



National Museum of Australia

***Proposed Gallery Development Stage
1: Life in Australia***

Submission 1.0
Public Submission

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1.0 Summary of proposal

The purpose of this submission is to refer *Gallery Development Stage 1: Life in Australia* for inquiry by the Parliamentary Standing Committee on Public Works. This project involves the redevelopment of exhibitions at the National Museum of Australia (the Museum) to create a new 1500sqm permanent exhibition of environmental history provisionally titled *Life in Australia*. The Museum proposes to undertake the redevelopment on behalf of the Commonwealth. The project value is estimated at \$20.5 million (GST exclusive) and is fully funded from the Museum.

The Museum is a body corporate established under the *National Museum of Australia Act 1980 (Cth)*. The Department of Communication and the Arts has portfolio responsibility for the Museum, which is a statutory authority within the portfolio. It was established to develop and maintain the National Historical Collection for the benefit of the nation, and to bring to life the rich and diverse stories of Australia. Central to the Museum's role as a national institution is its focus on meaningful engagement with Australians in the telling of their stories, and its commitment to the history and cultures of the First Australians. The Museum achieves this by caring for and expanding the collection, and by sharing the stories of Australia's people and places, and its social and natural environment, with national and international audiences. Today, the Museum is an outstanding institution housing engaging exhibitions; a rich and diverse collection of Australian historical material held in trust for the nation; and a place of historical research, learning, and compelling ideas and events. It is the only institution equipped to tell the comprehensive story of Australia from deep time to the present day.

The Museum has developed a Master Plan to 2030 that delivers an inspired vision for the 21st century and beyond. It outlines a transformative plan to double the size of current exhibition space and greatly extend the range of public experiences in Canberra, across the nation, and around the world. Key elements of the Plan envisage a museum in 2030 which:

- takes the Australian story into cities and regional areas across the nation through its travelling exhibitions.
'Defining Moments' schools programs and online platforms to ensure everyone has access to our history and culture, wherever they are;

- has doubled and re-imagined its current exhibition space in Canberra to bring the National Historical Collection alive in networked, participatory public galleries that merge real and virtual worlds;
- leads innovation in new experiential technologies that enable access and engagement with the nation's collections;
- showcases the Australian narrative through its international programs linked to the Department of Foreign Affairs and Trade initiatives to continue soft diplomacy outcomes;
- enhances commercial operations to raise additional own source income and develops collaborative partnerships with public and private interests to maximise resources;
- provides public access to world-class storage and conservation facilities that take people 'behind the scenes' of the Museum's work to develop and protect the nation's heritage; and
- enables national institutions to share services and facilities, and maximise the value of Commonwealth resources, through the co-operative Cultural and Corporate Shared Services Centre (CCSSC).

A key part of the Master Plan is a major program of gallery renewal. This program will see the permanent galleries redeveloped into three distinct spaces with a linked narrative experience that comprehensively tells the story of Australia. The first phase of this program is *Gallery Development Stage 1: Life in Australia*. This phase will involve the redevelopment of exhibitions original to the opening of the Museum in 2001. These exhibitions are well beyond their useful life and will be replaced with a new 1500sqm permanent gallery, containing an exhibition of environmental history provisionally titled *Life in Australia*. In creating the new gallery, modifications to the physical spaces of the building will be undertaken to increase and maximise space for exhibitions, programs, and commercial opportunities.

2.0 Need for works

2.1 The National Museum of Australia historical background

Although it is one of Australia's newest cultural institutions, the National Museum of Australia was almost 100 years in the making. Over the course of the twentieth century, proposals for a national museum were intermittent. A national inquiry in 1975 (the 'Pigott Report') finally resulted in the creation of the Museum in 1980 with the passing of the *National Museum of Australia Act 1980*. Collecting officially began with significant collections inherited from Australian Government collections, including the Australian Institute of Anatomy. A location was identified at Yarramundi Reach, Canberra.

In December 1996 the building of the National Museum of Australia was announced as the key Centenary of Federation project. Acton Peninsula was chosen as the site and the Museum officially opened on 11 March 2001.

The Museum building sits on the southern point of the Acton Peninsula with administration facilities extending north back along the eastern side of the Peninsula. The Acton Peninsula has played a major part in the history of Canberra, including being a known route of travel and a significant site for local Aboriginal communities for thousands of years; and the first site of European settlement in Canberra.

The design of the Museum was completed by a consortium consisting of architects Ashton Raggatt McDougall (ARM Architecture) and Robert Peck von Hartel Trethowan, and landscape architects Room 4.1.3. The basis of the Museum design is an interweaving of Australian stories, with key elements being a reimagining of the key axes from Walter Burley Griffin's vision for Canberra, tangling his land, water and municipal axes, and combining them with new axes to the city centre and Parliament House. A further axis is also incorporated: the Uluru line connecting the Parliamentary Triangle with Uluru, the geographic centre of the country. These tangled axes weave throughout the site, the Uluru axis running from the lake, through the building, past AIATSIS and ending in a curled red concrete ramp conceptually heading to Uluru, and are echoed by the building, which wraps around on the peninsula to take advantage of the spectacular views from the hall, galleries and administration. The key meeting point of the various axis is in the Atrium, envisaged as a great virtual knot, a metaphor for the emergence of Australian culture and a heart of 'Boolean string'. The internal form of the Atrium appears

as if it has been moulded around this knot and then the string removed, leaving a curved and sculptural space.

The 30 meter high loop at the entrance creates a landmark and provides a sheltered walkway into the Museum, and is considered to represent both the rainbow serpent from Aboriginal dreaming and a piece of the Boolean string, considered a metaphor for the strands that tie the nation together.

The Garden of Australian Dreams (GOAD) in the centre of the building interweaves the stories of Aboriginal and Torres Strait Islander and migrant communities of Australia through the overlay of the English-language map of Australia with a map of the linguistic boundaries of Indigenous Australia and the word home in 100 different languages.

The Museum's exhibitions, collections, programs and research focus on three interrelated themes, specified in the Act. They are:

- Aboriginal and Torres Strait Islander history and culture;
- Australia's history and society since 1788; and
- the interaction of people with the environment.

These areas define the Museum's intellectual and conceptual framework, which is articulated to the public through the themes of land, nation and people.

2.2 Identified need for the work

Domestically, it is clear that Australians greatly value their national cultural institutions. The most recent National Cultural Institutions Impact Report prepared by the Department of Communications and the Arts for 2016-17 showed how important these institutions are to Australia's cultural landscape. Some key findings for that year include:

- Visits to the National Collecting Institutions reached 10.7 million;
- 416,000 students visited the National Collecting Institutions; and
- 40.5 million website visits were made to their online sites.

The National Museum of Australia's contribution to this success has been significant, with:

- More than 1.8 million visits to the Museum and its programs;
- 88,500 students participating in education and teacher-guided programs at the Museum; and
- 2.1 million visits to the Museum's website.

Underpinning this is the Museum's continuing legislative mandate to develop, conserve, research and exhibit a National Historical Collection that represents Australia's rich and diverse history, as set out in the *National Museum of Australia Act 1980*. The Museum believes that the intrinsic value of its collections, and those of the other national institutions, together comprise a remarkable and peerless window into the nation's culture and society and that these collections and related programs are central to building an enterprising and successful knowledge economy in the 21st century.

As a collecting institution the Museum will continue to grow the number of objects in its collections to address both ancient and recent history, with the intent to be able to have a large number of objects on display for visitors addressing Australia's diverse history. The Museum has enacted and continues to build a schedule of special exhibitions, programs and events which are growing the number of visitors at Acton. The currency of the Museum's galleries, the number of objects they display, and the standard and quality of presentation is pivotal to the Museum's continuing success and ability to meet legislative responsibilities. As the galleries approach their 20th year, they are showing significant signs of age and will not meet the demand of growing audience numbers. Over the past five years, on-site visitor engagements at the Museum have grown by an average of 18% each year, from 600,000 in 2014, to over 1,000,000 in 2018. With increased visitation forecast to continue, addressing the age and deficiencies of current galleries is an urgent priority.

2.3 Current gallery deficiencies

Gallery Development Stage 1: Life in Australia will comprise the redevelopment of three exhibitions that are largely original to the opening of the Museum. They are:

- Circa theatre (closed in 2017 due to age and currently repurposed as programming space);
- Eternity (closed in 2017 due to age and currently repurposed as temporary display space); and

- Old New Land, the Museum's current permanent exhibition of environmental history (opened in 2001).

Two of these exhibitions closed having been retained well beyond their useful life and the option of continuing maintenance being cost prohibitive. Old New Land has remained open; however, it is also well beyond its useful life and is inadequate in its presentation and interpretation of Australia's environmental history for contemporary museum audiences. A full redevelopment of the spaces occupied by these exhibitions is the most sensible option.

Due to the age of the exhibitions, there are a number of specific deficiencies to be addressed as part of this project. These are:

- non-compliance with aspects of the building code;
- aged building services;
- aged exhibition infrastructure;
- lack of flexibility and functionality within the built architecture, including a ramp and mezzanine level;
- confusing visitor circulation throughout;
- outdated exhibition narrative, content and visitor experience; and
- inadequate display of collection and interpretative material.

The project will also address the inadequacy of the space dedicated to the Museum's permanent galleries. At 5000sqm, the galleries are less than half the size of the Australian War Memorial's galleries and 30% smaller than the National Gallery of Australia's exhibition space. In creating the new *Life in Australia* gallery, modifications to the building will be undertaken to maximise the use of existing physical spaces. An additional 430sqm of usable exhibition space will be achieved from these modifications.

2.4 Options considered in fulfilling the identified need

The Museum has undertaken an extensive period of planning to consider options for its future development. This has resulted in the following key documents and studies that have guided the Museum's proposal to undertake *Gallery Development Stage 1: Life in Australia*:

- National Museum of Australia Master Plan, 2018;

- National Museum of Australia Gallery Development Plan, 2016;
- Life in Australia Architectural Feasibility Study, 2017;
- Life in Australia Architectural Concept Design and Developed Design, 2018; and
- Life in Australia Exhibition Concept Design and Developed Design, 2018.

Extracts from a number of these documents are contained in the Confidential Submission.

2.5 Reasons for adopting the proposed course of action

Gallery Development Stage 1: Life in Australia will be a key achievement towards the realisation of the Museum's Master Plan. The current estimated cost for this project is \$20.5 million (GST exclusive) and it is fully funded from the Museum's existing capital reserves.

The Museum intends to seek non-Government sponsorship for the project. Sponsorship funds may be in addition to the estimated project budget of \$20.5 million (GST exclusive) and would be used to enhance the exhibition through a greater presentation of objects from the National Historical Collection and supplementation of technology to enhance the interactivity and interpretative reach of the exhibition.

2.6 Consultation with relevant stakeholders and key areas of concern

The following have been contacted and/or consulted by the Museum during the preparation of the submission:

- Department of Finance;
- Department of Communication and the Arts as portfolio agency;
- National Capital Authority; and
- Public Works Committee Secretariat.

Key issues raised by the above parties are detailed in relevant areas of this submission.

The Museum is undertaking a participatory process for the development of the *Life in Australia* exhibition, engaging

extensively with three well-defined groups: audiences; communities; and stakeholders. This engagement is formalised in the Museum's Engagement Strategy which articulates the definition, methods, objectives and expectations of audience, community and stakeholder engagements throughout the project.

The Museum is working closely with members of the public who have a direct connection to the content of the exhibition, including Indigenous and non-Indigenous communities. This involves informing, consulting with and involving communities in content development, and in some instances building creative partnerships to collaborate on the development of exhibits. As Indigenous perspectives and stories are integrated throughout the exhibition, engagement with Indigenous communities connected to exhibition content is a key focus of the Museum.

The Museum is also informing and consulting with stakeholders, defined as those who can affect or be affected by the project. Key stakeholders include:

- General public;
- Schools and the education sector;
- Minister for Communication and the Arts;
- Council of the National Museum of Australia;
- Indigenous Reference Group of the National Museum of Australia;
- Sponsors and other corporate partners;
- Donors and lenders of exhibition content;
- Communities and individuals associated with exhibition content;
- Specialist associations or groups;
- National Capital Authority; and
- Other museums.

The Museum is also undertaking a formal process of independent audience evaluation throughout the project to seek feedback from potential visitors on the experience content and design of the *Life in Australia* exhibition.

2.7 Description of the site

The Museum is located on the Acton Peninsula and is surrounded by National Capital Authority Land accessed via Lawson Crescent. Positioned prominently on the peninsula, the iconic form and architecture of the Museum is visible from key vantage points within the Parliamentary Triangle and surrounding areas. The Museum offers vantage points across the lake to the city; to Parliament House; to the National Library; and to New Acton.



