Lane, leads back down the hill, passing the site of the Leech Wells, three ancient wells where water, traditionally believed to have healing properties for leprosy, flows from springs into three granite troughs.

Key Principles from Case Studies

1. Nature-based recreational and educational features are growing in popularity as the public becomes increasingly aware of issues such as protection of biodiversity, the need to address climate change and the health benefits of outdoor soft and hard physical activities.
2. All developments based on, and using, the natural environment should ensure that site and constructions on the clearance and maintenance should be fully in keeping with the native flora and fauna of the site and not impair the visual or audio experience of visitors.
3. Grouping visitor attractions and activities in the form of clusters or trails serves to influence decision making by convincing prospective visitors that there is enough to see and do to make a trip to the area worthwhile and thereby increase visitation and usership.



Looking up-river from the Liffey Vale House and Gardens

4. Liffey Vale House and Site

4.1. Description and Assessment: Location, Access, Context

The Dublin County Council briefing note for the community consultations outlines, inter alia, the location and character of the Liffey Vale House and Gardens site. Key points in the briefing note include¹⁹:

- **Location:** 3 km from Dublin city centre, lying between Anna Livia Bridge in Chapelizod Road and on the south by the River Liffey, the river constituting the 'defining aspect of the space.'
- **Adjacent Lands:** the site is bounded along the northern banks of the Liffey by playing fields owned by the OPW and a collection of rowing clubs to the eastern side and a Department of Defence site to the other. Across the river is the War Memorial Gardens, an important cultural feature in the Liffey Valley catchment area.
- **Site Features:** the Liffey Vale House (a Georgian House and Protected Structure ref. 1346) is situated immediately inside the wall to Chapelizod Road and approximately 200 metres down a gentle slope to the river. There are the remains of semi-walled gardens and orchards to the western side adjoining the Department of Defence (DoD) plot. The house is presently derelict and the gardens overgrown.
- **Restoration Project Plan:** the house and gardens are owned by Dublin City Council (DCC), whose Parks Department has appointed a Conservation Architect to develop and oversee the implementation of proposals for the regeneration of the building and surrounding grounds

There are a number of issues relating to the location of, and access to, Liffey Vale House and Gardens:

Location: the site is penned in – to the north - by the busy and fast Chapelizod Road and – to the south - by the Liffey, with the GAA boundary to the eastern side and the end of the DoD plot at the western side where the river runs close to the road. The close proximity of the House to the road somewhat restricts the options that can be considered for its future use when restored.

Access: Chapelizod Road has no pull in places available presently for vehicles to drop off/pick up visitors to the site. Given that the primary focus for the development of the site is nature/biodiversity, maintaining as near an unspoilt environment as possible is vital. Motorised vehicular access should thus be minimised, and masked.

¹⁹ Dublin City Council – Liffey Vale Area Committee. Liffey Vale House and Gardens, briefing note, op cit

The options for motorised access to be considered are:

1. Car park on the adjacent DoD land, if this can be obtained by DCC
2. A park and ride scheme where visitors can park their cars at a specific car park located away from Liffey Vale and be taken to/from the site by shuttle bus
3. A bus service with a registered stop at Liffey Vale

Problems with options.

1. Any car parking adjacent to, or close by, the site will detract to some extent from its natural environment, however well the facility is designed
2. Is there a car park in the catchment area of, say, 1-2 kms, with sufficient additional capacity for the park and ride? A pull in area by the road will need to be provided for the shuttle bus to use to deliver and collect visitors. This will inevitably also be used by cars to drop off and pick up passengers, possibly creating traffic problems along the busy road.
3. As for 2, a pull in area for the bus to stop for visitor exit and entry - on both sides of the road? - will be needed, again with the attendant risk of disruption of traffic flow along Chapelizod Road with private cars also using the pull in space

Walking and cycling are the means of accessing the Liffey Vale site that are most consistent with the primary focus of the site on nature/biodiversity. Yet, such access is not possible as things stand. The concept of the linear trail along the banks of the river is a DCC objective and would strengthen the appeal of the Liffey Vale House and Gardens development BUT would require the assent and probably involvement of the GAA and the rowing clubs along the river, something that will take time and is by no means guaranteed.

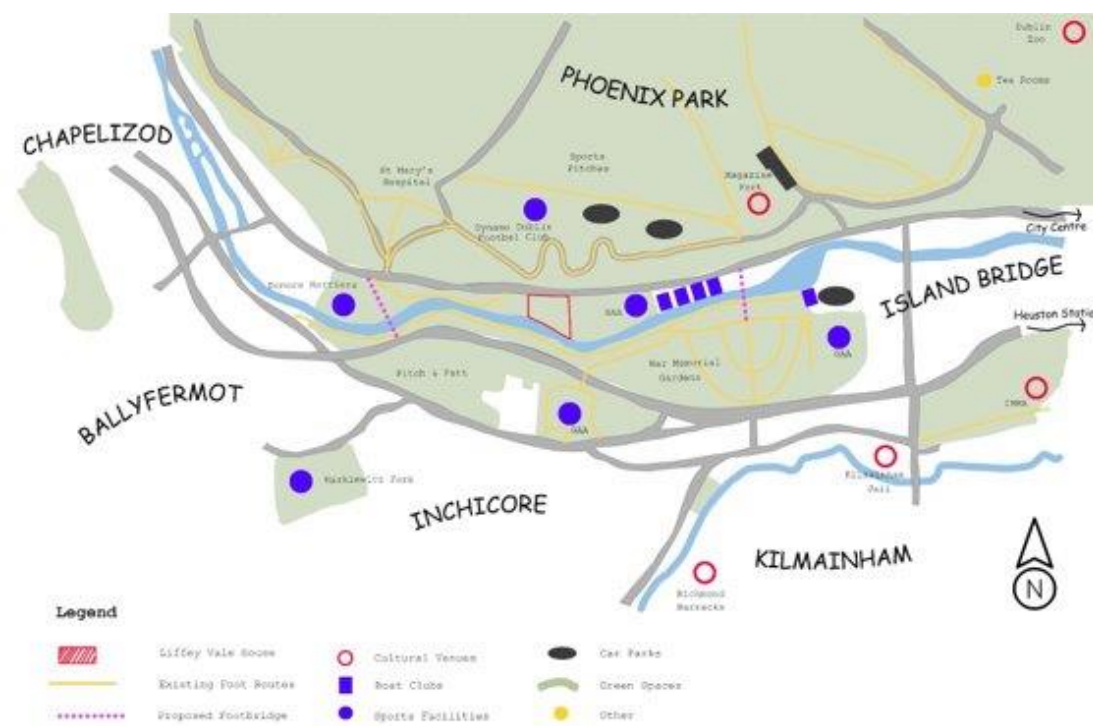
Another future plan/idea that could facilitate foot or cycle access is the construction of bridges, one that is in the planning stage (UCD – War Memorial Gardens), the other (Chapelizod), still in the conceptual stage:

