Our Ref: D2023-015

31 January 2024

3 & 4 LLANFOYST STREET, RANDWICK

BUILDING CODE OF AUSTRALIA 2022

CAPABILITY STATEMENT FOR DA SUBMISSION

Prepared for

PARSEH LLANFOYST PTY LTD

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0.0 Author and Reviewer

Revision history

Revision No.	Reviewed by	Description	Date
R00	Dean Morton (BDC0742)	Draft	25/05/2023
R01	Dean Morton (BDC0742)	Final	26/05/2023
R02	Dean Morton (BDC0742)	Final revision 1	14/06/2023
R03	Dean Morton (BDC0742)	Final revision 2	10/07/2023
R04	Dean Morton (BDC0742)	Final revision 3	13/10/2023
R05	Dean Morton (BDC0742)	Final revision 4	23/11/2023
R06	Dean Morton (BDC0742)	Final revision 5	31/02/2024

1.0 Executive Summary

This report has been prepared to assess the architectural documentation as detailed in Part 6 in accordance with the Building Code of Australia Volume 1 (BCA) 2022 and adopted standards. The proposed development is the construction of a residential apartment building including a single storey basement car park and residential apartments.

The assessment has revealed that the proposed development will be capable of achieving compliance with BCA 2022. The following matters will require further consideration during detailed design development at the construction stage of the project:

1. The building is to adopt type A construction throughout.

2. The car park storeys are to form a single fire compartment and to adopt a general FRL of 120 minutes within that compartment including the slab to ground level.

3. The exit stair serving the above ground storeys connects 5 storeys and is required to be fire isolated, the design does not include fire isolation or compliant discharge and is to be subject to a performance solution.

4. Openings to external walls within 3m of the side boundaries will require an approved form of protection or will be subject to a performance solution.

5. The vertical separation of openings is to be achieved by DTS compliant spandrels or projections and will include in part performance solutions for the use of fire rated balustrades. Where a sprinkler system complying with AS 2118.1-2017 is provided throughout then spandrel separation of openings is not applicable.

6. The provision of fire services including sprinklers, smoke detection, fire hose reels and hydrants are to be coordinated at the construction certificate stage.

7. Disabled access is generally compliant and subject to detailed review at the construction certificate stage.

2.0 Property Description

2.1 Location

The subject building is located at 3 & 4 Llanfoyst Street, Randwick, the property is bounded to the west, north and south by residential developments. The property is taken to face east for the purpose of the report.

2.2 Building Description

Use / Classification	Class 2: apartments (ground - level 3) Class 7a: car park (basement levels 1-2) NOTE – the storage areas of the basement level 2 does not exceed 10% of the floor area of the storey and therefore not separately classified
Rise in Storeys	The development will have a rise of 5 storeys (6 storeys contained)
Compartmentation	There are no maximum floor area or volume limitations imposed to class 2 parts of the building. The class 7a parts (being combined basement level 1 and 2) will not exceed floor area of volume limitations as a single fire compartment.
Effective Height	The building will have an effective height of 12.97m (RL71.68m–RL58.71m)
Type of Construction	The building requires Type A Construction
Climate Zone	For the purposes of Section J the climate zone is 5
Population	The population as determined from table D2D18 is: **Basement level 2** – 18 persons (1 person per 30m^2 for car park) **Basement level 1** – 6 persons (1 person per 30m^2 for car park) Note the BCA does not impose a population by floor area ratio for the class 2 apartments however it is reasonable to consider a population 2 persons per bedroom for the purpose of this report.

3.0 Building Code of Australia Assessment

3.1 Fire Resistance and Stability (Section C, BCA)

Fire Resistance

The building is to comply with Clause C2D2and Specification 5, for a building required to have Type A construction. Refer to clauses S5C11-S5C20 of Specification 5 of the BCA for the specific Fire Resistance Levels [FRL's].