Figure 2.7.1 Location of the National Museum of Australia on Acton Peninsula



Figure 2.7.2 Detailed site view of the National Museum of Australia

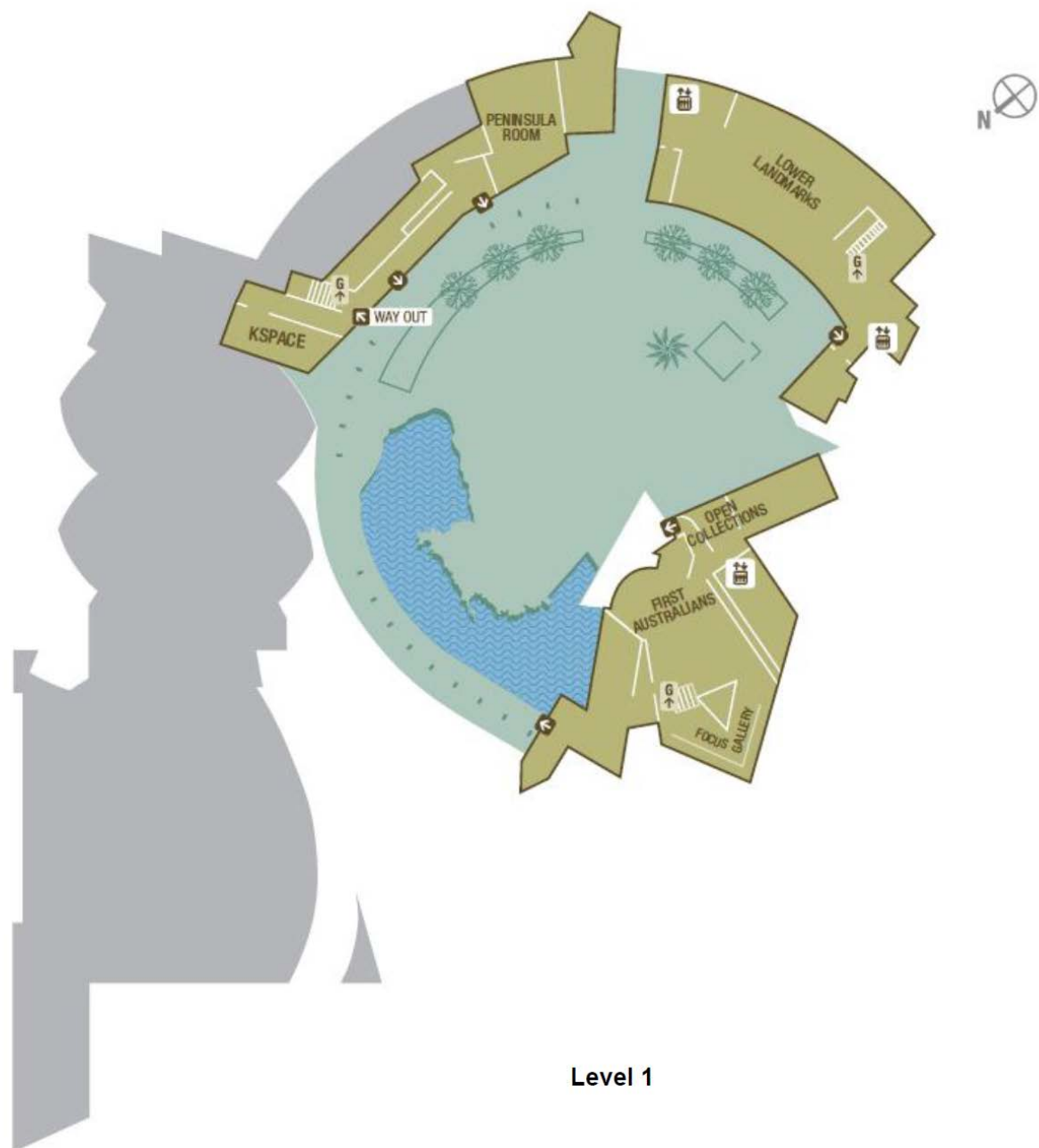


Figure 2.7.3 Level 1 – National Museum of Australia

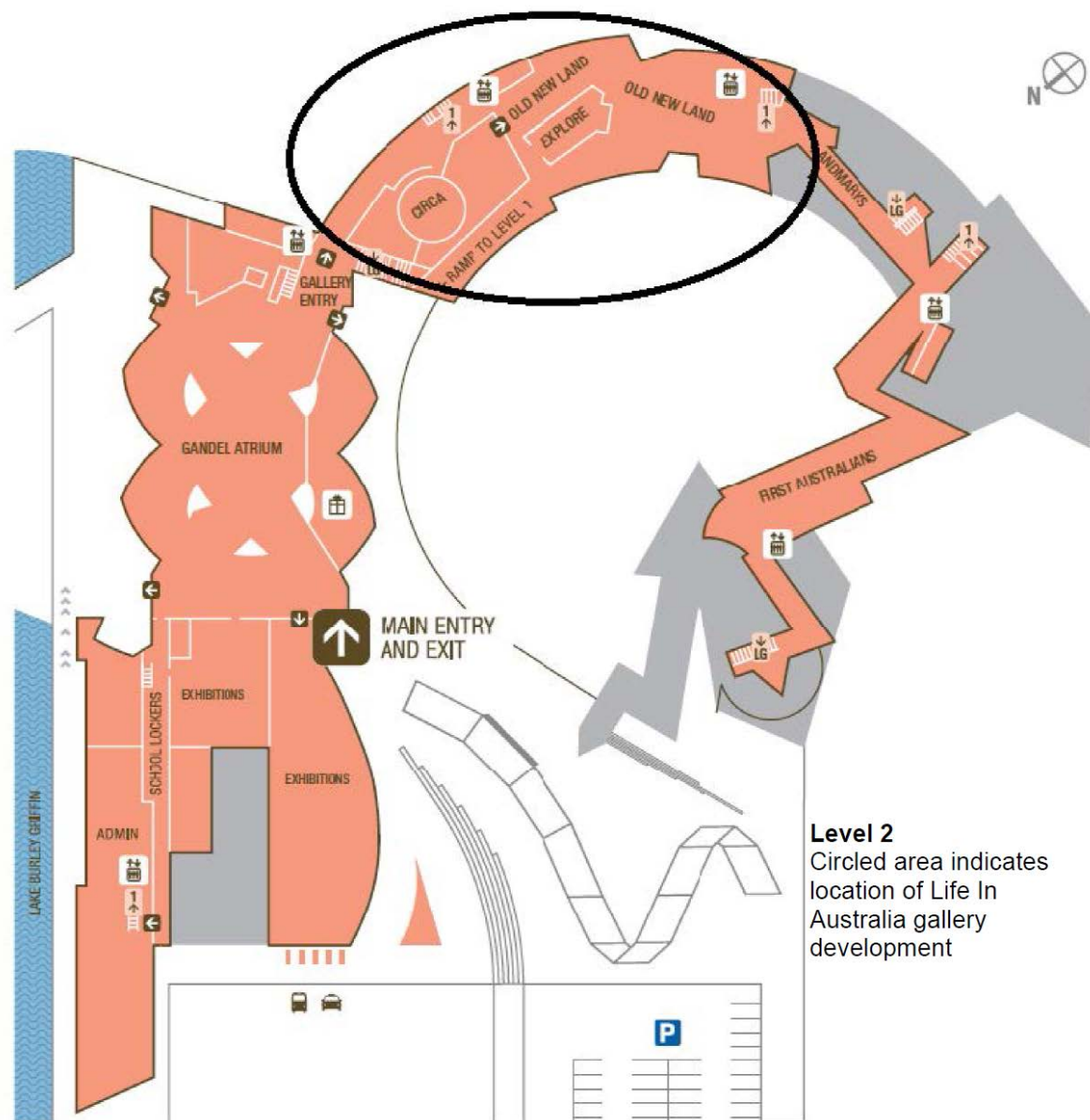


Figure 2.7.4 Level 2 – National Museum of Australia

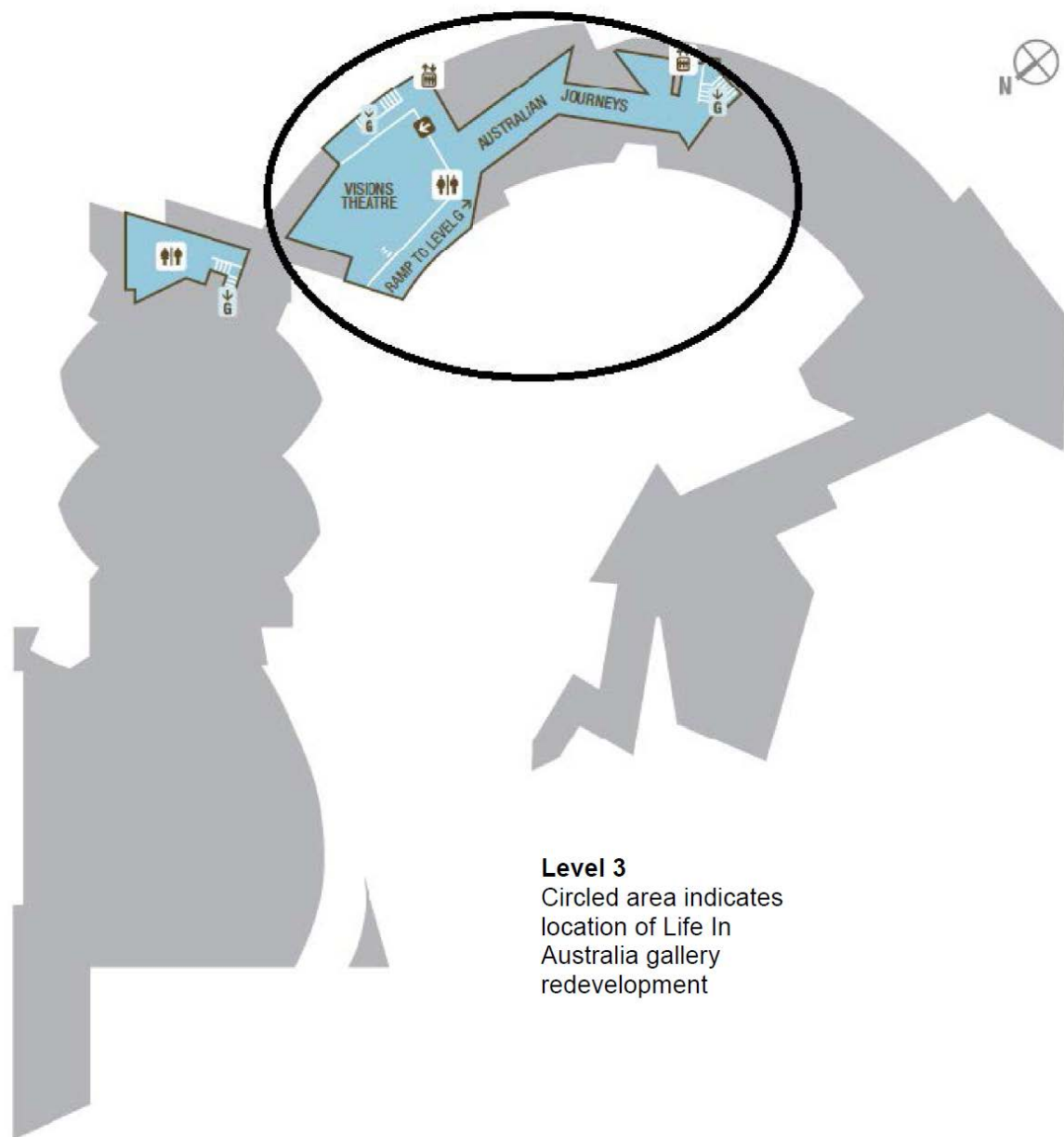


Figure 2.7.5 Level 3 – National Museum of Australia

Gallery Development Stage 1: Life in Australia is almost wholly contained within the existing Museum building. The exception to this is the creation of a new external stair, the location of which is indicated in the annotated façade picture below.



Figure 2.7.6 Location for proposed external stair

2.8 Local road and traffic concerns

The Museum is located on the point of Acton Peninsula. The Peninsula has single road access from a major arterial road (Parkes Way, Canberra).

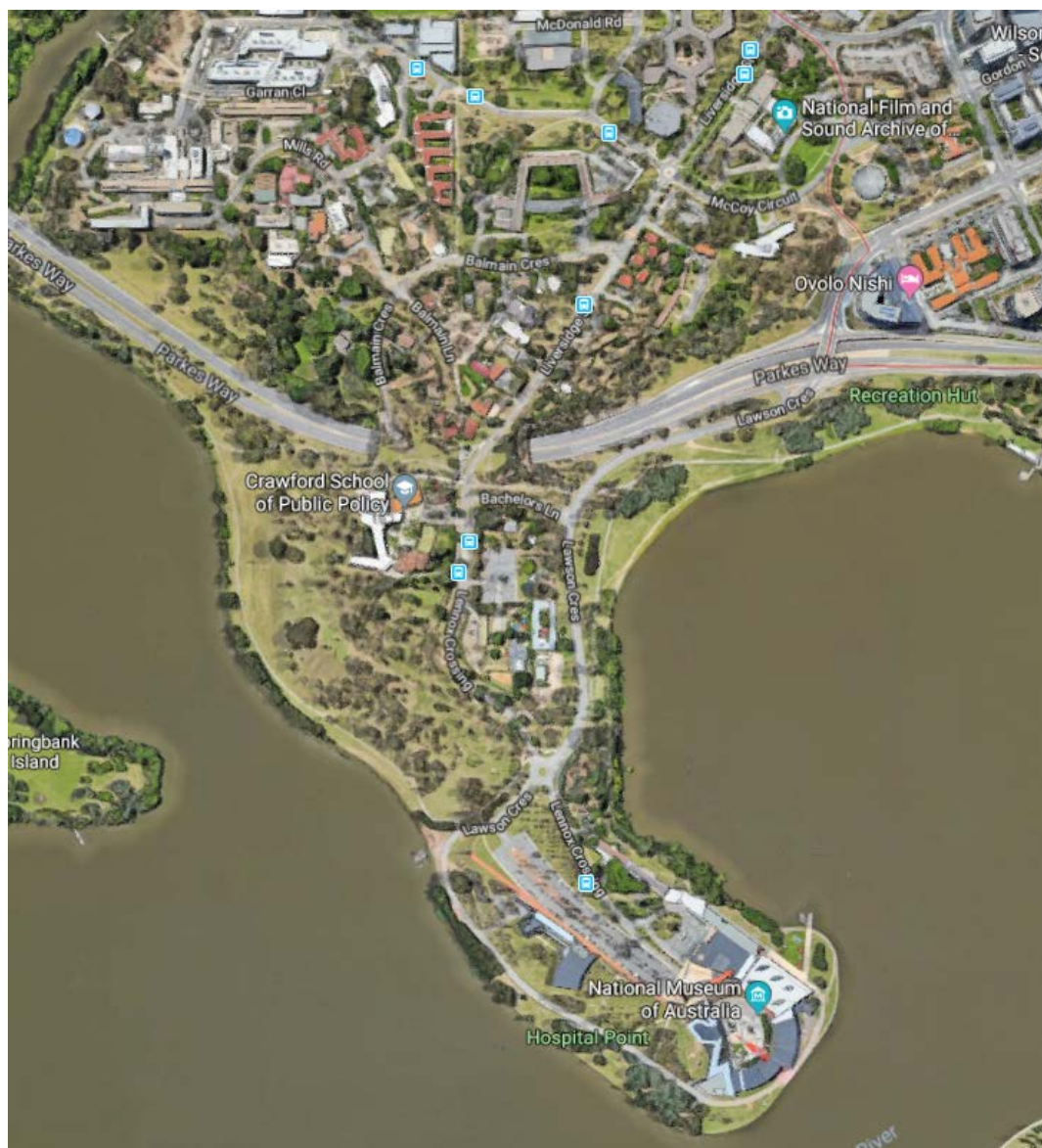


Figure 2.8.1 Location of National Museum of Australia in relation to Lawson Crescent and Parkes Way

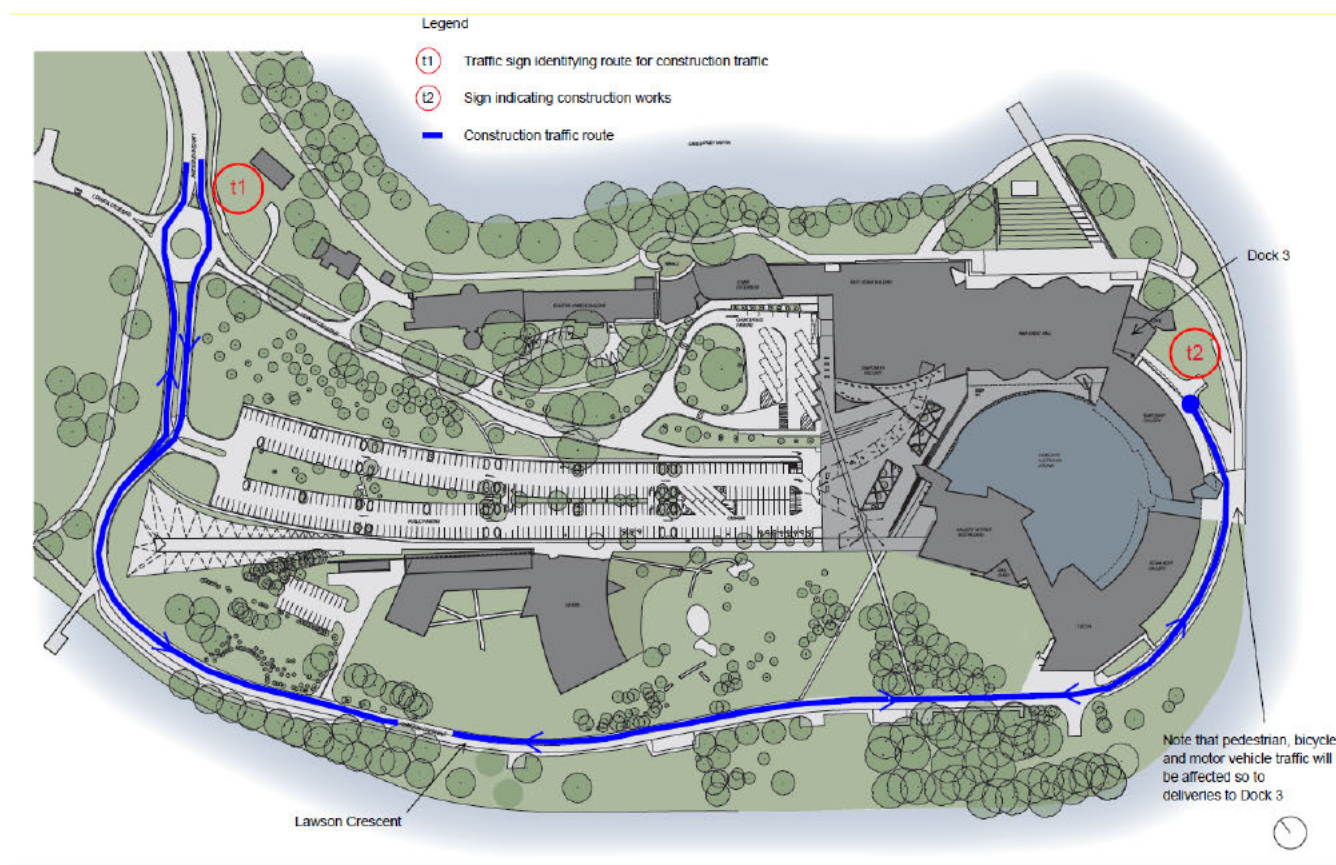


Figure 2.8.2 Proposed construction traffic route on Museum site

A site compound will be established during the project period. It will be located to the north of the site between the Museum building and Lake Burley Griffin. This is a public access area and a key route for emergency egress from the Museum. Traffic to and from the area will be carefully managed by the building contractor through a Temporary Traffic Management Plan (TTMP).

Visitation to the Museum site will increase as a result of construction activity. Options to minimise the impact on general visitor parking will be explored in consultation with the building contractor and the National Capital Authority.

2.9 Applicable legislation, required approvals

The consultants and contractors engaged to provide design and construction services to the project will be responsible for achieving compliance with all relevant codes and standards.

