

Our ref: EJM/CE/17016-02

28th April 2016

Henrietta Billings
SAVE Britain's Heritage
70 Cowcross Street
London EC1M 6EJ

by email only

Dear Henrietta,

RE: THE FUTURIST, LIME STREET, LIVERPOOL

As you are aware I visited the Futurist Cinema in Lime Street, Liverpool on Tuesday 19th April 2016 where I was shown around the building by representatives of Liverpool City Council (Fiona Gibson and Peter Skates), Neptune Developments (Rob Mason) and Ian Maciver (from Sutcliffe's Structural Engineer), although the later could not stay until the end of the inspection due to a prior commitment.

In particular I requested if plans were available, and I was advised that they should be, and these would be sent through. I followed this up with an email to Mark Kitts on the evening of Wednesday 25th April to confirm this request, and was advised the same evening by email from Mr Kitts that "*If you haven't already received via others I will sort tomorrow*".

Unfortunately we were hit by a serious computer virus on Thursday morning and thus have not been receiving email since then on our normal addresses. I subsequently emailed Mark Kitts on Monday morning, when I provided a temporary email address. Mr Kitts then sent back a section of the building. Unfortunately whilst this provides some assistance it is not the plans at each level which was needed for the proper assessment.

However in the absence of the plans I provide the following review of the building and in particular the front elevation.

We have been provided with the following information:

- Structural Statement by Curtins following inspection of 28th March 2014;
- Structural Statement of Façade Retention by Sutcliffe dated February 2015;
- Structural Assessment Report by Sutcliffe dated 14th April 2016 (Executive Summary only);
- Historic drawing - Section A-A through approximate centre of building.

The building is clearly in poor condition and it has already been accepted that the rear of the building is beyond practical re-use, in terms of the majority of the historic fabric would be lost. Based on this I spent my time concentrating on the front elevation and where I was able to gain access at ground, first and second floor levels, as well as the set-back projection room, but could not see the roofs and thus the restraint to the pediment. The front wall is of brick construction, but clad in terracotta units. The pediment at high level is set on engaged piers which project from the general face of the wall and will have a stiffening effect on the elevation.

At second floor level there are quite a number of cross walls which appear to be bonded into the front wall. This is positive as they will provide lateral stability to this element. More particularly there are no signs of cracks to these, near the front wall, which one would expect if there was progressive outwards movement of this wall. Only one cross wall had a crack but this had been strapped some while ago as a temporary measure and not opened further. See photographs 1 and 2.

These second floor cross walls are mainly supported on steel beams below spanning across the first floor room (the bar I assume) and which is open for the width of much of the front elevation. These were not as badly corroded as reported where these enter the front wall, and I didn't see evidence of any significant corrosion jacking affecting the wall. See photographs 3 and 4. However I did that some of these extend back and bear on further steel lintels over doorways which are in poor condition. So some temporary propping of these beams and/or the affected lintels would be appropriate. The first floor here is largely timber with a significant void below to the 'filler joist' structure of the ceiling to the ground floor lobby.

The floors are largely of filler joist construction, i.e. steel beams encased in concrete, in this case a clinker based mixed, not unusual for the period. There are signs of some corrosion to these, but again this is not currently to an extent where seen, and where they bear into the front elevation, that it is contributing to movement of the front wall through corrosion jacking. Of course we were permitted to walk on some of these floors, for instance at second floor level, which suggests they are still in a condition to accept this.

At ground floor level there appear to be cross walls other side of the entrance foyer which we assume are bonded in and thus provide some lateral restraint at ground floor level to the front elevation. As these appear to be substantial walls, it also seems likely that walls exist in the basement below these, although access to these was not possible at the time of the inspection.

As previously indicated the front elevation is terracotta clad. The recent report suggests that the cladding is in danger of imminent failure through lack of bond or failure of ferrous fixings. I did carefully review the front elevation, from ground level, and could not find evidence of micro-fractures to the units, which one would expect if such fixings had been used. I also could not see level, any evidence for delaminating or failing units. I certainly did not see any evidence that the masonry and terracotta cladding are acting independently of each other. It is noted that in the Sutcliffe February 2015 there are some images appended and these show some localised damage to features through decay or failure of the 'fire-skin' to the terracotta, and a few ferrous fixings and possible damage to one unit through corrosion of a steel beam from a filler joist floor.

