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Wednesday, 15<sup>th</sup> August 2012

Healthe Care Pty Ltd Mr. Mark Sweeney PO Box 1114 MASCOT NSW 1460

Dear Mark,

## Re: Hurstville Private Hospital – DA Report, Structural & Engineering

The following is an overview of the Structural Engineering Design for the Alterations & Additions to Hurstville Private Hospital.

The proposed development consists of alterations to the existing hospital which include the refurbishment to parts of the existing hospital, the addition of three (3) new floors over parts of the existing hospital and the construction of a new five (5) storey building with two (2) basement Levels adjoining the existing two basement levels on the corner of Pearl & Millett Streets.

Existing Structural Drawings have been sourced from James Griffiths Consulting Structural Engineers Pty Ltd. These drawings indicate that the existing building to which the additions occur is concrete framed. The proposed extension of this building will also be concrete framed, utilising the existing concrete columns to support the vertical loads. The existing hollow block walls to the stair shafts on Millett Street will be removed and replaced with reinforced concrete shear walls.

The new Lift Shaft and Stair Shaft constructed on the Northern end of the existing access road along the North Western boundary will also be constructed of reinforced concrete walls.

The existing concrete columns will be increased in strength to support the additional vertical load where required.

The new works will also be a concrete framed building, consisting of reinforced slabs, band beams and transfer beams supported vertically by concrete columns, reinforced concrete walls and core filled reinforced blockwork.

The re-constructed reinforced shear walls of the existing building and the newly constructed shear walls will provide the lateral stability to the construction over the existing building and to the new building.

The existing drawings indicate that the existing concrete columns are supported by either pad footings founded on rock or concrete bored piers socketed into rock.

The Geotechnical Engineer (Jeffery & Katauskas) will be responsible for confirming the founding material under the existing pad footings and bearing capacity of the said. The founding material under a number of columns will be exposed to confirm the size of the pads and bearing capacity of the material during construction. Jeffery & Katauskas will be responsible for determining settlement of the existing pad footings under the additional vertical loads and rectification works will be designed if required.



The new concrete columns and load bearing walls will be supported by pad/strip footings founded on rock to the satisfaction of the Geotechnical engineer. The existing lower level basement slab will be locally removed to construct the new pad/strip footings

There is a small amount of excavation required to the southern boundary to the Lower basement along Millett Street. It is not expected that this excavation will require temporary shoring.

New slabs and footings will be required under the detention tank and carpark areas under the southern corner of the new building

On Levels 2, 3 & 4 on the north-western side of the building, it is proposed to construct a lightweight corridor with a view to it potentially being removed in the future. The corridor will be constructed using structural steel floor beams and joists with compressed fibre cement flooring. The floors will be horizontally braced to support the lateral loads. Beams spanning the full length of the corridor will support the vertical loads. The roof will also be horizontally braced.

It is also proposed to construct a slab on Level 2 over the existing roof structure to support the plant and mechanical equipment servicing the wards and new operating theatres. This plant slab will be constructed where possible by utilising the existing structural steel rafters and where required, new steel beams. These will then support precast concrete planks which will be topped with a concrete slab.

Where required, the existing rafters will be increased in strength and supported midspan by increasing the heights of the existing concrete columns.

The roof structure will comprise of fire-rated steel columns supporting steel rafters and purlins. The fire ratings will be achieved either by an approved coating or by cladding in fire rated gyprock.

If you have any questions or should you require anything further, please do not hesitate to contact the undersigned.

Yours sincerely

Cer He

Todd Bailey <u>Principal</u> BE (Civil) MIEAust CPEng NPER (Structural)