Legislation applicable to the proposed project is:

- *National Museum of Australia Act 1980* and Regulations;

- *Australian Capital Territory (Planning and Land Management) Act 1988;*
- *National Construction Code 2016* and cross referenced Australian Standards; and
- *Disability Discrimination Act 1992.*

The project requires the following approval:

- *Australian Capital Territory (Planning and Land Management) Act 1988*: In accordance with this Act, the Museum must seek approval for construction, alteration, extension or demolition of structures which are not purely internal. The proposed external stair will be referred to the National Capital Authority for consideration with respect to the statutory requirements of the National Capital Plan. The Museum has undertaken consultation with the NCA prior to this submission and received the authority's provisional support. A formal referral of the works is planned to occur in December 2018.
- *Transport Canberra and City Services*: A Temporary Traffic Management Plan (TTMP) will be designed in accordance with AS 1742 Part 3 and the Traffic Control at Worksites Manual (RMS2012) and lodged through Roads ACT as well as the National Capital Authority.

2.10 Heritage considerations

The Museum is not a place entered in the Commonwealth and National Heritage Lists; however, it is an iconic building of national significance located within the Parliamentary Triangle. The Museum has engaged the original Principal Architect of the Museum, Howard Raggatt from practice ARM Architecture to undertake the architectural design for the project. The Museum and ARM Architecture are committed to the principles of heritage management and will ensure any change to the building has no adverse impact on its values.

3.0 Planning and design concepts

3.1 Master and site planning

Gallery Development Stage 1: Life in Australia is informed by the following planning documents:

- National Museum of Australia Master Plan, 2018; and
- National Museum of Australia: Strategic Plan, 2018-2022.

3.2 Detailed description of the proposed scope of building works

The Museum has appointed ARM Architecture as the architect for the project.

The proposed scope of building works has been informed by the following phases of architectural design:

- Architectural Feasibility Study, 2017;
- Concept Design, 2018; and
- Developed Design (in progress), 2018.

The scope incorporates design and technical contributions from a range of specialist sub-consultants, including: Taylor Thomson Whiting (NSW) Pty Ltd (structural and façade engineering); WSP Australian Pty Ltd (mechanical, hydraulic, acoustic, security and electrical services); Ignis Solutions (fire engineering); and Eric Martin and Associates (disability and access).

3.2.1 Background to proposed building works

Gallery Development Stage 1: Life in Australia will comprise the redevelopment of three exhibitions that are largely original to the opening of the Museum. They are:

- Circa theatre (opened in 2001 and closed in 2017 and currently repurposed as programming space);
- Eternity (opened in 2001 and closed in 2017 and currently repurposed as temporary display space); and
- Old New Land (opened in 2001).

A fourth exhibition, *Australian Journeys*, will be relocated and amalgamated within a larger permanent exhibition.

All exhibitions listed are located within the Museum building and are considered part of the Museum's permanent galleries.

3.2.2 Base building works overview

Base building works are defined to comprise permanent construction works which are required for the long term operation of the Museum. They are generally not specific to a particular exhibition but provide infrastructure for all exhibitions and define floor spaces. Base building works enable the new exhibition design to be implemented, whilst also incorporating building-wide considerations and meeting the requirements of an expected design life which is longer than the exhibition.

The objectives of the base building works for this project are to:

- create a building envelope to support the proposed exhibition;
- increase exhibition space and maximise the functionality and flexibility of the space by:
 - removing visual and physical impediments such as airlocks; ramps; and columns;
 - creating volume for large displays;
 - improving circulation and wayfinding through a well-defined visitor path; and
- create space for functions and events to take place in the exhibition space.

The base building works comprise:

- partial removal of an existing mezzanine floor to create a new mezzanine floor;
- demolition of part of the building façade to create a new external stair improving connections between floors and enhanced connections to Lake Burley Griffin;
- removal of the existing internal stair; and
- removal of existing internal ramp.

3.2.3 Base building works design

The base building works design affects three levels of the Museum's permanent galleries.

A series of detailed plan drawings showing the existing base building conditions and the proposed base building design are below.

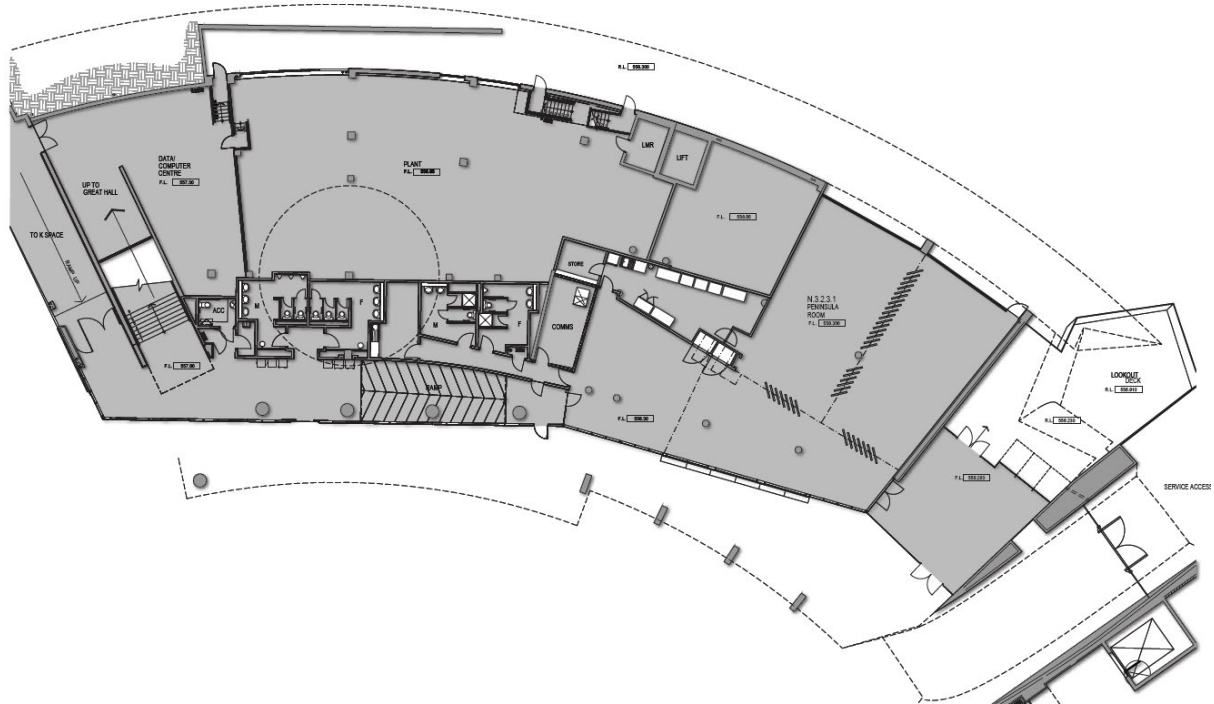


Figure 3.2.3.1 Level 1 existing conditions

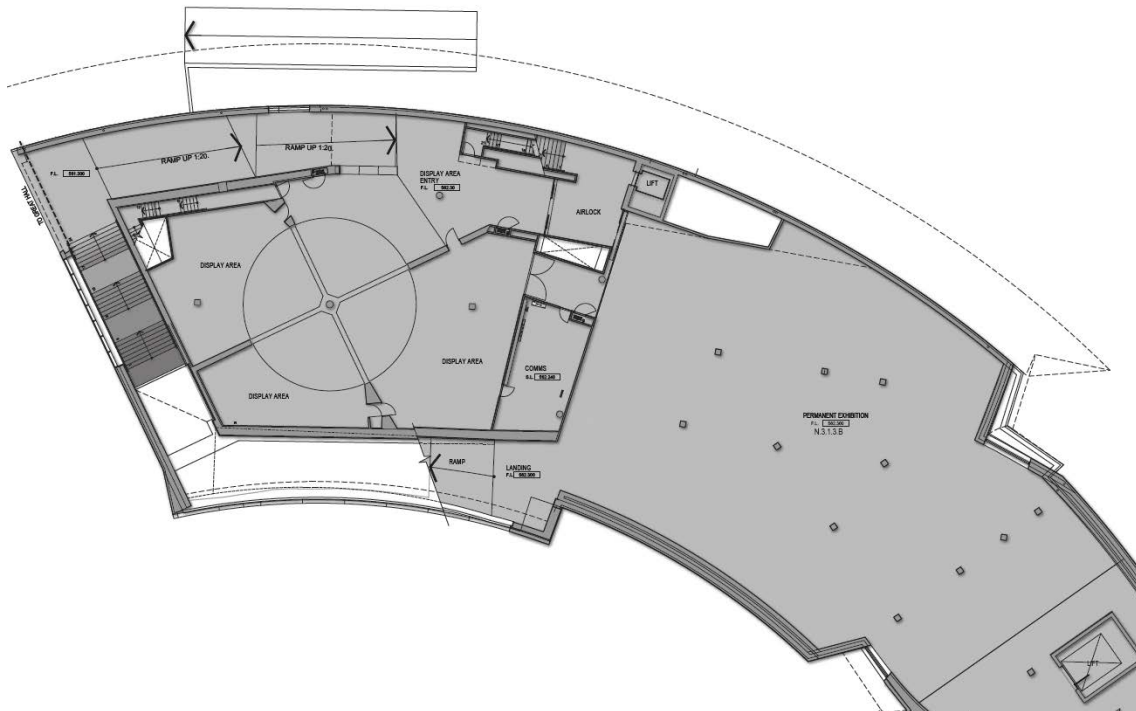


Figure 3.2.3.2 Level 2 existing conditions

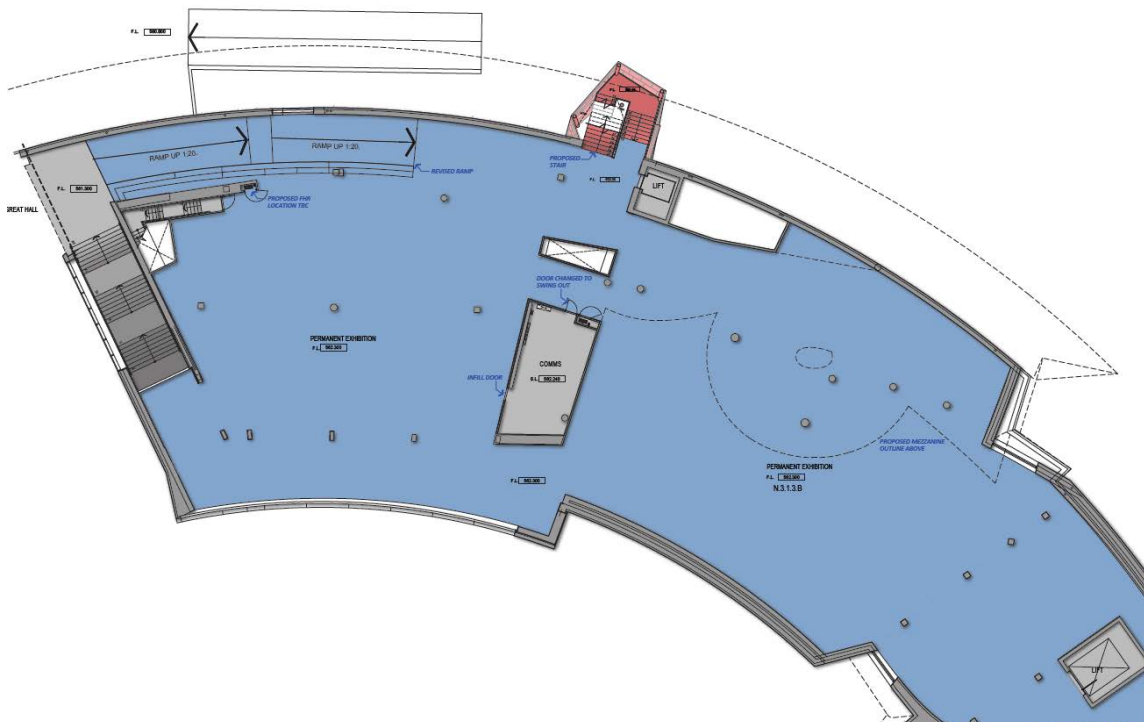


Figure 3.2.3.3 Proposed floor plan for Level 2

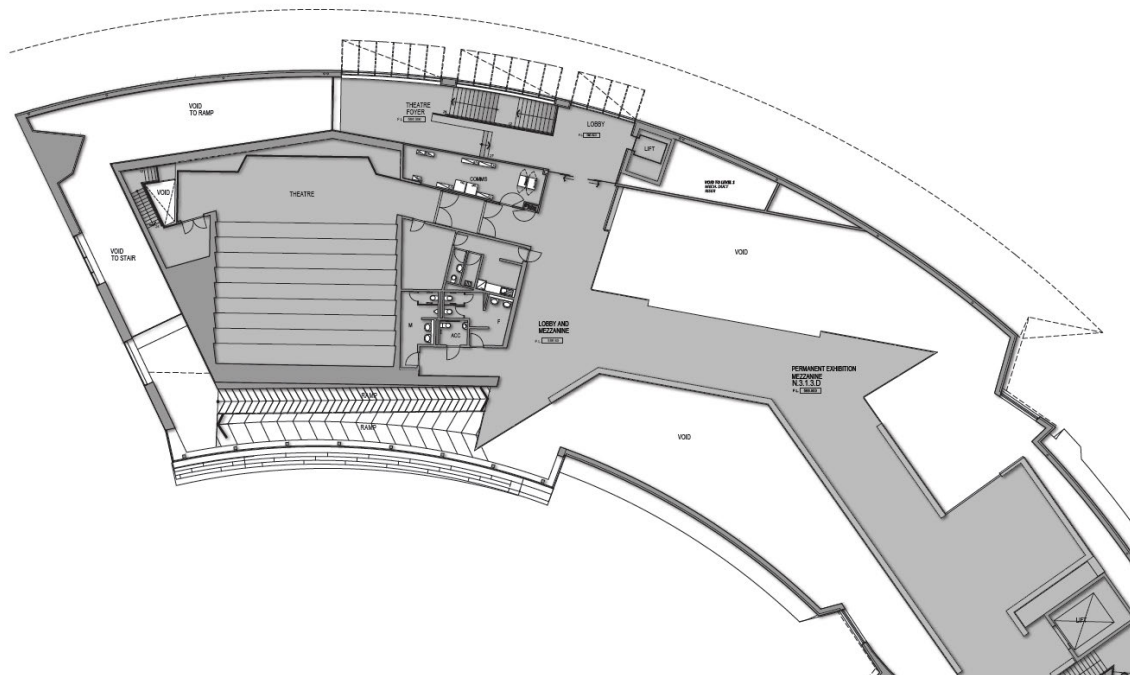


Figure 3.2.3.4 Level 3 Existing conditions

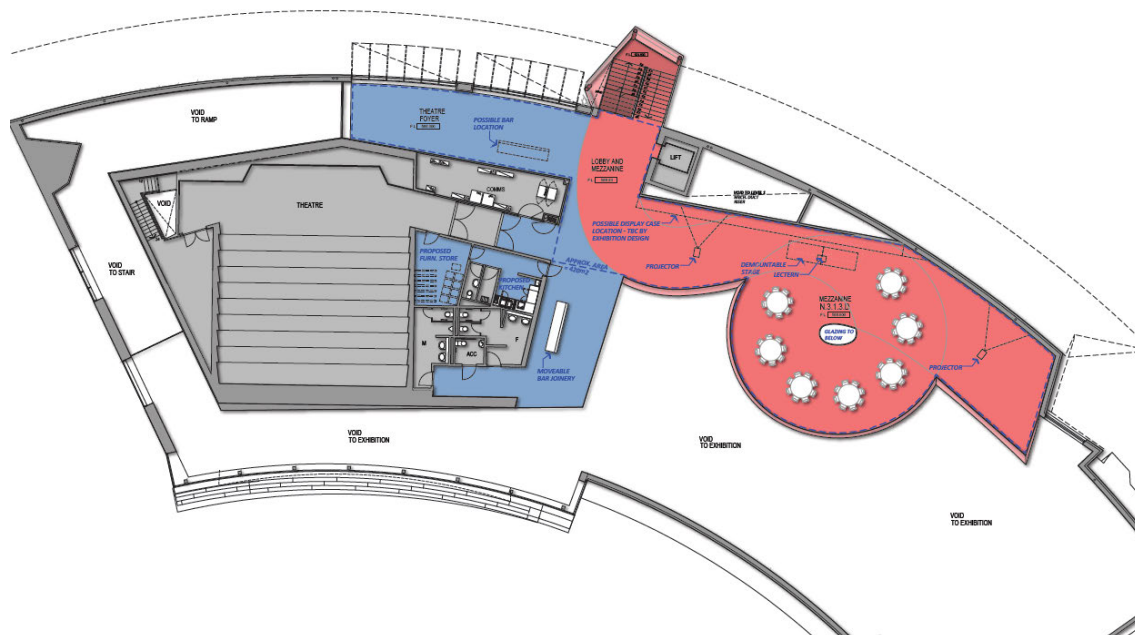
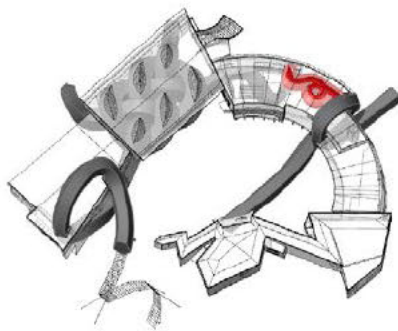


Figure 3.2.3.5 Level 3 proposed design

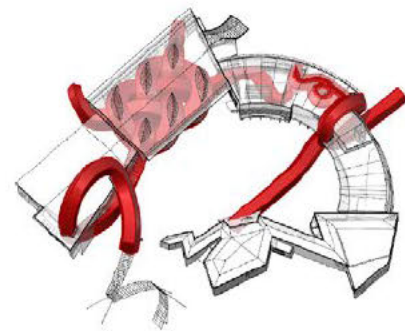
3.2.4 New external stair and mezzanine

The new external stair spans all three levels of the Museum's permanent galleries. The new internal mezzanine is located on level three (with level one being ground floor).