Lightweight construction &, fire hazard properties

Where lightweight fire rated construction is proposed for walls, the system must comply with clause C2D9 and specification 6 of the BCA and the manufactures tested specification.

The fire hazard properties of floor, wall and ceiling linings are to comply with clause C2D11 and Specification 7 of the BCA. All materials selected for use in the construction should be accompanied by a valid test report demonstrating compliance with defined fire hazard properties.

The use of combustible materials as either wall systems or as attachments to a wall are restricted under the BCA. The plans do not reflect the use of combustible materials generally.

Compartmentation & separation

Parts of the building with different classifications on the same storey must be fire separated by a fire wall of the higher FRL specified under Specification 5 of the BCA for the classifications concerned or the entire storey is to be constructed to the higher FRL. Intervening floors between different classes are required to have the FRL of the classification in the lower storey applied to the separating floor. In this regard the following is to be considered in respect of the structural design for fire resistance:

1. The basement car park levels are to adopt class 7a FRL's throughout (generally being 120 minutes) with the slab separating ground floor and part level 1 having a FRL of 120/120/120.

2. Bounding construction between residential sole occupant units (SOU) in class 2 parts are to generally achieve a FRL of 90/90/90 (loadbearing) or -/60/60 (non loadbearing). Note that permitted reductions under Specification 18 are permitted based on sprinkler protection being afforded throughout the building.

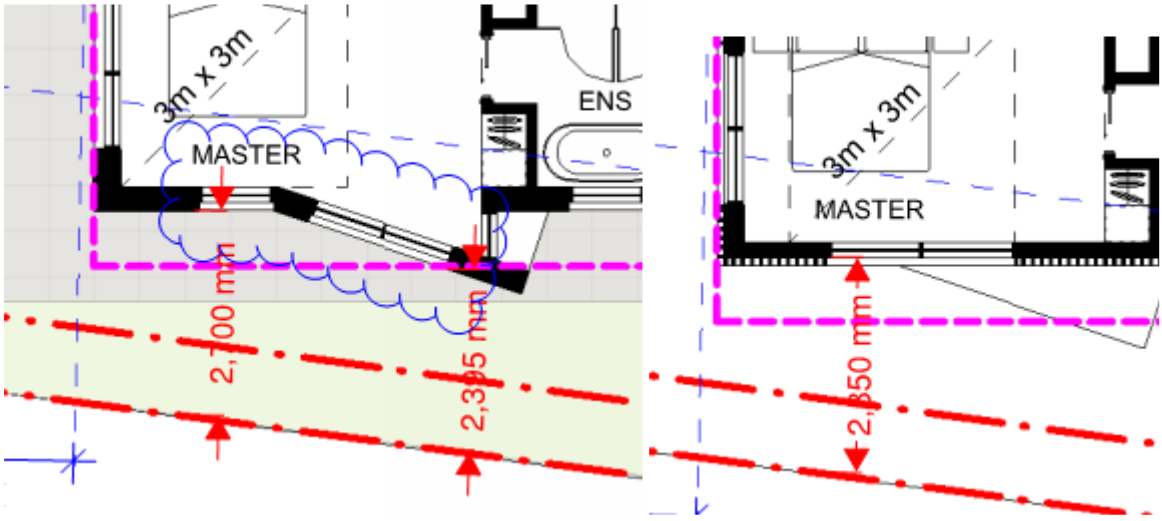
The proposed development is capable of achieving the required FRL's, and to be confirmed by the structural engineer, any reduction to FRL's is to be assessed by way of a performance solution.

Protection of Openings

There are openings to external walls within 3m of the side boundaries that will require protection in accordance with the provisions contained within Part C4 of the BCA as identified below. The form of protection is to be as per the permissible methods listed to clause C4D5 or via a performance solution.

Levels ground,1, 2 & 3:

Unit G03, 13, 23 & 32 master bedroom:



Lift landing doors to the internal lifts must achieve an FRL not less than -/60/- in accordance with Clause C4D11 of the BCA and AS 1735.11.

