

RICHARD CROOKES

# ALEX AVENUE PUBLIC SCHOOL

## SITE INFRASTRUCTURE OVERVIEW

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CONFIDENTIAL



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## Alex Avenue Public School Site Infrastructure Overview

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# 1 PROJECT BACKGROUND

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## 1.1 INTRODUCTION

This site infrastructure report has been prepared by WSP on behalf of the Schools Infrastructure NSW (the Applicant). It accompanies an Environmental Impact Statement (EIS) in support of State Significant Development Application (SSD 18\_9368) for the new Alex Avenue Public School at the corner of Farmland Drive and future realignment of Pelican Road in Schofields (the site). The site is legally described as proposed Lots 1 and 2, being part of existing Lot 4 in DP1208329 and Lot 121 in DP1203646.

The new school will cater for approximately 1,000 primary school students and 70 full-time staff upon completion. The proposal seeks consent for:

- Construction of a 2-storey library, administration and staff building (Block A) comprising:
  - School administrative spaces including reception;
  - Library with reading nooks, makers space and research pods;
  - Staff rooms and offices;
  - Special programs rooms;
  - Amenities;
  - Canteen;
  - Interview rooms; and
  - Presentation spaces.
- Construction of four 2-storey classroom buildings (Block B) containing 40 homebases comprising:
  - Collaborative learning spaces;
  - Learning studios;
  - Covered outdoor learning spaces;
  - Practical activity areas; and
  - Amenities.
- Construction of a single storey assembly hall (Block C) with a performance stage and integrated covered outdoor learning area (COLA). The assembly hall will have OOSH facilities, store room areas and amenities;
- Associated site landscaping and open space including associated fences throughout and games courts;
- Pedestrian access points along both Farmland Drive and the future Pelican Road;
- Substation on the north-east corner of the site; and
- School signage to the front entrance.

All proposed school buildings will be connected by a covered walkway providing integrated covered outdoor learning areas (COLAs). School staff will use the Council car park for the adjacent sports fields pursuant to a Joint Use agreement. The proposed School pick up and drop off zone will also be contained within the future shared car park and will be accessed via Farmland Drive.

The purpose of this site infrastructure report is to provide a review of the existing Electrical, Mechanical, Hydraulic and Fire protection services (MEP Services) site infrastructure services at Alex Ave. Public School as part of the schematic design.

This site a green field site and our review is based on the available information from Dial Before You Dig (DBYD) and relevant Arch. drawings and master planning.

## 1.2 CONSULTANT SCOPE

WSP/PB will provide a high-level summary of the existing site MEP services and proposed services to the site.

## 1.3 ASSUMPTIONS AND CONSTRAINTS

This report will only review the school site infrastructure and the associated plant.

The review has been carried out using available DBYD information and relevant available drawings.

As part of this review, as a minimum, Educational Facilities Standards and Guidelines (EFSG) have been considered.

The followings constraints have been identified following the site visit and initial review;

- Further detail review of the Authority infrastructure is required to identify the exact locations and capacity of the Authority mains.
- Augmentation or upgrade of the Authority infrastructure – Subject to further coordination and confirmation with relevant Authorities and application.

## 2 Property Review

This site is currently a green field site (vacant land).



Figure 2-1: Site Plan

# 3 Services Review

## 3.1 ELECTRICAL SERVICES

### 3.1.1 POWER SUPPLY

A new 1,000kVA Endeavour Energy Pad Mounted substation will be installed along Farmland Drive adjacent to the new carpark area to provide power to the site. The final substation location and particulars are subject to assessment and approval by Endeavour Energy.

Underground consumer mains cabling will connect the substation to a new main switchboard located in the Hall building. The main switchboard will supply power to sub-distribution boards located in the various site buildings for power provisions to final lighting, power and mechanical sub-circuits. All submains cabling will be reticulated by means of underground conduits. Refer to the electrical site plan sketch for further details (issued as a separate document).

### 3.1.2 COMMUNICATION SERVICES

A new telecommunications fibre connection will be provided to the school. Preliminary investigations indicate that NBN Co is the telecommunications provider within the area. The connection will be taken from Farmland Drive near the main school entry. Further investigation and survey works may be required to confirm the exact connection location.

