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FIRE SAFETY REPORT
6 CHAIR DENTAL FACILITY HENDERSON INTERMEDIATE
JN 206281

We have reviewed the proposed new dental 6 Chair Facility at Henderson Primary, based on the drawing supplied by Kay & Keys Architects. We consider the drawing complies with the fire safety provisions of the NZBC, subject to the following:

- Wall and ceiling surface finishes shall achieve a minimum spread of flame index (SFI) ≤ 5 and smoke developed index (SDI) ≤ 10, *OR* SFI ≤ 9 and SDI ≤ 8
- Locking devices on doors shall comply with section 7.3 of this report
- Exit signage shall be provided complying with section 7.6 of this report
- Emergency lighting providing complying with F6/AS1. Refer to Aurecon electrical documentation.

1. Introduction and Building Description

This report addresses the compliance with the Fire Safety Clauses of the New Zealand Building Code, C1, C2, C3 and C4 (as applicable).

The building is a dental clinic with 6 dental chair facilities.

2. Design Philosophy

The design philosophy is to consider the proposal against the means of escape provisions of the NZBC Acceptable Solution C/AS1 'Fire Safety'. NZBC C/AS1 is contained within the DBH Compliance Documents. This provides an audit against the prescriptive solution. This design follows the Acceptable Solution with no Alternative Solutions proposed.

3. Scope of Report

3.1 Building Act 2004 and Building Regulations 1992

The building is new building work and as such is required by the Building Act 2004 to comply fully with the Building Regulations 1992, specifically the NZBC appended as the First Schedule to the Regulations. This report addresses the fire safety requirements of NZBC clauses C1 'Outbreak of fire', C2 'Means of escape', C3 'Spread of fire' and C4 'Structural stability during fire' (as applicable).

4. Basic data & fire safety precautions (FSP)

The building requires the following contains the following characteristics and fire safety precautions required as per table 4.1 of C/AS1.

Purpose Group	=	WL
Escape height	=	~ 600 mm (single floor)
Occupant load	=	34 Based off 2 dental staff in for each treatment area, 1 patient per treatment area, 1 reception staff, and 15 people in waiting area
Firecell Rating	=	0
Other fire safety precautions	=	2af 16 18c
	Where	2af - manual fire alarm, not required when occupant load is less than 50 persons

16 – visibility in escape routes
18c – fire hydrant system where distance from Fire Service appliance to any where in the building exceeds 75 m.

See further comments below

5. Fire alarm system

The building can be exempted from a type 2f manual alarm system because the occupant load is less than 50.

6. Fire / smoke ratings

There are no fire / smoke ratings required in this building. Refer to section 10 below for assessment of fire spread to neighbouring buildings.

7. Escape route features

7.1 Number of escape routes & cumulative escape route width

The building requires one escape route and is provided with 2 escape routes.

The occupant load is less than 100 people and therefore the minimum requirements apply.

Door clear opening width minimum - 760 mm
Horizontal open path width minimum – 850 mm
Vertical travel path minimum – 1000 mm

The number and width of escape routes comply with all the requirements.

7.2 Length of escape routes

Refer to C/AS1 3.4 'Length of escape routes' and Table 3.3. The allowable dead end open path (DEOP) and total open path (TOP) lengths are 24 m and 60 m respectively. The maximum DEOP and TOP are within these limits as shown on FSK-05 Therefore the escape route lengths comply with the requirements.

7.3 Locking devices

Locking devices (when the building is legally occupied) shall:

- Be clearly visible, located where such a device would be normally expected, designed to easily operate without a key or other security device, and allow the door to open in the normal manner,
- If of an electromagnetic type, in the event of a power failure or door malfunction, either:
  - Automatically switch to the unlocked (failsafe) condition, or
  - Be readily opened by an alternative method satisfying the requirements of the above

7.4 Direction of opening

Refer to C/AS1 3.17.3 'Direction of opening'. The direction of opening of doors on escape routes must be in the direction of escape for > 20 people on open paths and > 10 people in exitways. The direction of opening, as detailed on the plans, complies with these requirements.

7.5 Emergency lighting

Emergency lighting shall be provided to comply with F6/AS1. Refer to Aurecon electrical drawings for emergency lighting requirements.

7.6 Exit Signage

Install signs at all manual call points as per Figure 4 of NZBC F8/AS1.

