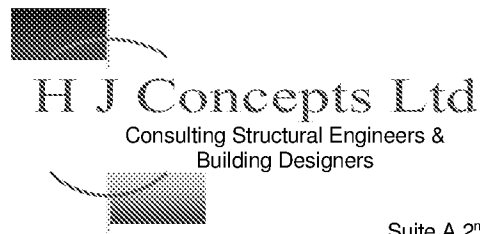


B5 Ltd
Site Office
Littlemead Business Centre
Tangmere
West Sussex
PO20 2EU
21 May 2018



Dear Mr Brooks

RE: 2-4 Waterloo Square, Bognor Regis PO21 1SU

BRIEF

On 17th May 2018, H J Concepts Ltd were contacted and instructed by Mr R Brooks of B5 Ltd for the purpose attending site to review the structural condition of the buildings (where access is available) and more specifically the exposed structural steel support beams at 2-4 Waterloo Square, Bognor Regis PO21 1SU

Experienced Structural Engineer Philip Hamblin IEng MICE AMIStructE of H J Concepts Ltd attended site on the morning of 21st May 2018 with Mr Brooks. In attendance was also Mr A Smith of Artesian Surveyors, who were instructed with the view of accessing whether any ACM's (Asbestos Containing Materials) were present, prior to creating any further openings within and around the building.

Record photographs were also taken during the visit to aid a balanced desk top review to be undertaken during the writing of the review.

LIMITATIONS OF REPORT

This report is a record of a limited visual inspection carried out by H J Concepts Ltd and general conclusion of the state of the building and whether it is has sufficient structural integrity to allow occupation by domestic and or commercial tenants.

At the time of writing no in-depth site review had been undertaken and no structural analysis undertaken or a recommendation for remedial works or reinstatement works.

A number of areas of the existing buildings were inaccessible, covered, unexposed and enclosed and as such have not been inspected and we are therefore unable to report that such parts of the property are free from defect.

No inspection was carried out on the wiring, plumbing or internal services of the structure nor any internal inspection of the external drainage (foul and storm water). All external observations were carried out by eye from ground level.

No reference to any damp penetration and wood infestation has been investigated and no inspections were carried out for deleterious materials, such as asbestos.

EXECUTIVE SUMMARY

Due to the visual condition of the exposed structural steelwork, the exposed decayed timberwork and the cracking within the render finish and the overall condition of the buildings, it is imperative that an intrusive investigation is undertaken prior to the re-use of the building for either residential or commercial purposes. The structure is showing signs of extensive corrosion and decay and in our opinion **the structure is not in a safe and stable condition for occupation and use** without a thorough investigation and assessment of all exposed, hidden and buried structural elements and the necessary repair / replacement works under taken.

PROPERTY & INSPECTION



Waterloo Square View



Norfolk Street View

The building which is located between Waterloo Square and Norfolk Street is a mixture of two and three storey buildings, with commercial premises on the ground floor and residential units on floors one and two. At the rear of the building at first floor is a commercial boxing facility.

The structures on Waterloo Square elevation are formed principally by load bearing masonry with structural beams over large openings and timber floors, and a pitched slate roof. The ground floor was a mixture of concrete slabs and timber floors.

The Norfolk Street structure appears to be a load bearing masonry structure with structural beams, a beam and block first floor and a steel truss roof covered with a rolled profile roof sheet. The first floor walls have a mixture of masonry and timber construction with boarding. The ground floor was a mixture of concrete slabs and timber floor joists. Internally on the ground floor, commencement of a programme of refurbishment was evident, with debris piles of boarding material, walls marked for removal or alteration and commencement of demolition.

Water ingress was evident throughout much of the building and a number of areas appeared too risky to review at this early stage due to the holes in the structure and the amount of material lying on the floors.

It should be noted that the adjoining buildings were the subject of a very serious fire in November 2016 and subsequently collapsed with the remaining being demolished and the site cleared. Due to the intensity of the fire it is inevitable that water had entered the subject buildings



Image courtesy of BBC News Website



Image courtesy of The Mirror Website

A search of the internet has revealed that the buildings at 2-4 Waterloo Square were constructed around the early 1900's. An exact date has not been determined at this stage. It is also evident that the buildings have undergone several renovations with a number of intrusive structural alterations, especially on the ground floor and that a further structural alteration had commenced recently, but had been abandoned.

