

lend lease  
barangaroo south  
building r1  
project application  
architectural design report  
\_collinsandturner





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This report supports a State Significant Application (SSA 6513\_2014) submitted to the Minister for Planning pursuant to Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act).

The application seeks approval for construction of a stand alone building known as building R1, along with associated works at Barangaroo South, as described in the Overview of Proposed Development section of this report. This Architectural Design Report specifically relates to Building R1.

The R1 SSA seeks approval for the construction and use of a building containing 804 sqm of gross floor area, together with external terraces and associated public domain and landscaping.

Barangaroo is located on the north western edge of the Sydney Central Business District, bounded by Sydney Harbour to the west and north, the historic precinct of Millers Point (for the Northern half) the Rocks and the Sydney Harbour Bridge approach to the east, and bounded to the south by a range of new development dominated by Large CBD commercial tenants.

The Barangaroo Site has been divided into three distinct redevelopment areas (from North to South) – the Headland park, Barangaroo Central and Barangaroo South. The R1 SSA site area is located within Barangaroo South as shown in the location Plan.







## 02 design excellence

### 2.1 selection process

Collins and Turner were selected as architects for R1 following a design excellence competition organised by Lend Lease. Competing architects were Lacoste and Stevenson, Draw, LAVA, Sylvester Fuller and Scale Architecture

### 2.2 practice background

Prior to establishing their practice, both Penny Collins and Huw Turner each gained over 15 years experience internationally working with industry leaders including Barangaroo's lead architects RSHP (formerly Richard Rogers Partnership). Grimshaw, Hassell, and Foster and Partners.

Since the inception of the practice in 2002, Collins and Turner has established a track record in realising unique design solutions to meet our clients' needs.

The practice consistently applies guiding principals of innovation, quality, sustainability, economic value, and social wellbeing to every project. Designs are concerned with the unique physical context of a place - sensitive to each particular local culture and climate. Collins and Turner prefer to be honest with materials, to be innovative with their potential, and to reduce visual clutter in their expression.

Collins and Turner's architectural achievement has been recognised nationally and internationally with extensive publication of projects in books and magazines, on-line, and on television. Exhibitions of our work include the 'Living the Modern' exhibition of contemporary Australian housing exhibited at the Deutsche Architektur Zentrum, Berlin, 'Abundant' the Australian Pavilion at the 2008 Venice Biennale, and 'Home - real and ideal' at the Boutwell Draper gallery in 2011.

A number of Collins and Turner projects have been recognized with design excellence awards. In 2013, the firm won the Sulman Medal ( the highest honor awarded by the Royal Australian Institute of Architects in NSW) for the Waterloo Youth Family Community Centre, along with a national award for public architecture, and state and national awards for sustainability, and the national Bluescope steel award for best steel building for the same project.

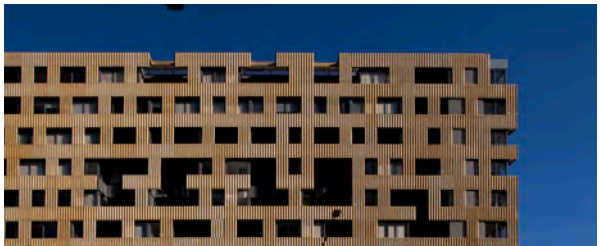
In 2009, Collins and Turner won the Aaron Bolot Award, NSW's highest award for multiple housing for a residential development at Boomerang Beach. Recent successes include in 2014, the winning of a City of Sydney design excellence competition for a high rise residential project in Waterloo.



Farmhouse  
Bombala Shire, NSW



Multiple Housing,  
Boomerang Beach NSW



Multiple housing,  
Victoria Park NSW



Waterloo Youth Family  
Community Centre, NSW



3.1  
site and brief

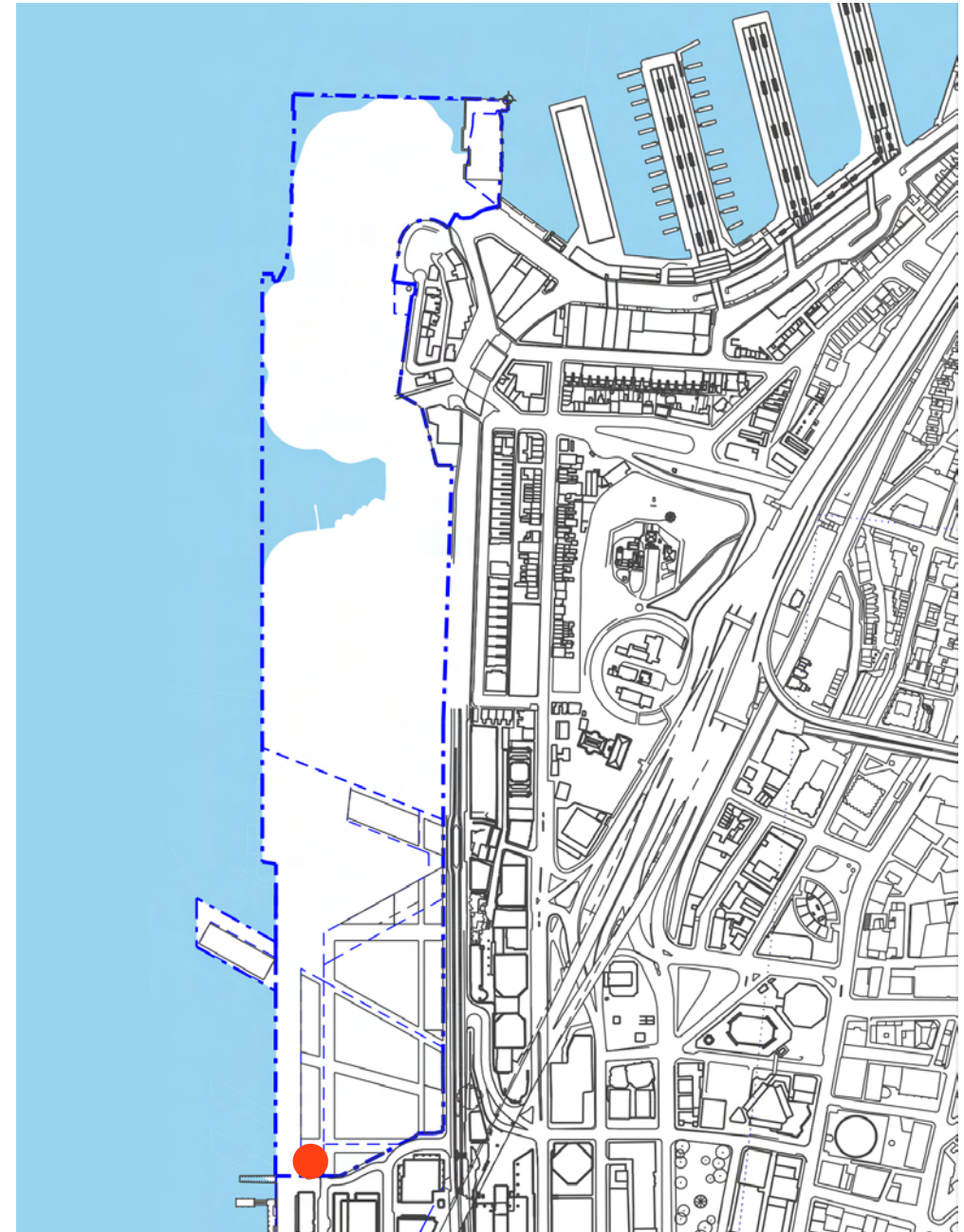
The R1 site is positioned in the South West corner of the Barangaroo Concept Plan and forms part of the residential and commercial strip along the western edge of the Barangaroo South. The site is orientated north south and marks the south-west corner of the Barangaroo development. It is positioned over the common basement to Stage 1A of South Barangaroo and will make use of the parking facilities and services allocated in the underground basement.

Towards the west, the R1 site faces the Sydney Harbour waters and borders a public promenade which connects to King Street Wharf and Darling Harbour. The foreshore promenade will have a public character with covered seating, trees and landscaping. Opposite to the R1 site, across from the promenade it is envisaged that there will be up to three ferry wharfs.

