

# letter

2019 01 25 ELC Report To M OC Re MMH Cellar Floor



25 January 2019

Attention: Martin O'Carroll,  
ELC  
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Dear Martin

## **MARTIN MELCK HOUSE: REPLACEMENT OF CELLAR FLOOR**

### **1 Background**

The cellar below the western wing of Martin Melck House was made habitable during the renovations and restorations overseen by Gawie Fagan in 1990's.

Part of the work to the cellar entailed building a low masonry 'retaining wall' around the perimeter of the cellar. Columns were installed along the centre line of the cellar, running from the doorway to the back of the cellar. A beam attached to the top of the columns halved the span of the original floor joists, adding structural stability to the floor above.

The current floor comprises loose-laid concrete cobbles laid on a sand layer.

Plumbing and drainage services were installed, and the cellar used as an entertainment facility.

### **2 Problem Statement**

The cellar is in need of refurbishment after standing empty for a number of years. One of the predominant problems is the damp that permeates through the cobbles. It is clear this system was installed to prevent the damp from migrating sideways [if

there was an impermeable layer below the cobbles] and rising up and through the walls.

However, this system has proven to be unsuccessful as there is insufficient air-flow in the cellar for the damp that emerges there to be carried off by air movement.

### **3 Proposal**

In principle, the proposal is to remove the existing cobbles and sand layer, and replace the floor system with a drained system that deals with the damp below a concrete surface bed.

The proposed system allows for moisture/damp to percolate through the stone layer and condense against the damp-proof membrane. If there is sufficient moisture to be liquid, it will migrate to the perforate pipe and discharge in the existing sump in the back corner of the cellar.

This system should also be efficient enough to prevent rising damp.

The build-up of the proposed floor system is as follows:

1. After the cobbles have been removed and the sand layer levelled, a trench approx. 300mm wide and 150mm deep with sloping sides must be dug adjacent to the columns, from the door to the back of the cellar.
2. The entire floor area is to be covered with geotextile such as Bitem.
3. A 110 diameter agricultural pipe such as Cordrain is to be laid in the trench, to discharge into the existing sump at the back left-hand corner.
4. A layer of 19mm clean builders stone 150mm thick is to be laid over the entire floor area.
5. A damp-proof membrane at least 375 microns thick is to be laid over the entire floor area, and turned up along the walls. Laps are to be sealed as per manufacturer's instructions.
6. A compressive foam barrier such as Jointex is to be installed to line the perimeter of the cellar.
7. A 75mm 25MPa concrete surface bed is to be cast over the entire floor area, taking care not to puncture the damp proof membrane and dislodge the Jointex joint between the low 'retaining walls'.

8. NB: The underside of the concrete surface bed is not to be lower than the underside of the low retaining walls.
9. Ref 245 steel mesh is to be cast into the concrete surface bed.
10. Textured screed/floor finish to be applied to top of concrete surface bed.

#### **4 Way forward**

The proposal described above should be submitted to SAHRA for their input/ approval, and modified if necessary, before a Permit is granted and the work put in hand.

Please contact us should you have any queries or require additional information.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Stuart Hermansen', with a small blue mark at the end.

Stuart Hermansen

**For: HB ARCHITECTS [PTY] LTD**