The proposed design for the external stair and mezzanine enhance the existing architecture by elaborating on the constructive geometry used in the original building design. The 'Boolean String' which can be seen in the original design has been extended to create the form of both the external stair and the mezzanine. The string can be seen emerging from the interior to form the stair before wrapping inside to create the mezzanine. Referencing this existing massing strategy has created a design consistent with the original architectural language.



Original 'Boolean String' with proposed addition



Proposed 'Boolean String'

Figure 3.2.4.1 Extension of the 'Boolean String'

An existing internal stair and a portion of the existing facade and windows will be removed to create the new external stair. Emergency egress from the new external stair will be provided at ground level.



Figure 3.2.4.2 Location of proposed external stair works



Figure 3.2.4.3 View of proposed external stair

An existing linear mezzanine will be partially removed to create a new multipurpose mezzanine. The new mezzanine is comparable in size to the existing; however the revised location allows for increased double height space to the exhibition below and a panoramic view over the Museum's permanent galleries. The mezzanine provides a 3.5m clearance height to the floor below. The red of the 'Boolean String' will be used on the underside and the ceiling treatment above will shadow the 'String' to strengthen the reference to the existing architectural language. A glazed aperture in the floor of the mezzanine will enhance the visual connection to the exhibition below.

The new mezzanine is located adjacent to the Museum's existing Visions Theatre. This is a dedicated lecture theatre suitable for talks, presentations and film screenings for up to 177 people. Some minor refurbishment of rooms associated with the Theatre will be undertaken to provide facilities for functions and events to be held on the new mezzanine.



Figure 3.2.4.4 View from the existing Level 2 up to the existing Level 3 mezzanine



Figure 3.2.4.5 View of proposed new mezzanine

3.2.5 Demolition

The proposed demolition works include:

- Lower Ground: An existing door will be removed and replaced with an airlock;
- Ground Floor: The majority of existing internal walls will be removed to provide a clear base layout for the exhibition. An existing non-compliant circulation ramp will be removed to create a larger usable floor area. The design supports minimal changes to plant and riser locations. An existing internal stair between the Ground Floor and Level 1 will be removed;
- Level 1: The existing mezzanine will be partially demolished to increase the double height space available to the exhibition area below. The existing internal stair to the Ground Floor will be removed. The existing kitchen will be refurbished;
- General: Redundant electrical outlets, power and communications cabling and trays will be removed. All existing lighting, including lighting control equipment, will be decommissioned and removed with the exception of the emergency lighting monitoring devices. Redundant communications cabling will be removed. Existing floor coverings will be removed and floors will be made level and good; and
- External: Part of the eastern facade will be demolished to allow for the new external stair.

3.2.6 Structural

The proposed structural works include:

- a new external stair;
- removal of an existing non-compliant circulation internal ramp; and
- partial removal of an existing linear mezzanine to create a new multipurpose mezzanine.

An existing internal stair between the Ground Floor and Level 1 will be removed and replaced with a new external stair. The new external stair spans all three levels of the Museum's permanent

galleries. The existing stair penetration is framed by concrete beams and will be infilled using a fire rated Condek slab. The existing structure is adequate to support the proposed infill without strengthening. The new external stair will be supported on an independent structure with stability derived from fixing to a new foundation slab at external ground level. Curved CHS columns will provide dual support services to both the stair mid-landings and the façade support framing. The proposed external location does not clash with existing structural elements and requires only modifications to the façade.

An existing non-compliant internal circulation ramp between the Ground Floor and Level 1 will be removed. It consists of a Condek slab with secondary beams spanning to large 800WBs located on the radial grids. At the Lower Ground Level, the large WBs are welded to a 200SHS curved fascia frame providing support to an existing window and the existing external steel cladding of the building façade. New structural support will be introduced to support the building façade following removal of the ramp. The ramp penetration will be infilled using a fire rated Condek slab and supporting steel beams.

The new mezzanine will be framed using structural steel and a fire rated Condek slab. Stability will be achieved by new bracing and tying the structure to the existing lift shaft. Two beams at Ground Floor require strengthening to support the mezzanine columns. The new mezzanine has been designed for a live load of 5kPa. Removal of the existing mezzanine will not impact stability of the building structure as the current lift shaft is providing lateral stability to the existing roof.

3.2.7 Mechanical

The proposed mechanical works include:

- two new air handling units with ultrasonic humidification systems to provide extremely high efficiency humidification control;
- replacement of existing smoke exhaust fans; and/or installation of additional smoke exhaust fans;
- reuse of existing mechanical ductwork and zoning where possible;
- new diffusers to the ceilings; and

- recessed de-stratification fans to double-height spaces for energy efficiency and environmental uniformity.

The existing mechanical system is designed to a summer condition of 37.1°C DB and 21.4°C WB. The proposed new mechanical design will also be to these ambient conditions. To achieve a more onerous ASHRAE latent condition would require wholesale removal of existing plant.

A due diligence exercise will be completed on the smoke exhaust systems to test the current sufficiency of flow rates. If they are insufficient a range of solutions will be explored including: revised smoke modelling to reduce smoke exhaust air flow rates; replacement of existing smoke exhaust fans; or installation of additional smoke exhaust fans.

Two new air handling units with ultrasonic humidifiers will be installed. One will service the new external stair and internal space; the other will replace an existing unit currently servicing Visions Theatre.

The existing ductwork and zoning will be reused where possible and modified to suit the new exhibition layout. New diffusers will be provided to ceilings. Recessed de-stratification fans will be provided to double height spaces for energy efficiency and environmental uniformity.

The mechanical systems are mostly dedicated to the construction area which will minimise the impact on other areas of the Museum during construction.

3.2.8 Electrical

The proposed electrical works include:

- provision for lighting, power and mechanical;
- exit and emergency lighting;
- security monitoring and detection;
- base building lighting and control; and
- essential services including fire detection and EWIS.

Existing distribution boards (DB) will be retained in their current location. These are sufficient for the power requirements of the proposed exhibition and have capacity for a limited quantity of 3-phase power supply if required. Consideration will be given to an

uninterrupted power supply (UPS) for DBs associated with audiovisual/multimedia equipment. Power to support the exhibition will be reticulated through wall, floor and ceiling as appropriate. Existing cabling and trays will be reused where possible and supplemented with new. Power will be reticulated on separate cable trays to data.

New shielded Cat6a data cabling will be installed to support the proposed exhibition audiovisual/multimedia displays. Cabling will be on separate trays to power and reticulated from in-ceiling consolidation points located throughout the space. The Museum's existing Wi-Fi system will be retained. The Wi-Fi access point layout and mapping will be remodeled to suit the proposed exhibition layout.

New general house lighting will be installed. This will likely be recessed LED downlights with appropriate optics depending on ceiling height. Some areas may have bespoke lighting to suit the architecture (i.e. the new external stair). General house lighting will be coordinated with the proposed specialist lighting for the exhibition.

New exit and emergency lighting will be designed to suit the exhibition layout and nominated egress paths. Existing emergency lighting monitoring devices will be retained.

Lighting control will be addressable DALI to provide appropriate dimming and monitoring functionality. Lighting controls will be Dynalite and integrated with existing systems.

New EWIS and extinguishers will be installed and connected to existing infrastructure. Detection and EWIS systems will comply with current standards.

The existing sprinkler system will be modified to suit the proposed exhibition layout. New sprinkler coverage will be introduced to the external stair, and the existing sprinkler main feeding the area under the mezzanine will be re-routed to run at high level on Level 1 and drop down to below the mezzanine slab to serve sprinklers at this level.

The Museum's existing access control system which uses electric strikes and card readers will be deployed to control and monitor access to all back-of-house areas (i.e. communications room). The Museum's existing CCTV monitoring system will be installed throughout the exhibition space as appropriate.

3.2.9 Hydraulics

The proposed hydraulics works include:

- new Reverse Osmosis plant equipment will be installed in the existing Level 1 mechanical plant room;
- new drainage and cold water for the proposed new kitchenette on Level 1 provided from the Ground Floor. All penetrations through the floor slab will be fire rated as appropriate. Cold and hot water provision will have a thermostatic mixing valve; and
- relocation of an existing Fire Hose Reel and Fire Hydrant.

3.2.10 Acoustics

An acoustic design will be undertaken to address noise from building services (including mechanical systems) and the proposed exhibition. The design will seek to achieve an internal noise level target of 40-45dB LAeq, Sound absorbing finishes to doors, ceilings and partitions will be used to minimize reverberation time.

3.2.11 Facade

Parts of the existing aluminium paneled building facade will be removed for the proposed new external stair. Some of the existing glazing will also be removed.

The new external stair will have Low E glazing with either a coloured or printed interlayer to achieve the desired red colour. The glazing mullions will reference the existing mullion patterns used in the Museum's Atrium.

3.3 Detailed description of the proposed scope: exhibition work

The Museum has appointed Local Projects as the exhibition and experience designer for the project. Local Projects are a large multidisciplinary practice based in the US.

The proposed scope of exhibition works has been informed by the following phases of design:

- Architectural Feasibility Study, 2017; Architectural Concept Design, 2018; and Architectural Developed Design, 2018 (in progress);

- Exhibition Concept Design, 2018; and
- Exhibition Developed Design (in progress), 2018.

The scope incorporates design and technical contributions from a small number of specialist sub-consultants.

3.3.1 Background to proposed exhibition works

Gallery Development Stage 1: Life in Australia will comprise the redevelopment of three exhibitions that are largely original to the opening of the Museum. They are:

- Circa theatre (opened in 2001 and closed in 2017 and currently repurposed as programming space);
- Eternity (opened in 2001 and closed in 2017 and currently repurposed as temporary display space); and
- Old New Land (opened in 2001).

A fourth exhibition, *Australian Journeys*, will be relocated and amalgamated within a larger permanent exhibition.

All exhibitions listed are located within the Museum building and are considered permanent exhibitions.

3.3.2 Exhibition works overview

Exhibition works are defined to comprise infrastructure works that are installed within the base building structure which are required for the medium-term operation of the Museum. Design is the responsibility of a specialist exhibition designer and works are generally undertaken by specialist fit-out contractors. The works are specific to a particular exhibition and have an expected design life of 15-20 years. The elements are less permanent and can be demounted relatively easily and will be generally fabricated offsite and installed onsite.

The exhibition works comprise the following:

- cabinets, plinths and other exhibition-specific joinery;
- showcases;
- exhibition specific services;
- seating;

- graphic structures;
- public program infrastructure and defined spaces;
- object barriers;
- exhibition lighting (fixtures and track);
- exhibition security systems;
- exhibition graphics, signage and text;
- object display and support elements;
- hanging systems;
- guidelines for materials used in showcases;
- specified showcase systems;
- multimedia/digital infrastructure (hardware and software); and
- floor and ceiling finishes within exhibition space.

3.3.3 Exhibition works design strategy

Life in Australia is an exhibition of environmental history. It will reveal the grand, dynamic patterns of the Australian continent, and explore how people are part of its lively rhythms and flows.

Key exhibition stories are:

1. Introduction to the Story of Australia: As told through the Museum's three permanent galleries: 'Life In Australia', 'A Modern Nation' and 'Aboriginal and Torres Strait Islander Peoples';
2. Introduction to *Life in Australia*: Including the biodiversity, geology and evolutionary history of the continent.
3. Power: Deep time forces of creation understood geologically and culturally, the power and agency of the non-human world, and the role of humans within this system – Indigenous creation spirits, deep time continental formation, monsoons and cyclones, crocodiles;

4. Connection: The continent's dynamic rhythms and flows across landscapes and seasons – Murray Darling Basin, Australian Alps, whales and Eden;
5. Life: The unique biodiversity, beauty and complexity of life in Australia, and human relationships of care and nourishment with the non-human world – Great Barrier Reef, arid lands, South West Western Australia, Canberra region, Tasmania; and
6. Change: Past, present and future change on the continent, and hope in the face of a challenging future.

The principle considerations underpinning the exhibition works design strategy are outlined below.

3.3.3.1 Exhibition spatial planning

Spatial planning seeks to achieve a sense of immersion and ease of navigation throughout the exhibition. A clear main circulation path will be provided, leading visitors through a series of centrally located, immersive landscape forms. Collection material will be integrated into the landscape forms, in both focussed exhibits and mass object displays. Running along the gallery's perimeter walls, a span of benches provides a seating landscape and place for visitors to dwell.

3.3.3.2 Exhibition fit out considerations (including use of materials)

New fixtures, fitting and colours will be carefully selected and composed to evoke intended mood and tone of each chapter of the exhibition while complementing the materiality of the collections.

3.3.3.3 Exhibition multimedia and digital considerations

The current digital, technical and lighting environment of the Museum's galleries has largely been in place since the building opened in 2001. It has reached its end-of-useful life.

The *Life In Australia* project will include design and documentation of an entirely new digital, technical and lighting environment that fully supports new ways of digital engagement and is tightly bound to the storytelling aims of the exhibition. This includes, but is not limited to:

- a fully integrated digital experience that includes core digital experiences with the potential to extend across all the Museum's main galleries (i.e. digital labelling; mobile

apps etc.), and bespoke, one-off digital experiences particular to the *Life in Australia* exhibition;

- hardware and software;
- exhibition and theatrical lighting;
- master control; and
- system integration.

Digital media will play a pivotal role in the *Life In Australia* exhibition storytelling. Three main approaches to digital content are envisaged:

- several large scale, immersive and interactive digital experiences;
- a series of immersive media theatres; and
- a series of smaller, linear digital elements, some integrated into digital labels.

Digital hardware will include display, source, transmission and control devices. This may include projectors, screens, touchscreens and digital labels to access and communicate digital programs and content.

These components are conceptual and further planning is required to determine feasibility.

3.3.3.4 Exhibition graphics considerations

Exhibition graphics will be developed for major exhibition labelling and way finding elements.

A suite of repetitive graphics will be developed to convey the overall narrative and written exhibition content. It is intended to deliver object labelling through digital tablets. A typography convention will be applied to graphic elements.

3.3.3.5 Exhibition lighting considerations

Exhibition lighting will be used to set the mood and tone throughout the galleries. Levels, temperature and focus will be adjustable and dependant on the particular point in the exhibition storyline and/or collection item on display.

A full suite of LED fixtures will be specified for the galleries. These fixtures will greatly reduce power and maintenance requirements.

3.3.3.6 Exhibition acoustic considerations

The development of multimedia and digital elements is at a conceptual stage. While the extent

of sound attenuation is not yet known, some pre-emptive measures are being considered to mitigate the typically hard and reflective surfaces and finishes of exhibition infrastructure (i.e. showcase glazing). Materials and finishes with acoustic dampening properties may be utilised in the ceilings.

3.3.3.7 Exhibition security considerations

The principles that underpin security of the proposed redeveloped *Life In Australia* exhibition are:

- protection of collection from theft or wilful and inadvertent damage by visitors; and
- protection of collection from damage due to environmental conditions.

Based on evaluation of the Museum's existing exhibitions, physical barriers present the most successful means of protecting the collection.

The majority of the collection intended for display will be showcased. Proprietary and custom showcases will have a unique keying system to limit access to cabinets and surrounding joinery. Showcase glazing will be low-iron laminated glass.

A motion sensor system to detect and deter visitors from touching exposed collection items may be used to deter inadvertent damage through visitor contact.

The Museum has specified environmental parameters for the exhibition. Control measures for temperature, relative humidity, light and environmental pollutants will be implemented as they relate to exhibition works.