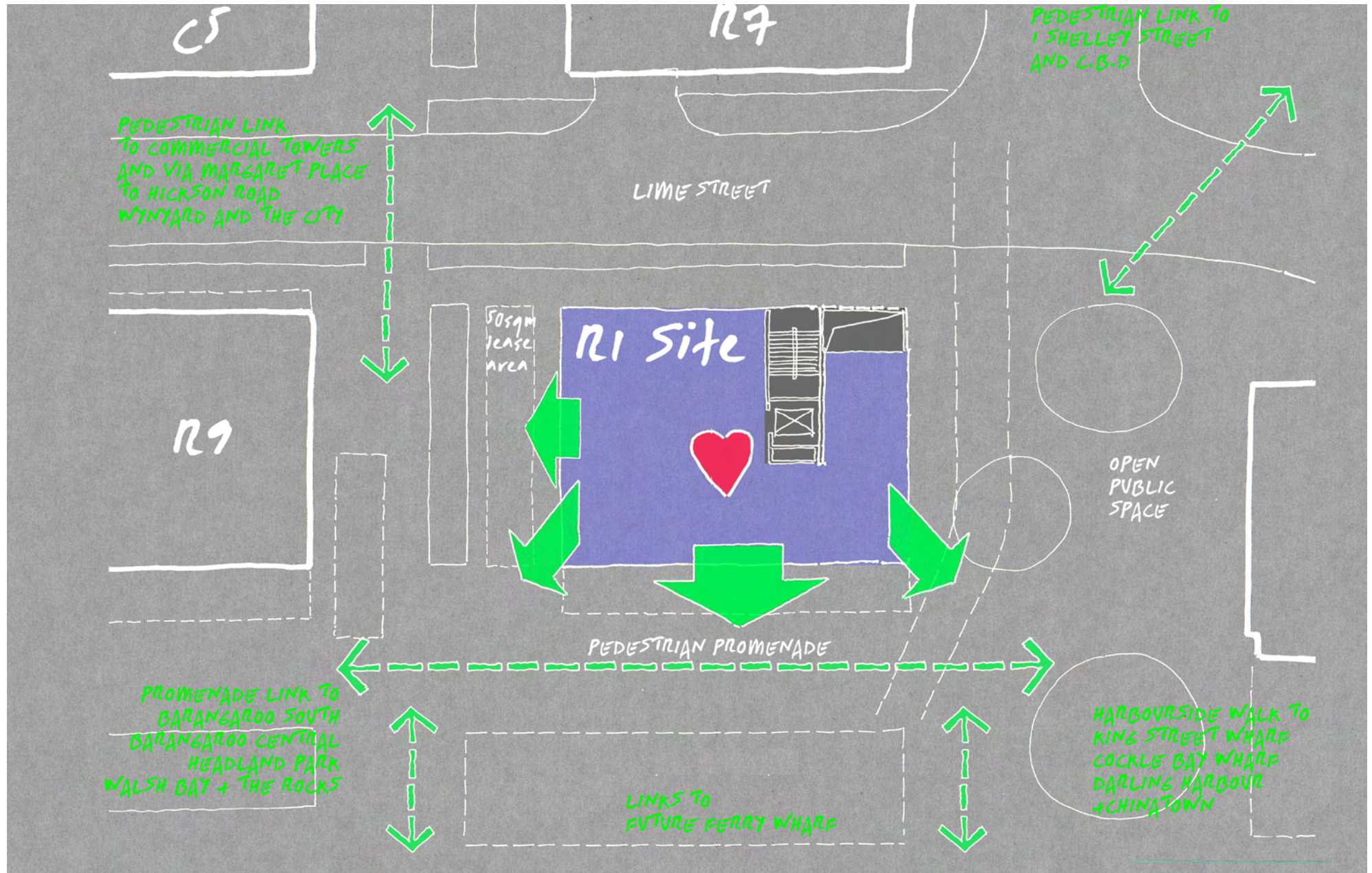
The site has a close proximity to all the amenities of the CBD, the Rocks and Darling Harbour. To the east the site is defined by Globe Street which is the main vehicular route through the Barangaroo South development. Globe Street forms the address point to R1. Transport Place and Lime Street, running east west through the Concept Plan, define the northern and southern extent of the site. These pedestrian routes connect the development back to the Sydney CBD.

The three high-rise office buildings proposed on top of three storey commercial podiums just east from R1 will bring the urban density of the Sydney CBD close towards the water's edge. This creates a contrast in conditions between east with high density buildings and the west where the site is exposed to the Sydney Harbour. The towers will overlook the R1 site.

With the office towers located to the north of R1, the solar access will be predominately from the west. The orientation of the building is therefore west towards Sydney Harbour to benefit from optimum solar access and unobstructed water views. Factors such as wind, low afternoon sun, reflectivity from the water as a result of being on the water's edge in combination with the public character of the promenade have been an influence the proposed development on the R1 site.









#### 4.1 r1 in the context of the masterplan

Planning of R1 is within a building footprint established by the Concept Plan, and incorporates services and infrastructure, the location of which are pre-determined to suit detailed Stage 1A basement design by Lend Lease Design, now under construction.

The location of the core has generated a plan that focusses public spaces on the western promenade, with service areas to the east along the newly constructed Globe street frontage

The building thus aims to serve as a high quality gateway to Barangaroo South, interfacing both the South boundary to Kings Street Wharf and the waterfront, while meditating the scale of the high towers behind it. The building provides punctuation to the edge of the public foreshore promenade, which links Pyrmont and Darling Harbour with Walsh Bay and Circular Quay.

The resulting building is designed to maximise views to the harbour and have good solar access in the afternoon.

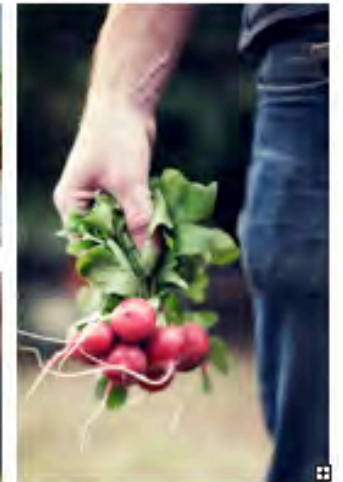
#### 5.1 design process

Since Collins and Turner's appointment, R1 has gone through an intensive design process with input from multiple parties involved.

This process has led to an effective design collaboration and design cross fertilisation in coordination with Lend Lease and their design advisors. Furthermore the R1 design has been under regular review of the Barangaroo Delivery Authority and their design advisors.

Specialist consultants for services, structure, facades and environmental sustainable design have given input throughout the process to optimize the outcome of the proposed design.

05  
concept





### 5.3 design vision - form generation

In seeking an architectural vocabulary for the building, collinsandturner looked to the kitchen for inspiration.

The building form is simple, familiar, and universally understandable - a series of stacked shallow bowls of different diameters and profiles define the external form of the structure.

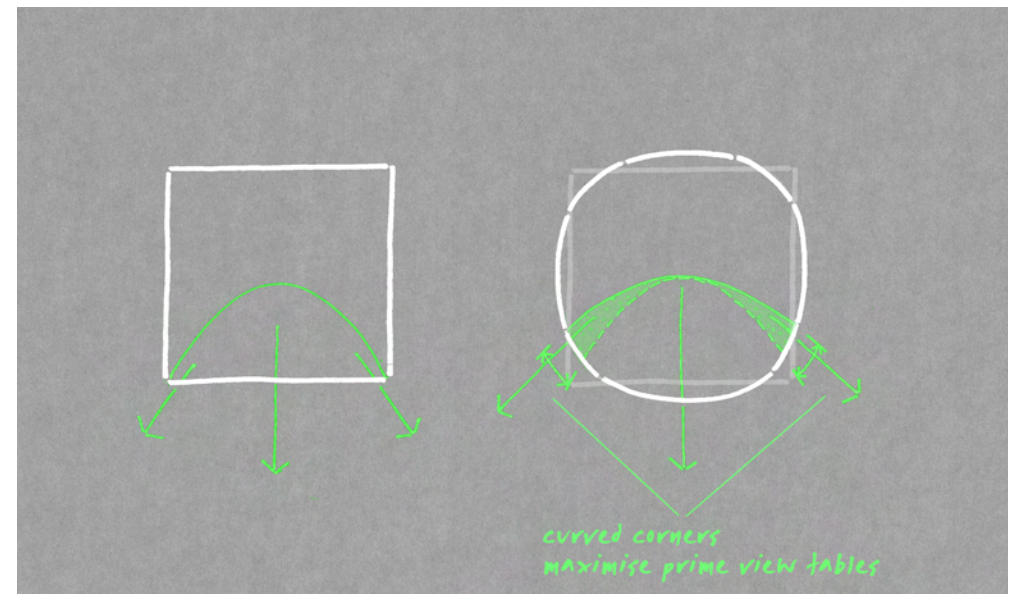
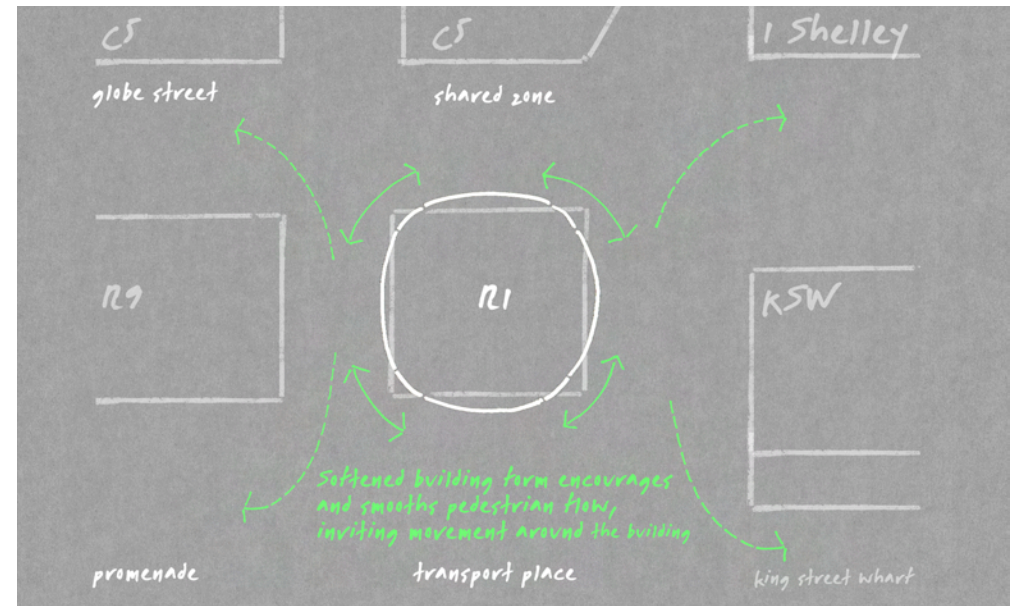
The bowls are gently curved in plan and section, converting the square plan form given in the masterplan into a softer organic shape that subtly informs pedestrian movement and view lines to the adjacent precincts, whilst ensuring that the building blurs the conventional definitions of front, back and sides.

Each curved bowl incorporates a substantial planter at the perimeter of the building.