1. Linking the War Memorial Gardens across the river to the UCD rowing club from where access into Phoenix Park would be through the Islandbridge Gate. The bridge's northern point would be some 400 – 500 metres to the east of the Liffey Vale House and Gardens site, which at present would entail a walk along the busy road past the rowing clubs to reach it,
2. Linking Chapelizod Bypass to the east of the Donore Harriers site where it could join the existing footpath up to - and through - the DoD site, if this is successfully annexed, to Liffey Vale.

A possible shorter-term solution might be to extend the walking route as shown on the presentation to the 8 November workshop with DCC executives through the (assumed) annexed DoD site to Liffey Vale²⁰.

This would make it possible to link Phoenix Park through:

- the re-opening of the gate along Chapelizod Road – see 3. Next Steps in the Phoenix Park Strategic Review, actions 22 and 24; and
- further to the west the Knockmaroon Gate and the proposed focus in the Phoenix Park Strategic Review on the Biodiversity Quarter around Farmleigh Estate).



²⁰ Blackwood Associates Architects. DCC Executives Briefing Presentation. * November 2019.

4.2. Assessment of Development Options Examined

Numerous ideas have been put forward on the theme and specific features of the Liffey Vale House and Gardens. These have been drawn both from previous reports prepared for DCC²¹, and through consultations held with DCC executives, stakeholders, community representatives and recreational users in the area. The suggestions include:

House regeneration conversion:

- interactive visitor centre, either with or without café/restaurant
- discovery project room for one or a combination of study/ exhibition/ performance, with or without café/restaurant
- stand-alone café/restaurant, with retail of goods with local provenance
- artists' studios
- residence for site caretaker/manager.

NB one of the essential requirements whatever design and development option is chosen is the provision of toilets which will either be part of the reconfigured house or within the café/restaurant located in the grounds of the site.

Gardens restoration involving:

- creation of a waterside recreational and environmental learning park focusing on 'managed rewilding' through clearance of non-native vegetation and protection of native species, creating clear views of, and ready access – including through boardwalks, where necessary - to, the riverbank, and providing interpretative panels on the various trees, plants and wildlife in the gardens,
- as above, with café/snack bar with both inside and outside seating around the gardens, and toilets
- boat mooring, storage and hire facility
- angling station
- garden centre

²¹ Master Plan Proposals, 2008; Feasibility Report for the Creation of a Linear Parkland and Visitors Centre at the Long Meadows, 2016

Product Development Concept	Authenticity to Cultural and Natural Heritage of Site	Level of Competition in Catchment Area	Market Appeal		
			Local/ Dublin Residents	Domestic Tourists	International Tourists
Liffey Vale House					
Visitor Centre	Moderate	High	Low	Low	Low
Discovery Project Room for study/exhibition/performance/ events	Moderate to High	Moderate	Moderate	Moderate	Moderate
Café/restaurant in House	Moderate	Moderate	Moderate to High	Moderate	Moderate
Artists' Studios	Low	Moderate to High	Low to Moderate	Low	Low
Parks Department office - caretaker/manager residence	Low	Not relevant	Not relevant	Not relevant	Not relevant
Liffey Vale Gardens					
Recreational and Environmental Learning Waterside Park	High	Low	High	Moderate to High	Moderate
Café/Snack Bar	Moderate	Moderate	Moderate to High	Moderate	Moderate
Boating Facilities	Low to Moderate	High	Moderate	Low to Moderate	Low
Angling Facilities	Low to Moderate	Moderate	Moderate	Low	Low
Garden Centre	Low to Moderate	High	Low to Moderate	Low	Low

It is clear that the outcome sought by the DCC for the development of the area along the river is the creation of a linear walking and cycling trail from Islandbridge to Chapelizod, in which the Liffey Vale House and Gardens would serve as the hub. This was stated as objective GCO41 in the Dublin City Council Development Plan 2011-2017 along with the intention to investigate the feasibility of providing a footbridge across the river to facilitate a pedestrian route linking the Liffey Valley Park and the War Memorial Gardens with Phoenix Park, and to provide a footbridge with cycle lanes across the river at Chapelizod.

While none of these developments has actualised as yet, they remain developments that are fully consistent with the DCC's stated aims in its subsequent Development Plan to 2022²² of meeting future recreation and open space needs of citizens while ensuring the adequate protection of natural assets in creating a clean, green, well-connected city. Its policies include:

- to develop linear parks, particularly along waterways, and to link existing parks and open spaces in order to provide green chains throughout the city

²² Dublin City Development Plan 2016-2022, Chapter 10

- to promote permeability through our green infrastructure for pedestrians and cyclists

while key objectives are:

- to improve pedestrian and cycle access routes to strategic level amenities while ensuring that ecosystem functions and existing amenity uses are not compromised and existing biodiversity and heritage is protected and enhanced
- to engage with and involve corporate volunteers, landowners and relevant agencies to support their communities in the development and delivery of green infrastructure programmes.

Based on the analysis in the matrix above, it is clear that the optimal development is the recreational and environmental learning waterside park based on 'rewilding' of the natural trees and plants endemic to the area. None of the other regeneration development options considered matches the waterside park in respect of originality, authenticity to the site, limited competing attractions/activities, and widespread market appeal. In addition, the experience of visitors to the park can be enhanced through the provision of a café/snack bar in the house or set in the grounds of the site while it will be imperative to provide toilet amenities.

Furthermore, the focus of the environmental learning (ELWP) waterside park on rewilding the site's biodiversity and endemic flora and fauna sits foursquare with the DCC goal of creating recreational facilities for walkers and cyclists while ensuring the ecosystems are protected.