3.4 Work Health and Safety

The Museum acknowledges that the health, safety and welfare of employees, visitors and contractors is of primary importance. The Museum has a Manager, Work Health and Safety (WHS) on staff. The

Manager will work closely with the Museum's Site Superintendent during the delivery of works to:

- familiarise contractors and subcontractors with the Museum's Contractor WHS Induction Program. The purpose of the program is to provide guidance to participants on WHS and environmental responsibilities while working within the Museum precinct;
- familiarise Museum staff with Work Health and Safety policies and procedures; and
- assist with the development of project-specific Work Method Statements to ensure specialised tasks are carried out in a safe manner.

The Museum will commission an asbestos and hazardous materials survey for the area proposed for work as part of the project. The survey will involve inspection of accessible, representative construction; and the collection and analysis of potentially unsafe materials. The findings of the survey will inform the procurement and delivery of building and exhibition works for the proposed project.

3.5 Details of the project delivery system

Gallery Development Stage 1: Life in Australia will occur during normal operation of the Museum. Careful planning will be undertaken to ensure construction works are carried out with minimal impact on visitors and staff. Noisy works may be conducted out of core operating hours.

Works will be staged and detailed planning for this will take place with the building contractor once appointed.

The Museum has a specific project delivery strategy that outlines the three major components of works and the relationship between these works. The three major components are detailed below.

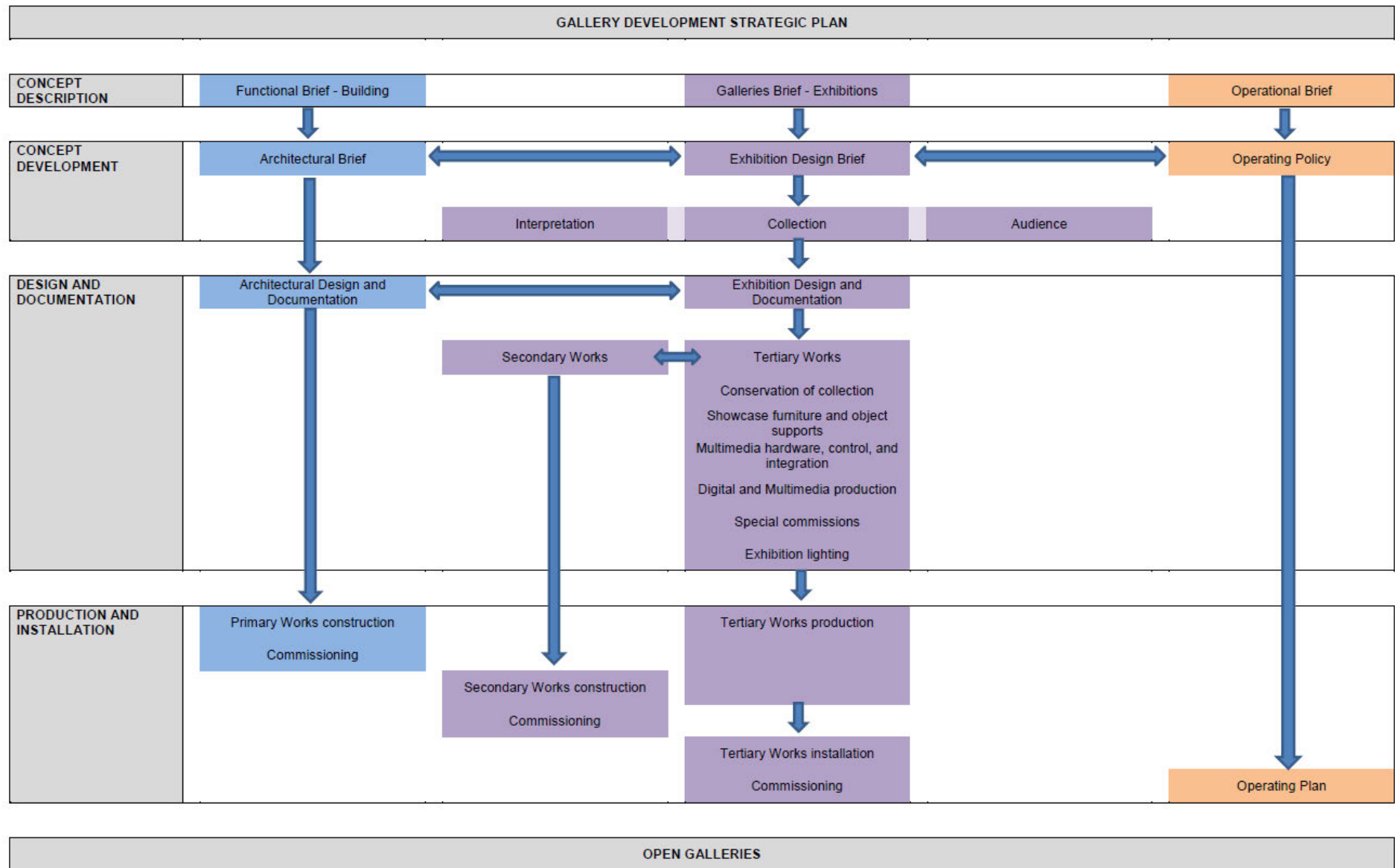
- Primary Works: Defined as permanent construction works within the base building which are required for the long term operation of the Museum. Design is the responsibility of the architect and the works are generally undertaken by specialist construction contractors. The works do not require any environmental control.
- Secondary Works: Defined to comprise infrastructure works that are installed within the base building structure which are required for the medium-term operation of the Museum. Design is the responsibility of the Exhibition Designer and

works are generally undertaken by specialist fit-out contractors. The works are specific to a particular exhibition and have an expected design life of 15-20 years. The elements are less permanent and can be demounted relatively easily and will be generally fabricated offsite and installed onsite. Secondary works can only commence once Primary Works are concluded and requires a secure, but not necessarily environmentally controlled environment.

- Tertiary Works: Defined as the final stage of exhibition installation coinciding with and including object installation. Tertiary works include all elements to be installed within the infrastructure delivered as part of Secondary Works. These may include such things as showcase fitout and object supports; sets; multimedia hardware and software; graphics; and objects. Design is generally the responsibility of the Exhibition Designer, although the Museum will be responsible for some components (in particular conservation of collection). Tertiary Works is the final stage prior to opening and requires full environmental and security controls.

The diagram below details the delivery strategy.

GALLERY DEVELOPMENT – PROJECT DELIVERY



3.6 Project schedule

The following is a summary of the key primary project milestones. These dates have been developed in conjunction with primary, secondary and tertiary consultants moving into the developed design. Adjustments may be required as the project progresses.

Phase	Start	End
Concept description	Oct 2016	Jul 2017
Concept development	Jul 2017	Mar 2018
Architectural feasibility study	May 2017	Aug 2017
Exhibition Design	Jun 2018	Mar 2019
Architectural Design	Jun 2018	Jun 2019
Close and decant galleries	Mar 2019	June 2019
Primary Works	Jul 2019	Jan 2020
Secondary Works	Jun 2019	May 2020
Tertiary Works	May 2020	Nov 2020
Soft opening	Nov 2020	
Contingency	Nov 2020	Dec 2020

4.0 Cost-effectiveness and public value

4.1 Importance to the community and or community benefit

A socio political economic analysis is not required as implementation of this project does not change the overall function of the Museum or the its permanent galleries.

4.2 Overall project budget

A cost estimate prepared for the project is \$20.5m. A breakdown of the cost estimate has been prepared by a Quantity Surveyor and is included within the Confidential Submission.

4.3 Depreciable value of works

The forecast annual depreciation of the works is \$1,078,000 (GST Exclusive) over 20 years. The net increase in annual depreciable

value of the *Life In Australia* gallery is \$420,000 (GST exclusive) over 20 years.

Capital
expenses:

\$10,979,280

Building and equipment
costs:
3,154,514

\$

Increase in operating/utilities costs across 20 year life cycle:
\$ 50,000

Total

:

\$14,183,794

Additional utilities costs result from the additional 60m² floor area created by the proposed external stair.

4.4 Revenue

The Museum is a not-for-profit organisation. Revenue will be generated as a result of additional commercial opportunities and fee-based education programs delivered to schools and community groups.

The projected revenue for this project has an annual value of \$110,000 (GST excl.) through use of the commercial space on the mezzanine.

