MECHANICAL + ELECTRICAL
Q + A

on

NEW EXHIBITION SPACES +
VISITOR FACILITIES

at

THE OLD RECTORY
RECTORY STREET
EPWORTH
NORTH LINCS

for

EPWORTH OLD RECTORY
TRUSTEES

Ref : S.2321C

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1.0 Introduction

1.1 The following sections represent the questions raised by James Haigh of LEDA, with answers from Glew + Smith (date 26.03.10). Followed by responses from English Heritage (date Response 1: 30.03.10 + Response 2: 23.04.10), LEDA (date 30.03.10), and E.O.R.T (date 22.04.10).

2.0 Mr James Haigh: LEDA (date 25.03.10)

2.1 **Question:** Is drawing 110C suitable to act as a brief for the purposes of writing costings?

Answer: Yes, it is a comprehensive list of the works to date.

Response (EH): None

Response (LEDA): None

Response (Trustees): None

2.2 **Question:** Could we provide LEDA with a drawing schedule?

Answer: Yes (please find attached).

Response (EH): None

Response (LEDA): None

Response (Trustees): None

2.3 **Question:** Would it be feasible to introduce a draught lobby to the main entrance, located between the two posts supporting the overhang, running back into the new Visitor Centre by 3m?

Answer: The introduction of a lobby would be suitable; it could be made to match the existing proposals.

Response (EH): We suggested in our letter of 25th January 2010 that the eaves at the south end of this building were extended outwards to improve its visual appearance and to create a more welcoming approach for visitors from the car park. Now it is proposed to encroach upon more than half of this space for the proposed new draught lobby. We have concerns about this, as it represents an expansion of the building and erodes the benefits we had hoped for by extending the roof out. We would not wish the building to grow in this way. If the draught lobby is necessary can the space be found within the previously agreed built volume?

Response (LEDA): None

Response (Trustees): The inclusion of a 2.0m draught lobby, with double doors within the existing proposed floor plan of the building would be acceptable.

2.4 **Question:** Can we add high level openings for ventilation between the north and south of the glazed link on each side of the Education Room?

Answer: Yes these can be added. We will add one each side of the Education Room on the south elevation, with corresponding openings along the north elevation, totalling four openings.

Response (EH):

Response (LEDA): Glazed link ventilation treatment will be effective and satisfy secure access matter. I have also asked Richard to allow for solar controlled 'neutral' glass to the south facing elevation to help limit gains.

Response (Trustees): 4No. high level fanlights in glazed link on both North and South elevations.

2.5 **Question:** Can we add low level openings (doors) to each the east and west of the glazed link along the north elevation?

Answer: Yes, however security would be an issue meaning the openings would need to be narrow slits as apposed to conventional doors. We propose two/three narrow glazed openings from the ground to the eaves at each end of the glazed link along the north elevation and to the east of the south elevation. These would allow for ventilation, but prohibit access.

Response (EH): None

Response (LEDA): See 2.4

Response (Trustees): No doors to be located on glazed link therefore suitable.

2.6 **Question:** The comparatively large surface area of glazing for the new Visitor Centre will allow a correspondingly large amount of heat loss. In order to reduce this loss are we able to reduce the amount of glazing, increasing the mass of the building fabric? (The glazed link would not need to be taken into account as it is not heated.)

Answer: Yes, this would be possible. Our worries about the effect on the aesthetics however has been expressed. We have attached sketches F + H which show a possible arrangement. The arrangement shown is not fixed and could be reviewed. This alternative is subject to the suitability of the ground source heat pump. If it is calculated that the ground source heat pump would not be cost/environmentally effective, and a gas powered boiler is opted for (See Question 20) then the current arrangement of glazing with improved frames and glass might be more effective.