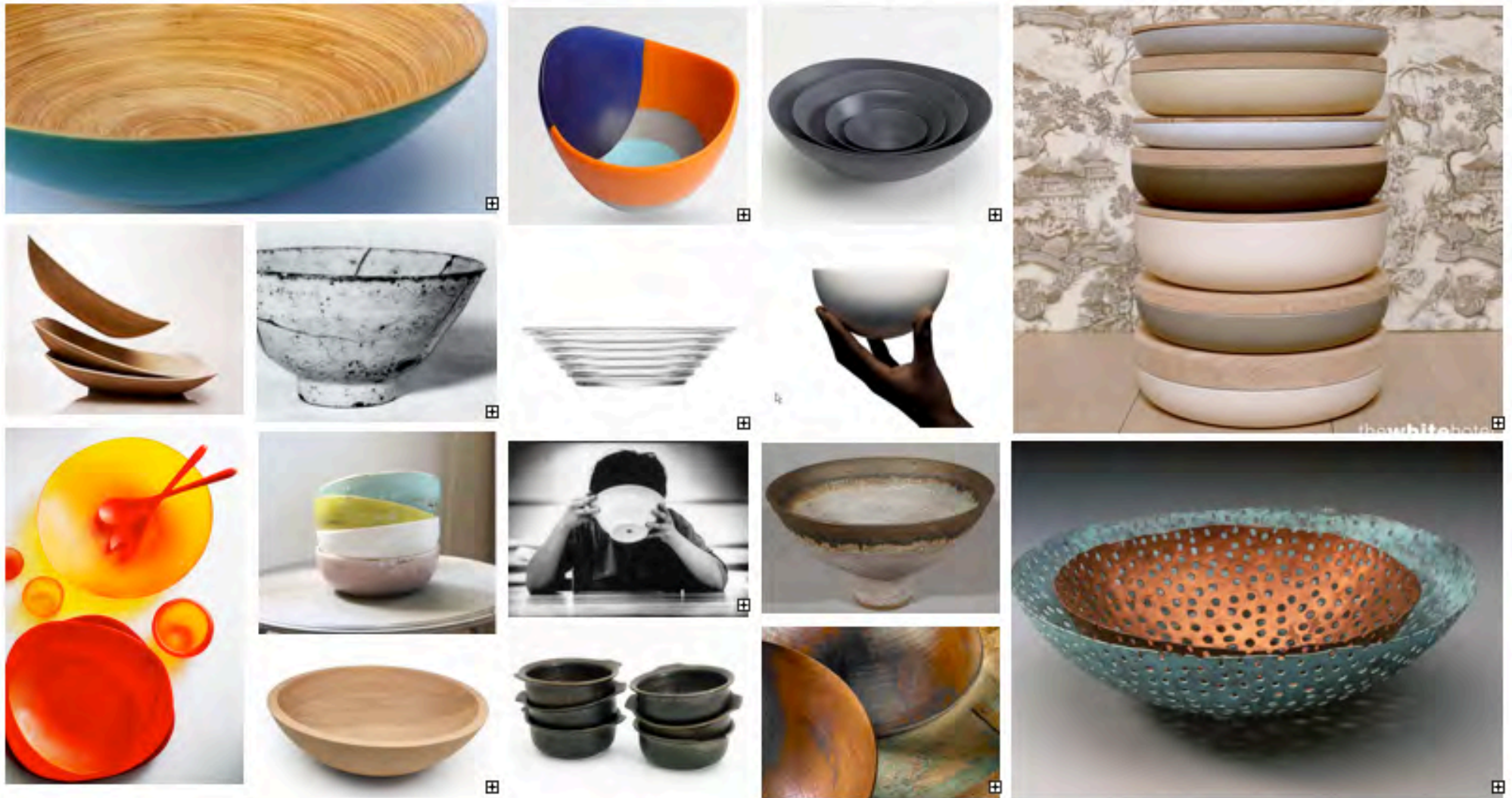
The bowls are constructed as concrete shells clad in fine tubes of a timber based material. The concentric tubes can tightly define the varying geometries of the different bowls and give a soft organic tactile quality to the building whilst also appearing sleek and futuristic.

The bowls are supported on a tripod like concrete structure, with gently inclined columns further emphasising the buildings dynamic form

Frameless operable glazing defines the perimeter of the internal spaces, with structural detail in off-form concrete where visible.



05  
concept  
reference images



\_collinsandturner



05

concept

development sketches

\_collinsandturner

## 6.1 Design Principles

R1 provides a mediating transition in scale between the towers, buildings R7, R8 and R9 and the existing waterfront structures at King Street Wharf.

The building creates a set-back alignment with the building along King Street Wharf to create a continuous active edge to the water. The ground plane of R1 engages with and will contribute to the active public character of the waterfront promenade. The strong form of the building is given depth and modulation through its façade treatment which creates a contrast of solids and voids. Landscaping is an important part of the R1 design which breaks up the scale of the building.

## 6.2 Building Scale and Massing

R1 consists of 3 storeys which are articulated as three horizontal layers. fenestration is recessed to a different depths at each level and each facade, creating a playful abstract form. Large portions of the fenestration will be operable, emphasizing further the three dimensional nature of the structure.

Viewed from the pedestrian promenade, the soffit below the roof is expressed similarly to the levels below as a louvered bowl, with daylight filtering through the layered cladding at its perimeter. Above the soffit, glazed and solid roofing provide weather protection.

## 6.3 Waterfront Interface

Building R1 is orientated towards North and West towards transport place and Sydney harbour. Whilst final internal planning will be determined to suit the needs of the future tenant, it is anticipated that back of house and service areas will likely be orientated to east and southern facades, allowing the creation of a permeable and active edge to the waterfront.

The 27 meter wide promenade between R1 and the water's edge is seen as an active "peoples place" with outdoor seating, ferry wharfs, extensive tree cover and landscaping, celebrating Sydney's unique harbour side setting. The operable western façade further helps to mediate between this contrast of community and privacy.

## 6.4 Setbacks

R1 is designed within the indicative R1 building envelope which is positioned within the site boundary of Block X of the Barangaroo Concept Plan.

Non trafficable portions of the balconies to the north and west extend across the R1 boundary as planted awnings.

To the South, balconies are located within the site boundary, and southern easement.

Along Lime street, awning projections are minimised, in order to optimise the relationship with planned mature planting, as indicated in the public domain SSDA







## 6.5 facade

The facades of R1 as conceived as vertical stack of fluid bowl forms, with a sleek organic appearance. Planting within the perimeter of each bowl is designed to soften the presentation of the building.

Following the exploration of a number of alternatives include metallic finishes, a warm timber appearance was favoured as the external material for the bowls, when viewed from the pedestrian areas surrounding the building.

The double curved form of the bowls is achieved with a series of tightly grouped concentric extruded profiles, open jointed and acting as a form of rainscreen suspended below the building superstructure.

Options in natural timber including timber reclaimed from the wharfs on site, and naturally grown bamboo have been considered in detail.

The timber sections are mounted using an integrated aluminum carrier system that fixes back the buildings concrete structure. The void between the bowl forms and structure above varies in shape, and is used to integrate building services.

A lightweight precast lightweight concrete planter forms the edge, positioned within a maintenance only walkway separated by a frameless glass windbreak which protects the public seating area.

Vertical walls between the bowls combine fixed and operable frameless glass, with opaque treatments to glazing at building services on the south, and mesh louvres to ground floor air intakes..

06  
detail section

50mm timber dowel  
soffit with 18mm gaps

operable glazing

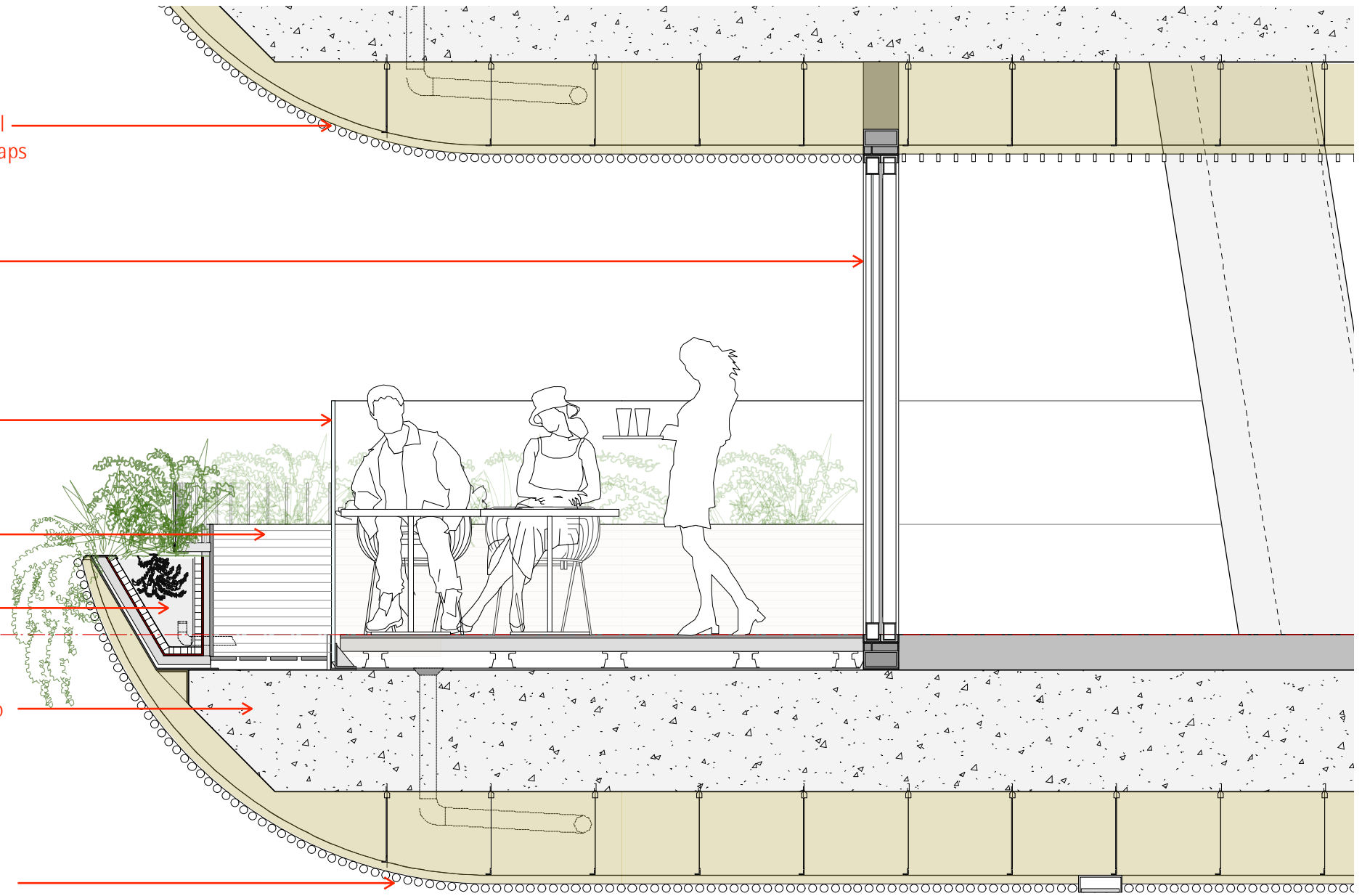
1350mm glass  
windbreak

maintenance zone

continuous  
perimeter planter

concrete waffle slab

ground level timber  
dowel soffit













#### 6.4 Rooftop

The R9 roof is highly exposed to the tall office buildings proposed as part of Barangaroo South. The roof is composed as partly private residential terraces and partly body corporate rooftop space. The five top floor apartments have private roof decks which are orientated towards the Sydney harbour.