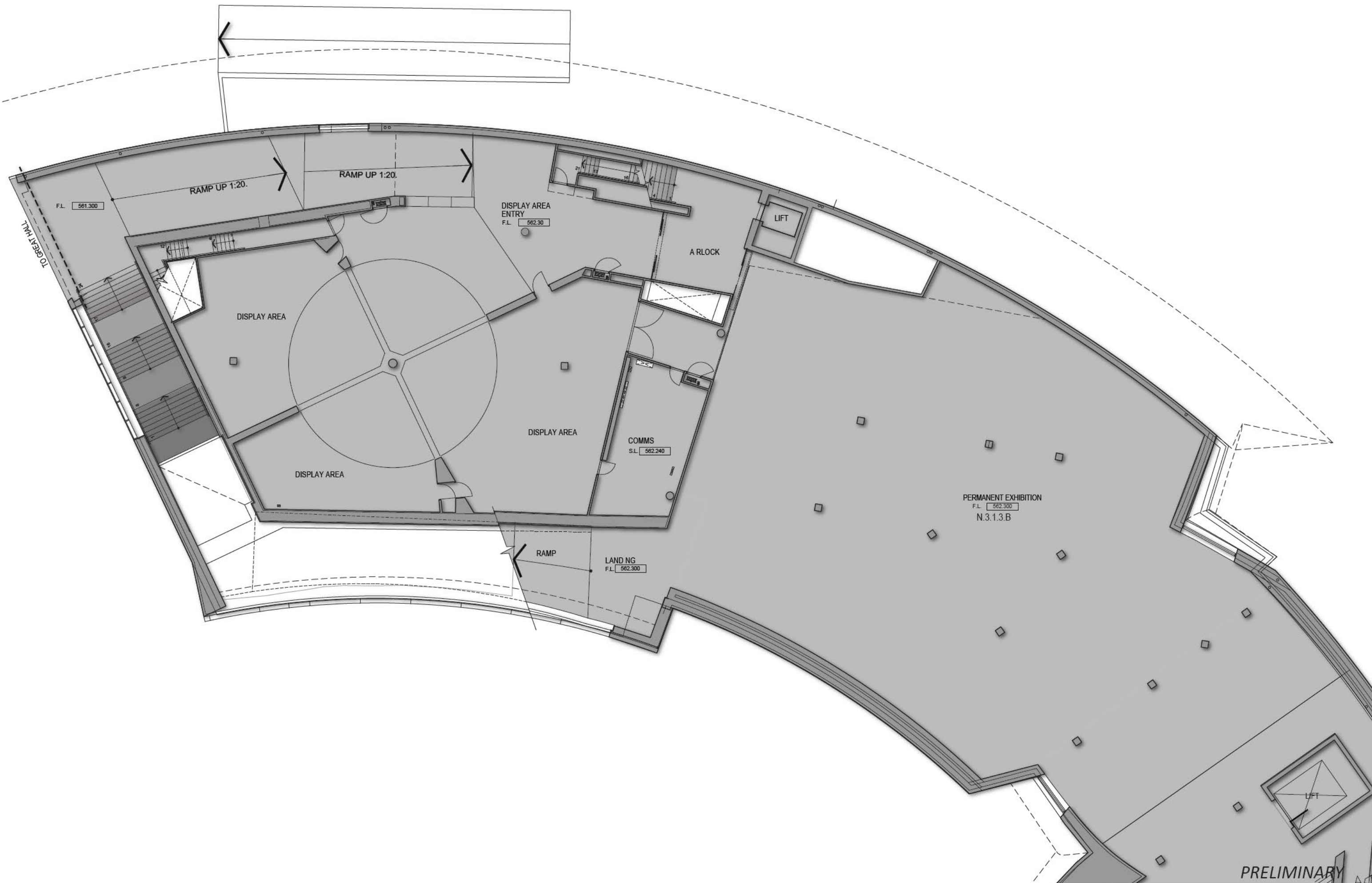
5.0 Appendices

Appendix A: Primary Works Concept Design Drawings

Appendix B: Architectural Design Renders

Appendix A - LIA Architectural Drawings

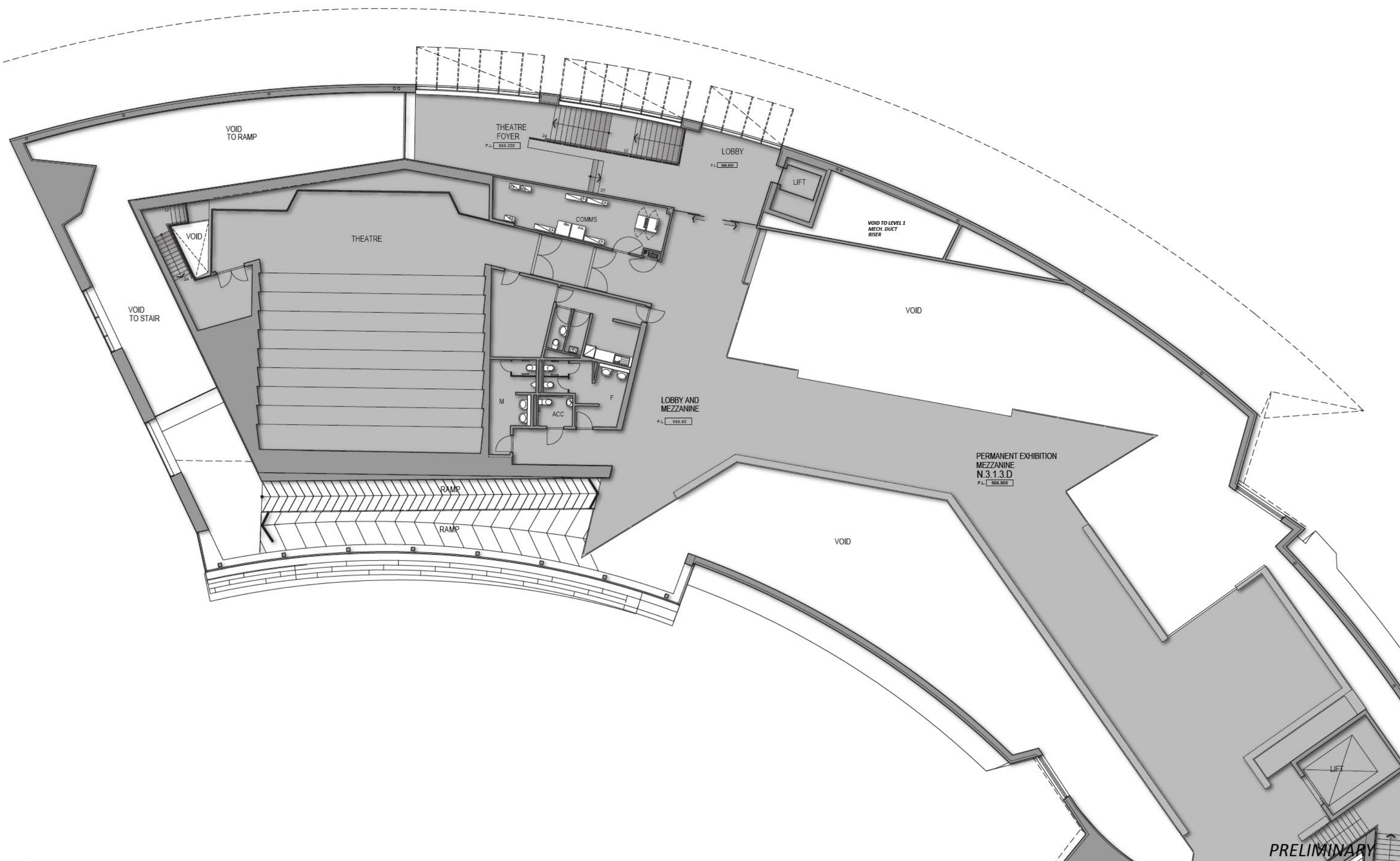




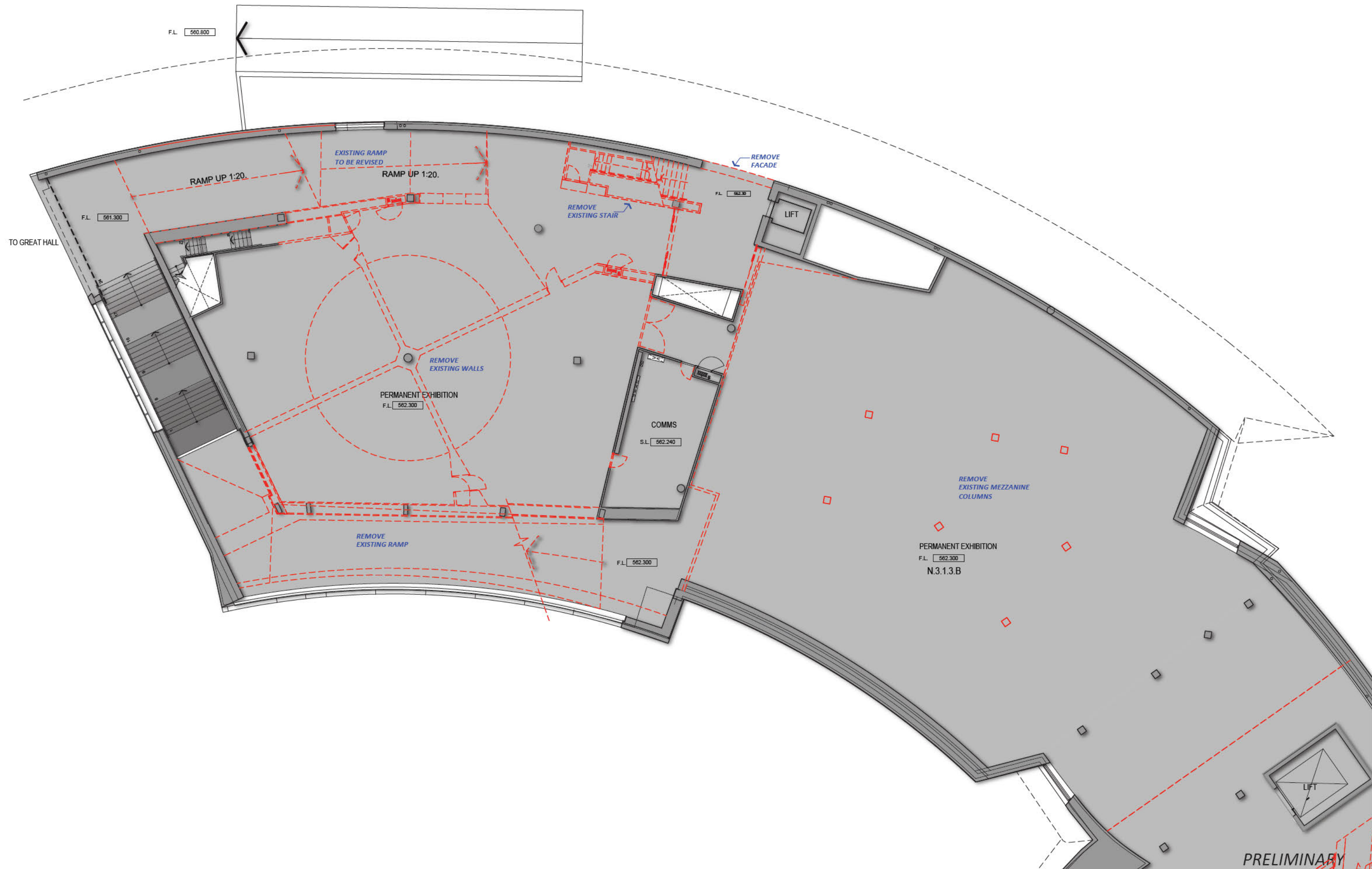
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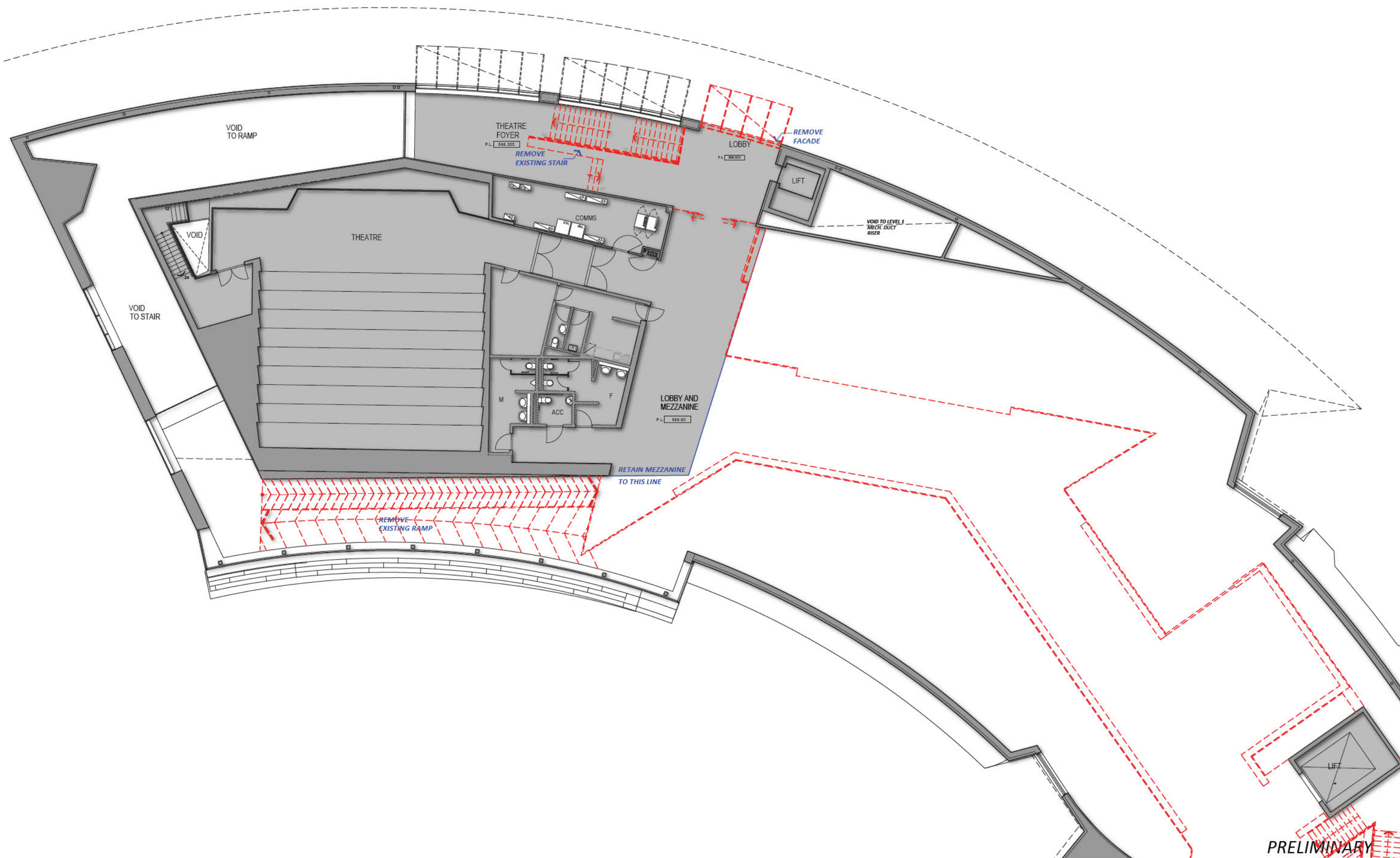
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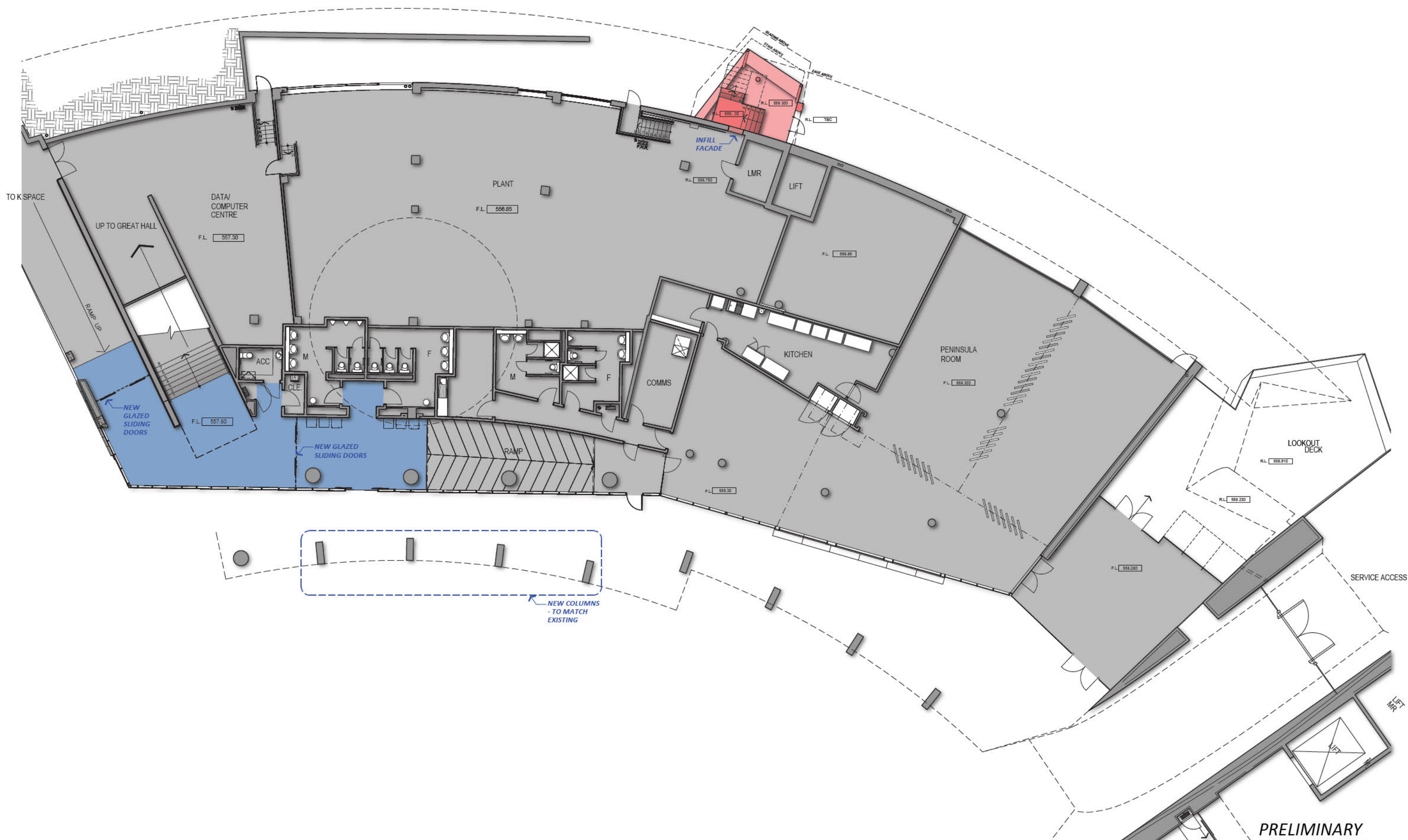
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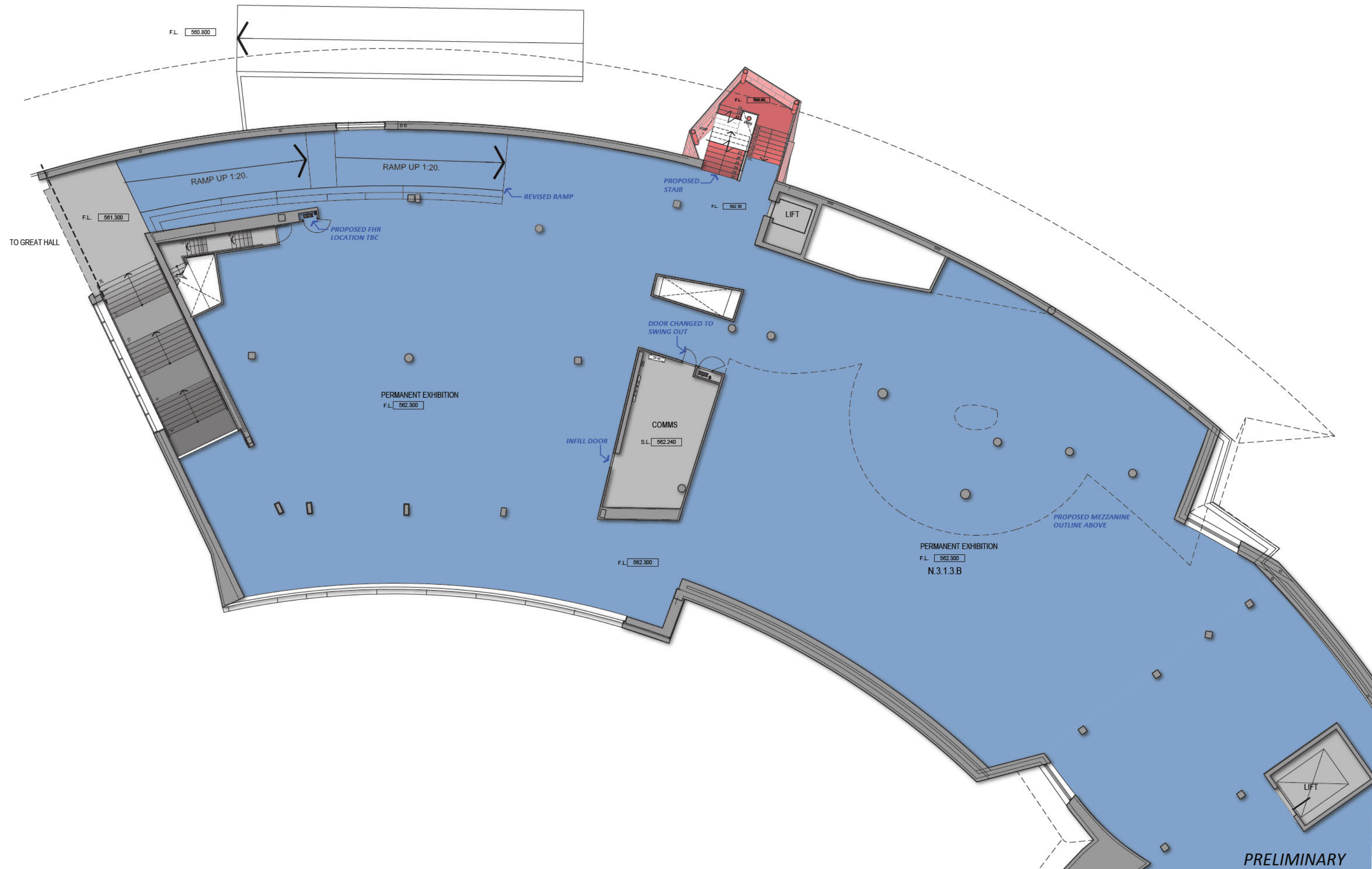