It is clear that while the linear trail along the river between Islandbridge and Chapelizod remains an objective, such a development has to start somewhere. The creation of the ELWP waterside park at the Liffey Vale House and Gardens site can represent the initial phase of such a development BUT at the same time become an attraction in its own right, acting as the anchor attraction for the subsequently-developed trail.

The possibility of linking the ELWP waterside recreational park and environmental learning centre with the planned biodiversity quarter developments in Phoenix Park represents an opportunity to provide visitors with a river dimension to their interest in the natural heritage offering of Phoenix Park, and Dublin City.

4.3. Success Criteria for Development of the House and Site

TDI's consultations with DCC executives, stakeholders and the local community sought to establish what would be considered a successful outcome for the regeneration of the Liffey Vale House and Gardens, and how such success would be measured. There was consensus that the principal factors would be:

- Support, of, and benefit to, the local community
- High levels of visitation and usership from local residents, Dubliners and tourists as well as schools and special interest groups
- Creation of an Internationally-recognised outstanding biodiversity-themed waterside recreational and educational centre
- Establishment of physical links with Phoenix Park and the War Memorial Gardens leading to heightened visitor experiences and increased visitor flows

However, these factors would need to combine for the regeneration to be considered a real success.

The results of the DCC executives workshop are summarised in Appendix C.

4.4. SWOT/Gap Analysis

As illustrated in Section 1, there are many current policy and strategy developments relating to the natural environment and climate change that serve to highlight the importance of greening for urban areas and the benefit of outdoor recreation for health which feed directly into the assessment of the Liffey Vale House and Gardens SWOT (strengths, weaknesses, opportunities and threats) and the gaps that its regeneration can fill in meeting of these imperatives.

In particular:

- Society's growing awareness of the importance of preserving, protecting and enjoying the natural environment in all its forms of expression, and
- A corresponding increase in the public's knowledge about, and acceptance of, exercise as a key component of health.

These changes serve to increase the opportunities for the future development of the site; though, at the same time, the threats of weak support and failure to work with new partners in the operation and marketing of the site will also grow.



On the basis of the SWOT analysis above drawing on the findings of the multi-strand programme of research involving extensive consultations, the examination of policies, strategies and plans, and the experiences of other relevant site developments, TDI concludes that there is a strong opportunity to regenerate the Liffey Vale House and Gardens as a nature-based recreational park and educational centre. This can serve to fill a gap in the market provision that can attract visitors – local, national and international – and school groups.

4.5. Visitor Experience Options: Potential and Impact

The range of experiences available to visitors to the Liffey Vale House and Gardens will of course be a function of how the site is developed. Given its development as a combined recreation and learning site, then the types of visitor attracted can comprise the following range:

- Walkers seeking relaxation to enjoy the views and the information boards relating to the features of the site.
- Walkers and cyclists seeking more strenuous activities – though this will not be without the development of trails featuring the Liffey Vale House and Gardens.
- Special interest enthusiasts relating to the event/exhibition/performance/class being mounted in the project room in the house e.g. aspects of the nature of the site, art, photography, literary events, history of the area.
- School groups for classroom and on-site inspection related to the natural environment of the site.
- Adult learning groups/Specialist workshops.

4.6. Site Positioning and Product Development

Drawing together the analyses and evaluations of the preceding sections, the following series of conclusions are drawn:

1. The Liffey House and Gardens site has the opportunity to be developed as Dublin's first riverine park that combines recreational features with an environmental learning centre based on managed rewilding,
2. Though it has the potential to be a stand-alone feature, its success would be greatly enhanced if it was combined with neighbouring sites, in particular the much-visited Phoenix Park (an opportunity which will be increased with the development of the proposed Islandbridge bridge between the War Memorial Gardens and the UCD boat club) and the locations along the bank of the River Liffey between Chapelizod and the weir in the form of a linear walk,

3. In order to fulfil the requirements of managed rewilding, site clearance should be carried out in a way that fully protects native vegetation while eliminating invasive species, and to demonstrate the commitment of the development to protection of its biodiversity, part of the gardens could be maintained with no visitor access. Achieving a balance between its educational role and recreational use will necessitate management of the areas where the two groups may visit in the gardens,
4. The house needs to be sound and sight isolated from Chapelizod Road which it abuts in order that the general peacefulness of the site may be equally felt in the building,
5. The house should feature key elements including:
 - Multi-purpose project room where events, exhibitions, workshops and study classes can be held;
 - a café/snack bar featuring to the maximum extent possible locally-produced food and drinks, possibly using a name reflecting the whole site and its purpose by incorporating reference to the flora and fauna in the gardens such as ash and rowan trees and bats e.g. Bats Roost Café, Frogs café;
 - toilets; and
 - Outstanding viewing points.
6. Other features and services may be added as long as these do not erode in any way the site's principal identity as a riverine park offering relatively gentle recreation (such as walking and cycling) and environmental learning,
7. Pedestrian and vehicular access to the site should be improved as extensive motorised transport at the site would conflict with the central purpose of the regeneration. However, it will be necessary to address the requirements the 'Great Outdoors: A Guide for Accessibility, launched in October 2018, which highlights the importance of accessibility to outdoor activities, sporting pursuits and family trips for people with disabilities in the same manner as their family, neighbours and friends²³. It will also be necessary that, when school groups visit the gardens, the statutory child protection requirements are met,
8. The support and involvement of the community of Chapelizod and surrounding area is vital, both through active usage of the facilities created and through volunteering opportunities, in order to stimulate a sense of pride in the development of the Liffey House and Gardens among the residents of the area.

²³ Great Outdoors: A Guide for Accessibility, Irish Wheelchair Association, Sport Ireland, October 2018. <https://www.sportireland.ie/sites/default/files/2019-12/great-outdoors-a-guide-for-accessibility.pdf>

In light of these conclusions, the positioning proposed for the regenerated Liffey Vale House and Gardens is:

A waterside recreational and environmental learning centre with outstanding river views, riverbank activities and a centre of biodiversity excellence



Looking up-river towards Chapelizod

APPENDIX N



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Overview

Visitor-focussed interpretation planning relies on audience insights to inform decision making and measure success. Successful interpretation speaks directly to target audiences, makes them feel the interpretation is for them, meets their expectations and needs while ensuring that they leave the site having learned, experienced and enjoyed their time there. In this way, visitors will return and develop trust in the brand and visitor experience, feel connected to the site, develop a sense of pride of place and engage with the values and ethos of Liffey Vale House and Gardens. This document outlines an approach to develop an engaging visitor strategy for Liffey Vale House and Gardens by first identifying the current and projected audiences and secondly, by recommending how interpretation may target these audiences.