The main communications room will be provided in the Library building and will provide telecommunication services to the various site buildings using a star topology. Each site building will be provided with a local building communication room for termination of field data outlets.

All incoming cabling and inter-building cabling will be reticulated by means of underground conduits. Refer to the electrical site plan sketch for further details (issued as a separate document).

### 3.1.3 LIGHTING

#### 3.1.3.1 INTERNAL LIGHTING

Internal access lighting to illuminate circulation areas such as foyers, entry vestibules, corridors and stairs. Functional lighting to illuminate classroom, office, library, communal hall and etc. Illumination level to comply with AS1680 and Department of Education design guide.

LED light source is proposed to achieve energy saving target.

#### 3.1.3.2 EXTERNAL LIGHTING

External lighting to illuminate building entrances, footpaths, sheltered walkways, roadways and car park. Illumination level to comply with AS1158.3.1.

Categories are:

Area /pathway lighting P3

Car parks P11b

Access roads P3

Lighting pole locations are to be selected to avoid light spill and pollution to neighbourhood. Obtrusive light control to comply with AS4282.

Weather proof and vandal-resistant type lighting poles and fittings are proposed in campus to achieve long term reliability. LED light source is proposed to achieve energy saving target.



### 3.1.3.3 LIGHTING CONTROL

Intelligent programmable lighting control system to be proposed to achieve automatic switch, timer control, dimer control, daylight harvesting and integration with period bell alarm.

### 3.1.3.4 EMERGENCY LIGHTING

Emergency lighting system including single point emergency light fitting, exit sign to be provided to comply with NCC and AS2293. The system will be computer monitored.

## 3.1.4 SECURITY SYSTEM

Department of Education School Security Unit shall be consulted at design development stage.

### 3.1.4.1 CCTV CAMERA SURVEILLANCE

CCTV camera to be proposed at campus high risk area such as carpark, main entry, sick bay, library and etc. CCTV network video recorder is proposed in main communication room and CCTV monitors are to be in administration area.

### 3.1.4.2 ACCESS CONTROL

Access control to be provided at high duty area such as main communication room, building entry door and etc.

### 3.1.4.3 ALARM SYSTEM

Alarm system to be proposed at library, sick bay, access shower/toilet and etc.

## 3.1.5 PHOTOVOLTAIC SYSTEM

PV solar power grid-connect rooftop system to be provided to offset power consumption. The PV system will be designed by others.

## 3.1.6 CEILING FANS AND WALL MOUNTED FANS

Ceiling / wall fans and associated fan speed controllers will be provided as required by the EFSG.

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## 3.2 HYDRAULIC SERVICES

Based on the DBYD information review (Section 4.1) Sydney Water, water service and sewer service mains, and Jemena gas main are located within the site vicinity.

### 3.2.1 WATER MAINS

There is a water main to the north of the site located along Farmland Drive. This water main is a diameter 150 mm oriented Polyvinylchloride (oPVC).

The final connection of the sewer main is subject to Sydney Water application and approval.

### 3.2.2 SEWER MAINS

There are no sewer mains in the immediate vicinity of the site. The closest sewer mains are located as follows:.

- 300mm Polyvinylchloride (PVC) pipe appearing to run west around No 1 Road to the south of the property.
- 150mm Polyvinylchloride (PVC) line to the west of Hyde Street to the north of the property, and;
- 150mm Polyvinylchloride (PVC) to the east of Hyde Street, parallel to Wembley Way to the north of the property. This third pipe is concrete encased with multiple maintenance shafts.

The final connection of the sewer main is subject to Sydney Water application and approval.

### 3.2.3 GAS MAINS

There is a gas main located along Farmland Drive. This gas main is a 50 mm, 210kPa gas main on the Southern side of the road.

### 3.2.4 SITE SERVICES

As this is a green field site there are no known services within the site.



## 3.3 MECHANICAL SERVICES

Generally the following mechanical systems are provided to the school buildings

### 3.3.1 COMFORT SYSTEMS

#### 3.3.1.1 AIR-CONDITIONING SYSTEM

Spilt type air-conditioning system is provided to the communications and building distribution rooms in each block as applicable.