So in conclusion it is noted that there is some lean outwards of the front elevation, however there is no evidence to suggest that there is progressive movement of this, i.e. this movement appears to be historic in nature. The lack of movement to the front elevation is evidenced by the lack of cracking to the cross walls which tie into and provide lateral restraint to this elevation. Once cross wall has split but temporary restraint straps have been inserted with no evidence of further movement. I could not detect any evidence of failure of the terracotta cladding at the time of the inspection.

It is noted that the statement by Antony Clarke of Curtins (an engineer accredited in conservation – CARE), and on behalf of Neptune Developments and Liverpool City Council in March 2014, indicates in the discussion section on the façade condition that:

"The structural condition of the façade for its age is reasonable whilst the remainder of the property is in poor condition."

He does suggest some further investigation into the fixing of the terracotta units, as well as the filler joist floors where bearing in to the front elevation. These investigations seem not to have been carried out, or if they have I have not been provided with this information.

With regard to the pediment, I have been provided with the high level images including the steel restraint angles back to the timber roof structure behind. It seems likely that the ends of these are residing on decayed timber structure and thus in reality I suspect are offering only nominal restraint, if any. Thus I do consider that the pediment section is vulnerable, particularly in strong wind conditions.

So in my opinion it should be perfectly possible to retain the front elevation of the building and incorporate it into a new scheme. As indicated in both the March 2014 Curtins report and the February 2015 Sutcliffe report there are temporary works options available to provide lateral restraint to the front elevation whilst this work is carried out, and indeed due to the concerns if this could be implemented at this time it will provide greater re-assurance about stability as well as restrain the pediment. The most effective option for this would be an external inclined steel framed propping scheme built off the pavement and or road. Both reports rightly highlight the need to establish if any services exist in the pavement, but seeing as the latter report is now over a year old I assume this has now been established, although no information has been provided.

In addition it is necessary to know about the basement layout. Any structure sitting on the pavement will surcharge the basement retaining wall (as shown on the section provided). However if there are cross walls, which seem likely from the walls above, then these act as buttresses to the wall and provide 'strong points' for the external temporary structure to utilise. Of course the position and condition of these walls will need to be checked.

The Sutcliffe 2015 report suggests that such a scheme will be extremely difficult for a number of reasons.

Firstly they advise that the terracotta units will be vulnerable to damage by construction activities such as demolition, piling, underpinning and through induced vibration. I do not agree with this and providing that all temporary waling (horizontal members running along the building) and associated verticals use protective padding and timber boards, the risk of damage will be limited, although some is likely.

Bond failure between terracotta units and main wall – I have not seen any evidence from the existing reports or my own inspection of this action. If this action was found then conservation treatments could be used to stabilise and re-secure these back to the elevation.

Some stone sets (terracotta units I assume) are loose or fractured – conservation works on these prior to main construction works could temporary support these.

So in my view it is possible to introduce a scheme of temporary works in the form of a steel frame to provide temporary restraint to the elevation. The check on pavement services will be required and bridging over these may be needed. Also careful planned access will be needed into the basement to check positions and condition of cross walls buttressing the front wall. Obviously any existing plans will assist with this and thus my request for drawings – however it seems likely that there are basement cross walls based on the walls seen at ground floor level.

The steel frame, or associated wailers will need protective pads against the terracotta, and will need to extend through openings to clamp the wall. Some local opening up of terracotta at low levels will be advisable to understand the exact form, fixings etc., and thus further inform the methodology.

The temporary works is likely to extend into the road, I suspect over one lane, but of course this is even likely to be necessary for demolition.

Now turning the latest email from Liverpool City Council head of Building Control, where from access scaffold he has determined that the pediment is in 'such a dangerous condition that it requires immediate action'. This has, or is resulting in the reduction of height of the pediment. It is important that this work is carried out with great care and fully recorded, in particular in relation to the terracotta units so that these are not damaged. Of course it will also be useful in confirming details of the construction techniques and in particular how the units are fixed back to the main walls.

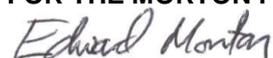
I note that they intend to only take the minimum amount of structure down at present but suggest that this will need to include the central arch at second floor level. Firstly I suggest that the extent of dismantling should be limited down to just above the string course to the pediment as shown on the marked-up photographs appended as photographs 7 and 8. This is the position where the wall steps out in thickness at the rear, as well as where the engaged piers or pilasters exist to the front elevation, which should offer greater stiffness to the elevation. If necessary it should be possible to provide some additional lateral restraint from the rear in the form of scaffold raking buttresses – I note that Greg Allen in the sixth paragraph of his email dated 26th April is suggesting the scaffolding contractor will return to assess some internal works so it could be part of these, but of course will need to be assessed once the roof structure behind is removed as indicated.

