



18 May 2018

STRUCTURAL ENGINEERING DESIGN STATEMENT

**ST ANTHONY OF PADUA CATHOLIC SCHOOL
140 ELEVENTH AVENUE, AUSTRAL
PROJECT NO. 7300**

This is to advise that our office has carried out a structural engineering review of the master planning documents for the proposed St Anthony of Padua Catholic Primary School at 140-170 Eleventh Avenue and 135-165 Tenth Avenue, Austral, NSW.

These documents included architectural drawings (numbered 4032/DA002 to 4032/DA004, 4032/DA101 to 4032/DA106, 4032/DA201, 4032/DA301), survey drawings and geotechnical investigation reports.

The proposed new buildings on the site range from single storey buildings to four storey buildings. The buildings are generally of masonry, masonry veneer and lightweight wall construction. The floors of the buildings will be of concrete construction. The roofs of the buildings will be of timber framed and structural steelwork framed construction supporting metal deck roof sheeting.

Geotechnical Investigations

Two geotechnical investigations have been carried out for the site as noted below:-

- ◆ JK Geotechnics report dated 22 July 2016
- ◆ Alliance Geotechnical report dated 13 April 2018

The subsurface conditions encountered on the site were generally as follows:-

- ◆ Silty clay topsoil ranging from 200mm to 400mm depth.
- ◆ Fill in some areas which extended to depths of 1.0m to 1.2m. The fill was generally very moist and poorly compacted.
- ◆ Residual soils generally consisting of silty clay which extended to depths of 1.5m to 3.3m. This material was classified as a highly reactive material which may experience high ground movement resulting from moisture changes.
- ◆ Weathered shale bedrock was encountered at depths ranging from 1.3m to 3.3m.

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Foundation System

The main building column loads will be supported on reinforced concrete bored pier and reinforced concrete pad footings which will be founded on the weathered shale bedrock of extremely low strength or stronger.

The ground floors of the buildings will be of reinforced concrete construction. The reinforced concrete floor slabs and beams will be supported on reinforced concrete bored piers. The bored piers will be founded on the weathered shale bedrock of extremely low strength or stronger.

The basement walls of the buildings where they are below ground level will be acting as retaining walls. These walls will be constructed using reinforced blockwork.

Building Floor Structure

The building elevated floor construction will generally consist of a reinforced concrete frame in order to provide lateral stability to the building.

The reinforced concrete floor construction will consist of reinforced concrete slabs spanning between reinforced concrete beams. The reinforced concrete slabs and beams will be supported on reinforced concrete columns and reinforced concrete walls.

Building Roof Structure

The building roof structure will generally consist of structural steelwork beams supporting structural steelwork purlins which in turn support the metal deck roof sheeting and ceiling framing. The steel beams will be supported on reinforced concrete columns. The reinforced concrete columns will provide lateral stability to the building in addition to providing the required fire rating to the structure.

Where smaller spans are achievable in the buildings, structural timber framing will be used to support the metal deck roof sheeting and ceiling framing.

Structural Engineering Design

The structure that will be detailed on our drawings will be designed in accordance with the requirements of the relevant Australian Standards (current edition with all amendments, as listed below), The Building Code of Australia (2016) Part B1 and in accordance with accepted engineering practice and principles.

Australian Standards List:-

AS1170.0(2002), AS1170.1(2002), AS1170.2(2011), AS1170.4(2007), AS1379(2007),
AS1684(2010), AS1720.1(2010), AS2159(2009), AS2870(2011), AS3600(2009),
AS3610.1(2010), AS3700(2011), AS4100(1998), AS4600(2005)

Yours faithfully



B FIMMANO

Director