Install EXIT or FIRE EXIT signs along the escape route as per the requirements of NZBC F8/AS1:

- Located as shown on drawings FSK-05
- Located on a vertical surface within 600 mm of the door
- Worded EXIT or FIRE EXIT plus a directional arrow if necessary
- Height of lettering minimum 50 mm but may be greater depending on viewing distance
- Colour being white on safety green background, except any area usually under dimmed lighting conditions in which case the colour may be safety green on black background
- Sign shall be internally illuminated and comply with F8/AS1 'Signs' and the Standard AS/NZS 2293.3:1995 'Emergency evacuation lighting for buildings – Emergency luminaries and exit signs'

8. New interior surface finishes, floor coverings and suspended flexible fabrics

Walls and ceilings shall have a spread of flame index (SFI) ≤ 5 and smoke developed index (SDI) ≤ 10, *OR,* SFI ≤ 9 and SDI ≤ 8

9. New exterior surface finishes

No requirements as the building has purpose group WL, has a building height of less than 7 m and is further than 1 m from a relevant boundary.

10. Spread of fire to neighbouring boundaries

The west side of the building is 6.8 m from the boundary on the west side, 7.6 m from a classroom block on the south side, remote from all other boundaries (> 15 m).

The easy, west, and south sides are assessed as per C/AS1, Section 7, Enclosing rectangles as below:

Assessment of west side adjacent to boundary

FHC	=	2
Enclosing rectangle	=	~ 5 m x 4 m
Distance to boundary	=	~6.8 m
% allowed unprotected area	=	100 %

Assessment of south side adjacent to classroom block

FHC	=	2
Enclosing rectangle	=	~ 20 m x 3 m
Distance to boundary	=	~7.56 m
% allowed unprotected area	=	100 %

Hence the building is located sufficiently away from boundaries that external walls do not require any fire rating.

11. Fire Service Requirements

11.1 Internal Fire Hydrant

An internal fire hydrant is not required as the distance from the fire service appliance to anywhere in the building is less than 75 m.

11.2 Fire service vehicular access

The Fire Service attendance point and access must:

- Be able to withstand a laden weight of 25 tonnes and an axle load of 8.2 tonnes
- Have a minimum width of 4.0 m
- Provide a clear passageway 3.5 m wide and 4.0 m high
- Provide to within 18 m of one side of all buildings.

The access is via Concrete Drive and is expected to meet the above requirements.

12. Conclusion

Provided that the fire protection features described in this report are implemented, we consider that the proposed dental clinic will meet the fire safety requirements of the New Zealand Building Code.

Prepared By:
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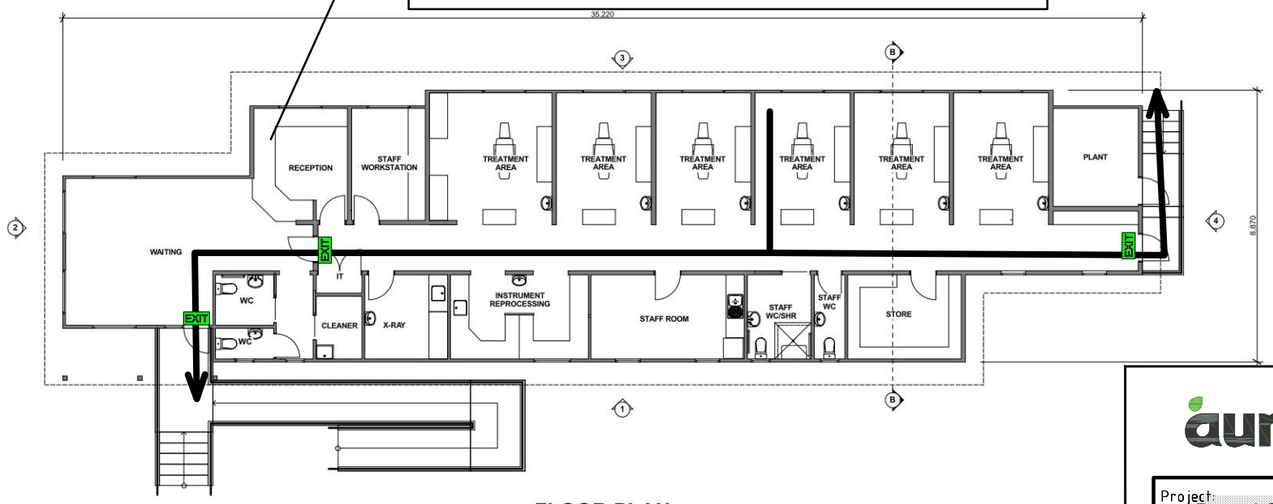
Reviewed By:
Paul Martini, *ME (Fire), Dip Sci, BSc*