Response (EH): With regard to the panels of solid wall now proposed for the west face of the building, I would like to speak further with Giles Proctor when he is available. My initial thought is that it reminds me of a 1960s village hall or church, which is not necessarily what we are aiming for. I thought the simpler approach with the broad areas of glazing looked less self-conscious alongside the Old Rectory than this is likely to appear, as well as affording better views of the glebe land setting. The introduction of these masonry panels would invite direct and possibly uncomfortable comparisons between the new building and the Old Rectory. Darren suggested the possibility of a masonry plinth instead, which may be less obtrusive.

Response 2 (EH): If the panel of brickwork are really needed we would suggest they are less whimsically placed and relate to the table positions to give customers the best view.

Response (LEDA): Visitor Centre Glazing: The extra-over costs for providing a ground source heat pump are calculated at 12% of the total servicing budget (+£36k). I shall provide a carbon calculation to demonstrate cost and carbon value of adopting this technology in this instance. Allowance currently made for a single centralised gas fired heating system with monies being directed to improve building thermal performance as in this case by allowing for triple glazing and reducing the overall surface area of glass.

Response (Trustees): A 300mm brick plinth around the glazed area of the building would be acceptable. Ventilation could be added into the plinth.

2.7 **Question:** Both doors leading into the glazed link would need to be high performance to stop heat loss into the link from either of the two main buildings.

Answer: We agree with this comment, and will add a note to our drawing 110C.

Response (EH): None

Response (LEDA): Door to Education Room also requires to be high performance draught sealed and thermally efficient.

Response (Trustees): The doors to the east of the lobby are to be completely glazed units.

2.8 **Question:** The sun pipes should be 300mm min in diameter to be effective.

Answer: The current diameter of the sunpipes are 300mm, and is referred to on drawing 110C under note 85.

Response (EH): None

Response (LEDA): Sun pipes…nominal 300mm agreed. (Item No.85 on your drawing 110C referred to 150mm radius (I'd taken this earlier as diameter. Sorry for the confusion). With respect to style of terminal Monodraught do a Conservation style sun pipe collector, but this may still be unattractive given the location. Perhaps a discussion with Monodraught or similar would allow a bespoke solution to be agreed. I visited the Nordbygg Building Exhibition in Stockholm on Friday and was very impressed to see the glazed tiles you refer to. They were being used as the outer surface of a full roof/solar collector system. Company: Soltech Engery.

Response (Trustees): This is satisfactory.

2.9 **Question:** Can additional roof lights be introduced along the west roof slope to allow for ventilation of the new Visitor Centre.

Answer: Yes, we have provided a sketch G showing the roof plan with locations for two new openings. These would align with the negative spaces of the roof lights on the east roof slope and the saw tooth bays of the west roof slope.

Response (EH): None

Response (LEDA): I wish to see the west roof lights introduced to provide daylight over the servery. I am comfortable with the level of ventilation provided by the existing east facing roof lights, but of course we can allow all to open to further improve summertime ventilation in the vicinity of the servery. Richard is allowing for window actuators and controls in the main contractor elements (rain sensing will be allowed).

Response (Trustees): This is satisfactory.

2.10 **Question:** Will the kitchen be for commercial use?

Answer: Yes, we will add to our drawings the equipment required (sink, large cooker, etc) and the extractor fan. The extractor fan would be required to extend above the ridge proposed height, we propose that it can run along the internal ceiling and be boxed in. This will reduce the impact on the external appearance as much as possible. The external pipe which would exit the building could be contained within a lantern which would be detailed to match the overall aesthetics.

Response (EH): English Heritage would wish to see and agree and proposed protruding extraction fan and its housing. Would it need to exit at roof level?

Response (LEDA): We had discussed the fact that the commercial nature of the kitchen would warrant a mechanical fresh air supply too (the alternative would be large amounts of cold air being drawn into the building whenever the exhaust system was in operation. A supply air system could rest on the mezzanine floor above and have relatively discrete louvers or low profile roof vents to allow incoming air. More discussion required at Stage 2, but the prices allow at this stage).

Response (Trustees): Vents in ridge tiles acceptable if possible.

2.11 **Question:** Can a heat exchange unit be added to the new visitors centre?

