

## APPENDIX A – Cormac’s Structural Engineer comments

Hello Peter

Please find below a statement on what I believe is happening in the floor to cause the cracking in the top layer of screed.

Photo 1



Photo 2



Photo 3



Photo 4



I do not believe that the cracking seen at the surface of Saltash Station floor is due to reflective cracking as a result of anything below the insulation boards or due to the boards themselves as the boards are staggered in the direction across the room and the crack is relatively straight, photos 1 & 4.

Looking at photo 2, it can be seen that the heating pipes bend almost directly beneath the edge of the screeded bay, it is possible that the edge of the screeded bay would be a weak line in the screed and so if the screed were to shrink a crack would form there. The bends in the heating pipes may restrain the screed around them causing the screed along the line of the bay edge to break up and form a larger crack. The screeding bays probably resulted in the crack in the lower layer of screed, the line of which is shown in photo 3 with tape over it. This tape would have distributed the stress concentration at the crack in the lower screed and prevented a crack along the same line, known as reflective cracking, from forming in the top 10mm layer of screed.

I believe that the crack in the top layer of screed is independent of the crack in the lower screed and that the lower screed does not require any further work.

My recommendation is to install a straight 10mm deep movement joint in the top layer of screed in the location of the surface crack between the corners of the doormat wells, and where the crack deviates from this line it could be filled with concrete repair grout of a similar colour to the screed. The cracks in the café floor could also be repaired with the concrete repair grout without the need for a movement joint.

Regards,

**Gavin Boyd** BEng CEng MICE | Senior Engineer (Highway Structures)

Cormac Solutions Ltd | Infrastructure Group

[gavin.boyd@cormacltd.co.uk](mailto:gavin.boyd@cormacltd.co.uk) | Mobile: 07596317912

[www.cormacltd.co.uk](http://www.cormacltd.co.uk)

Main Building, Western Group Centre, Radnor Road, Scorrier. TR16 5EH