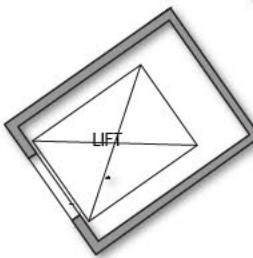
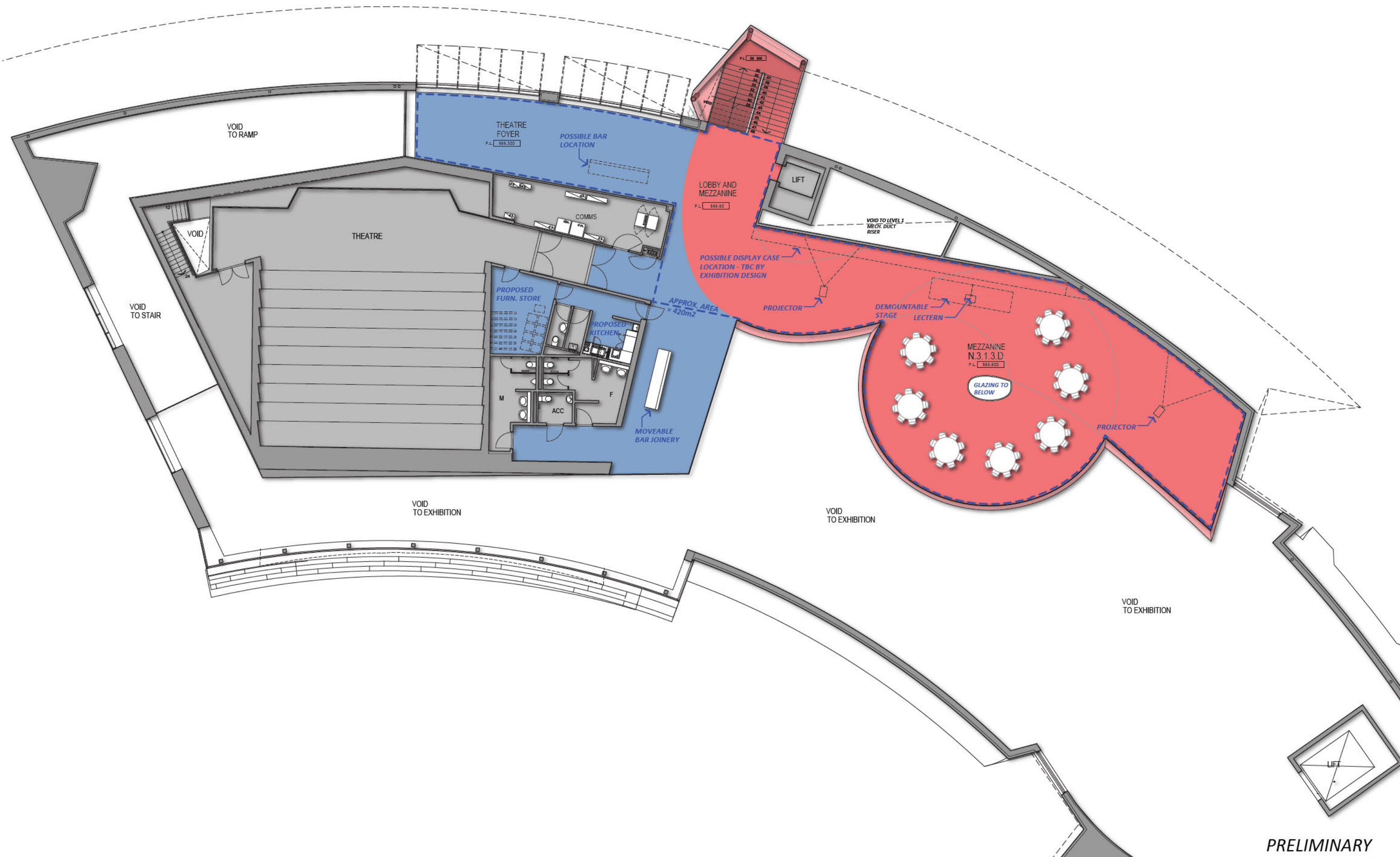
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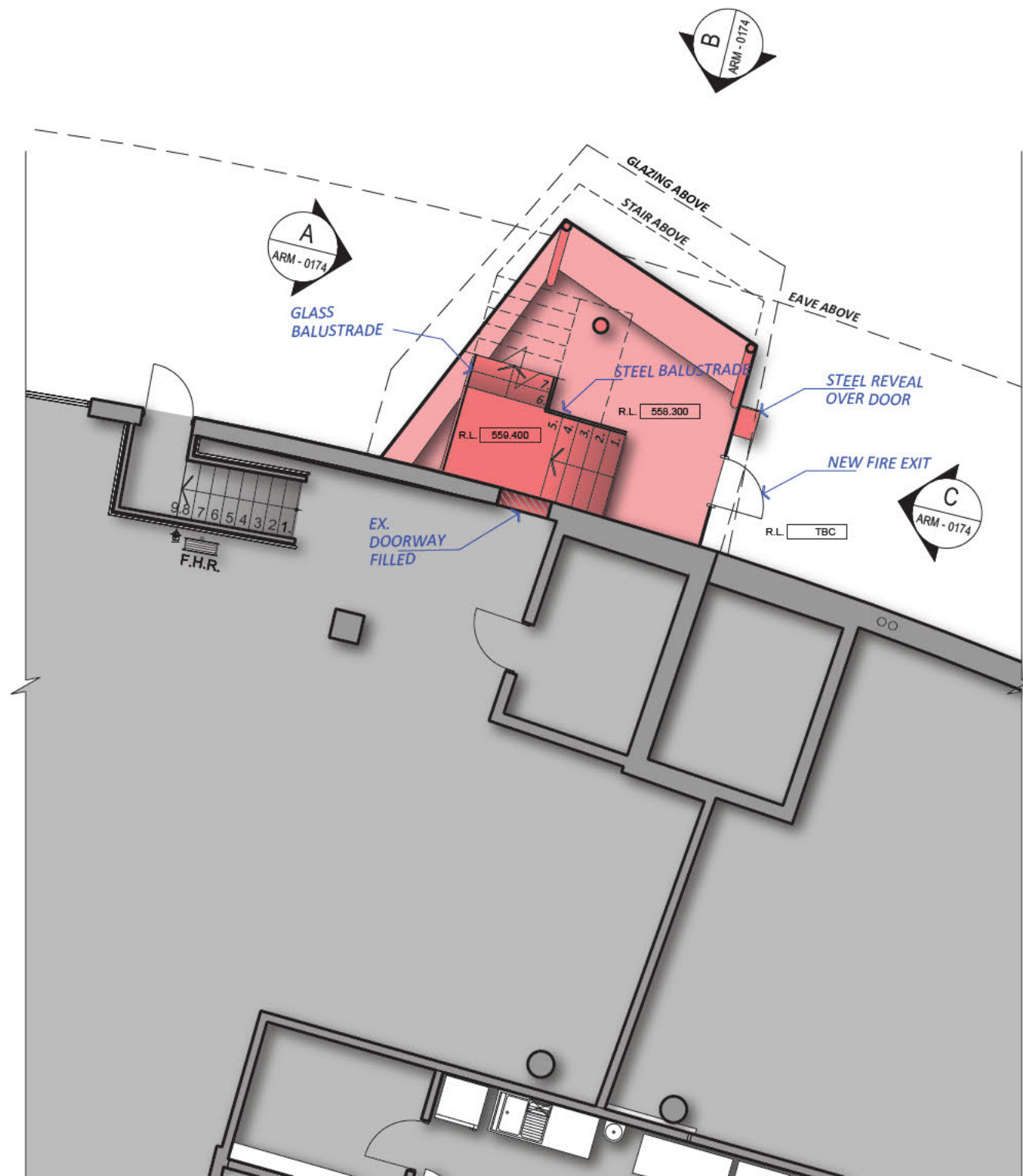
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NMA GALLERY

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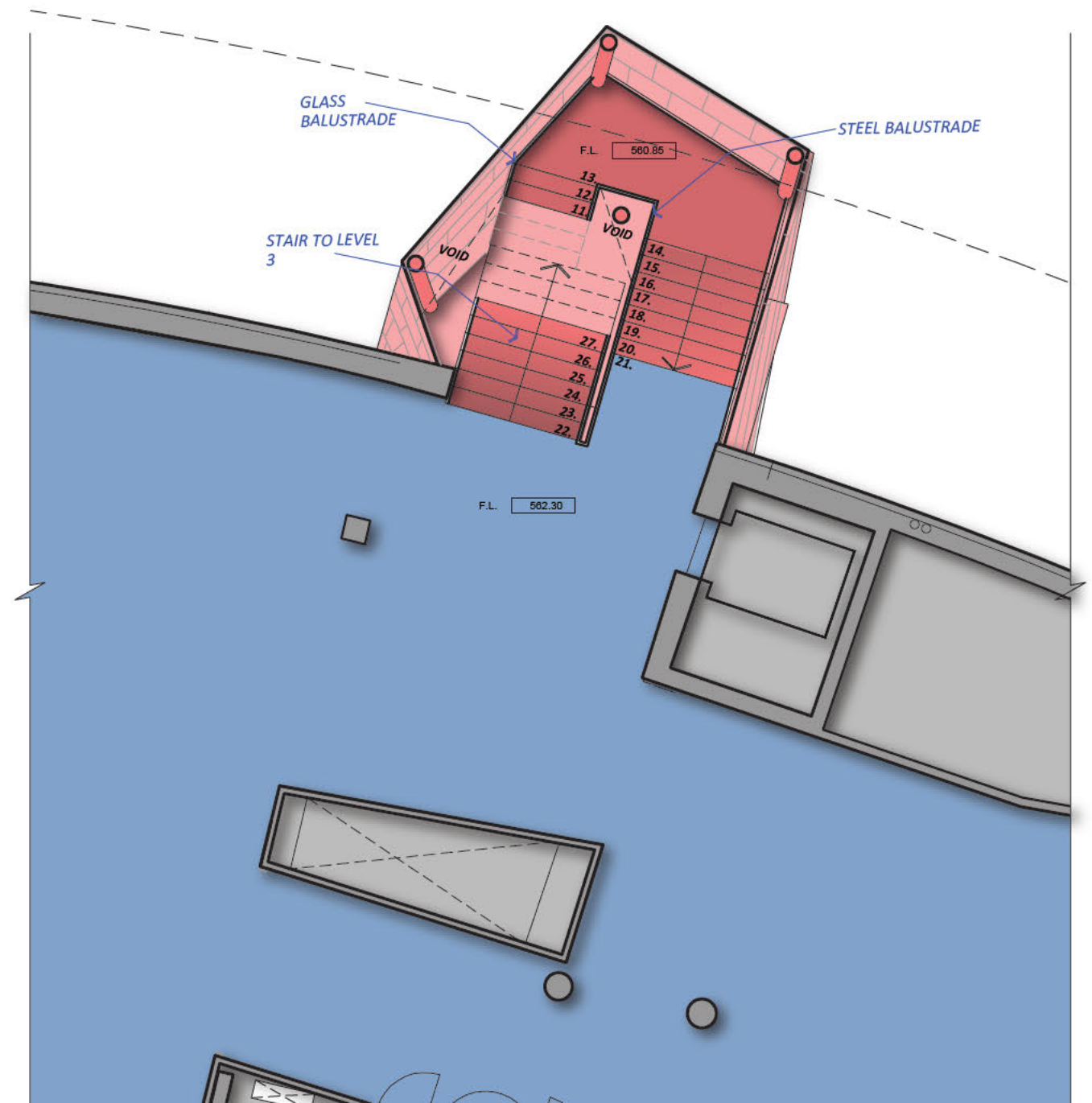
Life in Australia Gallery - Concept Design Report @ 10/10/18



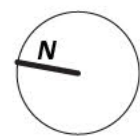




LEVEL 1 - PLANT ROOM



LEVEL 2 - GALLERY ENTRY



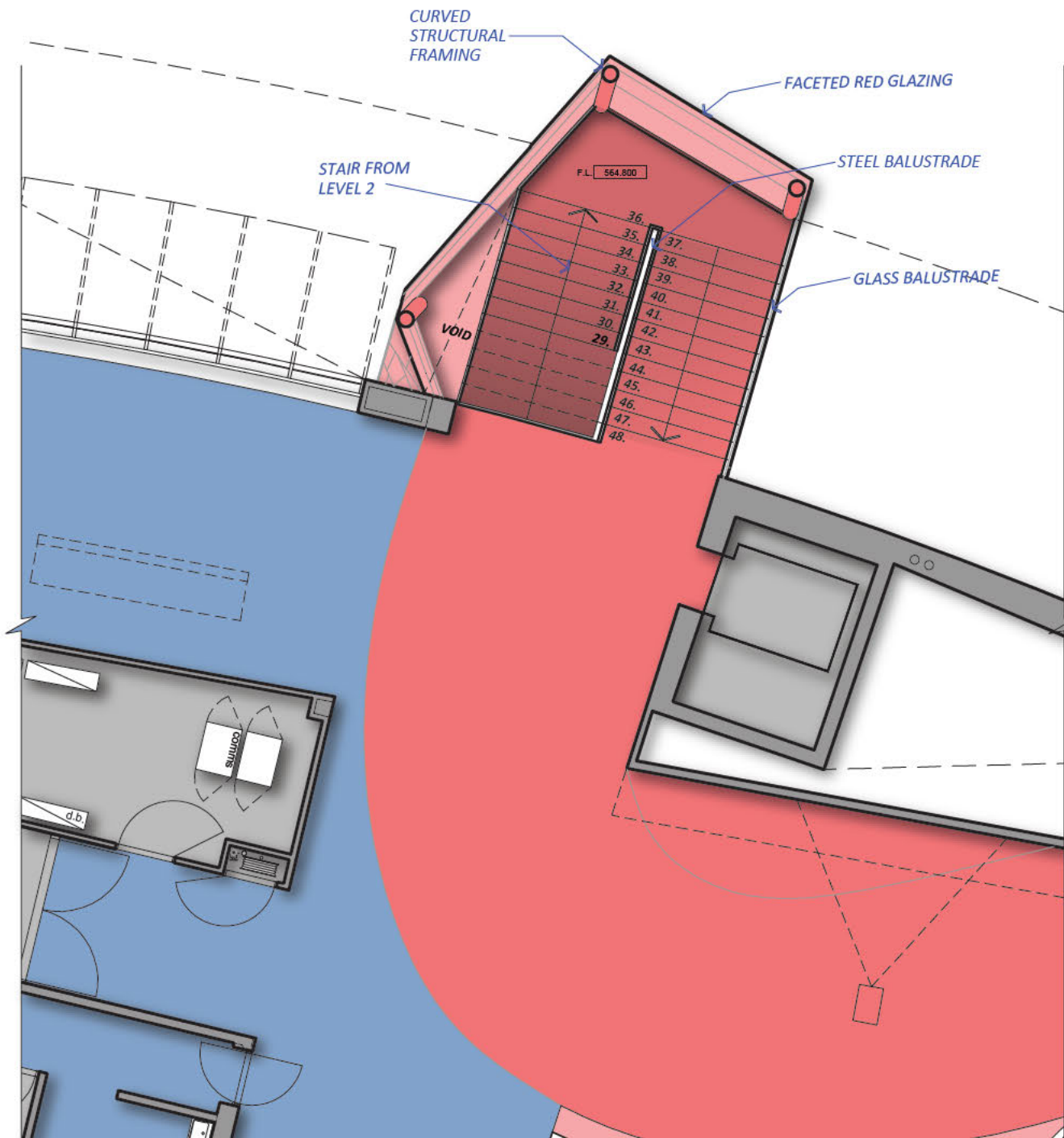
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E/ info@armarchitect.com.au W/ armarchitect.com.au
ABN 22 476 940 330

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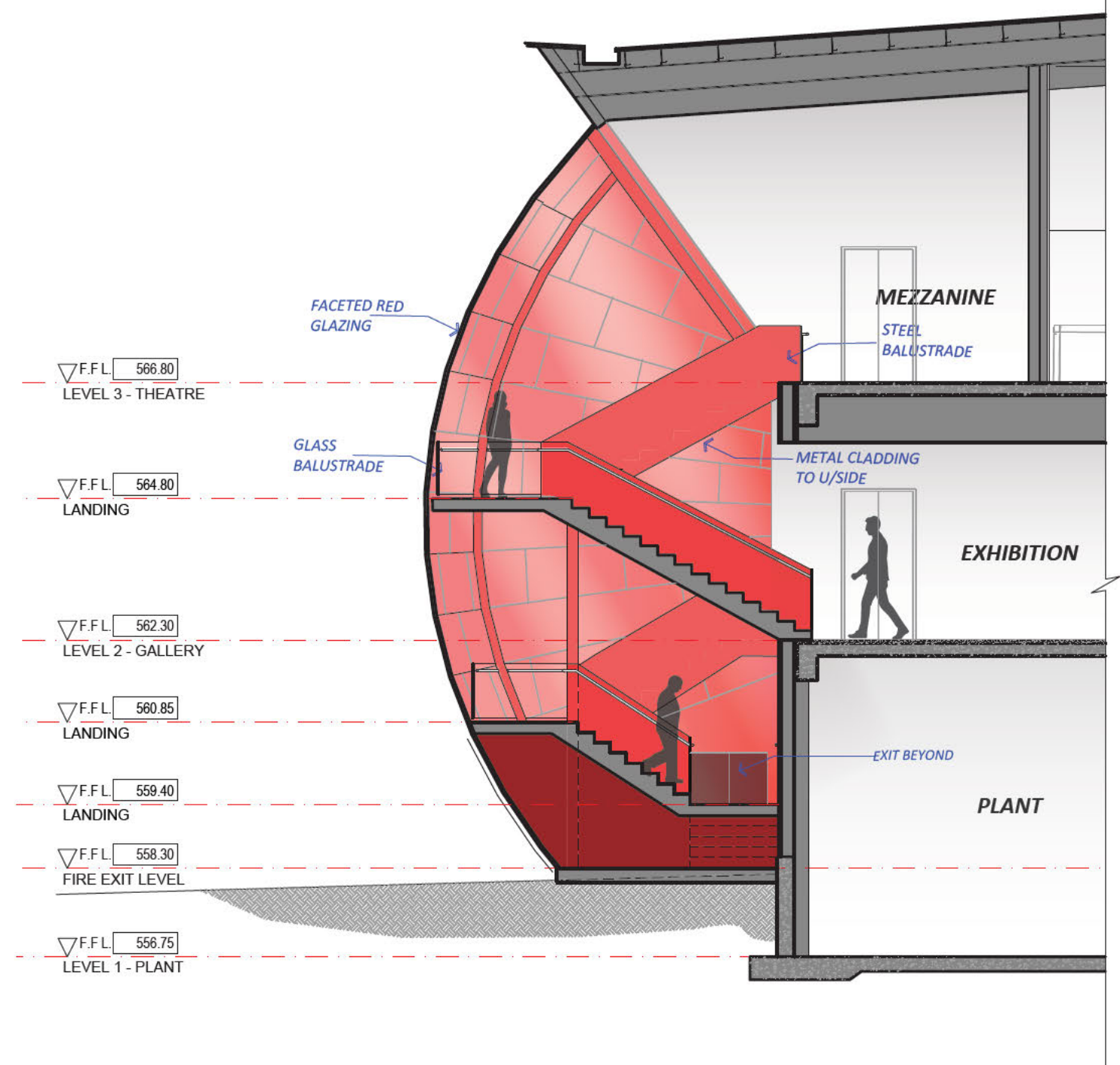
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LEVEL 3 - THEATRE