Answer: Yes, we will locate the unit on the mezzanine floor, running piping through the flooring to the rooms below. The floor depth will need to be increased to 150/200mm for the pipes.

Response (EH): None

Response (LEDA): None

Response (Trustees): This is satisfactory.

2.12 **Question:** Can we amend glazing to be solar controlled glazing?

Answer: Yes we will amend all notes on drawing 110C which relate to glazing in the new glazed link and new Visitor Centre.

Response (EH): With regard to the use of solar controlled glazing, would this be clear and transparent from outside? We would not favour mirror effects or bronze tinting.

Response (LEDA): None

Response (Trustees): This is satisfactory.

2.13 **Question:** Do alterations to the existing floors levels in the Old Rectory allow for the introduction of insulation and improved air tightness?

Answer: After reviewing this with David, introduction of modern insulation will impact on the natural ventilation regime and may cause dampness in the building, and would therefore not be suitable.

Response (EH): None

Response (LEDA): None

Response (Trustees): This is satisfactory.

2.14 **Question:** In Kitchen (E) could a door be introduced to create a draught lobby to the house?

Answer: In principle yes, however this would need to be put to English Heritage for their comment. The door specified would need to be justified and form part of the listed building consent.

Response (EH): With regard to the possibility of introducing an internal porch into the kitchen of Old Rectory (room E) we consider this will be visually and spatially obstructive, given the proposed presence of the lift enclosure in the same room. We would therefore not favour the proposed porch.

Response (LEDA): None

Response (Trustees): Can we explain the proposal again to English Heritage, explaining that no new lobby would be introduced, rather that the kitchen (room E) becomes a type of draught lobby. Re-use existing first floor door to be removed.

2.15 **Question:** Are we able to increase the insulation in the roof of the Old Rectory?

Answer: New insulation could be added from the apex of the roof to the eaves. Again this would need to be put to English Heritage for comment.

Response (EH): The possibility of insulating the roof of the Old Rectory – I would need to ask Giles Proctor for his view on this. My initial thought is that the introduction of insulation will presumably require the disturbance of existing fabric – old plaster etc, and if this was the case we would not favour this. In this connection and in relation to all of the issues relating to the Old Rectory itself, I would point out that Park L of the Building Regulations only requires 'reasonable provision' to be made for the conservation of fuel and power. Epworth Old Rectory is Grade I listed building and there is no obligation to modify it to meet Part L. I enclose with a printed copy of this email our guidance 'Building Regulations and Historic Buildings'. This is also available on the Web.

Response 2 (EH): The possibility of insulating the roof of the Old Rectory: We would wish the underside of the roof not to be insulated because of the presence of old plaster, which we would wish to be retained in position as an essential part of the character of the building. The only other way to insulate would be to take off the tiles and replace them with insulation below. As far as we know, re-roofing is not necessary at this time. When re-roofing does become necessary at a future date, we suggest that would be the time to consider insulating beneath the tiles. If this is done, however, the air flow through the bitumen felt that is likely to have been installed in the 1950s would need to be improved to protect the roof timber from rot.

Response (LEDA): None

Response (Trustees): Insulation to be added on top of flat areas in loft of and on internal faces of slopes.

2.16 **Question:** Can existing chimneys in the Old Rectory be blocked?

Answer: Yes but they would need to be ventilated and capped to stop rainwater from entering.

Response (EH): As to whether we would be happy for existing chimneys at the Old Rectory to be blocked, I will need to ask Giles Proctor, but would refer to our guidance note and the comments above on Part L of the Building Regulations above.

Response 2 (EH): Are we happy for existing chimneys to be blocked. No. However, you may wish to investigate a chimney balloon, which is inflated in the chimney and expands to fill the chimney. This stops the free flow of air up the chimney but is reversible.

Response (LEDA): None

Response (Trustees): Two of the existing chimneys to remain open and available to use for open fires, with the rest temporarily blocked using EH's chimney balloon solution.