All entry doors to residential units must be protected by self-closing -/60/30 fire doors as per clause C4D12.

Vertical Separation of openings

The vertical protection of external openings to different storeys as per Clause C3D7 of the BCA is required where an AS 2118 part 1 sprinkler system is not provided throughout. The form of separation will be by spandrel panels to external walls being of non combustible materials with a FRL of 60/60/60 with an overall height of 900mm with a minimum height of 600mm above floor level. Where balcony projections are used they are to be a minimum of 1100mm forward of the opening and having a FRL of min 60/60/60. Where balustrade elements are proposed as part of the vertical fire separation this is to be subject to a performance solution.

The type of sprinkler system to be confirmed at the construction certificate stage.

Fire sealing of penetrations

All service penetrations must be sealed to the requirements of Clause C4D13, C4D14, C4D15 and specification 13 of the BCA.

Electrical Supply

Electrical equipment is to be separated from the building in accordance with Clause C3D14 of the BCA. The main switchboard is to be constructed to achieve a fire resistance level of 120/120/120 with the door being –/120/30 fire rated.

Protection of Equipment

The following equipment is to be fire separated with construction complying with Clause C3D13 of the BCA.

(i) lift motors and lift control panels; or
(ii) a battery or batteries installed in the building that have a voltage exceeding 12 volts and a storage capacity exceeding 200kWh.
(iii) Separation of on-site fire pumps must comply with the requirements of AS 2419.1-2021.

3.2 Access and Egress (Section D, BCA)

Number of exits required

There is a requirement for a minimum of 1 exit for each above ground storey and two exits to be provided from basement storeys and the design is considered compliant. The fire pump room will only have a single exit made available and is to be subject to a performance solution.

Exit travel distances

Exit travel distances to a required exit generally complies with Clause D2D5 and Specification 17 of the BCA.

Fire isolated exits:

The northern stair is not considered to be designed as fire isolated and are not required to be designed as such to the basement level.

The south stair accessing the fire pump room is required to be fire isolated.

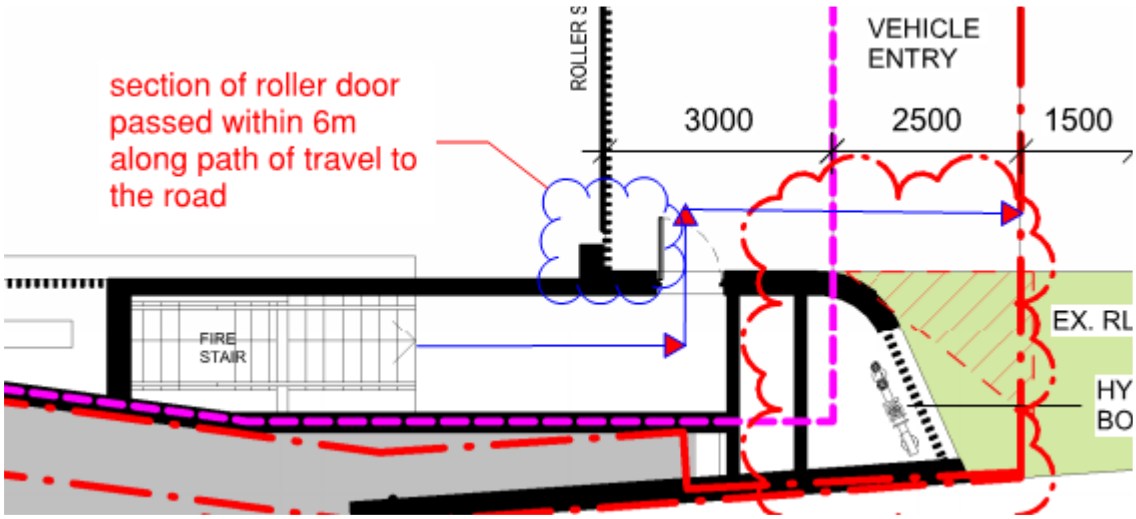
The stair serving the above ground storeys is required to be fire isolated as connects 5 storeys and is proposed as non fire isolated, in this regard the form of the stair including the discharge is to be subject to a performance solution at the construction certificate stage.

