



7 May 2022

STRUCTURAL STATEMENT

LOCATION: Sequoia - Apartment 5.
15 Diggins Terrace, Thredbo Village.

DESCRIPTION OF WORK: Development Control Order – Ref EF 22/5385

REFERENCED DRAWINGS: Structural drawings not available.

Paul Larkin of Grounded Structural & Drafting Services attended Sequoia Apartment 5 on Friday April 29 and undertook a structural inspection of the building. A subsequent inspection was made on Tuesday 17 May prior to attendance at a meeting on site with the owners, builders, and Department of Planning representatives.

The scope of the inspections was to determine if the current building works involved any work on the structural members, or altered the loads placed on any structural members of the existing building in response to Development Control Order – Ref EF 22/5385. Reference is drawn to;

Reason for issuing the Order

6) On 4 April 2022 Departmental Officers Mr Mark Willoughby and Ms Sandria Butler undertook a site inspection of the Premises during which they observed that internal building works had been carried out including:

- alterations to the structural capacity of the building.
- and;

9) The Works are not exempt development under the provisions of clause 4.17 and schedule 2, item 5 of State Environmental Planning Policy (Precincts—Regional) 2021:

iii) The works include alteration to a load-bearing member of a building.

Observations;

The works currently being undertaken at Sequoia Apartment 5, are not of a structural nature.

The roof structure of the apartment consists of a structural steel frame, bearing on columns within the external walls, and at four locations internally.

All ceilings in the building are suspended under the steel roof frame and are not intended to offer any bracing effect.

Internal walls intersecting external walls, are not engaged with the structural roof frame, and are intended to offer minimal (if any) bracing effect. Current works undertaken on any internal walls which intersect external walls has not diminished any bracing effect they were intended to achieve.

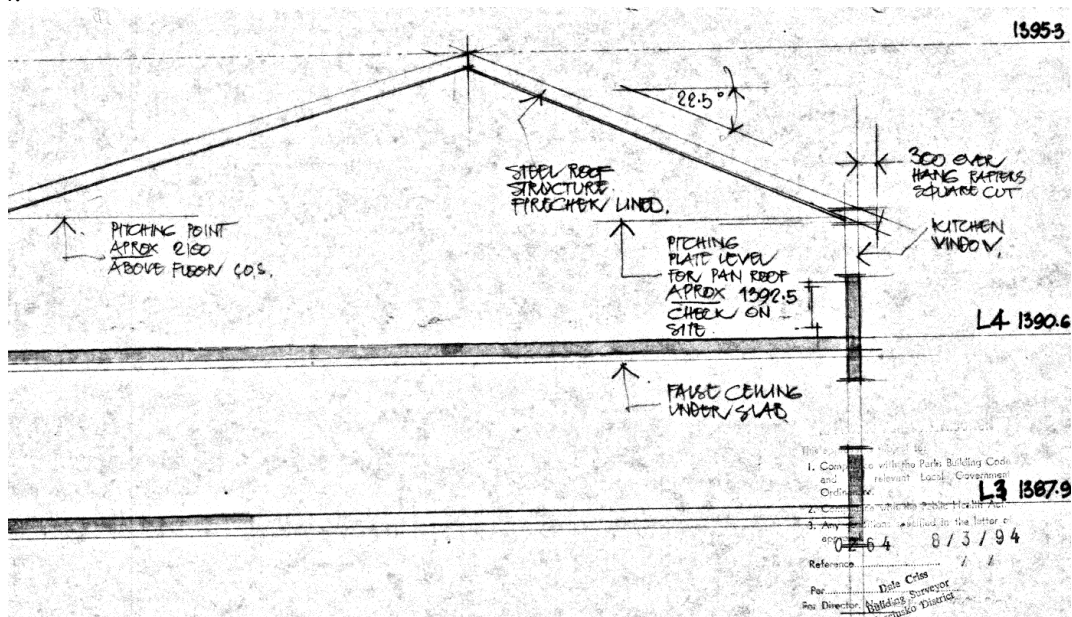
Internal walls removed in the kitchen area offered no structural function. Proposed new kitchen ceiling 'beams' also serve no structural function; they are for aesthetic purposes only. Fixing of these beams has been inspected and found to be adequate to support their own mass. The additional 'self-weight' loads imparted by these elements are insignificant and do not affect the load bearing capacity of any structural members.



The upper floor is constructed of a concrete slab bearing on level 3 masonry walls.

Slab thickness, determined by visual inspection at service penetrations is 200mm.

Although engineering details are not recorded, the architectural intent for the upper floor slab is shown below; and in the plans attached, which are taken from a DA submitted in 1994.



It is assumed that in 1994, a proposed floor design, which was approved by the Kosciuszko Building Surveyor, was designed to carry loads in accordance with AS1170.1 Table 3.1 A1;

TABLE 3.1
REFERENCE VALUES OF IMPOSED FLOOR ACTIONS

Type of activity/occupancy for part of the building or structure	Specific uses	Uniformly distributed actions kPa	Concentrated actions kN
A Domestic and residential activities (also see Category C)			
A1 Self-contained dwellings	General areas, private kitchens and laundries in self-contained dwellings	1.5	1.8 ⁽¹⁾

Concerns have been raised by Dept Planning representatives, about loads imparted by the addition of timber wall linings to internal walls; and, about the installation of new baths in the bathrooms.

The wall lining selected is 12mm thick hardwood which has a mass of 11.8kg/m². Even the worst-case wall, the media room wall has 8.1m² of cladding, generating a distributed load of 0.32 KPa, one fifth of the required design capacity for imposed loads.

The baths selected also generate minimal loads, which do not exceed the design loads used for design of suspended slabs in general areas.

The larger bath has a water capacity of 158 litres. Allowing for framing, linings and tiles, the constructed bath generates a distributed load of 1.25 KPa, safely within the required design loads. It should also be noted that the 1994 renovation also specified baths.

Regarding floor coverings, historical construction records for the building do not indicate the intended floor coverings.

The floor tile proposed in the current renovation works is a lightweight 6mm porcelain tile, mass 13.01kg/m², generating a distributed load of 0.128 KPa.

Ceramic tiles weigh between 25 – 30 kg/m²

19mm timber flooring weighs 25 kg/m²

Heavy pile wool carpet and underlay weighs approximately 7kg/m².

A safe engineering assumption would see either tile or timber flooring in the kitchen area of a ski resort apartment during the original design. For the dining and living spaces of the same open plan room it would be safe to assume design for carpeted floors.

Given these assumptions, there is a minor permanent floor load increase from 7kg/m² (carpet) to 13.01kg/m² (new porcelain tiles); this equates to 0.058kPa additional loading, which is structurally insignificant. It is also worth noting that more significant permanent loads have been removed from the same areas via the removal of internal non-load bearing walls and their linings and furnishings.

Finally, the new glazed balustrade around the stair penetration in the living space has been designed in accordance with the required standards, a design certificate has been provided to this effect. The imposed loads generated by the new balustrade are equal to or less than the solid balustrade design previously in place, therefore we are satisfied that this element does not alter any load bearing member or result in the capacity of a member being exceeded.

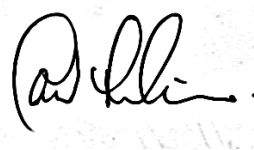
In conclusion, in accordance with Item 5(b) of Schedule 2 of the Precinct Regional SEPP, the current works proposed do not alter any load bearing member of the building, nor do they result in the load bearing capacity of a member being exceeded.

I certify that I am a practicing Chartered Professional Engineer as defined in the current Building Code of Australia.



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