The following images show the clear and extensive damage that has taken place within the primary structure, especially the structural steelwork, which is showing signs of extensive and serious corrosion. The primary cause of this is water ingress from the aggressive coastal environment, with much of the damage associated with salt water ingress and entrapment. The buildings have been neglected for many years and as such the exterior of the building has been unable to protect the inner structure.



Primary Support Beam, supporting the floor and structure to the Boxing Facility (Viewed from Ground Floor) Note the lamination of the top and bottom metal plates and the extensive corrosion of the main beams web at the base of the beam.



Severe cracking to render over support beams at First Floor (no safe access to investigate further)



Beam in Norfolk Street at ground Floor (Badly decayed timber boxing hiding a Steel Riveted beam)



Rear view of floors at first and second level (facing Norfolk Street)



Waterloo Square Elevation – Severely laminated balcony steelwork at First Floor

HISTORY

Following a brief investigation in to the age of the building it is uncertain what the primary steel structure has been constructed with. The Institute of Structural Engineers published a document in October 1996 "Appraisal of existing structures" 2nd Edition and Michael Bussell (Building Conservation) published "19th Century Structural Ironwork in Buildings"

Within these documents it notes the historic use of cast and wrought iron in buildings and when steel was introduced. There appears to be an era when both wrought Iron and Steel were both used:

Cast iron

- *Beams and inclined roof rafters, etc – from the 1790s until c1870*
- *Columns – from the 1790s until c1910*

We believe the building is later than this and as such cast ironwork is unlikely to be within the structure. However this cannot be ruled out totally.

Wrought iron

- I-section beams (small) and fabricated riveted plate girders and trusses – from c1850 until the 1890s
- Wrought iron columns – rare (cast iron columns were stronger and cheaper)
- Tie-rods and strapping to timber roof trusses – from late Medieval times until the 1890s

Steel

- Introduced c1885, dominant by c1900; had displaced both cast and wrought iron by 1914

The building appears to sit within the period of both wrought iron and steel and given the appearance of riveted plate girders this type of material cannot be ruled out.

Below is a series of historic images of the site from a number of web-based sites

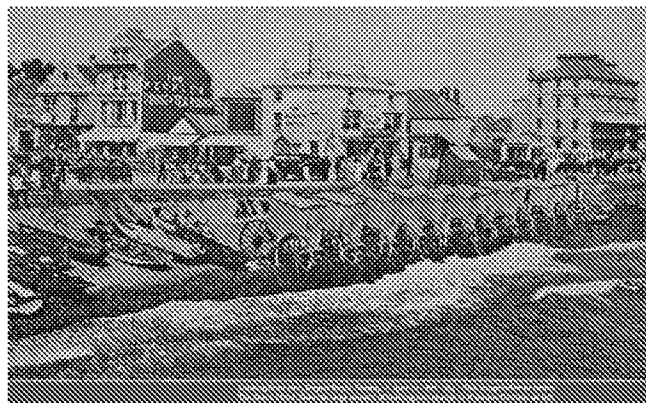


Image A (subject buildings on the far left of the image)

Image B (subject buildings on the far left of the image)

Image A - Waterloo Square from the Pier in 1903. Image courtesy of the Francis Frith Collection Photo Ref 50184

Image B - Image of the site from the Pier circa early 1910-1912

DISCUSSION

Given the extensive nature of the water ingress into the structure, the structural steel beams and structural timber elements are not in a particularly great condition, with many of the visually accessible ones at ground floor being in an advance stage of corrosion or decay.

Due to the possible presence of ACM's it was not possible to expose the enclosed elements until further examination and testing of the cladding materials. There were also a number of hidden voids which contained pigeons and pigeon droppings, which are a cause of harm to general human health.

It was clearly evident that a previous refurbishment had stopped abruptly and this was also not assisting in the investigation of the prime structure.

It was evident that the prime supporting structure has suffered extensively with water and salt ingress, with the buildings being located in an extremely hostile environment right on the sea edge.

Whilst no calculations had been carried out to justify the structure, it was clear that extensive works would be required to expose the hidden elements of the structure and assess whether they would require refurbishment or a complete structural change. This also applied to bay windows, floors and balconies.

CONCLUSION

Due to the visual condition of the exposed structural steelwork, the exposed decayed timberwork and the cracking within the render finish plus the overall condition of the buildings, it is our opinion that the structure is not in a safe and stable condition for occupation. There were many areas that could not be explored during the initial visit and based on the condition of the exposed structural elements that many hidden elements of steelwork and timberwork will also be in a very poor condition.

Yours sincerely



Philip Hamblin IEng MICE AMIStructE
For & on behalf of H J Concepts Ltd