By defining experiences in line with target audiences it is important to communicate what Liffey Vale House and Gardens has to offer in a way that motivates and is relevant to the target audiences. Engagement opportunities are suggested below each identified group, focusing on domestic, local and potential audiences. The engagement options will develop further as the project develops.

A number of supporting documents have been consulted, in particular 'Situational Analysis - Liffey Vale House and Gardens Regeneration by Tourism Development International. Elements of this document include vital audience information and key points retrieved from this document to re-enforce the strategy for audience development.

¹ Tender Document, Vol 3 2 Service Requirements Final p4

Project background

Dublin City Council proposes to restore the house and gardens of Liffey Vale House and Gardens, providing a new cultural, educational and leisure facilities open to the public for recreational, cultural and community uses. The restoration of the derelict Georgian building and associated gardens of Liffey Vale House & Garden shall at a minimum incorporate a small interpretative centre, cafe and bus drop off point thus establishing it as the focal hub for a planned wider valley park route.

Located adjacent to Liffey Valley Park and a new pedestrian bridge at Lutyens War Memorial Garden at Islandbridge, the opportunities to develop audiences extends to the wider locality beyond Chapelizod and into Dublin 8 and Dublin 20. As one of Dublin's linear greenways, the project will help connect the heart of the city with its rural hinterland, act as ecological corridors to and from the city and constitute the major elements of potential greenways network through the urban environment. As with other areas in Dublin, the Liffey, Tolka, Dodder and two canals, the Royal and the Grand, Liffey Vale constitutes a green lung for the greater Dublin population and will hold increasing relevance as population and development expand.¹

Within 3km of the city centre, the study area forms a perfect location for formal and informal recreation and is of significant ecological and historical interest. The project objectives includes the provision of leisure and educational outdoor spaces incorporating the existing small wetland and woodland area in the vicinity.²

² Tender Document, Vol 3 2 Service Requirements Final Page 4

The Liffey Vale area provides an extremely attractive riverside setting to anglers, walkers, cyclists and watersports activities from the immediate areas of Chapelizod, Islandbridge, Ballyfermot and Inchicore and the wider city.³

Target Audiences

Commuters and Cyclists

Liffey Vale House and Gardens is along a green belt transitional area of the Liffey Valley between the high density Dublin city region and the suburbs of west Dublin. Potential audiences already walk, cycle or catch a bus into town passing the Liffey Vale site or by cycling opposite it from Chapelizod to the War Memorial Gardens, into Kilmainham to the city.

- Opportunities for engagement - create visible and clear motivational signage to entice commuters in. Provide discounts in the café for cyclists, celebrate low carbon emission transport, offer free bike puncture/pumping stations.
- The emerging brief has suggested providing bicycle parking for private bikes, and possibly one of the public bicycle schemes.

Recreational Walkers

As stated in the Situational Analysis Report 'Levels of engagement of the Irish people in what the Irish Sports Monitor calls Broader

³ Tender Information. Vol 3 2 Service Requirements Final. Page 4

Physical Activity (i.e. other than sports) are rising. The rise in the proportion that is 'highly active' is recorded at almost a third – 32.6% - achieving the minimum level of activity set out by the National Physical Activity Guidelines. The increase in the proportion that engage in 'recreational walking' rose from 63.6% to 66.2% between 2015 and 2017, equivalent to almost 100,000 additional Irish people going for regular walks. The 45 to 54 age group has the highest level of participation in recreational walking at 71.3% in 2015, with the strongest increase between 2015 and 2017 in the 25 to 34 age group. This level of participation translates into almost 2.5 million people walking for recreation each week. Those participating in recreational walking took on average 4.6 walks over the previous week.'

- Opportunities for engagement - develop clear signage and route paths for all ability walkers, sharing and promoting positive health benefits for walkers, highlight specific wilding/natural features along walking routes.

Rowers

The unique collection of rowing clubs on the northern bank reflects the national importance of this stretch of the river with the War Memorial Gardens the most important cultural element within the Liffey Valley catchment area.⁴

- Opportunities for engagement - develop interpretation that celebrates the archival legacy of the rowing club and Liffey Vale through historical interpretation and archival imagery. Temporary exhibitions and educational workshops may be

⁴ Tender Document, Vol 3 2 Service Requirements Final. Page 4

developed as part of the Educational policy of Liffey Vale House and Gardens.

- Guest sessions may invite visitors to try kayaking and canoeing from Liffey Vale House and Gardens as part of a collaborative partnership.
- Awareness of canoeing events should be shared to encourage audiences to understand kayaking, canoeing and rowing events happening during rowing seasons, to build connectivity and enjoyment.

Garden Visitors

According to the Situational Analysis, visiting gardens is growing in appeal with overseas tourists, the overall number more than doubling between 2009 and 2017 when 31% of the total to Ireland chose this activity i.e. 2.8 million in total. In a 2013 Fáilte Ireland survey, almost three-out-of-four overseas holidaymakers to Dublin expressed an interest in ‘exploring the countryside close to Dublin’, with 46% putting this desire into practice.⁵

The Phoenix Park masterplan explored the introduction of ‘quarters’ within the park, designating the Knockmarron entrance area of the Park as a potential Biodiversity Quarter. A small glass structure exists at this entrance and is selected as an appropriate centre location for a possible Biodiversity facility. As also noted in the Situational Analysis report, there is undoubtedly ‘collaboration and co-opetition’ opportunities with Liffey Vale House and Gardens in the future, should such a facility be developed.

⁵ Situation Analysis - Liffey Vale House and Gardens Regeneration 131219.pdf Page 9

- Opportunities for engagement - Gardeners may be engaged through additional educational and exhibition interpretation focusing on aspects of Liffey Vale House and Gardens. Practical tips on how to rewild areas of your garden and benefits of this practice to biodiversity, tips to integrate native species into formal landscapes, ways of reducing waste (e.g. orchards, berries), unique foraging techniques and recipes (e.g. nettle soups/tea and wild garlic leaf salads which grow in the Phoenix Park). Free seed distribution. Bee-keeping workshops. Seasonal advice.
- The emerging brief suggests outside the re-wilded areas, the design, planting schemes and management regime demonstrate ecologically responsible and effective regimes for public spaces and private gardens; these can act as exemplars to Tidy Towns / Pride of Place / City Neighbourhoods initiatives.