The terraces are embraced by landscaping and have a roof of photovoltaic panels which prevent cross viewing from the commercial towers C3, C4 and C5. The communal rooftop consists of a composition of lawn, landscaping and paved areas. A lightweight roof with photovoltaic panels provides shade and privacy to dedicated communal barbeque areas. The landscaping emphasizes both horizontal as vertical planes of the R9 rooftop and provides the building with an attractive fifth façade.







## 6.4 Ground Floor and Public Domain

The building has a lofty ground floor space which orientates itself towards the public foreshore promenade and transport place. The operable façade can be opened up completely to allow for a seamless connection of the public realm into the building interior.

The promenade adjacent will have elements of seating and the LV1 bowl acts as a partial awning over this space, allowing the R1 building activity to extend into the public realm, creating a space equally between the public and R1 users.

landscaping including a public lawn and trees define the active edge of the adjacent western foreshore walk, and layer the 27m wide promenade.

R1 defines the western edge of Lime Street which is seen as an active shopping street within the Barangaroo South Master-plan. Glazed facades at ground level here provide views into R1, and it is anticipated that daily activity with the ground floor will contribute to the streetscape and provide a sense of theatre.

Building services and carpark and basement generator air intakes are located along the southern elevation at ground level, on a partially raised podium. Integrated stepped seating and extensive landscape will soften the presentation of the louvres which are located here, and serve to activate this space which looks south towards King Street Wharf and Bungalow 8.



Shared open dining, amongst plants and below overhangs  
The Grounds, Alexandria NSW

## 7.0 Environment

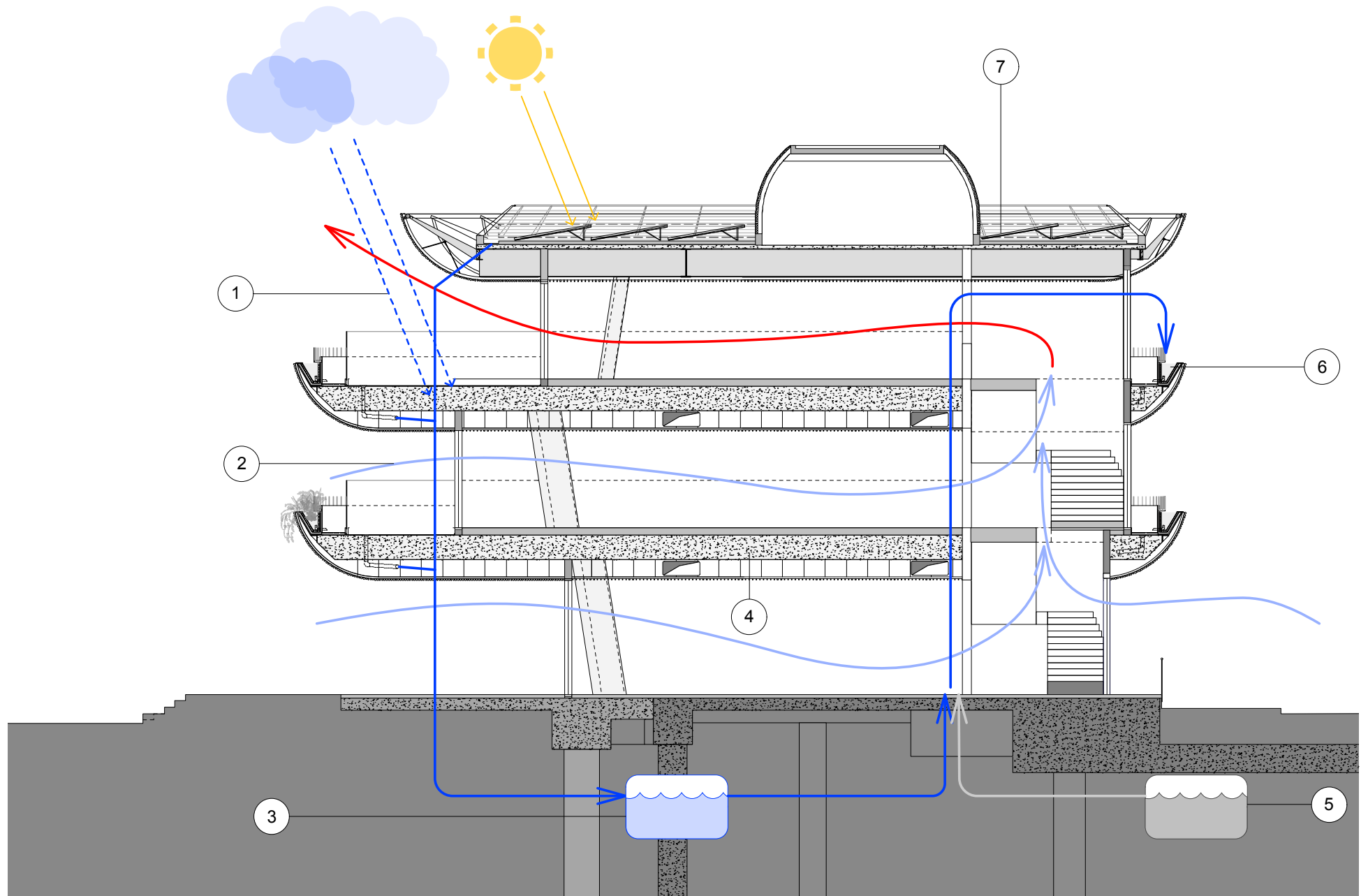
The R1 building is designed to make an important and symbolic contribution to the project-wide ESD targets for the Barangaroo South development.

The R1 building is designed to make an important and symbolic contribution to the project-wide ESD targets for the Barangaroo South development.

The following diagram summarises proposed strategies:

1. Rainwater captured on roof and terrace.
2. High level return air openings in double height dining room encourage natural ventilation via the stack effect in all internal areas. Minimum reliance on A/C systems.
3. Connection to centralised rainwater and grey water systems.
4. Concrete frame uses recycled concrete aggregate. Thermal mass of the buildings structure used for free cooling via slatted semi-open ceiling.
5. Grey water used for irrigation of building wide integrated planters.
6. Timber facade cladding utilises reclaimed timber, and is in itself recyclable,
7. Roof mounted photovoltaics further contribute to project wide renewable energy targets.
8. Low energy LED lighting will be utilised in interior and exterior building lighting. A lighting control system will calibrate light levels with external ambient levels.

