



INSPECTION DEPARTMENT
Main tower inspection.
DATE. 18/12/2013.

(E2.1 Bridge)
Report No 413.
Main Towers north & south.

Date: 02.09.13 to 20.11.13

Both the North & South main towers were visually inspected intermittently over the above dates, Externally the towers were inspected in their entirety during the main tower painting program of works carried out respectively in 2008/9 & 2012/13. A visual inspection was carried out using optical aid equipment where required during this inspection. No internal inspection has been carried out since 2005. This was mainly due to new health & safety procedures being introduced.

Current status. : In general the main towers both North & South remain in a satisfactory condition. This report focuses in particular on housekeeping in the main tower internals & pier defences.

Housekeeping Tower internals .: No work related to the internal cleaning of the main towers has been carried out since the last inspection. Following discussions with the maintenance inspector , an organised / methodical sequenced program of works will be implemented & will be carried out early 2014.

Housekeeping Pier defences .: Both the main tower Pier defences north & south remains a graveyard for contractors materials . FRB. have inherited a variety of materials & scrap left by contractors who have carried out contracts for the organization in the past. Discussions have taken place with the maintenance manager with regards to the removal of the above, and it is expected a program of works to remove and clean up the pier defences will take place in 2014. Further discussions to take place.

Tower internal. : N & S. : Located on the main tower internal fixed ladders located in "B" cell in all four legs , the fall arrest rail system lies dormant and is no longer used . Information recorded on the inspection record tag states that the last inspection of this equipment was carried out in 2008. Although general access to this cell is mainly adopted by bridge inspectors who carry out inspections, if this safety system is never to be adapted for future possible use then could it be removed in a future program of works.

Paint cradle beams. : All paint cradle beams and associated fixings located on the main tower tops and below deck level on the main tower expansion joints and also below the cycle track permanent staging remain in a satisfactory condition.

Main tower internal fixed ladder access. : All main tower fixed access ladders and fixings located in cells " B, D & E " remain in a satisfactory condition.



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Main tower cycle track brackets N & S. All main-span & side-span access hatches located on the respective faces for entry were removed and all were visually inspected. Evidence of slight corrosion and discoloration present at the bracket base. internal paintwork remains in good condition. Information recorded last inspection stated that some water was present at time of that inspection. The possible reason for this was that previous to the inspection being carried out the hatches had been left off and the internals exposed . New gaskets were fitted & hatch covers replaced.

This inspection hatch covers were refitted by bridge inspectors and at the request of the maintenance manager, the perimeter of the hatches were re-sealed with a non hardening compound to prevent the possibility of possible water ingress.

Main tower expansion joints crossover internals . : Information recorded last inspection stated that a relevant amount of water was present on the floor with road surface debris and corrosion of the floor panels evident at time of that inspection. The possible reason for this was that previous to the inspection being carried out the hatches had been left off and the internals exposed . On instruction new gaskets were fitted & hatch covers replaced. It was recorded that following the inspection dewatering was required and that a program of works would be implemented to remove corrosion on the floor panels and the full box girder re-painted , this action was never carried out. This inspection showed no water evident. Heavy corrosion / discoloration remains on certain floor panels throughout the girder internal.

Paintwork. : . Externals as main tower introduction, however there is an area of paintwork on the south main tower external crossover at the tower top on the west side where the painted surface has broken down over an area of approximately 8 to 10 meters square. This area requires to be removed as surface corrosion is evident on floor panels where breakdown. Internals generally remain in a satisfactory condition . On the south main tower top crossover internal however there are areas where bolts have been removed/drilled and the surrounding perimeter paintwork has been removed and corrosion is evident at these locations. As recorded defects last inspection stating corrosion and water was evident in shelves located at "C" level in certain cells , this inspection no water evident at time of inspection, corrosion/ discoloration remains. Please refer to relevant Photographs & structure numbers Please refer to relevant Photographs & structure numbers .

Main Tower Lighting. : Main tower lighting in both north & south main towers remain in a satisfactory condition. Lighting defects totaling 7 in No, were recorded , but were repaired prior to issuing this report. This was done by the electricians who were carrying out emergency lighting routines in both towers..

Corrosion. : Tower internal bases .: There are two areas located in the North main tower where staining runs from approximately 5 metres above this area in the line of bolts where medium to heavy corrosion is evident on the corner faces of the steel , this



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is also evident on the base floor-plate and fixings. These are located in the west leg " Cell " E" base (base dry) & the east leg Cell " D" base (base dry). Please refer to relevant Photographs & structure numbers for information.

Bridge Inspector G. Elliott.

Below are some photographs related to main tower inspection information found this inspection, Please refer to maintenance program , structure report program & relevant photographic folder for detailed information.



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Photographs showing excess materials from previous works carried out on the North & South pier defences, and areas above on the suspended structure which have not been removed following completion of works.



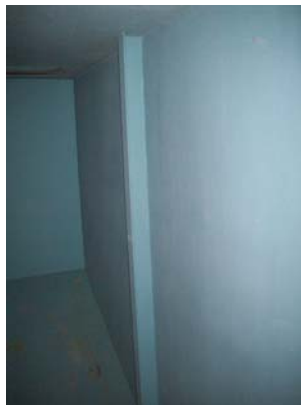
Photographs showing general condition of North main tower internals of the main tower cycle track brackets.



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Photographs showing general condition of South main tower internals of the main tower cycle track brackets.



Photographs showing general condition of North main tower expansion joint internals.



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Photographs showing general condition of South main tower expansion joint internals.



Photographs showing North main tower top crossover internal / external areas of water ingress. Bolts missing. Protective handrail fixing brackets.



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Photographs showing bolt holes & unpainted floor surface areas in North main tower top crossover internal



Photographs showing corrosion / staining in areas below.

Main tower north (west leg) in "E" cell South west corner.

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Main tower north (east leg) in "D" cell South east corner.

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View of defective area of paintwork on the South main tower top crossover external.
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Bridge Inspector.



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