SECTION



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ARCHITECTURE

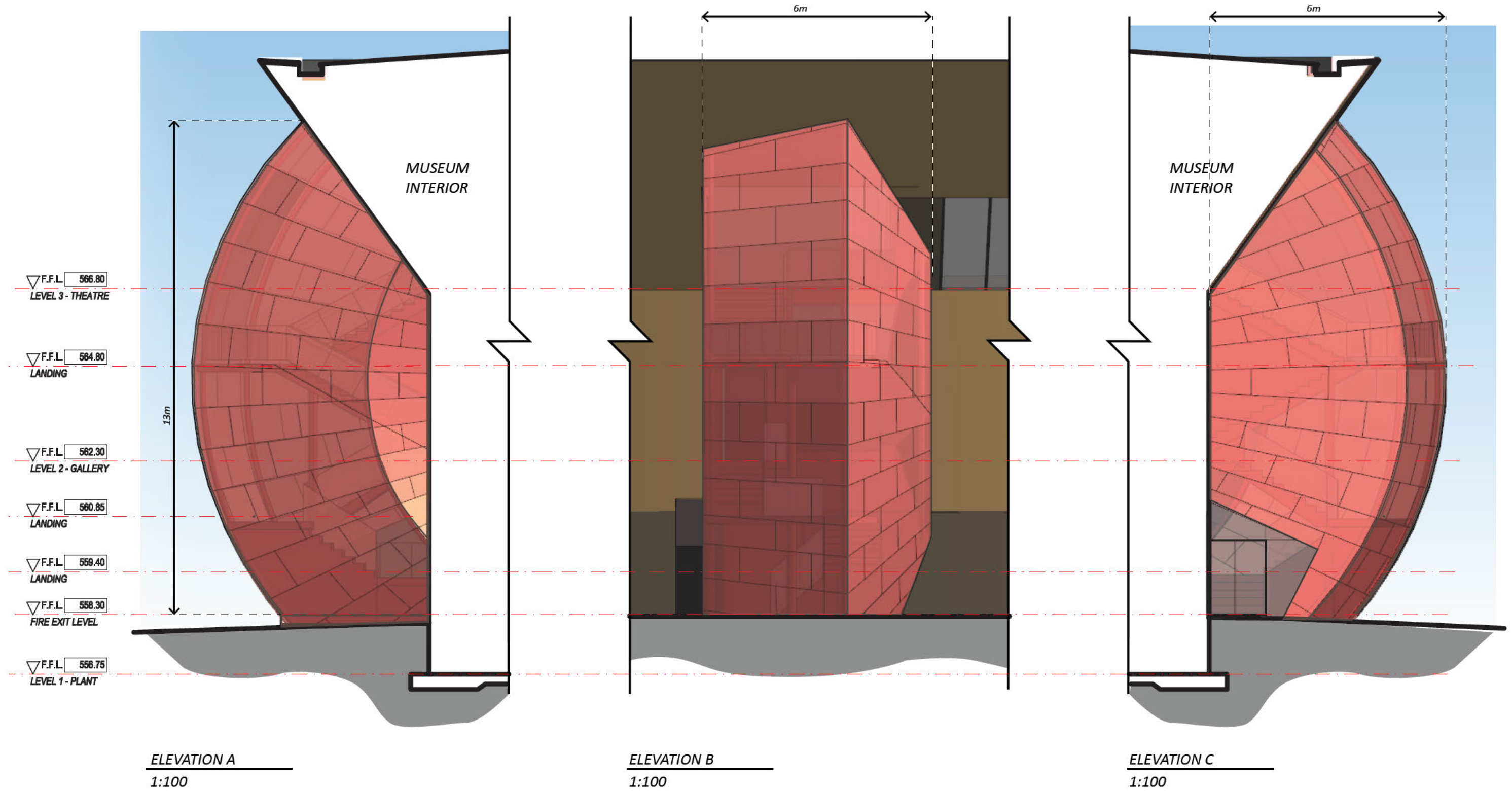
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E/ ma@armarchitecture.com.au W/ armarchitecture.com.au
ABN 21 476 949 359

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PRELIMINARY
LIA - PROPOSED STAIR - PLAN LEVEL 3 & SECTION
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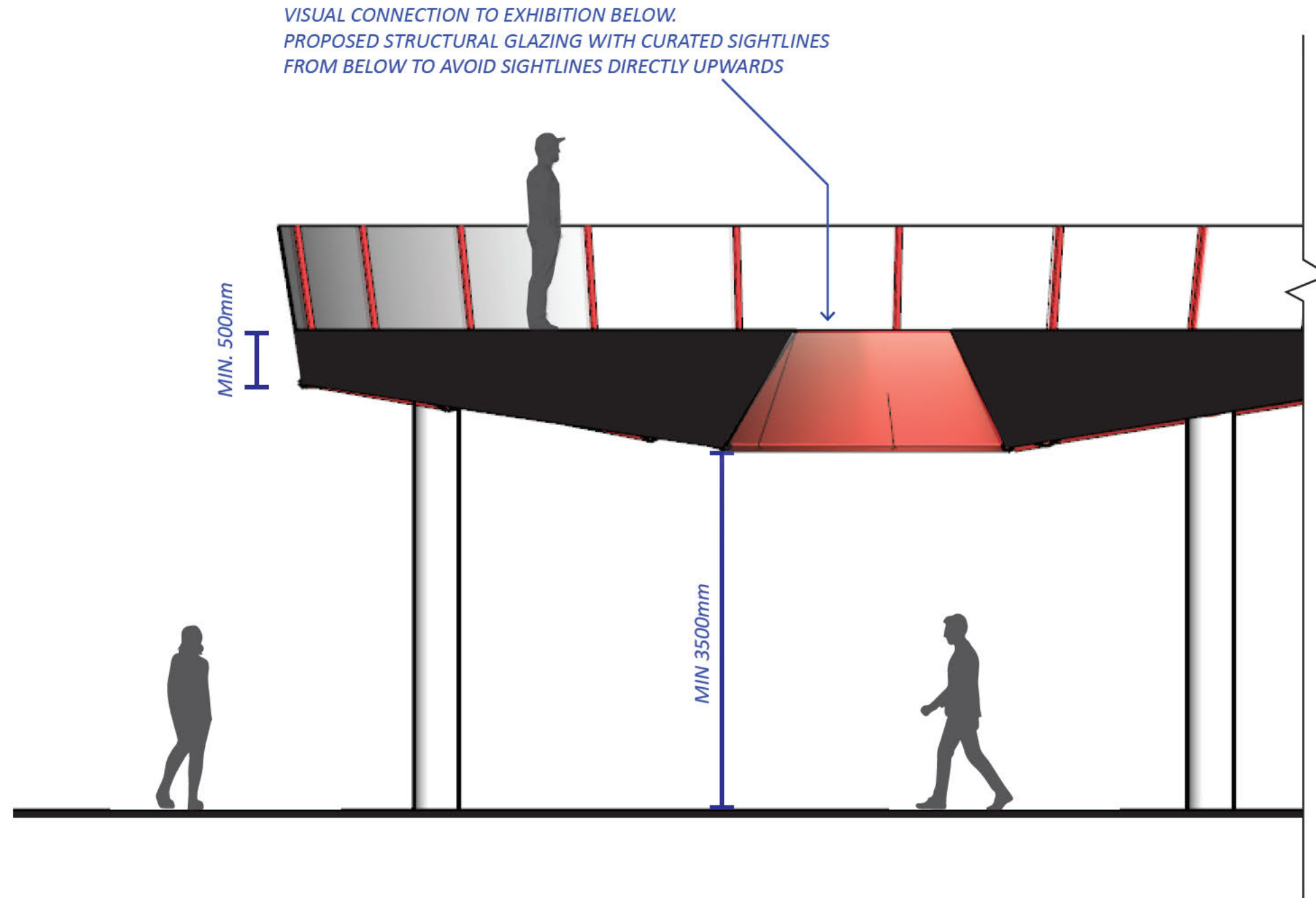


LEVEL 11/122 FUNDERS LANE MELBOURNE VICTORIA 3000 AUS
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E: mail@armarchitecture.com.au W: armarchitecture.com.au
ABN 22 476 949 399

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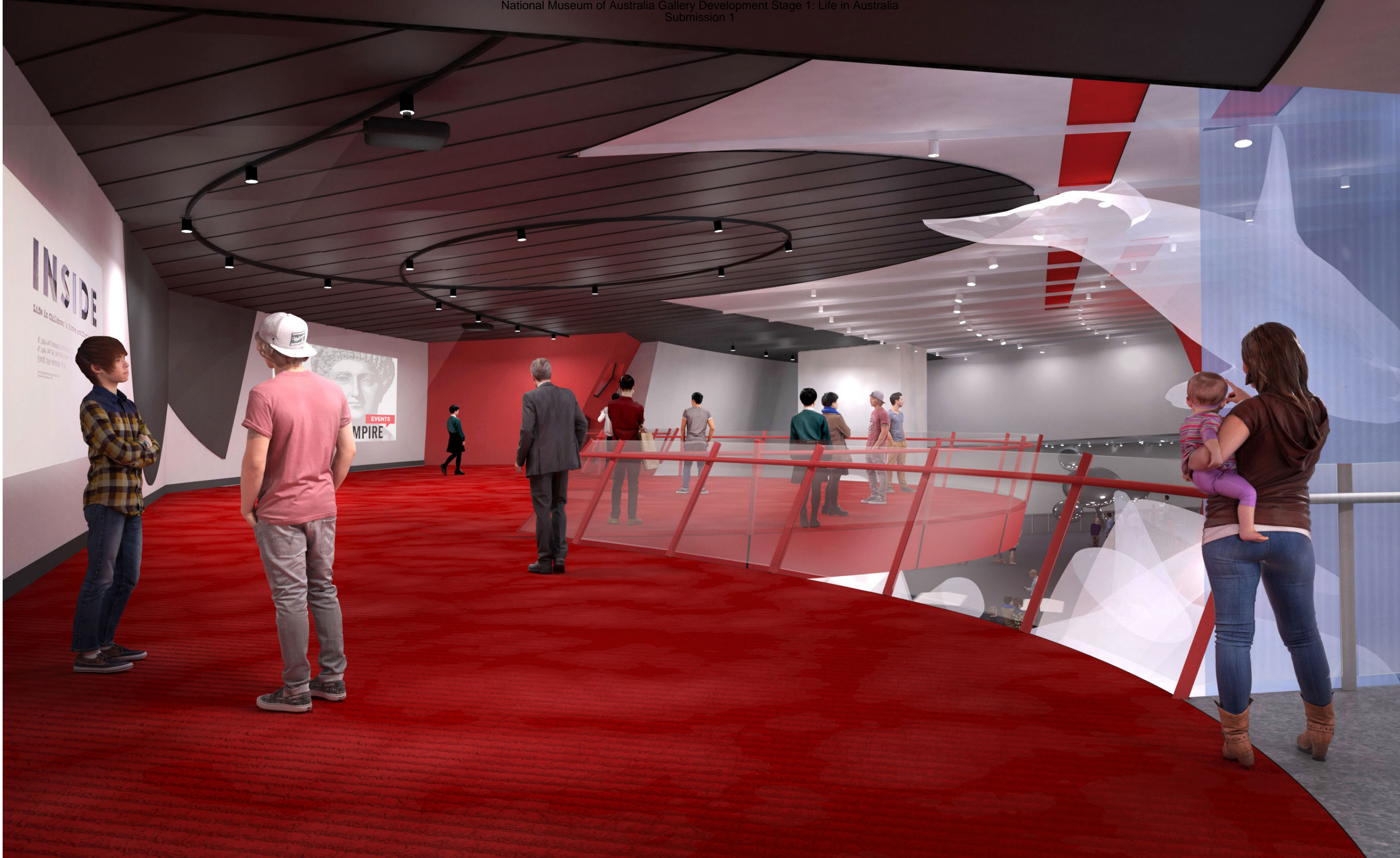
Appendix B - LIA Architectural Renders



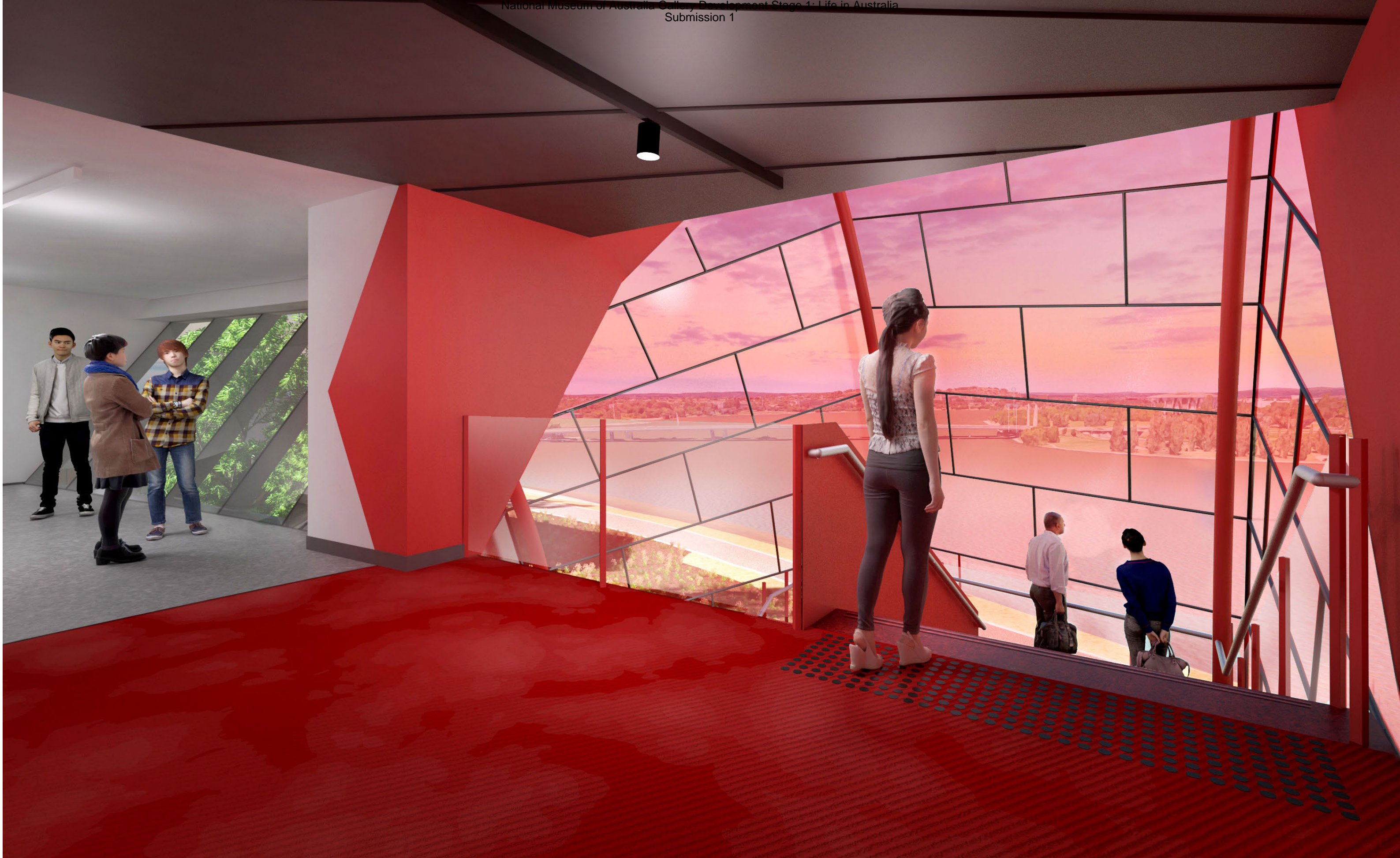
View from Level 2



View from Level 2 - with Exhibition



View from Level 3 - Mezzanine



View from Level 3 - Stair



External View - Stair