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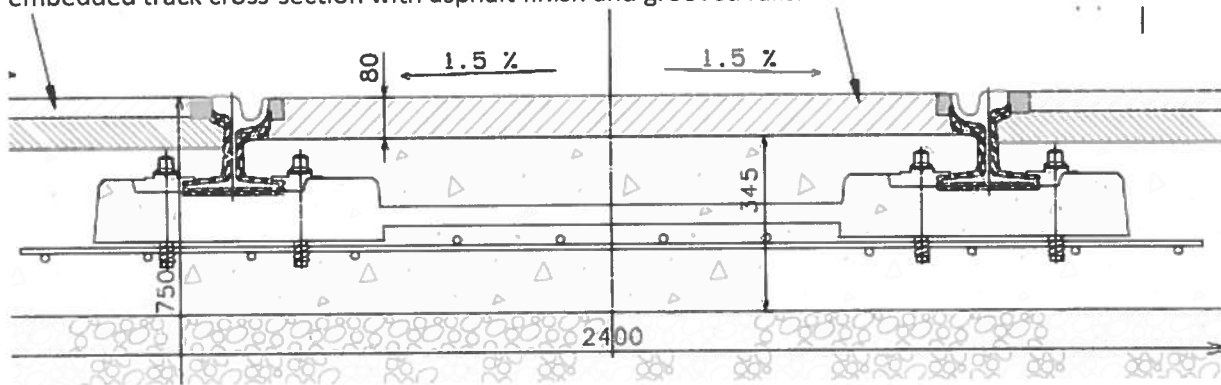
Mr Stephen Hickey
Senior Staff Officer
Dublin City Council
Environment and Transportation Department
Civic Offices
Wood Quay
Dublin 8

22nd March 2016

Dear Mr Hickey

I refer to your letter dated 7 March last concerning the use of rubber in-fills on Luas tracks to minimise conflict for cyclists.

Light rail embedded track systems are based on the concept of rails embedded into the road finishes, with the rail head flush with the road surface. The diagram below shows a typical embedded track cross-section with asphalt finish and grooved rails.



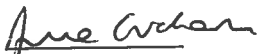
To facilitate this arrangement, a particular rail was developed already in the mid-19th Century, called “grooved”, that allows a simpler rail embedment with a slot (the “groove”) where the tram wheel’s flange can be accommodated. The benefit of the grooved rail design over a traditional rail design is that it allows for the road pavement surface to be installed flush with the side of the rail on both sides. In addition the profile of the rail head is flatter, when compared to other traditional rails, which allows the rail to be installed flush with the level of the road.

Cyclists can experience difficulties in crossing tram lines where there is a risk of a bicycle wheel becoming caught in the groove of the embedded rail. To address this, good design practice avoids the need for acute crossing of the rails by cyclists, instead making the crossings as close to 90° as possible.

Inserting rubber inserts into the grooved rail has been trialled in a number of locations such as Cologne (Germany), Zurich and Basel (Switzerland). These trials concluded the use of these inserts was not a satisfactory solution as the inserts were unable to withstand the loadings placed on them. Additionally, a report prepared for the National Transport Authority by Jacobs Consulting Engineers similarly concluded that the rubber inserts did not adhere well and required significant maintenance as the tram wheel wore down and ripped the material.

These major issues with rubber inserts are reflected in the reality that they are not in widespread use in any other cities. Accordingly, the use of rubber inserts in the rail grooves is not considered a technically acceptable solution for Luas Cross City.

Yours sincerely



Anne Graham
Chief Executive