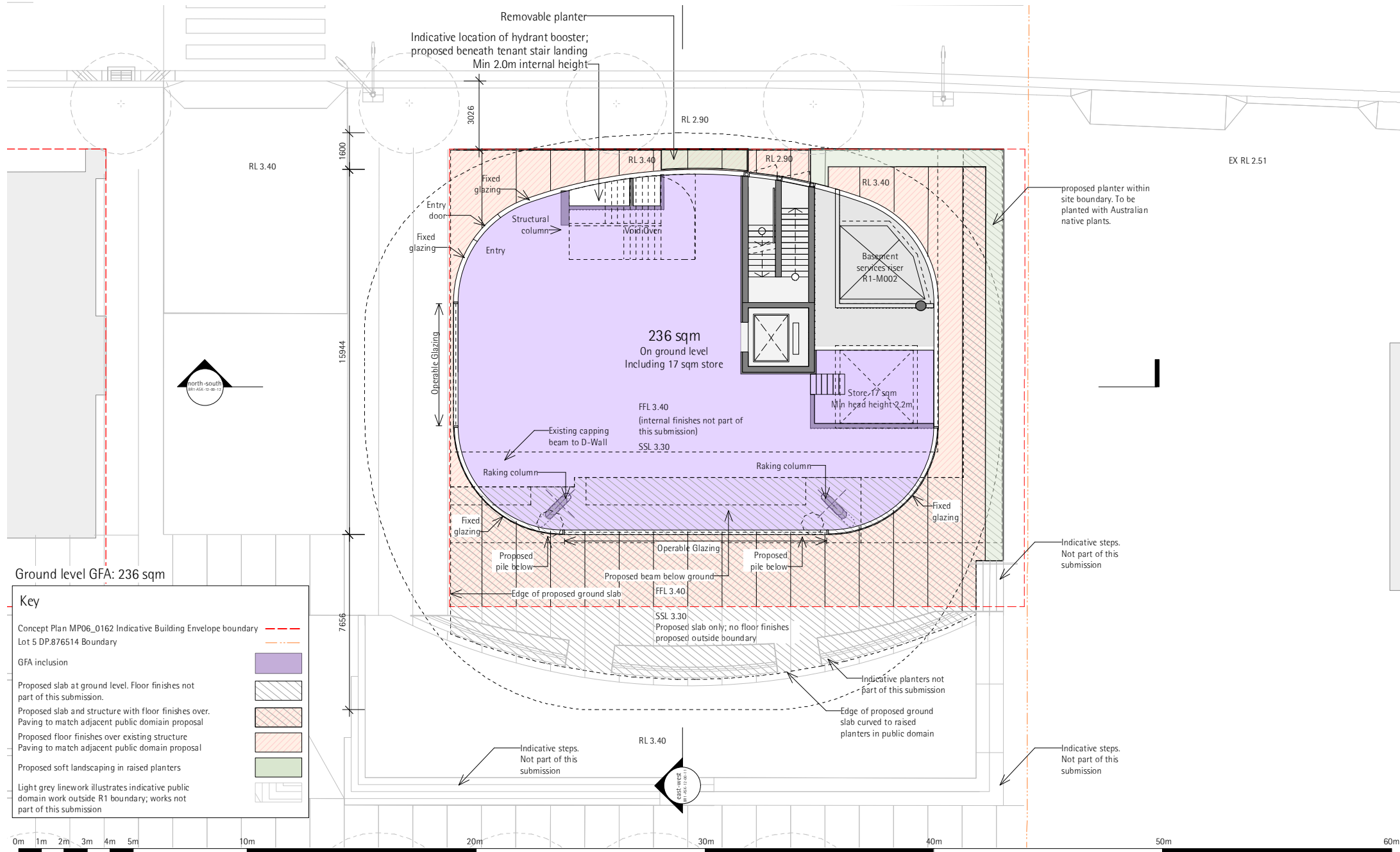




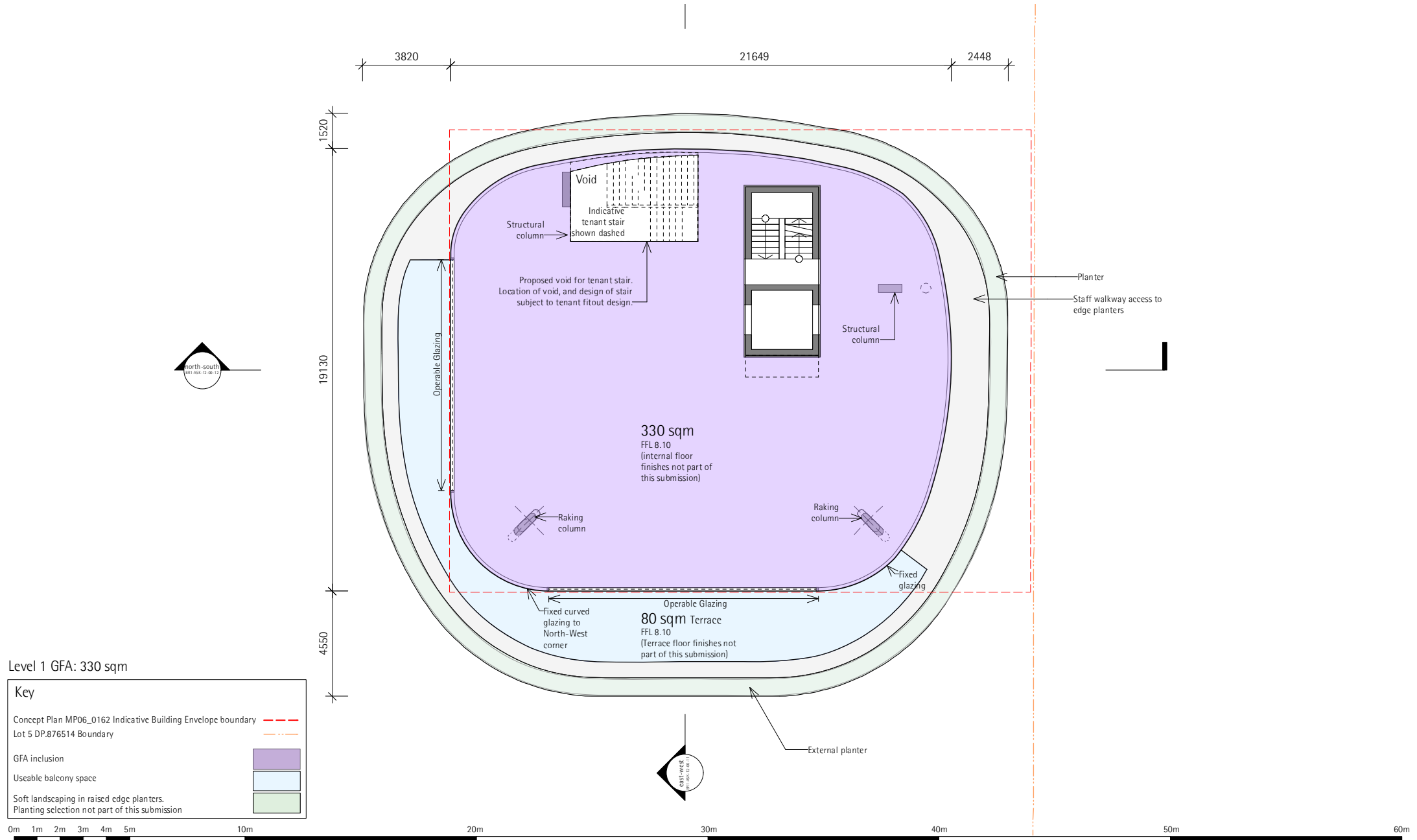
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# ground floor plan

