3 December 2019

JOSHUA CONSULTING ENGINEERS PTY LTD
ABN 82 065 027 349
20 Susan Street,
South Wentworthville, NSW 2145

JOB NO: 2019.83A

SFSG Pty Ltd
68 Sir John Young Crescent,
Woolloomooloo, NSW 2011 Our Ref: 2019.83A

Attention: Mr Adrian Vlastelica

STRUCTURAL REPORT ON ARTARMON BOWLING CLUB,
1A BURRA ROAD, ARTARMON NSW 2064

Dear Adrian,

Following your request on 14 November 2019, a qualified Structural Engineer has carried out a site inspection of the above on 25 November 2019.

For the purpose of this report, the entry to the bowling club is assumed to face south (Refer Photo 1 to 2). The site falls from the south to the north. The original building is a single storey timber structure with timber floors and walls (Refer Photo 3 & 4). The sub-floor walls are brick walls built on rock. The current roof is concrete tiled roof in the main section over the hall and metal roof at the building additions. The building had previously undergone alterations and additions to the south-east corner, the south-west corner and the northern side (Refer Photo 2, 3, 4, 10 to 13, 18 & 19).

Inspection of the building revealed that the building was built in 1956. The building consists of a main hall area, office area, refreshment area at the eastern side and a function room area at the south eastern corner (Refer Photo 5 to 7). There is a kitchen area at the north-western corner, a lounge and office area at the northern side of the hall area (Refer Photo 18 & 19). The hall area is approximately 15.3m long x 8.4m wide (Refer Photo 5 to 7). The layout of the building is shown in DWG 2019.83-S03 Rev A.

Inspection of the roof space over the hall area revealed the roof is man-made truss roof at 900mm centers (Refer Photo 8 to 9). There is a gable ends at the northern and southern ends of the hall roof. The existing timber roof trusses appeared to be structurally adequate based on the local inspection near the ceiling access panel. We recommend carry out another structural inspection for the whole roof framing when the ceiling panels are removed. The loads from the roof trusses are supported by the western wall above the existing glazing and the

beams located on the eastern side between the refreshment area and the hall area (Refer Photo 6 & 7). The stability of the main roof appeared to be relying on the cross walls at the ends of the hall and the cross walls near the refreshment area (Refer 5 to 7 and DWG 2019.83-S03 Rev A). We understand that the existing wall cladding, and the roof cladding will be replaced for the hall area. We understand that the existing additions on the south-eastern, south western and northern side will demolished in the new layout. Our understanding of the proposed demolition is shown in DWG 2019.83-S04 Rev A. In demolishing the stability cross walls for the hall, we will require 4 permanent steel portal frames structures to maintain the stability of the hall wall and roof framing. The approximate portal frame member sizes and locations are as shown in DWG 2019.83-S04 Rev A. We recommend providing temporary diagonal bracing to the stud walls before demolishing the existing stability cross walls (Refer DWG 2019.83-S04 Rev A).

Inspection of the pitched roof on the eastern side revealed some minor sagging of the roof tiles between the trusses (Refer Photo 1). We recommend that further review of the local trusses and the battens be carried out when the roof is exposed.

The roof gutter on the western side has rotated and there is vegetation on the roof gutter (Refer Photo 2). We recommend replacing the roof gutters and connect to existing stormwater line.

Inspection of the sub-floor structure revealed that the joists are supported on steel beams (Refer Photo 14 to 17). The floor joists are 250x45 at 450mm centers spanning approximately 2.8m. The floor joists appeared to be structurally adequate. The joists appeared to be in fair to good condition below the hall. There are steel floor beams (250UB) bearers support the floor joists and to create clear storage area or passage area under the building from the western side to the eastern side. The floor joists and the steel beams appeared to be structurally adequate.

We have reviewed the hazardous material survey report by EI Australia (Report No EA24281.E10 REV 0) and Dilapidation report by Opal Dilapidations Pty Ltd. There are hazardous materials on site, we recommend that the demolition works be carried out in accordance with the recommendations in the reports and to Australian Standard AS2601- Demolition of Structures. The other structures can be safely demolished after the temporary bracings are installed (Refer DWG 2019.83-S04 Rev A).

The new proposed layout of the building was not available at the time of inspection. We recommend that the new portal frames be incorporated in the new design of the building. The base plates and footings for the portal frames will need to be engineered and detailed when the existing structure is fully exposed.

We understand that the current building will be altered at the entrance and consideration for the disability access. We understand that part of the hall area at the southern side will be converted to an external area. We recommend that the external floor joists be lowered to allow for weather proofing at the threshold. The timber and decking will need be replaced with H3 treated timber.

The specification for the timber is in DWG 2019.83-S02 Rev A. The structural design will be required for the new architectural layouts. The other option for the disable access ramp is to construct the ramp using Bondek as a suspended reinforced concrete structure. The design can be determined when the new architectural drawings are available.

We recommend engaging a BCA consultant to review the compliance of the building should any of the existing elements be retained. The current windows height and glazing material for the windows may not meet the current Australian standards. We also recommend carrying out a termite inspection of the timber structures.

Should you have any queries, please do not hesitate to contact the undersigned on 0414 405 005.