Multi-generational visitors

One of the challenges discussed in the Dublin City Development Plan 2016 - 2022 is the need to accommodate people at different stages in their life-cycle. Household sizes are reducing while the population is ageing and the need for integrated residential accommodation is a feature of the report.⁶ This integration should also be reflected in the social and cultural policy of the city, a point particularly relevant to the neighbouring region of Chapelizod and

• ⁶ Dublin City Development Plan 2016–2022: Written Statement. Page 213

Palmerstown where two substantial Nursing Homes, Glenaulin Nursing Home and Maryfield Nursing Home are located.

- Opportunities for engagement - Older audiences may be engaged by secure comfortable seating, warm with good views of the river and more active visitors. Events targeting older visitors might include reminiscence workshops, where older visitors bring their tips and knowledge. For less mobile visitors, they might take part in nature workshops, focusing on sensory skills and also local history events. Short walks with age and accessibility friendly routes, seating and views.

Special Needs Users

Stewarts Hospital, Palmerstown provides residential and day services to people with intellectual disabilities. Across their two main sites, Palmerstown and Balgaddy in South West Dublin, the sites support approximately 800 service users.

- Opportunities for engagement - Collaboration with Stewarts Hospital might include welcoming volunteers to help in the maintenance and management of Liffey Vale House and Gardens. Educational workshops might develop nature workshops around caring and maintaining the world around us, tips on how to live independently with plants, reducing waste and environmental workshops.
- Emerging brief suggests paths are gently inclined (≤ 1 in 25) wherever possible, rather than ramped. Alternative stepped routes may be included in places. Equally, regular halting places and benches are planned to facilitate the less able bodied, and stopping and enjoying the place. It also

suggests sensory elements embedded in the design, for the benefit of the partially sighted and who respond to tactile engagement.

Families

As outlined by the Dublin Parks Strategy discussed below, families bring children.

- Opportunities for engagement - Interpretation around the site should encourage discovery and learning allowing natural safe play.
- The emerging brief suggests “subtle play” areas to be included within the site.

Nature Lovers

Visitors to Liffey Vale House and Gardens will be interested in the emerging ethos of the site as a rewilding project. This audience may be a broad audience that can be fostered and grown throughout the life of Liffey Vale House and Gardens.

Opportunities for engagement - Interpretation may subtly reflect on the life and wildlife that inhabits Liffey Vale House and Gardens at different seasons. Interpretation might include the life-cycle of eels, frogs, birds found in summer, short character profiles of common and uncommon wildlife, and even more digital interpretation such as bird boxes and live bat roosts as suggested by the Biodiversity Report. Workshops might also be held around willow coppicing, and the numerous uses of willow branches (e.g. basket/fencing weaving).

History Lovers

Those interested in local history, architectural and social history of Dublin may be enticed by the renovation of the original Liffey Vale House.

- Opportunities for engagement - interpretation within and outside the exhibition should include information on the families who once lived in the house as well as the type of interior architecture and features of the house pertinent to the time. The vast history of the Liffey from the ice age to more recent times may be interpreted such as the medieval life of the Liffey and story of monks of Kilmainham as well as the history of the Liffey and association with Phoenix Park.
- The emerging brief includes the aim that conservation of the Protected Structure will be in harmony with the original materiality of the building, building materials may be selected for their low embedded energy, harmony with nature and the buildings will be energy efficient to run, carbon neutral.

Anglers

On the north bank of the river, a number of fishing decks are also present. At Chapelizod, fishing is reserved for Chapelizod Anglers Club.

- Opportunities for engagement - may be through interpretation of the history and legacy of fishing on the Liffey, oral histories of fisherman and workshops of how to make fishing flies.

⁷ The Irish National War Memorial Gardens. Conservation Management Plan. OPW. Consultation Draft.- March 2016. Page 83

Dogs Walkers

A code of conduct for dog Owners was recently introduced for OPW National Historic Properties in the Dublin region. The Irish National War Memorial Gardens is part of this group. The code was developed following a period of public consultation. It covers a range of issues, from dog fouling to lead-wearing, to dogs and wildlife. The Constable regularly interacts with dog walkers in the Gardens. There is a bin on site which accept bagged dog waste. The code clearly outlines that within the Gardens, dogs are not permitted in the area of the fountains and the rose gardens, and are only permitted on the central lawn if they are wearing a lead.⁷

This may need to be considered in future plans. In the Phoenix Park there are limited bins for dog refuse and plastic bags containing dog refuse are regularly discarded throughout the park. While Liffey Vale House and Gardens is on a walking route, consideration may be given to dog owners, a popular audience who may be advised to return their dog to the leash on approach of the house and gardens but also be welcomed, with eco-friendly dog refuse bins.

Loyal Locals (Chapelizod, Palmerstown, Ballyfermot, Kilmainham, Inchicore)

The outcome of the Stakeholder workshop reported in the Situational Analysis Report supported 'strong community involvement, including through volunteers from the population of the area, leading to strong local pride in the development, thus fulfilling the statement of one participant:

“To be well known to Dubliners, spoken well of by all, a success and benefit to all.”⁸

- Opportunities for engagement - The Situational Analysis revealed continual desire to ensure there was local support with the Liffey Vale House and Gardens. Local collaboration, through volunteering, staffing, provision of ecological education, investment in local life; heritage events, businesses (e.g. sponsor of window boxes), outreach to the locality.

Community of Interest

A number of community and national groups exist who could be directly engaged and aligned with proposals at Liffey Vale House and Gardens. Collaboration with these groups might be considered and identification of more groups in the future.

Bull Island Action Group undertake projects in City Parks to aid conservation management. As a branch of the Conservation Volunteers, the travel to different sites needing attention, planting trees or cutting down Rhododendron.

