

INDEPENDENT CONDITION REPORT
OF
THE INGENIUM BUILDING
AT
GREY COURT SCHOOL
HAM STREET
RICHMOND TW10 7HN
Dated: 28th October 2022

Prepared by:

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INTRODUCTION:

- 1. The Survey and Brief:** J S Surveying Associates have been instructed to undertake a visual survey, assessment and report with condition grading and priority rating recommendations of the Ingenium Building. The report includes observations with recommendations for proposed replacement/repair works where considered appropriate.

Observations were taken from ground level. Due to weather conditions being damp combined with the extent of algae/mould growth on the outer surfaces of the pod, it was too slippery and not safe to try and attempt to access the top of the pod and/or structure projections (vents/rooflights) for close inspection.

No opening up of the structure or core samples was undertaken.

The survey was undertaken on 27th October 2022 and carried out by Mr J Sawyers of J S Surveying Associates Ltd.

The school caretaker provided access into the building but did not participate in the survey process.

The weather conditions on the day of the survey were damp following an earlier heavy downpour of rain, mild in temperature and partly dry with a scattered cloudy sky. The temperature during the survey was approximately 16°C. Weather conditions during the previous 48 hours had been a mixture of heavy rain, scattered showers and dry conditions.

- 2. The Findings**

The Ingenium Building is elliptical in shape and extremely unique in appearance. I was advised that there are only 2 of these buildings within the United Kingdom. The other unit is used as a general store and not as an intended classroom facility due to its poor condition. I have not carried out any research to verify this statement. I understand that this building was erected in approx 1992. It is a single storey, GRP outer skin constructed structure with the front elevation comprising of mostly glazed doors and glazed screens. On the top of the structure there are circular glazed rooflights and vent hatches. There are no gutters.

Rainfall runs off the roof area, down the side of the pod and into the ground. There is no management of surface water disposal other than the rain draining directly into the soil.

The outer skin to the pod is constructed in bays that abut one another with a foam/sealant filled construction joint.

The building appears to sit directly on the ground. No excavation was undertaken to ascertain the extent and nature of supporting foundation.

Internally, a double-glazed screen/doors have been fitted adjacent the original doors. It is understood that these were fitted as the original glazed doors/screen on the front of the building are extremely cold and draughty.

There is evidence of significant movement within the pod structure. The top of the pod appears to have “sunk” downwards causing the entrance door frames to bind on the entrance doors.

The majority of foam/sealant filled outer wall skin construction bay joints have opened up. Waterproof foil faced tape has been temporarily applied over these joints, in an attempt to prevent water entering the structure/internal environment. This tape has subsequently debonded and is disintegrating exposing the construction joints. The outer wall/roof panels abut one another. The joints between these panels have a compressible foam material and sealant which appears to be original.

Where the structure has moved and deflection has occurred, there are wide gaps (approx 0 – 10 mm) between the compressible material/sealant and outer wall/roof panel bay joints. This is possibly allowing moisture to enter the building fabric and internal environment. It is also possible that the structural timber frame core, within the GRP wall panels, is rotting. Further intrusive investigation would be required to assess the extent of any concealed rot to the structural timber core.

Waterproof foil faced tape has also been applied around the base of the rooflight upstands and around the base of the boiler flue where it passes through the roof zone, presumably in an attempt to stop moisture penetrating the structure/internal environment or to seal general cracks.

The main entrance outer doors and glazed screen are timber framed with integral double glazed units. The outside face of the doors and screens have been clad with a secondary glazed pane with decorative obscured edges to conceal the timber frame of the doors/screen. Two of these secondary glass panes are missing. There are no visible markings to indicate if the glazing is safety glass.

Between the door hinge edge and door frame there is a gap approximately 45 mm wide. A hand/fingers can easily go into this gap and there is a serious risk that a major injury could occur.

Internally the walls and ceiling are faced with GRP. A small access panel was open and the timber structure between the inner and outer skins of the pod was visible. Various areas of the internal GRP wall cladding is deflecting, buckling and debonding. It is suspected that this is a result of movement in the structure.

Internally there is evidence of significant water staining to the ceiling and walls. Fabric covered acoustic baffles are water stained and debonding from the GRP wall/ceiling. The class unit is used as a music room and within the class there are valuable “Apple” manufacture computer screens linked to musical equipment. A number of water-stained walls and ceilings are directly above this valuable electrical equipment. There is a serious risk that future water leaks could cause an electrical fault and/or damage the IT/musical equipment.