This will leave sufficient masonry over the central arch for this to be self-stable. However it should also be possible to insert temporary centering below the arch if necessary, and back propping below in the foyer, although I suspect this is unlikely. It will be important to cap over the head of the wall to protect this and ensure water ingress into the wall core is minimised.

I hope this report clearly sets out my views on the front elevation of the Futurist and hopes ensure its retention for incorporation into the proposed re-development of the site behind. Of course please do not hesitate to call me if you have any queries.

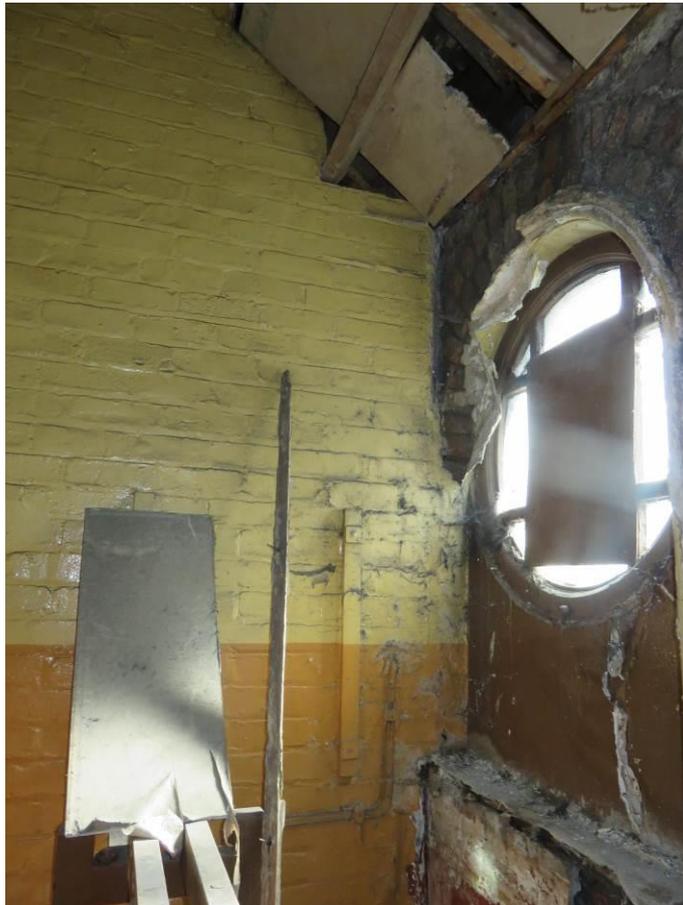
Yours sincerely

FOR THE MORTON PARTNERSHIP LIMITED,



EDWARD MORTON B.Eng (Hons), C.Eng, FICE, IHBC

Engineer Accredited in Conservation



Photograph 1: Cross wall to front elevation providing lateral restraint and with no evidence of cracking



Photograph 2: Cross wall with temporary restraint straps



Photograph 3: First floor room with steel beams spanning front elevation back to the cross wall behind