Irish Wildlife Trust have branches in Dublin and promote learning, campaigning and advocacy as well as directly educating and disseminating information about wildlife and nature. Their educational remit should serve as an inspiration for Liffey Vale House and Gardens as should their focus on the role of the public as ‘Citizen Scientists’ who can become involved in recording species or changes in the environment to help compile data. They also run

⁸ Situation Analysis - Liffey Vale House and Gardens Regeneration 131219.pdf
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a Waterways for Wildlife programme where staff, volunteers and the local community conducted a wildlife survey of a stretch of the Grand Canal.

Dublin Naturalists Field Club promote an interest in all branches of natural history and are concerned with the conservation and protection of rare and endangered plants and animals and the protection of sites of scientific interest. Current projects include The Dublin Ladybird Project and studies into the effects of our changing climate on the Butterfly.

Wetlands Survey Ireland has identified the Liffey at Liffey Vale and the gardens at the Irish National War Memorial Garden as a data source. While they do not have a public engagement remit, they do provide information for the public and would be a group to collaborate with.

War Memorial Garden Users

The Irish National War Memorial Committee was founded in the summer of 1919. The Committee under such high profile and dedicated public servants as Sir Andrew Jameson eventually contracted Sir Edward Lutyens to design a War Memorial Gardens at Longmeadows, Islandbridge, Dublin which now stands as one of the finest such Memorials in Europe.⁹

The Bookrooms in the War Memorial Gardens contain books, illustrated by Harry Clarke, which hold the names of all of the Irish

⁹ <http://www.dublincity.ie/main-menu-services-recreation-culture-dublin-city-public-libraries-and-archive-heritage-and-histo-43>

soldiers who died in the First World War.¹⁰ This can be viewed by appointment or during special events such as Heritage Week each August or Open House, Dublin each October.

Users of the Irish National War Memorial Gardens are local, national, and international. The Gardens attract a significant number of tourists each year, and are a recognised destination. Visiting dignitaries from abroad also include the War Memorial Gardens in their itinerary for various reasons, particularly commemorative. Local children also have regular access due to the proximity of the schools, as do clients of the St John of Gods Special School facility which is within the grounds of the Gardens. A recent initiative to measure park users gave a figure of 41,000 visitors in November and December 2015.¹¹

Phoenix Park Users

The 707 ha Phoenix Park, one of Dublin's principal attractions – and of relevance to the Liffey Vale House and Gardens development in view of its close proximity to the site – received an estimated 1.8 million visitors at its visitor centre over the past year. Over 2,300 sporting events take place in the intensive recreation zone each year.

A visitor experience strategy was published in 2019. Many submissions received by the public in response to the public exhibition of the proposed plans for the Phoenix Park emphasised the importance of the Park as a green space and as a haven for biodiversity. The value of the Park as a 'green lung' for Dublin, as a

critical green space at the heart of the city and as a haven for biodiversity, underpins all OPW's work in conserving and managing the Park. The public's commitment to and concern for the preservation of the Park's biodiversity was a welcomed feature of the feedback.

Responses to the survey endorsed conservation work undertaken to date to protect the variety of habitats throughout the Park including naturalised grasslands, woodlands and wetlands and ensuring this important haven for biodiversity is managed to the highest standards.

The OPW is committed to preserving the green value of the Park, to conserve and cultivate the biodiversity of the Park, to share learning and knowledge of the Park with others and to ensure that the Park makes its contribution to climate change mitigation measures.¹²

Park Users - Generally

A public questionnaire created by Dublin City Council as part of their Parks Strategy revealed the public's attitude to parks. The majority of respondents use their local parks on a weekly basis (42%) and on a daily basis (26%). This indicates that parks as a resource in the City are frequently used by the majority of the population, with only 2% stating they never use their local park. The returns indicate that parks are a valuable asset to the city.

¹⁰ <https://www.dublincity.ie/image/libraries/087-parks-war-memorial>

¹¹ War Memorial Gardens Conservation Management Plan. Page 74

¹² Draft Phoenix Park Visitor Experience Strategic Review Analysis of Submissions received December 2019. Page 6

Recreation is either passive (e.g. strolling) or active (e.g. sports), and generally suitable for all age groups and abilities. Parks also provide space to relax away from busy city living.¹³

Interestingly, the Parks Strategy also questioned why people go to parks? The answer to this may also give clarity as to who the potential audience for Liffey Vale House and Gardens may be. The stated reasons why people go to other parks are variable, however dog walking, events, bringing children to the park or running are frequent responses with park size and quality being important. It is important to note that most stated reasons are for some form of active recreation, which underlines the importance of parks and green space for healthy communities.¹⁴

The strategy also asked people what they do when visiting a park. The majority of respondents stated passive recreation activities in their replies, including walking (89%), relax/peace & quiet/fresh air (68%), enjoy flowers & trees (62%) enjoy nature & wildlife (48%) and meet friends (37%). Active recreation responses were however not insignificant with answers of sports; football games (19%), jogging (24%), cycle (26%), keep fit exercise/health (30%), bring kids to playground/play (43%) being the most prominent.

Other prominent activities stated include photography and reading. The results indicate the importance of providing parks with a balance of facilities to serve the majority of the population and avoidance of excessive areas with a single function. This is an issue in some city parks where there is a high level of provision of pitches to the detriment of other activities and uses. The results indicate the importance of providing space in parks for all recreation types and to promote healthy communities. The results also reveal the

underlying importance of parks that appeal to certain sectors of communities such as families with children, sports clubs and dog owners for example.¹⁵

Tourists

Tourism is important to Ireland, and also to Dublin, with visitor figures continuing to increase annually. In 2015 8 million overseas tourists visited Ireland with 4.9 million people spending all or part of their visit in Dublin. Parks and gardens are a significant draw for tourists. The National Botanic Gardens achieved in excess of 540,000 visitors in 2015 and over 1.5 million overseas tourists visit gardens in Ireland per year. While statistics are not available for visitor numbers to all Dublin parks, it is expected that they are a significant component within Dublin's overall tourism portfolio which generated overseas visitor revenue of over €1.7 billion in 2015.