In general, the split type air conditioning unit is reverse cycle type and will be allowed to operate in either cooling / heating mode.

#### 3.3.1.2 HEATING SYSTEMS

Heating is to be provided to learning and administration areas by way of free standing gas heating units with a low surface temperature.

### 3.3.2 VENTILATION SYSTEMS

#### 3.3.2.1 NATURAL VENTILATION

Homebases and learning areas ventilation is achieved by naturally ventilating the spaces, with cross flow assistance measures where applicable, ceiling fans are also to be provided.

The admin and library buildings are to be naturally ventilated where possible, with cross flow assistance measures where applicable, ceiling fans are also to be provided.

The hall is to be provided with ceiling fans and roof ventilators for ventilation. The OOSH areas are to be naturally ventilated where possible.

#### 3.3.2.2 MECHANICAL VENTILATION SYSTEM

The student toilets are generally ventilated naturally via external louvres or by mechanical ventilation via exhaust air fan.

In general, staff and access toilets is provided by mechanical ventilation via exhaust air fans.

The chemical and cleaners store room is provided with mechanical ventilation via in-line type exhaust air fan.

#### 3.3.2.3 DUST EXTRACTION SYSTEM

Independent duct extraction system complete with duct extractor, exhaust extraction ductwork and exhaust system is provided for the Special Program room.

### 3.4 FIRE PROTECTION SERVICES

We understand that there is no requirement for sprinkler protection and building occupant warning system in accordance with deemed to satisfy BCA requirements.

Smoke detection will not be provided unless an automatic shut-down of a mechanical system as per BCA in accordance with AS1668.1 is required subject to further confirmation during detailed design stage.

Portable fire extinguishers will be provided throughout the school in accordance with AS2441 and BCA requirements.

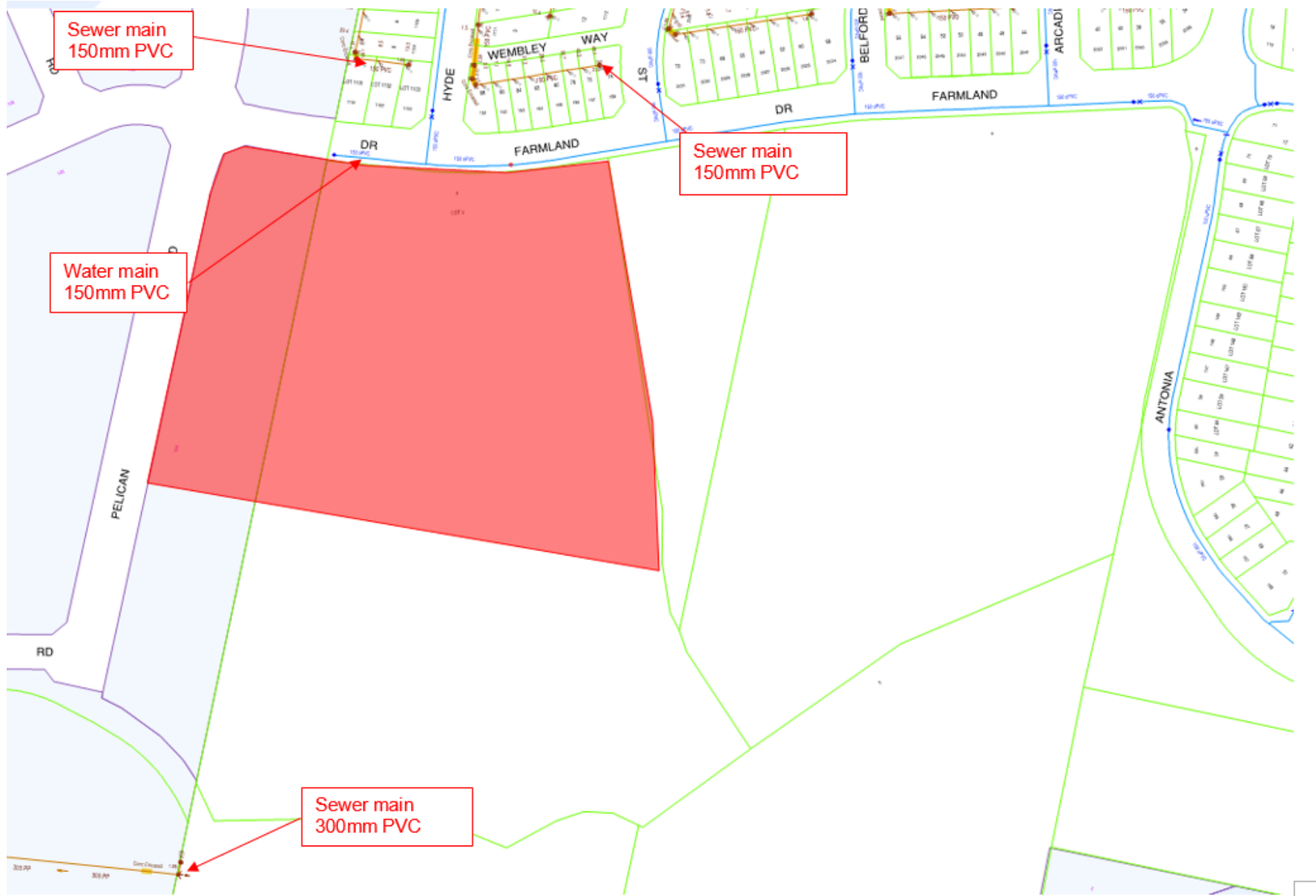
Further confirmation for Fire protection services will be confirmed during detail design phase in consultation with the project Principle Certifying Authority (PCA) and Fire Safety engineer in order to establish minimum requirements for compliance to the relevant Australian Standards and Building Code of Australia.