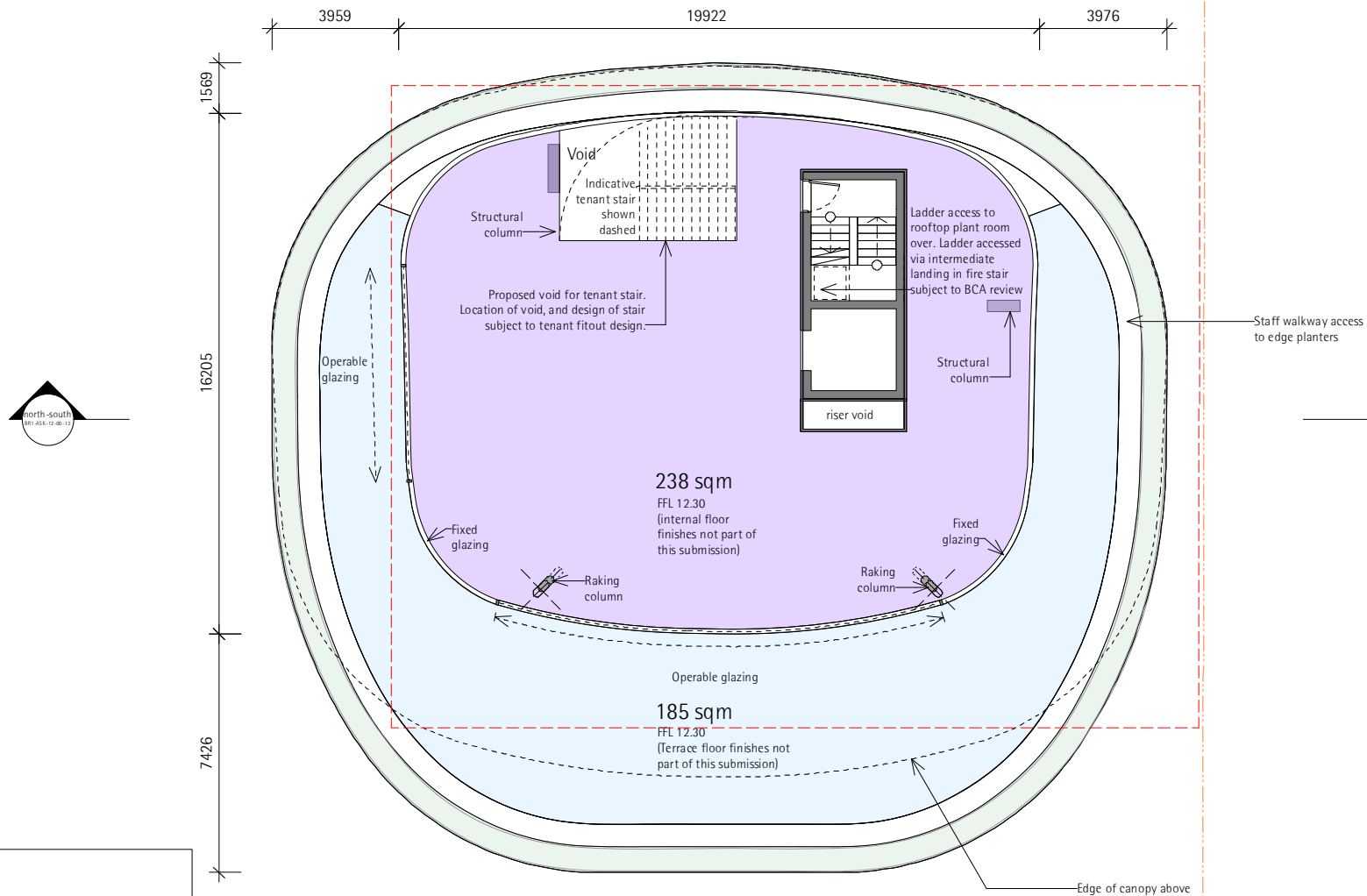


# first floor plan





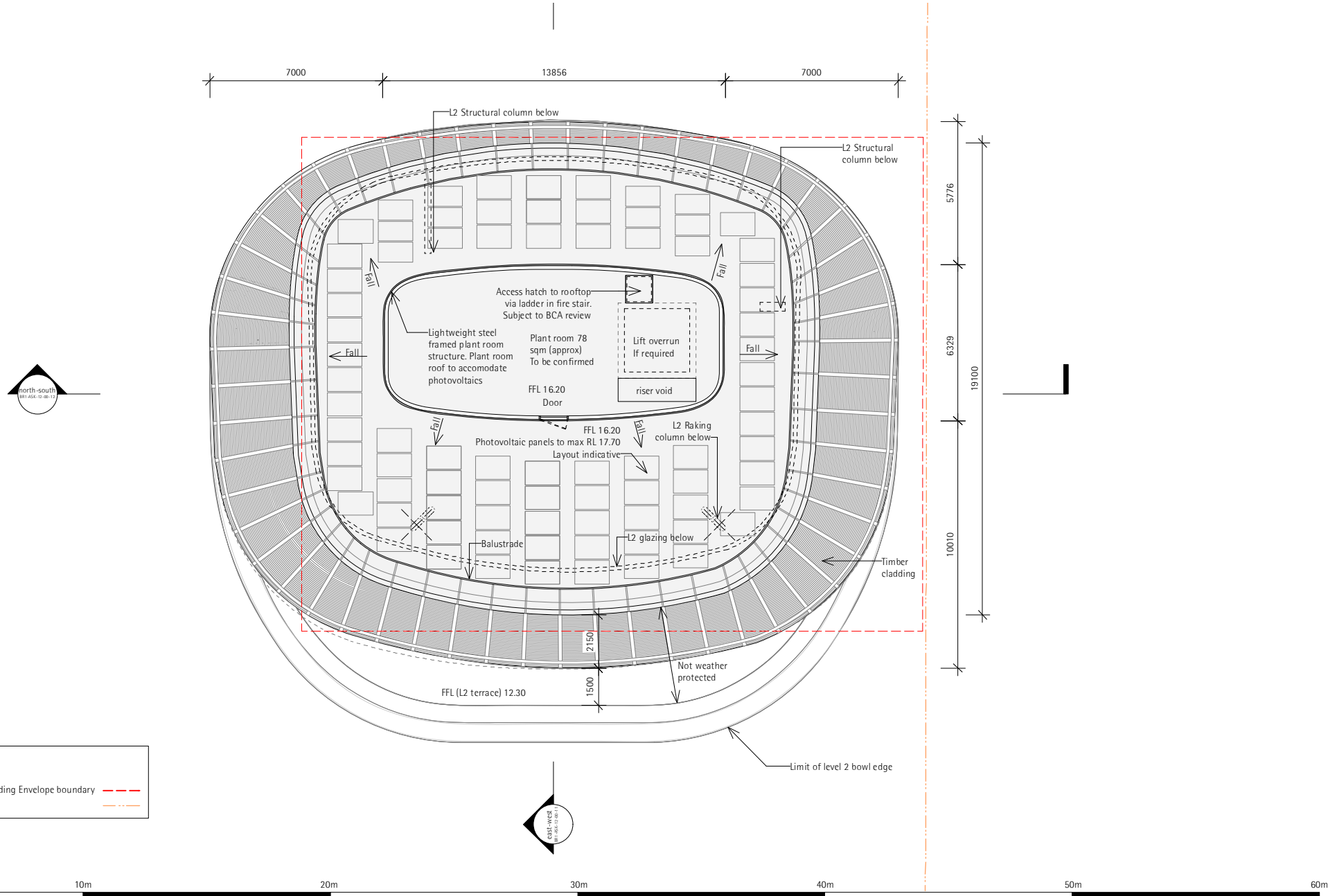
# second floor plan



Level 2 GFA: 238 sqm

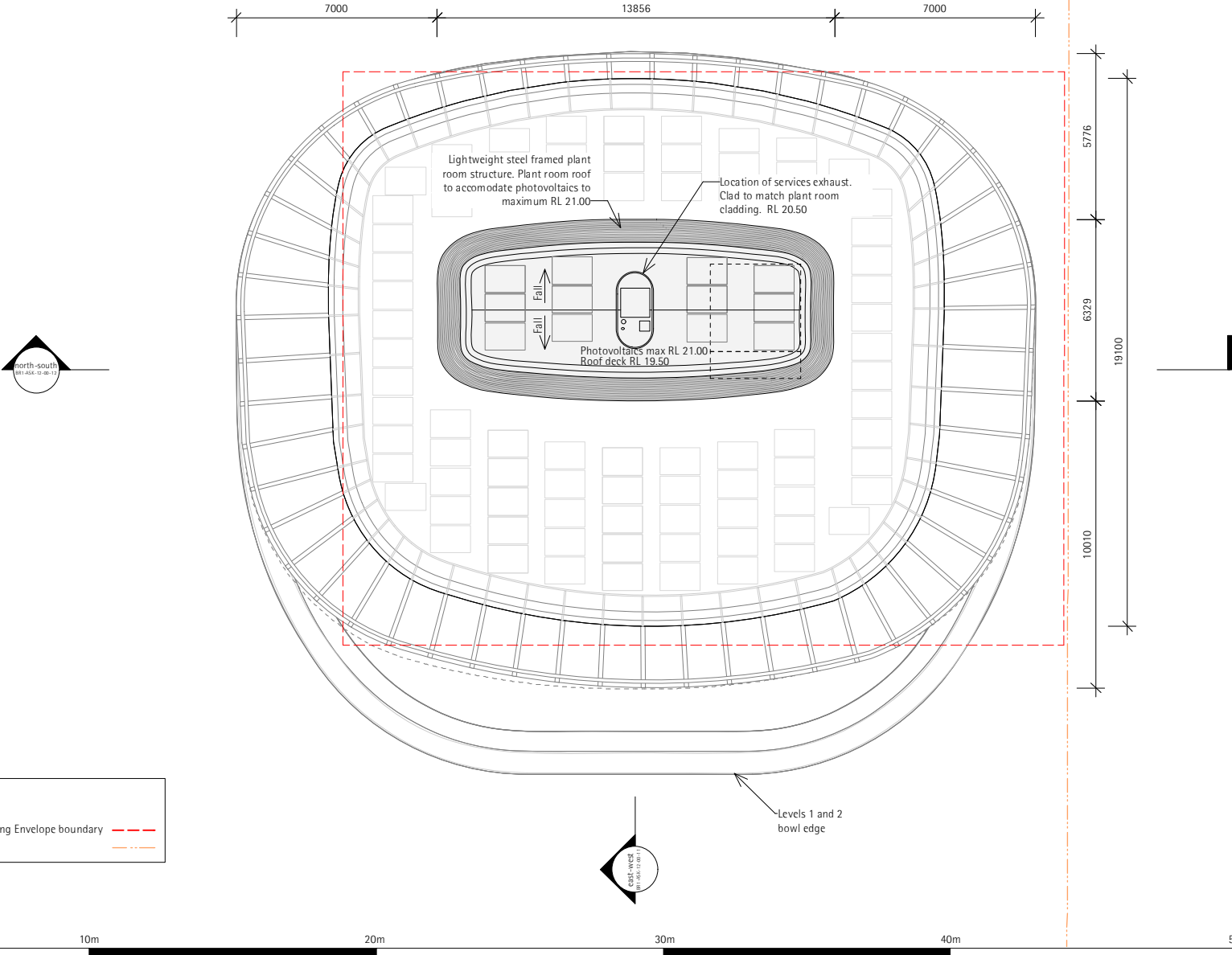
Key	
Concept Plan MP06_0162 Indicative Building Envelope boundary	---
Lot 5 DP.876514 Boundary	---
GFA inclusion	
Useable balcony space	
Soft landscaping in raised edge planters.	
Planting selection not part of this submission	