Visitor numbers are enhanced with events, such as the Bloom Garden Festival (120,000 visitors in 2017) in the Phoenix Park, and the Rose Festival in St Anne's Park, (up to 5000 visitors per day). Parks express the culture and the story of the city and are therefore potential visitor attractions. In particular, historic parks can relate to particular periods in the capital's history, such as Georgian-era Dublin. Contemporary parks also play a role in expressing Dublin as a modern city by incorporating relevant themes into their design. Fr Collins Park for example, puts a focus on sustainability and particularly on renewable wind energy. Fáilte Ireland's Destination Dublin Strategy identifies a Culturally Curious sector of leisure Terenure Village Market at Bushy Park Viking

¹³ Draft Dublin City Parks Strategy 2017 - 2022, Dublin City Council. Page 20

¹⁴ Draft Dublin City Parks Strategy 2017 - 2022, Dublin City Council. Page 3

¹⁵ Draft Dublin City Parks Strategy 2017 - 2022, Dublin City Council. Page 3

Festival at St Anne's Park tourism with growth potential to direct marketing investment.

The Dublin City Parks Strategy indicates city parks and squares and their link, in particular, to the Culturally Curious groups' interest in gardening. Parks as a tourism resource require further research to determine what levels of visits are achieved, how they can be successfully marketed, what visitors enjoy about Dublin's parks and what further work is needed to be done to enhance their appeal to visitors.¹⁶

From the above research it is clear that Liffey Vale House and Gardens has the potential to engage an active, interested, diverse and reliable audience whom have already been identified utilising the surrounding green lung area of west Dublin.

What it also highlights is the potential to engage these audiences in a different way, not just adding to the wonderful facilities that surrounds them but supplementing the instinctive and natural attraction of parks and gardens with an educational value that enhances the visitor experience, adding depth and intrigue, developing a deeper connection with nature through understanding and building a clientele of informed nature lovers who are actively engaged in different levels of engagement, from high level voyeurism, enjoying the surrounds of Liffey Vale House and Gardens, to the deeper learner, interacting with knowledge and information.

¹⁶ Draft Dublin City Parks Strategy 2017 - 2022, Dublin City Council. Page 22

Fáilte Ireland's Domestic Tourism Market

The focus for audiences at Liffey Vale House and Gardens will remain the domestic and local visitor. Fáilte Ireland has developed insight into the needs of this audience which is outlined below. As a result of the Covid-19 pandemic, this market is vital to the success of the project.

Tourism is a major contributor to the Irish economy. Fáilte Ireland support tourism destinations using predetermined visitor profiles to aid and direct the branding of tourist attractions. The Situational Analysis Report identified two market segments; Culturally Curious and Great Adventurers to which the development of the Liffey Vale House and Gardens could appeal. As in the report, these segments are elaborated on below and include additional domestic audiences which future strategies may also include.

The domestic market is important to drive business and maintain a sustainable and integrated visitor market. Irish residents generated 1.7 million trips to the capital city in 2018, with expenditure of €343 million.¹⁷ Fáilte Ireland has outlined three segments that can be considered.

1. Connected Families
2. Footloose Socialisers
3. Indulgent Romantics

Domestic tourism is a core component of tourism in Ireland and is vital to the overall viability of the tourism industry, providing

¹⁷ Situation Analysis - Liffey Vale House and Gardens Regeneration 131219.pdf p14 [Fáilte Ireland- Key Tourism Facts 2018]

the opportunity to operate year round, thereby growing and maintaining employment.¹⁸

1. Connected Families

Connected Families are made up of families with young children. Their core motivation is to spend quality time together and grow as a family.

Who are they?

Connected Families make up 23 percent of the domestic market, the single largest segment. They are made up of relatively young families. They are made up of parents in their thirties and early forties and children generally under the age of ten.

For Connected Families, family holidays are the best weeks of the year and a special opportunity to spend quality time together, creating memories to last a lifetime.

They put their heart into planning and finding out everything a destination has to offer, the best places to stay, the hidden gems and all the activities available that can be shared by adults and children together. For them it is not about having a plan for every day rather knowing that there are lots of ‘things to do together’ nearby and making sure their accommodation and facilities really suit their needs.

What they want from a holiday

Connected Families enjoy a holiday that offers a variety of things to see and do in a place that feels special. Whether it’s fun at a

petting farm, picnicking, learning to surf, catching crabs on the beach or taking a walk on a local nature trail, as long as they’re doing it together, they’re happy.

For the parents it’s all about their children being happy and enjoying themselves. They want to make the most of the opportunity to really ‘be’ with their children and love to see them do and enjoy the same simple things they did when they were children themselves.

They are seeking to create special memories that they can treasure, sharing experiences that they can fondly look back on in the months and years to come.

2. Footloose socialisers

Who are they?

Footloose Socialisers make up 15 percent of the domestic market. On average in their late forties and well educated, they are made up of groups of friends that enjoy getting away and spending quality time together. What matters most to them is being with like-minded people, whether they’re old friends or new acquaintances.

They really love the opportunity to get a break from their routines and responsibilities. For Footloose Socialisers a weekend with friends is a reminder of their long lost youth and they love to break out, really relax and enjoy themselves. Although value conscious, Footloose Socialisers regularly take short breaks with friends-going

¹⁸ Situation Analysis - Liffey Vale House and Gardens Regeneration 131219.pdf p10

to rugby matches, hill walking, attending music and cultural festivals or just playing a few rounds of golf.

What they want from a holiday

Footloose Socialisers are seeking to share experiences with people they can relax and be themselves with – experiences that bring people together and enrich life. They want to do this in authentic and interesting surroundings. They reject the idea of a package holiday.

They believe that it's good to go off the beaten track every now and again, try out different places, meet the locals and really get under the skin of a place. They enjoy good food and drink and tend to be interested in the history and culture of the place they are visiting.

3. Indulgent Romantics

Who are they?

Indulgent Romantics make up 14 percent of the domestic market. Although relatively broad in terms of age profile they are more likely than average to be aged between 45 and 64. They are interested in going to different places and enjoy the atmosphere of new cities, particularly if they offer opportunities for shopping, pampering, enjoying great food and the little indulgences in life. They enjoy quick and spontaneous weekend breaks to get away from the stresses and bustle of their daily lives.

Savvy trip planners they are always keen to find a good deal for a particularly nice hotel they've had their eye on. Interested and knowledgeable about quality travel, restaurants, food and wine, they tend to be in-the-know about what's hot and what's not.

What they want from a holiday

They are made up of couples whose ultimate goal is to find the perfect romantic hub for their holiday where they can soak up the luxury, reward themselves, be well looked after and reconnect with one another. Just being together and treating themselves a little really helps them to rebalance. They prefer to spend money on accommodation rather than activities and expect a certain standard of comfort in their accommodation and hospitality.