# 4 INFO / DATA PROVIDED TO THE CONSULTANT

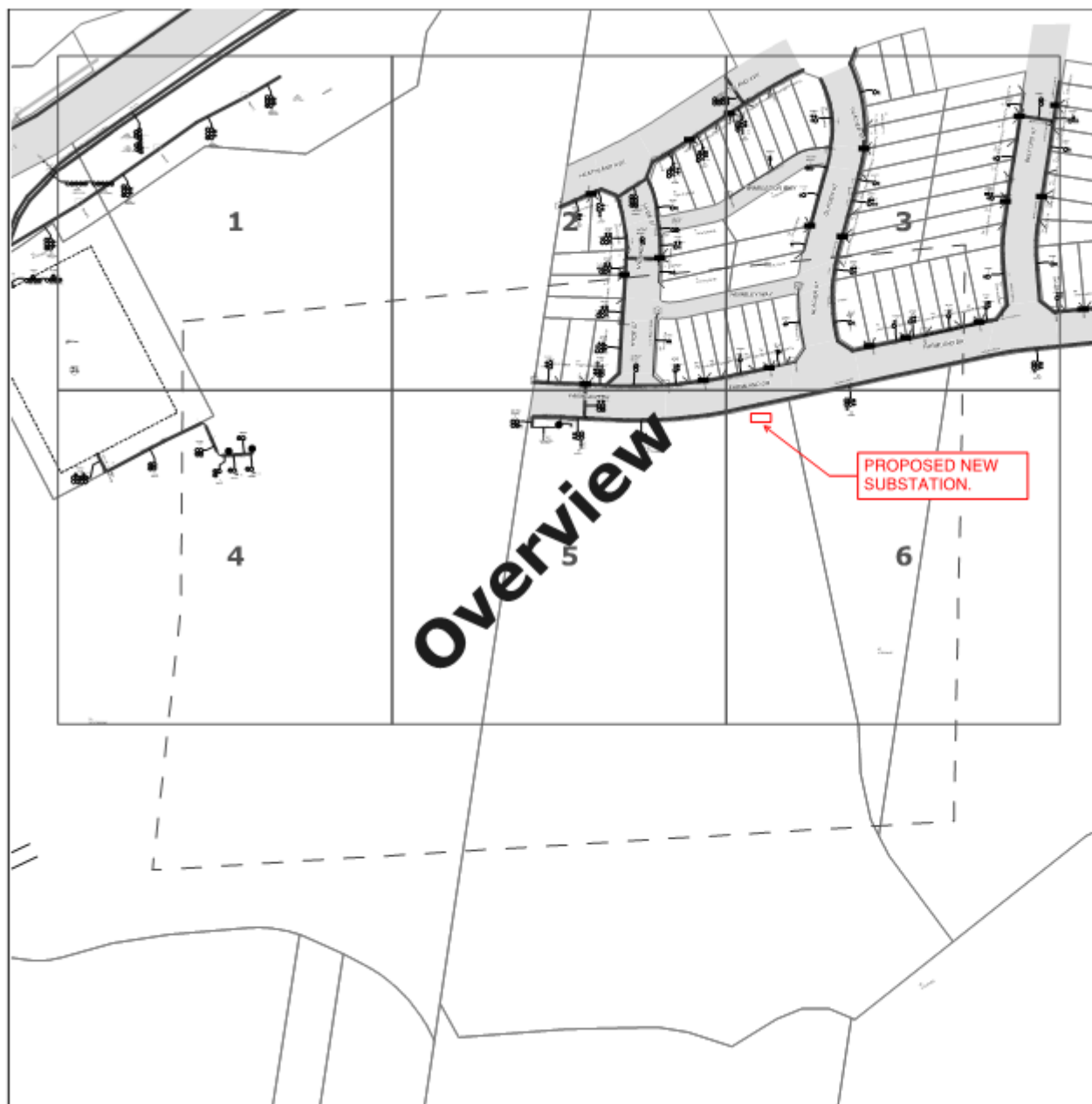
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## 4.1 DBYD INFORMATION