Yours sincerely,

Michael O.K. Chuah
B.E., M.I.E.Aust., C.P.Eng (891675),
NER (Civil/Struct), APEC Engineer IntPE(Aus),
ACCREDITED CERTIFIER (STRUCTURAL)



PHOTO 1: South elevation.



PHOTO 2: South-West elevation.



PHOTO 3: South-West elevation c1956 (The original building).



PHOTO 4: The additions to the south-east, south-west corners and rear extensions c1957.



PHOTO 5: The existing hall.



PHOTO 6: The existing hall and windows on the western side.



PHOTO 7: The existing refreshment area and function area.

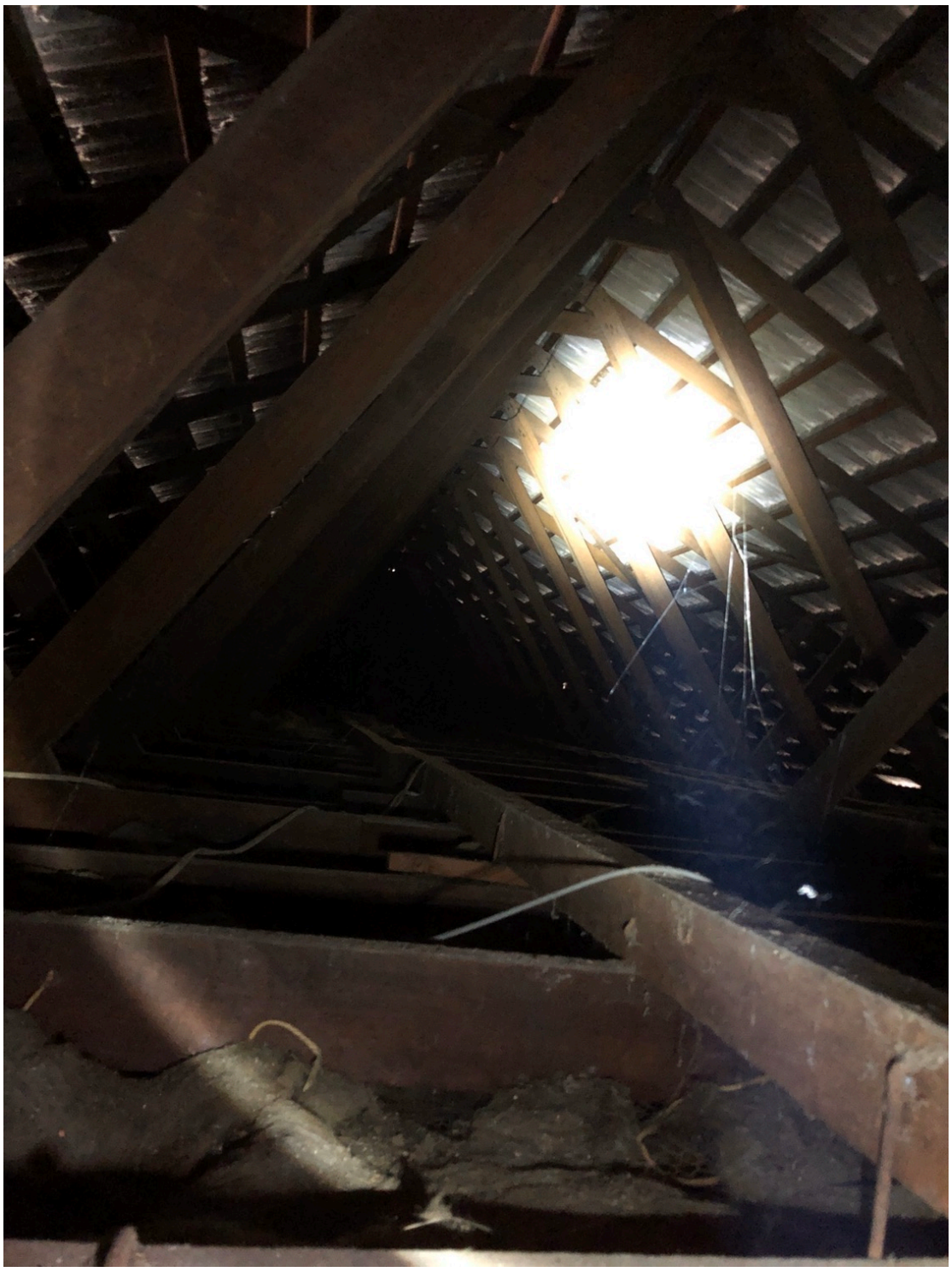


PHOTO 8: The existing truss roof over the hall area. There is no sarking to the roof.



Photo 9: The man-made truss roof. There is no sarking to the roof.



Photo 10: The extension at the rear eastern side on the northern end.



Photo 11: The extension at the north-eastern side.



Photo 12: The extension at the northern side.



Photo 13: The extension at the south-eastern side.



Photo 14: The sub-floor structure.



Photo 15: The sub-floor access door and wall. The passage area between the western and eastern side.



Photo 16: The sub-floor access door and wall.



Photo 17: The sub-floor beams and joists.



Photo 18: The rear kitchen at the north western corner.



Photo 19: The rear lounge room at the northern side.