Discharge of exits:

The stair serving the above ground storeys discharges occupants internally to a non compliant location as a required fire isolated exit and a performance solution will be required to address the design configuration in this regard at the construction certificate stage.

The stair accessing the fire pump room as a fire isolated exit discharges to an enclosed space without a minimum of 1/3 open perimeter contrary to clause D2D12 and is to be subject to a performance solution at the construction certificate stage.

The south basement stair accessing the pump room requires occupants to pass by the opening formed at the roller door without compliant protection as per clause D2D12 and C4D5 and is to be subject to a performance solution at the construction certificate stage.



Dimensions of exits

Exits and paths of travel to exits are to comply with clause D2D7 of the BCA. Generally exits widths are 1m in width clear of any obstruction including hand rails or other fixtures. Reductions in width are available at doorways to not less than 750mm clear.

The required aggregate width based on the population determined in Section 2.2 of the report is generally compliant.

Construction of Stairways

Goings and risers are to be designed to comply with the provisions of Clause D3D14 of the BCA and to generally achieve a minimum going of 250mm and maximum rise of 190mm.

There is to be no step or ramp within the width of the door leaf to a door threshold unless it is an external door in which the maximum step is not to exceed 190mm. The plans generally detail compliance in this regard.

Handrails

Handrails will be provided to stairways and ramps as required by Clause D3D22 of the BCA. For non-fire isolated stairs they are to be provided both sides of the flight, and to include the basement stair through to the point of discharge.

Barriers

Barriers will be provided for all areas where it is possible to fall more than 1m from the floor level to a lower surface. In general balustrades are to have no gap that will permit a 125mm diameter sphere to pass through, balustrades protecting a difference in levels of over 4m must not have horizontal elements between 150mm and 760mm above the floor that facilitate climbing. The use of frameless glass barriers is to comply with AS 1288-2021.

Egress Doors

All exit doors swing in the direction of egress and are required to be provided with the appropriate hardware in accordance with clause D3D26 of the BCA, the latches will be downward or pushing action on a single device located between 900-1100mm above floor level.

The sliding doors to the ground floor are to include a failsafe operation to open in the event of power loss or general fire alarm.

Protection of openable windows

Openable windows in bedrooms where the floor is more than 2m above the surface beneath and with a sill height below 1.7m require restricted openings or protection in accordance with clause D3D29 of the BCA, measures to restrict the window opening may include security mesh or to restrict the opening to not permit a 125mm diameter sphere to pass through.

Where the window opening is restricted calculations are to be provided at Construction Certificate stage that sufficient natural ventilation is provided by clause F6D7. For all windows not in bedrooms where the fall exceeds 4m from floor level to the surface below the sill height is to be minimum 865mm above floor level or a balustrade or similar provided in front of the opening.

Access for people with a disability

The proposed building is required to comply with the following:

- The Disability (Access to Premises — Buildings) Standards 2010;
- Part D3 of BCA;
- Australian Standard AS 1428.1-2009, AS/NZS 1428.4.1-2009, AS/NZS 2890.6-2009

The following areas are identified with respect to further review for accessibility:

1. Lifts are to comply with AS 1735.12 and have an internal lift car dimension of 1600 x 1400mm and a clear doorway opening width of 900mm (refer to requirements for stretcher facilities also)

2. Internal (non fire isolated) and external stairs and ramps are to be provided with handrails to both sides and tactile ground surface indicators top and bottom.