2.17 **Question:** Can we add insulation to the store and lobby in the education room?

Answer: Yes, this will be amended on our drawing 116B.

Response (EH): None

Response (LEDA): None

Response (Trustees): None

2.18 **Question:** The location of the proposed PV cells would be ineffective. It is suggested that they be relocated to the south facing slopes of the refectory and the education room roofs.

Answer: We can omit the current proposed locations and add in the suggested locations. This would however need to be subject to the approval from English Heritage, most probably based on the use of conservation PV cells if suitable items are available.

Response (EH): With regard to the proposed relocation of the PV cells onto the south facing slopes of the refectory and education room roofs: The south facing slopes are of course prominent in views from the street. Before agreeing to this we would wish to see what they would look like. Could you provide a drawing showing the proposed extent and treatment and photograph of the type of appliance to be fitted.

Response (LEDA): None

Response (Trustees): Remove all PV cells from project.

2.19 **Question:** Could the electrical distribution board/inverters be located within the store of the education room, if Question 18 is suitable?

Answer: Yes, there is scope for a new unit to be located at high level in the store room.

Response (EH): None

Response (LEDA): None

Response (Trustees): Not needed now, remove from drawings.

2.20 **Question:** If the overall energy performance of the new Visitor Centre cannot be sufficiently improved upon, and the ground source heat pump would remain an uneconomic and unsustainable solution, would the allowance for a new gas boiler system to be housed in the existing outbuilding referred to as store (on drawing 112B on the ground floor plan) be a suitable alternative?

Answer: Yes, this would also remove the need for a plant room in the new Visitor Centre, freeing more space for storage.

Response (EH): None

Response (LEDA): None

Response (Trustees): Remove ground source heat pump from scheme and specify two combined heat + power gas boilers. Revert plant room to previous location in out building.

2.21 **Question:** Are their any special requirements for the conditions of the library and office on the second floor of the Old Rectory?

Answer: This question need to be put to the Trustees, regarding conditions attached to their museum status, and possible insurance requirements for artefacts.

Response (EH): None

Response (LEDA): None

Response (Trustees): No

2.22 **Question:** Are all the existing windows to be draught proofed?

Answer: Yes, we are going to draught strip all the existing windows, with the work to be carried out in a suitable manner as required by English Heritage. We will look to use a method, for example: http://www.ventrolla.co.uk/part2_performance/.

Response (EH): I confirm that we do not object in principle to the draught stripping of the windows of the Old Rectory. I will check with Giles Proctor as to his thoughts on the method referred to.

Response 2 (EH): Draught stripping. We do not object. However, I understand that our colleague Richard Jaques (tel 01904 601986) has details of a system which uses a clear silicon and is even more discreet (I understand it was used at Harewood House). I suggest you phone him if you would like to investigate this (I would have asked him myself but I simply ran out of time and everyone has left the office for the weekend!)

Response (LEDA): None

Response (Trustees): None

2.23 **Question:** The term grey water is used on the drawings, did you mean rain water?

Answer: After discussion with David we did mean grey water. We still think the introduction of a rain water harvesting system would be beneficial to the new Visitor Centre. We would locate the system underground, to the east of the building. Our original note regarding grey water refers to the existing water cistern located within the west courtyard on drawing 116B. Could you suggest a use for this if we are to use a new system?

Response (EH): None

Response (LEDA): None

Response (Trustees): None

2.24 **Question:** The caps for the proposed sunpipes will stick out from the roof slope, could this be improved?

Answer: We think the opportunity to use glass pantiles over the sunpipes would create a flush roof slope and be more appropriate in combination with the conservation roof lights. The sunpipes would be attached underneath the glass pantiles and work in the same manner as previously intended.

Response (EH): I presume from this answer that the sun pipes will not stick up but will be beneath glass panties, which well be flush with the plane of the roof. We would support this approach.

Response (LEDA): See 2.8

Response (Trustees): This is satisfactory.

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Checked by:

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GLEW + SMITH: Architect + Surveyor

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