Drawings to be continued:







#### WARNING

- All electrical apparatus shall be regarded as live until proved de-energised. Contact with live electrical apparatus will cause severe injury or death.
- In accordance with the Electricity Supply Act 1995, you are obliged to report any damage to Endeavour Energy Assets immediately by calling 131 003.
- The customer must obtain a new set of plans from Endeavour Energy if work has not been started or completed within twenty (20) working days of the original plan issue date.
- The customer must contact Endeavour Energy if any of the plans provided have blank pages, as some underground asset information may be incomplete.
- Endeavour Energy underground earth grids may exist and their location may not be shown on plans. Persons excavating are expected to exercise all due care, especially in the vicinity of padmount substations, pole mounted substations, pole mounted switches, transmission poles and towers.
- Endeavour Energy plans do not show any underground customer service mains or information relating to service mains within private property.
- Asbestos or asbestos-containing material may be present on or near Endeavour Energy's underground assets.
- Organic-Chloride Pesticides (OCP) may be present in some sub-transmission trenches.
- All plans must be printed and made available at the worksite where excavation is to be undertaken. Plans must be reviewed and understood by the crew on site prior to commencing excavation.

#### INFORMATION PROVIDED BY ENDEAVOUR ENERGY

- Any plans provided pursuant to this service are intended to show the approximate location of underground assets relative to road boundaries, property fences and other structures at the time of installation.
- Depth of underground assets may vary significantly from information provided on plans as a result of changes to road, footpath or surface levels subsequent to installation.
- Such plans have been prepared solely for use by Endeavour Energy staff for design, construction and maintenance purposes.
- All enquiry details and results are kept in a register.

#### DISCLAIMER

Whilst Endeavour Energy has taken all reasonable steps to ensure that the information contained in the plans is as accurate as possible it will accept no liability for inaccuracies in the information shown on such plans.

**WARNING**  
THIS EXCAVATION IS IN THE VICINITY OF  
ENDEAVOUR ENERGY TRANSMISSION, POLE  
COMMUNICATION OR FIBRE OPTIC CABLES.  
PLEASE RING 131 003 OR 1300 6697 669 629  
4 WORKING DAYS BEFORE COMMENCING WORK

#### LEGEND

- or ■ Street light column
- ▢ Padmount substation
- or ■ Overground pillar (O.G.Box)
- Underground pit
- Duct run
- Cable run
- ⊙ Typical duct section
- ▲ Asbestos warning



NOT TO SCALE

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