3.3 Services and Equipment (Section E, BCA)

Hydrant Systems

The building is required to be provided with a system of hydrant coverage in accordance with the provisions of Clause E1D2 of the BCA and AS 2419.1-2021. The placement of the booster assembly is to be orientated to face to Llanfoyst Street. The location of the booster and configuration of access to the pump room are non compliant and to be subject to a performance solution.

The design of the hydrant service is subject to input from an accredited practitioner (fire safety).

Hose Reel Systems

The building will be provided with a fire hose reel system in accordance with the provisions of Clause E1D3 of the BCA and AS 2441-2005, this system must cover the car park areas of the development. Locations of fire hose reels are required to be located 4m from an exit. The design of the hose reel service is subject to input from an accredited practitioner (fire safety).

Portable Fire Extinguishers

Fire extinguishers are to be provided in accordance the provisions of Clause E1D14 of the BCA and AS2444 - 2001. There is to be a type ABE 2.5kg extinguisher located within 10m of the entry door to every SOU within the common corridors and provided relative to specific risks.

Exit and Emergency Lighting

Emergency lighting will be provided throughout the building in accordance with Part E4 of the BCA and AS/NZS 2293.1.2018.

Lifts

A sign must be provided in accordance with Clause E3.3 of the BCA warning against the use of lifts in a fire. Compliance with Specification E3.1 is required for an electric or electrohydraulic lift installation.

Every passenger lift is to be provided with handrails, minimum internal floor dimensions, clear door opening dimensions and car control buttons in accordance with AS1735.12 and be fitted with a series of sensory devices per clause E3.6 of the BCA.

The lift is to include a stretcher facility and fire services controls as services a storey in excess of 12m effective height.

Sprinklers

A sprinkler system in accordance with the provisions of Clauses E1D6 and E1D9, Specification 17 and 18 of the BCA throughout the building. The design of the sprinkler service is subject to input from an accredited practitioner (fire safety).

Smoke Hazard Management

The building is to be provided with the following fire and smoke detection measures:

- Class 2: An automatic smoke detection and alarm system in accordance with clause E2D8 and Specification 20 and AS 1670.1-2018 and AS 3786-2014.
- Class 7a: car park mechanical exhaust system to comply with clause E2D12 and clause 5.5 of AS 1668.1-2015 and AS 1668.2-2012.

3.4 Health and Amenity (Section F, BCA)

Damp and Weatherproofing

Adequate measures will be employed to ensure compliance Part F3 of the BCA is achieved in terms of weatherproofing, this is to include compliance with AS 4654.2-2012 in respect of waterproofing of external balconies and roof. It is advised that the building façade must be designed to comply with F3D5 or where not incorporating a DTS outcome as a performance solution against the performance solution F3P1. Roofing materials are to comply with clause F3D2.

Sanitary and Other facilities

Within each apartment there is to be facilities for cooking, washing and laundry facilities comprising a wash tub and space for a washing machine and either a clothes line min 7.5m long or space for a heat operated dryer in the same room as the washing machine. Plans generally detail compliance in this regard.

Ceiling Heights

The following minimum building ceiling heights must be maintained.

- Common kitchen, laundry or the like – 2.1m
- Corridor, passageway or the like – 2.1m
- Bathroom, shower, sanitary compartment or the like – 2.1m
- Habitable rooms including common areas and office spaces – 2.4m
- Stairways – 2.0m

Natural and Artificial Lighting

Natural lighting is to be provided class 2 sole occupancy units to habitable rooms and is to be not less than 10% of the floor are of the room concerned based on the light transmitting area of the glazing element (eg exclusive of framing elements), artificial lighting may be provided throughout other parts in accordance with the provisions of Clause F6D5 of the BCA and AS 1680.0. Compliance in general can be readily achieved and is subject to detailed design development at the construction certificate stage and where borrowed light is proposed to be demonstrated as compliant with clause F6D4.

