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Youth Club 39  
Church Path  
BOGNOR REGIS  
West Sussex  
PO21 1DB

Email: [chris.cook@sussexyouth.org.uk](mailto:chris.cook@sussexyouth.org.uk)

Dear Chris

**YOUTH CLUB 39, CHURCH PATH, BOGNOR REGIS  
ANNEXE ROOF**

**1. INTRODUCTION**

Further to an initial request made from Atkins Realis we have responded to a request by your youth organisation to visit your premises at Bognor Regis to better understand some concerns raised with regard to the annexe afforded to the main youth building where you have taken on the maintenance liability of this rather aged building.

Particular concerns have been raised regarding the annexe structural support afforded to the flat roof coverings of this single storey, load bearing, masonry building where clearly the failure of a roof beam to the main flat roof decks have afforded the failure/ ingress of rainwater from the roof over or indeed leaking from the covering has caused the demise of the supporting beam.

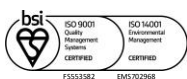
**2. BRIEF DESCRIPTION OF PROPERTY**

Briefly, the annexe is formed in a single storey and is a modest open plan space that has been partitioned internally to provide office, main hall space and subsequent store base to the north of the footprint. Internal partitions are effectively non-load bearing with the roof beams spanning across the narrow breadth of the build with Stramit reinforced cement straw pre-manufactured roof decking spanning between the beams. The beams are set at approximately 2.4m down the length of the build providing five equal roof deck spans. The flank ends providing support to the roof via the load bearing masonry around the perimeter. The Stramit boards are supported by a timber and ply webbed roof beam spanning approximately 6m onto blockwork piers that sit forward of the main cavity masonry external envelope projecting inwards 120mm and being 40mm wide.

**3. INTERNAL OBSERVATIONS**

A brief inspection internally revealed the middle bay towards the north of the build had been compromised by water ingress where the aforementioned ply web support roof beam had been remedially propped by two acrow props with a clear visible deflection of the beam to the eastern side of the build. Considerable dampness was observed to the carpeted floor covering, damage to the

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ceiling and the ply web which was significantly impacted by water penetration from the flat roof coverings over. The Stramit deck flat roof appears to have dipped as the beam has failed and deflected and thus this will continually worsen if damp is allowed to infiltrate and impact on the structural integrity of the timber beam which has effectively fully failed.

The acrow propping whilst relatively competent to carry the applied loads down to the ground floor deck is propping the bottom flange of the ply web beam and the makeup and beams structural integrity relies upon the plywood being intact between the top and bottom chord. The propping to the underside cannot be relied upon in either the short or the long term to support the roof deck over particularly given this is already deflected and water continues to penetrate the space.

It appears that rainwater outlets collected from this flat roof discharge adjacent this location and therefore it would not appear unreasonable to consider that the original falls afforded to the flat roof drain on to this line of this impacted beam and, therefore, is a natural sump regardless of the increased falls had by the beam's failure.

These will need to be inspected and checked further to ensure that these drained outlets to the roof are still operative. Localised damp staining was evident to the same west elevation further towards the south and likely represented a second drained outlet. This will need checking from roof level and downwards into the drainage system to ensure that these remain operative when you are in a position that the flat roof is repaired.

#### **4. CONCLUSIONS AND RECOMMENDATIONS**

Based on the brief inspection undertaken the plywood beam employed to support the Stramit flat roof deck has been compromised at this north of midspan location. Damp penetration be it caused by the beam's failure or failure of the deck has caused water to issue into the structural zone afforded by this ply web timber beam and it has effectively destroyed the structural integrity to the point that the beam will require full replacement. The previous calculation undertaken has been checked and we conclude that a steel beam option in the form of a 203 x 203 UC46 would be the best solution to afford a bearing beam to enable the existing Stramit deck to be readily supported.

To facilitate the removal and subsequent replacement of the plywood beam, the Stramit board decking will need acrow support along its full length, on both sides, astride the plywood beam such that the beam can be removed and replaced. It appears that the Stramit deck has dropped as the beam has failed. Whilst the current acrow propping is in place it has become ineffective where the ply web has failed. In order that the best opportunity of salvaging the deck and roof covering over, it will be required that the Stramit deck is propped, via a double scaffold board, set top and bottom, with acrow props set at 1m centres across the narrow breadth of the annexe on both sides of the defective beam.

After which we can take the opportunity to talk to your Roofing/Building Contractor, identified via Atkins Realis, to discuss the approach to the repair works. Here we feel that the flat roof deck is likely to require partial stripping back to hopefully ensure the roof deck can be jacked up via the

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Stramit board deck vertically upwards to restore the surface level of the deck to ensure the original drainage falls across and into the existing outlet gulleys are reinstated. Removal of the waterproof deck will bring a better opportunity for this to be afforded. The temporary work propping with acrows with screwheads should allow this to happen but would need to be carefully co-ordinated with an accurate level survey to ensure a good outcome with the beam then subsequently reinstated, packed into place. The waterproof coverings can then be reinstated together with the drainage outlet provisions to ensure that the rainfall, once intercepted on the flat roofs can be discharged safely to the existing drainage.

## 5. NEXT STEPS

- i) Re-engage with the flat roof contractor, sharing our report's contents regarding the structural repair works being required, the current propping whilst positive will not currently permit the flat roofing contractor to access the direct area beneath the prop giving the degree of fragility but, however, should allow them general access to the north and south ends to inspect the roof coverings and formulate their quotation.
- ii) Temporary work should be arranged to support the Stramit board astride the defective beam at the same time engaging with both builder and roofing contractor to co-ordinate the stripping of the existing covering and the re-levelling of the Stramit board to facilitate a good outcome for the new beams installation and restoring the top surface levels to afford positive rainwater drainage.
- iii) Arrange a contractor to strip the roof simultaneously and the levels restored, beam installed and roof coverings reinstated with a check carried out to ensure rainwater outlets offer a reliable discharge of collected rainwater.

We trust the foregoing outlined works required and enclosed sketch mark-up, indicating the beam and reflecting upon the procedure to temporary prop and replace the beam and thus allow engagement with the assistance of Atkins Realis to bring a suitable contractor alongside your identified flat roof contractor to execute the works.

We trust the foregoing is adequate for your current purposes and thus we should await engagement with Atkins Realis and your contractor and we can perhaps set up a brief Teams meeting to discuss timings and any questions from your broader team. There does remain some urgency to get the roof temporary propped and the current roof leak halted such that damage observed to date does not progress and become a further burden to the youth club in maintaining the repair to this building.

Yours sincerely



**ALAN TAYLOR**

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