There is a rooflight diffuser missing. The roof vents are mechanically operated by way of a motorised “hydraulic ram” that opens and closes the rooflight. On one of the roof vents it appears that a gasket may be missing/displaced as there is an open gap visible between the roof vent and roof vent frame of approximately 25 mm.

Beneath the roof vents there are circular acoustic baffles installed to conceal the motorised roof vent operating mechanism. On top of the baffles there are many old tree leaves and general debris which are believed to have entered via the gap between the roof vent and frame.

Towards the rear of the unit the floor level dips where subsidence in the structure has

occurred. Around the perimeter of the classroom there are heating floor grilles and heating pipes are visible beneath these grilles. Large areas of natural daylight and the ground beneath the Pod is visible behind the heating pipes when looking through these grilles. It is reasonable to suggest that the majority of heating output from these pipes is lost to the outside environment. When considering the findings of gaps around roof vents, draughty doors/frames and daylight visible around the heating pipes, it is reasonable to assume that heat loss from this building is significant and causing the school to pay for un-necessarily high heating costs.

The very nature of the structure, being that it is elliptical in shape, is difficult to effectively space plan and furnish. It is considered that there is an un-necessary amount of wasted floor space which cannot be effectively used due to the shape of the building.

Within the classroom there is a separate room which houses a cloakroom and boiler cupboard. There is also a small sperate room which houses “sound editing” equipment. The walls to the cloakroom are not fixed tight to the structural ceiling and so there is the opportunity of WC odour entering the class area. The door and partitioning to the boiler cupboard is poorly constructed and not fire rated.

There are no anti finger trap guards to inner rooms. This is creating a potential safety risk to the building users particularly the pupils.

3. Recommendations:

Taking into account the following main criteria:-

- The building is unique in appearance design and construction. A specialist contractor and possibly one with boat maintenance experience would be recommended to carry out any repairs. As this building is so unique in design and construction, employing a contractor willing to become involved with any repairs may be difficult to source for a fair and reasonable cost.
- The structure has become significantly deformed by the subsidence and deflection in the structure. The structural integrity of the building is questionable and a specialist structural engineer should be employed to carry out a full and detailed assessment.
- There is a strong possibility that moisture has become trapped within the core of the structure (roof and walls). Further intrusive investigations should be considered to carry out an assessment of the structural core. From my limited observations, the structural core appears to be timber framing. If moisture has become trapped within the core of the structure, the timber core may be rotting and the building may become structurally unsafe.
- Extensive repairs are necessary to seal the wall/roof construction bay joints which are open due to the structural movement.
- The building is awkward in shape and difficult to effectively space plan and furnish.
- Heat loss from the building is considered to be excessive taking into account the extent of visible daylight around the underfloor heating pipes, gaps around door frames and gaps around roof vents. Sealing the heating pipes from exposure to the outside environment is likely to be a time consuming, difficult and expensive process. Likewise obtaining replacement gaskets for the unusual rooflights may be difficult or not be possible if the gaskets are no longer available.
- Insects, rodents etc may be able to enter the classroom environment through the open gaps around the roof vents and particularly where daylight is visible when looking through the floor heating vents.

- The thermal properties of the structure are unknown. Further investigations should be considered to carry out intrusive investigations and ascertain the thermal properties.
- The building is on a valuable land asset footprint and in a prime location within the school complex. The school have made representations that the building is not financially viable to maintain, the shape is not conducive to efficient room layout usage and is un-necessarily costly to keep warm in winter months.

Taking into account all of the above factors, particularly with regards to the amount of structural movement that the building has undergone and with the pod being located on a prime and valuable footprint, I believe that a replacement building should be considered which could provide the school with a more economically efficient, usable facility and valuable asset.

4. EFSA Condition Grading and Prioritisation Rating:

Taking into account the overall extent of defects and condition of the above building fabric elements, I grade and prioritise these works as **Category C2**.

The open gap between the entrance door and frame are considered to be a serious risk to safety to building users particularly pupils. I recommend that anti finger trap guards are fitted to the entrance and inner room doors as an urgent priority to prevent injury from occurring.

I trust the above report helps you to understand the extent of existing defects and enable you to implement the correct level of investment for future development. Should you require further assistance, please do not hesitate to contact me.

Yours sincerely
For and on behalf of
J S Surveying Associates Ltd

Julian D Sawyers

Julian D Sawyers
Building Surveyor