Ventilation

The building is required to be provided with ventilation in accordance with the provisions of Clause F6D6 of the BCA. Ventilation may be provided by natural means or a mechanical system complying with AS 1668.2-2012.

Sound Transmission and Insulation

The floor separating the residential units and separating the sole occupancy units from public areas must achieve a sound insulation rating of Rw+Ctr (airborne) of not less than 50 and an Ln,w+Ci (impact) not more than 62.

Walls separating units must achieve a sound insulation rating of Rw+Ctr (airborne) of not less than 50.

Walls separating units from plant rooms, lift shafts, stairways corridors or other public areas must have an insulation rating of Rw (airborne) not less than 50.

Walls separating a bathroom, sanitary compartment, laundry or kitchen in one sole occupancy unit from a habitable room in another or separating a unit from a lift shaft must be of discontinuous construction.

The doorway separating to sole occupancy unit from the public area must have an Rw not less than 30. Soil, waste & stormwater services must be separated by construction having an Rw+Ctr (airborne) not less than:

- 40 if the room is a habitable room
- 25 if the room is a non-habitable room

3.5 Ancillary Provisions (Section G, BCA)

Cleaning of Windows

As per NSW Clause G1D5 a building must provide for a safe manner of cleaning any windows located 3 or more storeys above ground level.

This is satisfied where—

(i) the windows can be cleaned wholly from within the building; or

(ii) provision is made for the cleaning of the windows by a method complying with the Work Health and Safety Act 2011 and regulations made under that Act.

3.6 Energy Efficient Construction (Section J, BCA)

Building Fabric

Parts of the building forming an envelope to a conditioned space are to achieve the minimum construction requirements for insulation R-Values required by BCA Part J4 and for the class 2 apartments BASIX applies as does clause J4D3. It is noted that in general there are no conditioned spaces for the class 7a part.

Building Sealing

Openings in the building such as doors, windows, exhaust fans and ventilation systems forming part of an envelope to a conditioned space must be sealed to the requirements of Part J5 of the BCA to prevent loss of conditioned air and applies to the class 2 parts of the building.

In that regard, all external doorways and windows must be fitted with a draft seal, exhaust fans to have dampers, there are to be tight fitting skirting boards, cornices and architraves. The requirement for seals does not apply to fire doors fitted between the fire-isolated stairways in the conditioned areas of the building.

Air-conditioning and Ventilation System

The design of all mechanical air-conditioning and ventilation systems must achieve compliance with Part J6 of the BCA with regard to input power and efficiency features and applies to the class 2 parts of the building.

Artificial Lighting and Power

The building is to maintain maximum lighting power levels and control systems as applicable. The design of lighting systems must comply with BCA Part J7 to the class 7a parts of the building.

Hot Water Supply

Hot water supply systems will be installed in accordance with Part J8 of the BCA and AS/NZS 3500.4 and incorporate insulation to inlet and outlet lines of hot water storage units.

Access for Maintenance and Facilities for Monitoring of Energy Use

The building is to have facilities for maintenance and energy monitoring in compliance with BCA Part J9 and the NSW variations.

4.0 Fire Safety and Other Measures

4.1 Proposed Fire Safety Measures

In terms of the proposed works the following fire safety measures are proposed to be installed;