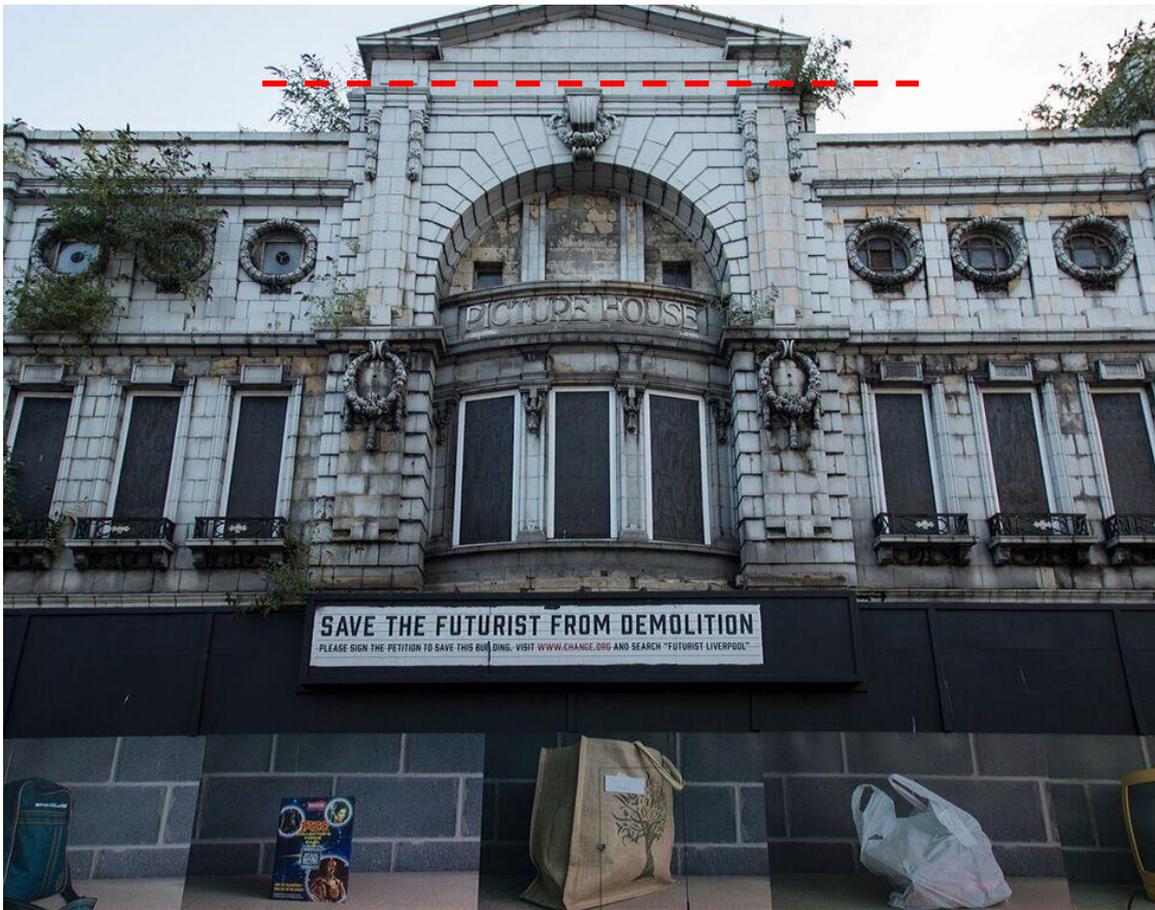
Photograph 4: Steel beam to front elevation with no evidence of corrosion jacking to built-in end



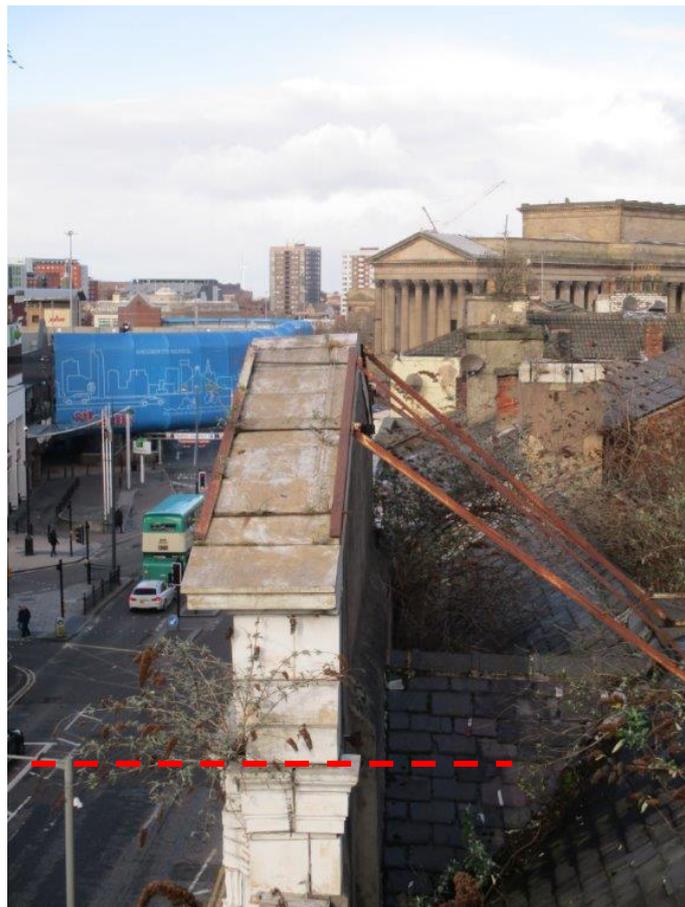
Photograph 5: Restraint straps to pediment



Photograph 6: Base of restraint straps



Photograph 7: Suggested position of dismantling



Photograph 8: Suggested position of dismantling