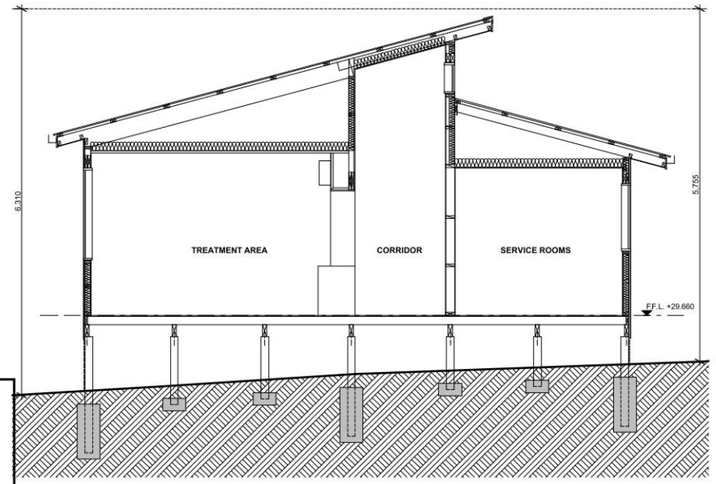
Enc: Fire safety sketch (two pages)
cc:

Dead end travel distance = 4 m
Total travel distance = 28 m



Floor Area = 270m²
Stairs & Ramps Area = 41m²

FLOOR PLAN
scale 1:100



SECTION B
scale 1:50

EXIT Exit sign locations

→ Max travel lengths

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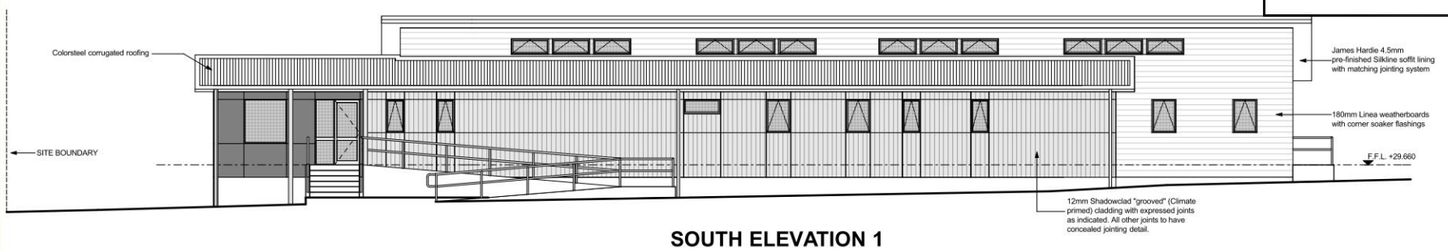
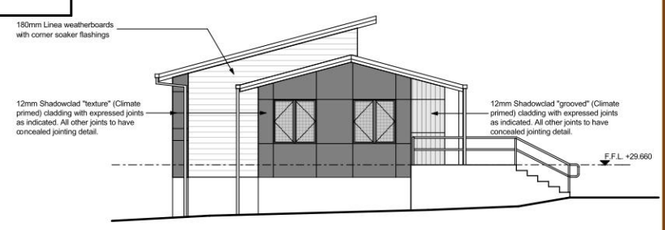
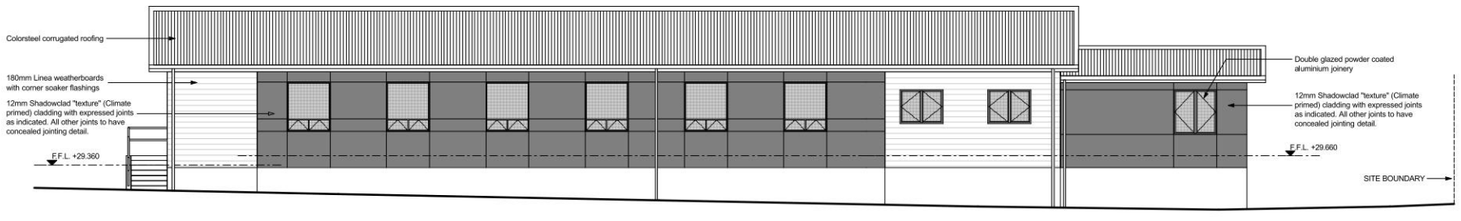
Project: Dental Clinic Henderson Intermediate			
Title: Fire Drawing			
Dwg #	FSK 05	Drawn	SDW
Revision	1	Verified	PM
Date	15 Apr 2010	Approved	



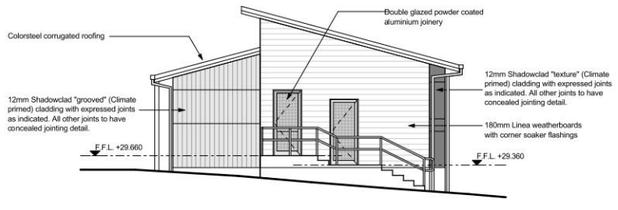
SOUTH ELEVATION 1
scale 1:100



WEST ELEVATION 2
scale 1:100



NORTH ELEVATION 3
scale 1:100



EAST ELEVATION 4
scale 1:100

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Waitemata District Health Board
Te Wai Awhina
WDHB