Fire Safety Measure	Standard of Performance
Access panels, doors and hoppers to fire-resisting shafts	BCA 2022 Clause C4D14
Automatic fire detection and alarm system	BCA 2022 Clause E2D8, E2D9, Spec. 20, AS 1670.1-2018, AS 3786-2014
Automatic fire suppression system	BCA 2022 Clause E1D6, E1D9, Spec. 17 & 18
Emergency lighting	BCA 2022 Clause E4D2 & E4D4, AS 2293.1-2018
Exit and directional signage	BCA 2022 Clause E4D5, (NSW E4D6) & E4D8, AS 2293.1-2018
Fire dampers	BCA 2022 Clause C4D15, AS/NZS 1668.1-2015, AS 1682.2-1990
Fire doorsets	BCA 2022 Clause C3D13, C3D14, C4D5, C4D9, C4D14, AS 1905.1-2015
Fire hydrant systems	BCA 2022 Clause E1D2, AS 2419.1-2021
Fire hose reel systems	BCA 2022 Clause E1D3, AS 2441-2005
Fire seals (protecting openings and service penetrations in fire resisting components of the building)	BCA 2022 Clause C4D15, Spec 13, Manufacturer's specifications
Lightweight construction	BCA 2022 Clause C12D9, Spec 6, Manufacturer's specifications
Mechanical air handling systems	BCA 2022 Clause E2D12, AS/NZS 1668.1-2015, AS 1668.2-2012 (clause 5.5 car park exhaust operation)
Openings in fire-isolated lift shafts	BCA 2022 Clause C4D11, AS 1735.11-1986
Portable fire extinguishers	BCA 2022 Clause E1D14, AS 2444-2001
Fire engineered solutions	TBA
Warning and operational signs	BCA 2022 Clause D3D28, D4D7, E3D4, Section 108 of the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021

5.0 Conclusion

Following an assessment of the proposed building it is considered that the proposed building is capable of compliance with the provisions of BCA 2022 and is subject to detailed design development at the time of seeking consent for construction.

6.0 Referenced plans

Architectural plans prepared by OROSI Architecture

DRAWING LIST		
DRAWING NUMBER	**DRAWING NAME**	**REVISION**
DA 1001	COVER SHEET	O
DA 1003	SITE ANALYSIS	O
DA 1004	SITE AND ROOF PLAN	O
DA 1100	BASEMENT 2	O
DA 1101	BASEMENT 1	O
DA 1102	GROUND LEVEL	O
DA 1103	FIRST LEVEL	O
DA 1104	SECOND LEVEL	O
DA 1105	THIRD LEVEL	O
DA 2001	ELEVATION SHEET 1	O
DA 2002	ELEVATION SHEET 2	O
DA 2003	ELEVATION SHEET 3	O
DA 2004	ELEVATION SHEET 4	O
DA 3001	CROSS SECTION	O
DA 3002	LONGITUDINAL SECTION	O
DA 6001	SOLAR_VIEW FROM THE SUN	O
DA 6002	SOLAR_VIEW FROM THE SUN	O
DA 6003	SOLAR_VIEW FROM THE SUN	O
DA 6004	SOLAR_VIEW FROM THE SUN	O
DA 6005	SOLAR_VIEW FROM THE SUN - EXISTING	O
DA 6006	SOLAR_VIEW FROM THE SUN - EXISTING	O
DA 6007	SOLAR_VIEW FROM THE SUN - EXISTING	O
DA 6008	SOLAR_VIEW FROM THE SUN - EXISTING	O
DA 6009	SOLAR_VIEW FROM THE SUN - COMPLYING ENVELOPE	O
DA 6010	SOLAR_VIEW FROM THE SUN - COMPLYING ENVELOPE	O
DA 6011	SOLAR_VIEW FROM THE SUN - COMPLYING ENVELOPE	O
DA 6012	SOLAR_VIEW FROM THE SUN - COMPLYING ENVELOPE	O
DA 6021	SHADOW DIAGRAMS	O
DA 6022	SHADOW DIAGRAMS	O
DA 6201	SHADOW ANALYSIS - NEIGHBOURING BUILDINGS	O
DA 6202	SHADOW ANALYSIS - NEIGHBOURING BUILDINGS	O
DA 7001	CALCULATION	O
DA 7011	SOLAR ACCESS PLANS DETAILS	O
DA 7021	VENTILATION DIAGRAM PLANS	O
DA 7031	FINISHES SCHEDULE	O
DA 7051	ADAPTABLE UNIT LAYOUT	O
Grand total: 36		