# roof plan





plant room roof plan

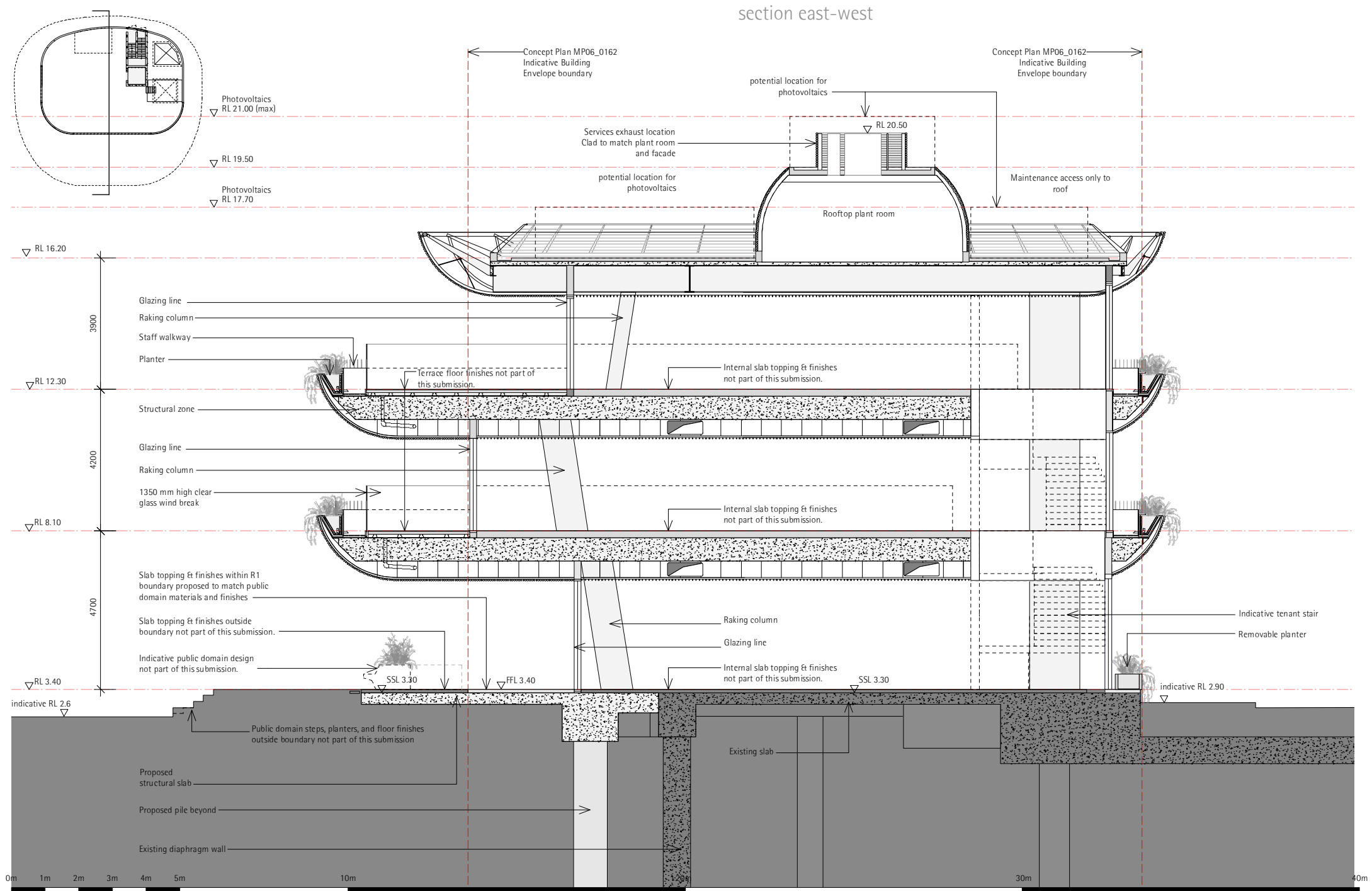


**Key**

Concept Plan MP06\_0162 Indicative Building Envelope boundary ---

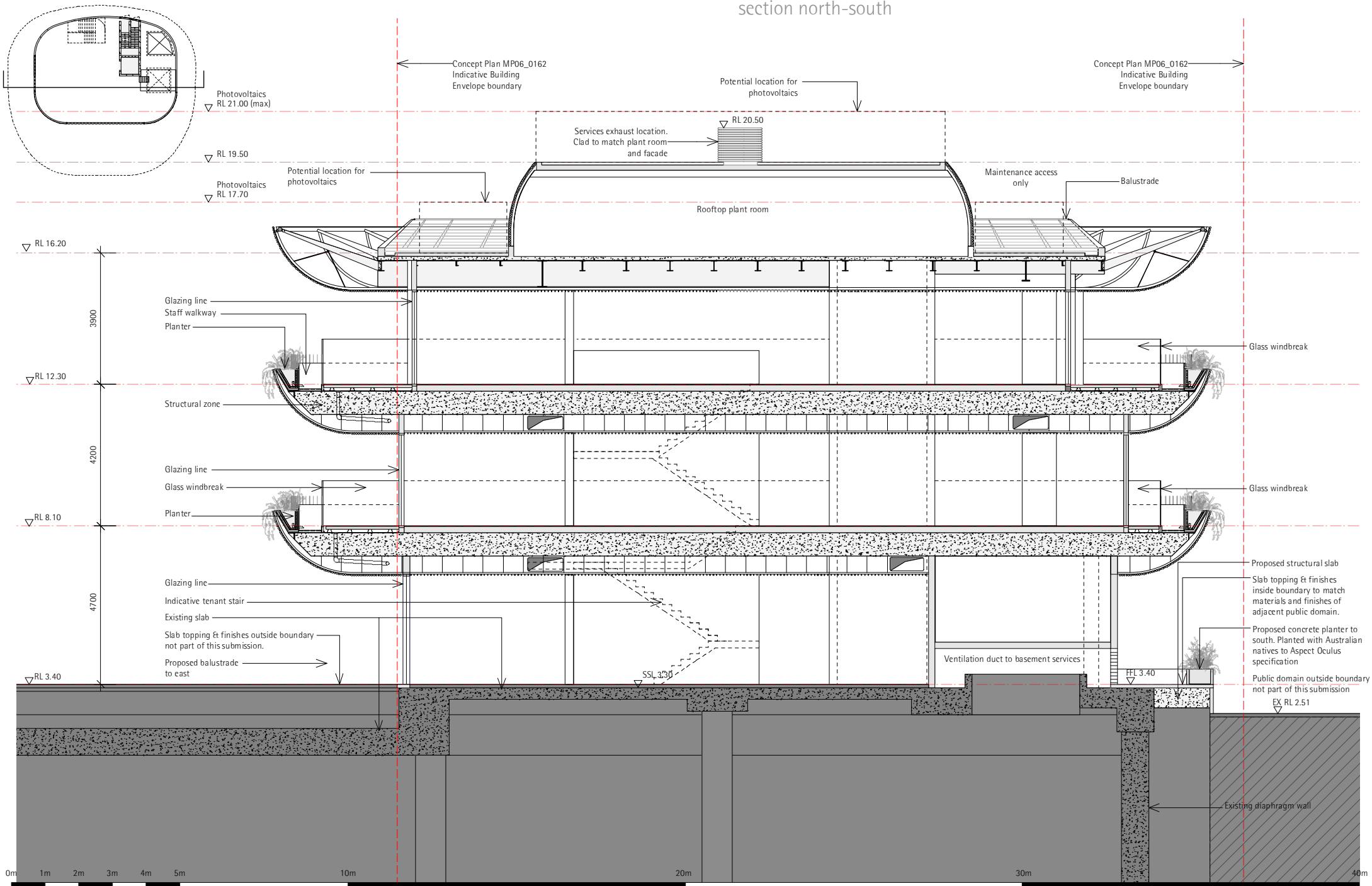
Lot 5 DP.876514 Boundary ---

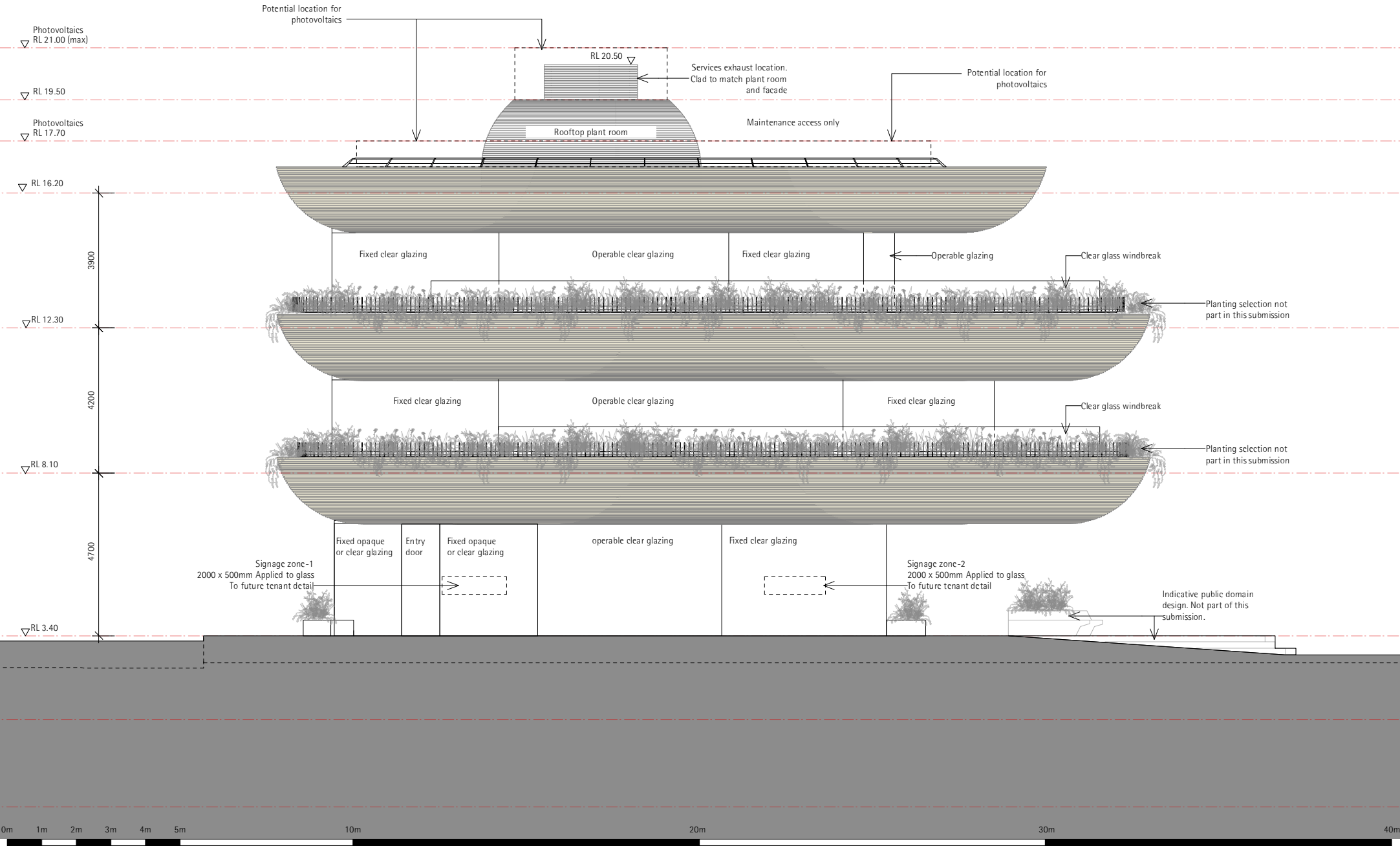
section east-west





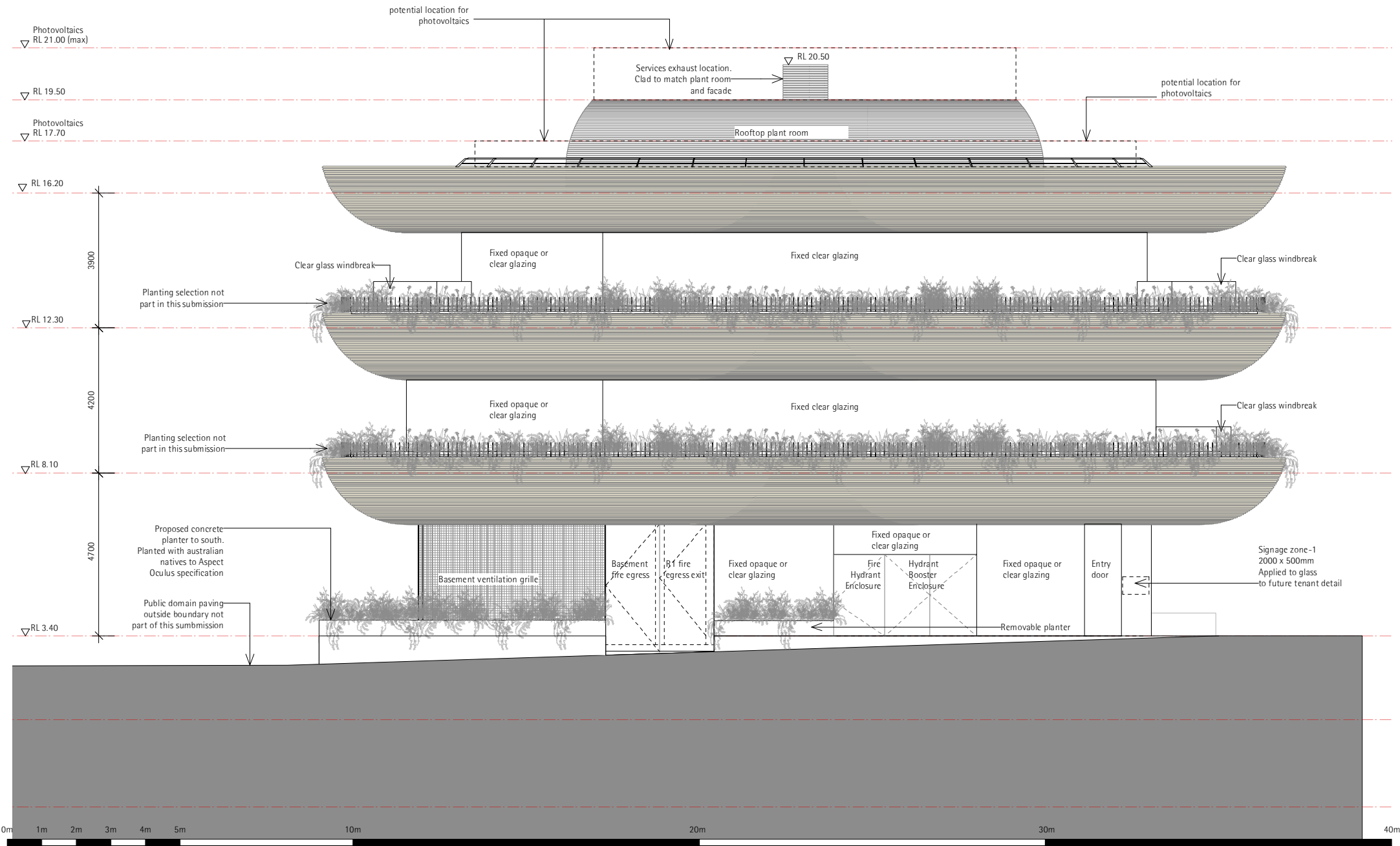
section north-south



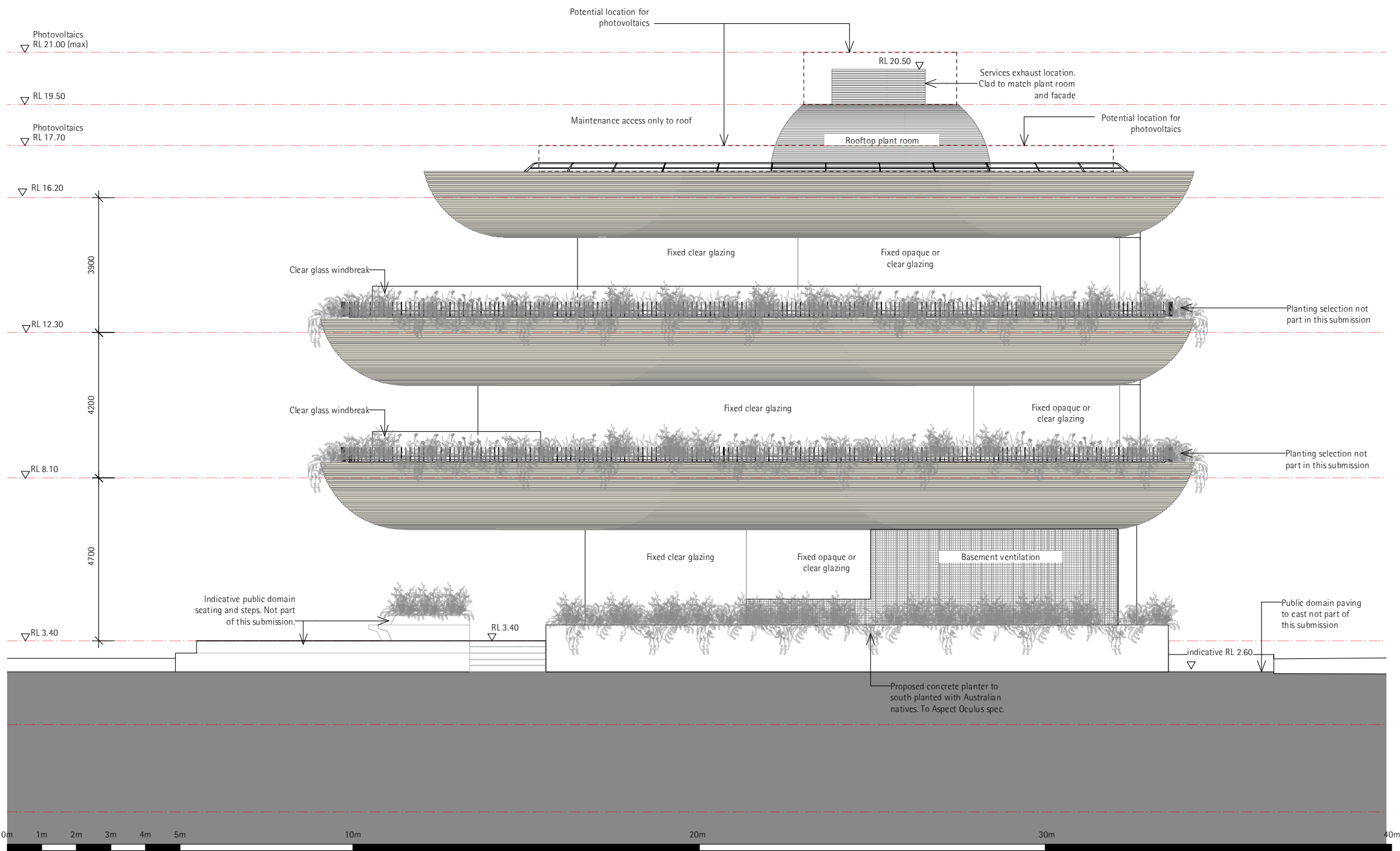




eastern elevation

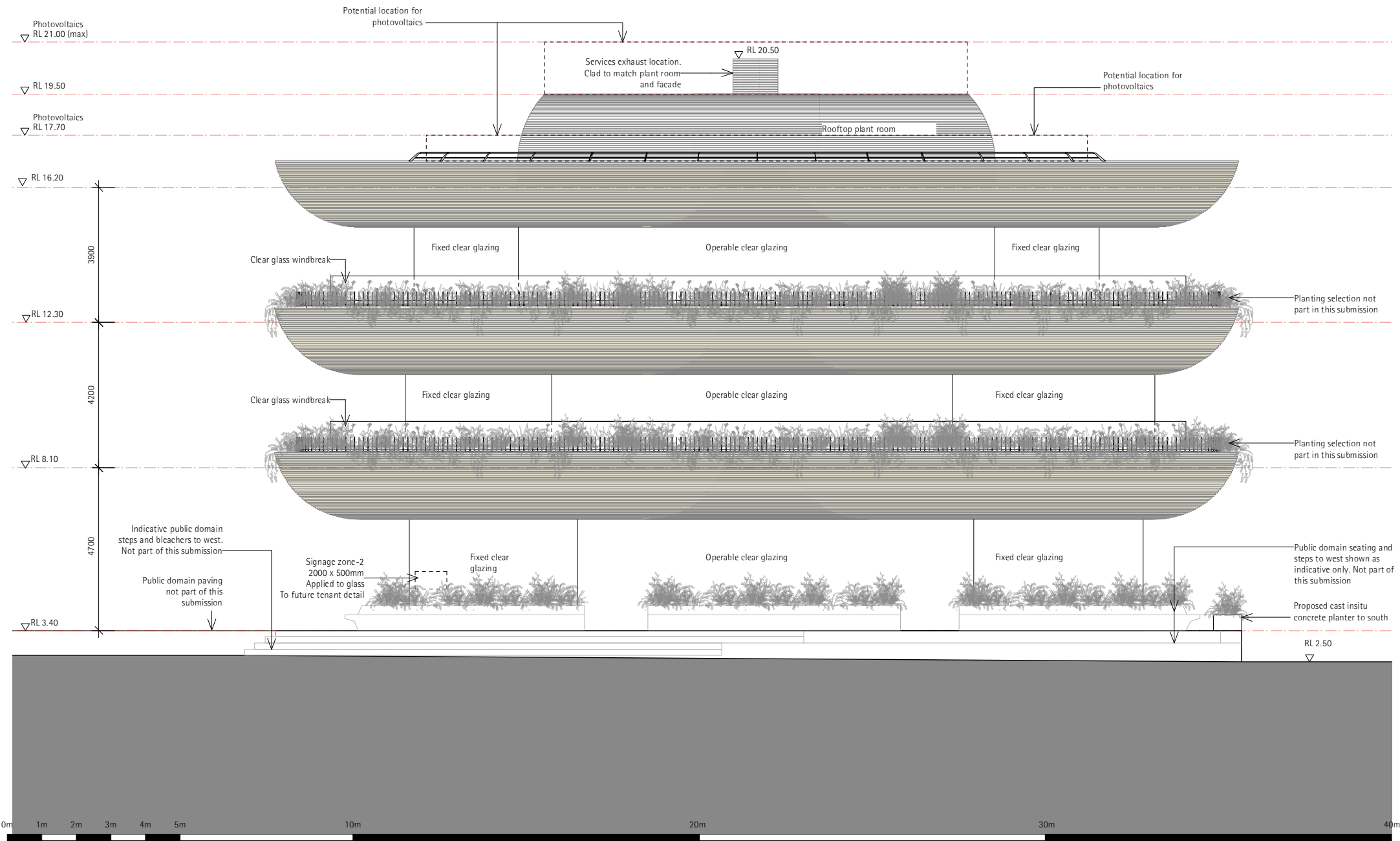


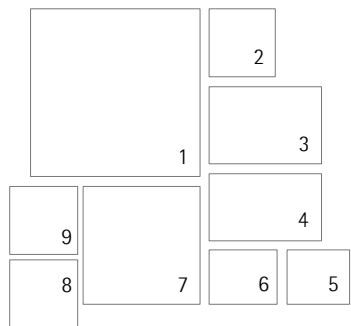
southern elevation





western elevation





Key

1. Recycled spotted gum dowels to bowl cladding, charred and sanded finish, 20-40 % sanded. e.g. by Australian Architectural Hardwood Pty. Ltd.
2. Clear glass - straight and curved
3. Ductile cast iron finish to balcony edge railings at levels 1 and 2
4. Opaque Laminated glass including dark mesh interlayer. e.g. Sefar Architectural Vision mesh by Bent + Curved Glass Pty Ltd (or similar appearance)
5. Sika Sarnafil roofing membrane
6. Dark anodised aluminium window frames: Vitrocsa or similar
7. Ventilation grille: Black powder-coated finish to Gryffin securifor-358 welded steel mesh (or similar)
8. Custom precast concrete paving to match waterfront paving as per Aspect-Oculus public domain proposal
9. Cast insitu concrete planterboxes with corrugated texture as per Aspect-Oculus public domain proposal