Fixed Oral Health Care Units

6 CHAIR FACILITY
HENDERSON INTERMEDIATE
70 Lincoln Road,
Henderson, Auckland

Scale: Original A1	Designed	PK
	Drawn	MM
	Checked	PK
	Plot Date	13/04/2010

Drawing: Floor Plan, Elevations & Section

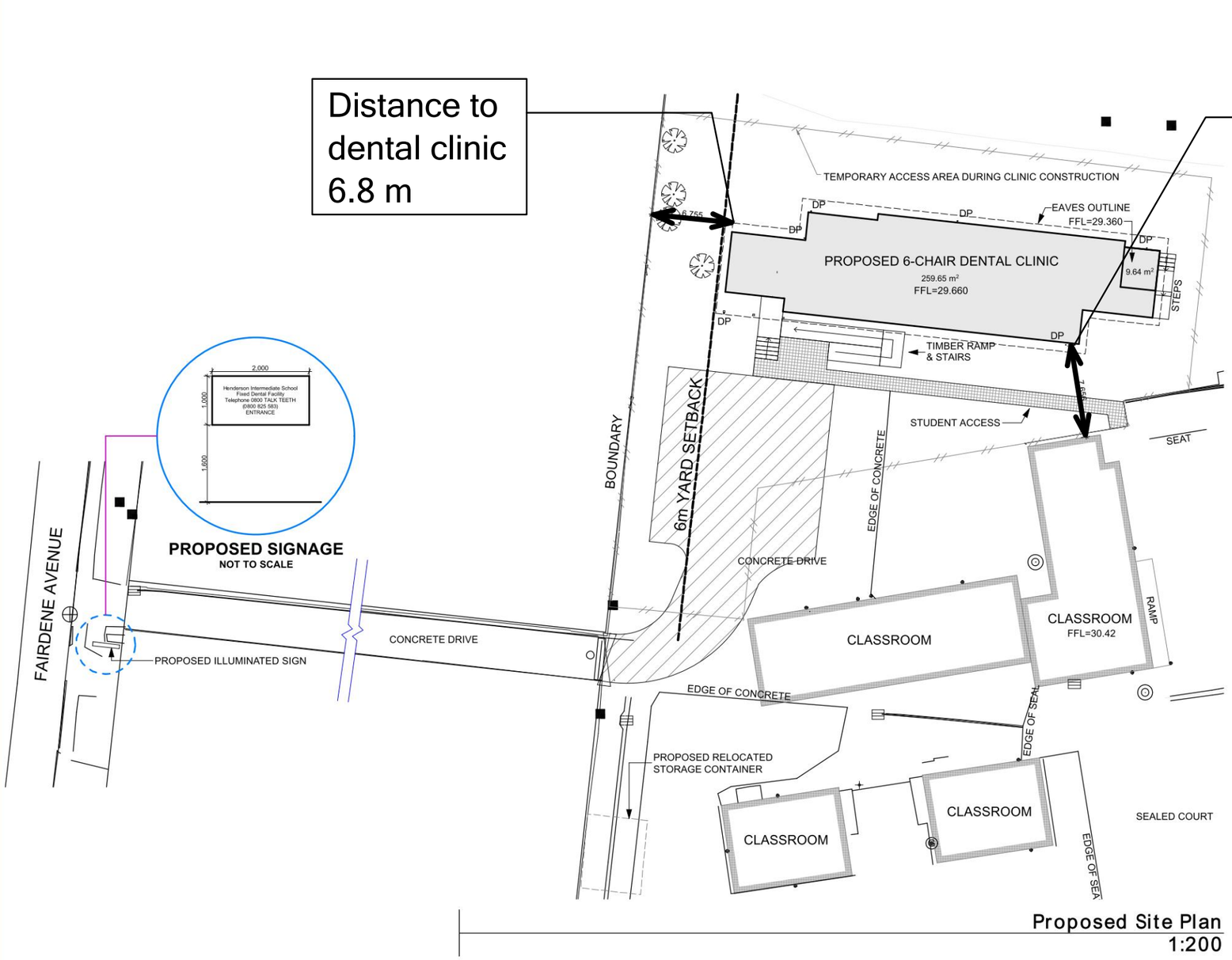
Status OUTLINE PLAN OF WORKS

Project No.	Drawing	Revision
GWD 03.1	03	-

ALL DIMENSIONS TO BE VERIFIED ON SITE

Distance to dental clinic 6.8 m

Distance to classroom 7.6 m



Proposed Site Plan
1:200

Lincoln Rd Entrance
1:50

N

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Project: Dental Clinic Henderson Intermediate

Title: Fire Drawing

Dwg #	FSK 06	Drawn	SDW
Revision	1	Verified	PM
Date	15 Apr 2010	Approved	

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GWD 03.1	02	-

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