Visitor Profiles

The forthcoming Interpretation Strategy will develop these ideas, explore how information can be interpreted to engage passive and active audiences and build the values and ethos that is emerging for Liffey Vale House and Gardens. Developing visitor profiles is an interpretive exercise that aids this interpretive processes. The profiles developed in the Situational Analysis Report are shared below and in the next stage of the project will be used as benchmarks to review and propose interpretive direction.

Eight small focus group sessions were undertaken by Tourism Development International during November, 2019. The focus groups included discussions amongst recreational users of the War Memorial Gardens, many of whom reside in the surrounding neighbourhood.

A brief overview of these discussions are outlined below:

Couple Mid 20s – on holidays from Venezuela

- Read about War Memorial Gardens when visiting Kilmainham Gaol
- Would love to be able to cross Liffey on to Liffey Vale site and then into Phoenix Park
- Very interested in history/war
- Keep development ‘minimalist’, leave nature untouched/leave natural
- Tea/coffee facilities/Toilets most welcome

Residents of the neighbourhood (Age 60+)

- Welcome bridge to link both sides of river
- Enjoys watching the rowing on the river
- Improve paths/more bins needed

- Liffey Vale House – Keep small/needs to blend in with environment
- Tea rooms/Toilets needed

Special Needs Assistant to Wheelchair User – St John of Gods

- Bridge would be fantastic from War Memorial Gardens to other side
- Love gardens
- Could Liffey Valley consider adopting a “Sensory garden” approach
- War Memorial Gardens are extremely popular with people of special needs
- who require fresh air and an outdoor experience
- Paths need to be improved and developed alongside river
- Tea/coffee area/toilets – most welcome
- More benches – nowhere to sit

3 Local Residents - Sarsfield Road (Age 60+)

- Fix paths by river
- Bridge is a priority
- More park benches
- Coffee shop at Liffey Vale House would be a welcome addition to local facilities
- Can be a lot of anti-social behaviour in park

4 colleagues – Rialto (Age 50s)

- Love walking the dog in the War Memorial Gardens
- Concerned about anti-social behaviour, scramblers/motorbikes etc. –
- believe bridge might encourage more bad behaviour

- Area is rich in biodiversity and needs to be managed and protected
- Biodiversity themed café at Liffey Vale would be nice – could story boards
- be used?

- Teahouse
- Toilets
- Centre could host photography exhibitions etc.
- A bridge linking up the attractions would be great
- Great history – Viking settlement

3 adults – Ballyfermot (Age 60+)

- More benches
- Better park management
- More paths/trails by river
- Need for toilets
- Bridge may attract a lot of anti-social behaviour if not managed and
- supervised

3 adults – Residents Hyde Square (Age 50s)

- Toilets needed
- Rowing club will benefit by having access to both sides of river with new
- bridge – that’s very good. Big question is will bridge every happen – it’s been
- talked about for years!
- Develop trails/walks around Liffey Vale House and Gardens
- Keep development minimalist

3 Local Residents - Sarsfield Road (Age 60+)

- Welcomes the regeneration of Liffey Vale House and Gardens
- Facilities for House might include:
 - Exhibition space (calendar of events)

Fáilte Ireland's Overseas Audiences

Overseas markets may take a number of years to recover yet, with Fáilte Ireland's support, may be a future target audience. Fáilte Ireland have also gathered information on overseas audiences and have identified three primary overseas audiences to focus their campaigns. Two of these audiences, the Culturally Curious and Great Escapers could be incorporated into an audience engagement strategy in the future.

Generally, the overseas target holidaymaker is a '39 year old Cultural Explorer from Great Britain, United States, Germany, France or Ireland'. This visitor is the target visitor across all markets. In 2017, 44% of the holidaymaker market to Ireland was from Great Britain, 15% from the United States, 6% from Germany and 5% from France. This represents seventy per cent of all overseas visitors to Ireland.

1. Culturally Curious

Who are Culturally Curious?

The Culturally Curious visitor is interested in all that a place has to offer, and are attracted to authentic travel. They love to delve deeper into the history of a location, and crave unusual experiences and enjoy connecting with nature and wandering off the beaten track.

Where are they most likely to be seen?

Exploring landscapes – megalithic or early Christian relics
In castles, gardens, museums, country houses and art galleries

On literary tours, UNESCO sites, visitor centres, browsing for books to deepen their experience
Enjoying good food and wine, particularly local specialties At unique local festivals and events
Walking, cycling, or pleasure boating to explore a new place



Figure 1. Culturally Curious audiences want to explore and be immersed in a place where they can connect with locals and discover the hidden gems in a destination.

2. Great Escapers

Who are they?

They are often couples, approximately 30 years old, some with babies or quite young children. Most are in serious need of time out from busy lives and careers. They are specifically interested in rural holidays and travel very much as a couple or family.

Great Escapers are on holiday for a break, to get physical with nature, and to reconnect with their partner. More likely to take part in slightly more strenuous, but not extreme, exploration. More

interested than other segments in getting connected to nature especially the more remote and exciting places.

What they want from a holiday

To connect with the landscape, to feel the earth beneath their feet, to soak up the beauty. A sense of history, of their place in the vastness of nature - they want to feel part of it. Against this kind of backdrop Great Escapers can spend real quality time bonding with those closest to them. They can rebalance themselves and take stock of their lives, concentrating on what's important to them. They appreciate peace and quiet between activities... the point is the trip itself. It's 'down time', it's being off the beaten track, it's a great escape. But it's important that getting away from it all is easy enough - they want the 'wow' factor without too much effort. Most importantly, Great Escapers want to come home refreshed and revitalised, their batteries recharged.

Most likely to be seen doing

Escaping to breath-taking landscapes

Actively exploring more remote and exciting places, on foot or by bicycle

Standing enveloped in each other's company on the top of a mountain or cliff

Visiting a castle or a landmark

Gentle exploration of the place - walking, cycling, pleasure boating

Relaxed meal of fresh local produce, or a fun evening in an authentic pub.

Next Steps

The Audience Engagement Strategy and supporting Situational Analysis will be used to develop an Interpretation Strategy and Concept Designs.

