G A Hughes & Associates Limited
Consulting Civil & Structural Engineers
Hamilton & Whangaparaoa

EARTHQUAKE IEP ASSESSMENT
2-WHARF STREET, WARKWORTH

PREPARED FOR

DEK FAMILY TRUST

REFERENCE 13751
G A HUGHES CPENG 13402

27/9/2013

2 Wharf Street, Warkworth. EQ EEP

1) Introduction

We have inspected the building and reviewed available building consent documentation for the purposes of carrying out an initial evaluation procedure assessment. This has been carried out using the procedures and methodology as set out in Section 3 of New Zealand Society for Earthquake Engineering guidelines "Assessment and Improvement of the Structural Performance of Buildings in Earthquakes'

2) Investigations & Available Documents

We have been provided with copies of drawings and specifications. We have also obtained a copy of the RPNZ Property Data

3) Building History

The building was designed in 1982 by Worley Consultants Limited and we assume that it was constructed shortly after. We note that the RPNZ data states constructed in the 1980's

4) Description of the Buildings

The building has shop front at Wharf Street and has a triangular shape in plan and tapers to the right hand rear of the site.
The ground floor is reinforced concrete founded on solid ground or shallow rock. The exterior side walls are reinforced concrete block. The upper floor is timber with a steel UB. Upper level walls support the timber framed roof structure and are braced with galvanised steel braces in each direction.
The building frontage has openings for shop fronts but has piers and well reinforced block wall panels. Reinforced concrete cast in situ bond beams are present at first floor level. The rear wall and shop front walls have reinforced block and concrete pilasters

5) Description of the Building Structure Behaviour

Gravity actions are taken by the roof framing, floor joists and beams to the concrete block load bearing walls beams and pilasters to the reinforced concrete foundations frames.
Lateral wind and seismic actions are resisted by concrete and concrete block walls, columns and steel braced timber framed wall and timber floor diaphragm at the upper level.

6) Condition of the Building

The building is in good condition. We have not carried out any intrusive on-site inspections.

7) Structural Weaknesses

We have identified only one potential structural weakness.

7.1) Eccentricity

Eccentricities are due to the presence of relatively flexible shop fronts at the Wharf Street frontage and triangular shape of the building. It is noted that the triangular shape provide additional rigidity and seismic capacity due to its shape. Eccentricity is noticeable in the case of transverse seismic actions across the street frontage. There is a small seismic gap to the adjoining building in Queen Street.

8) Seismicity

Warkworth has relative low seismicity and shallow soils.

9) Ductility

We have assessed the overall building ductility to be 1.5 and a SP factor 0.85.

10) Wall Bracing Capacities

The side walls have pilasters and bond beams and the front wall also has pilasters and bracing panels

11) Overall Structural Integrity

Our assessment (as set out on the attached data sheets) shows a capacity of 115% NBS (Grade A+) in the both the longitudinal and transverse directions.

12) Conclusions

This assessment indicates that the building is neither Earthquake Prone nor potentially an Earthquake Risk.

27 SEPTEMBER 2013