

**SYDNEY OPERA HOUSE
ACCESSIBILITIES
& WESTERN FOYER UPGRADE**

**PROPOSED ESCALATORS
BETWEEN BOX OFFICE FOYER
& SOUTHERN FOYERS**

ARCHITECTS' STATEMENT

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FOR SYDNEY OPERA HOUSE TRUST

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**UTZON ARCHITECTS +
JOHNSON PILTON WALKER**
ARCHITECTS IN COLLABORATION

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INTRODUCTION

The Sydney Opera House Conservation Plan (Third Edition 2003) recognises the need for improved access with mechanical assistance to the Concert Hall and Opera Theatre auditoria levels, and for any proposed arrangements to cause the least disruption to the character of the existing spaces.

Sydney Opera House requested Jørn Utzon to consider opportunities for the introduction of escalators to improve patron accessibility as part of the Strategic Building Plan.

The Western Foyers Upgrade project currently under construction includes a new universal access lift from the Lower Councourse Level to the Western Foyers and Box Office Foyer Levels.

The proposed escalators from the Box Office Foyer to the Southern Foyers of the Concert Hall and Opera Theatre will be the final stage of this project to improve accessibility by addressing the needs of the ambulant disabled and the increasingly elderly demographic of patrons of the Sydney Opera House.

This Architects' Statement was prepared to assist the process of Heritage Impact Assessment and it outlines the design in relation to the:

- Brief
- Strategic Building Plan
- Utzon Design Principles
- Conservation Management Plan

The SOH Venue Improvement Program - Box Office Foyer Facility Brief (Issue 2.1 January 2005) identified the provision for accessible escalators between the Box Office Level and the Southern Foyers.

"4.2 Functional Requirements: Accessibility

Provide escalators from Box Office L+030 to the southern foyer of Opera Theatre and Concert Hall for use by wheelchair users and able bodied patrons alike. Minimal specification as follows:

- Step width min 1000mm

- Step length min 1100mm (accommodated by escalator steps forming a horizontal platform) "

The design is consistent with the Strategic Building Plan (2001) which lays down a broad vision to achieve two objectives.

- Develop and safeguard the Sydney Opera House and its site for the benefit of future generations
- Redress the practical limitations affecting the functioning of the building as a contemporary performing arts centre and visitor attraction.

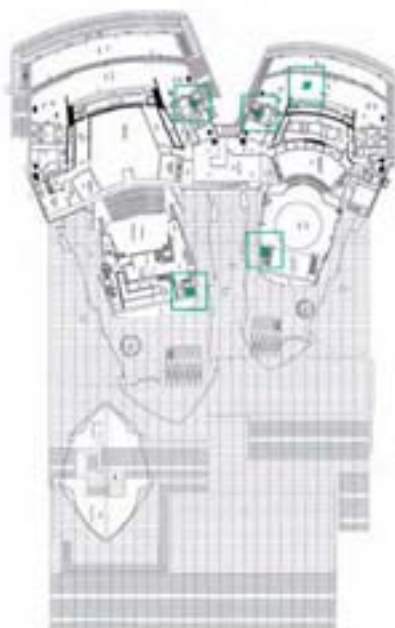
Resolving Accessibility

The proposed new escalators is a key element of the Strategic Building Plan framework to enhance accessibility at the Sydney Opera House.

In the Strategic Building Plan there is also future provision for improved lift access to both the Southern and Northern foyers of the Opera Theatre and Concert Hall via level access through Central Passage.



Level 12' accessible lift locations



Level 42' accessible lift locations

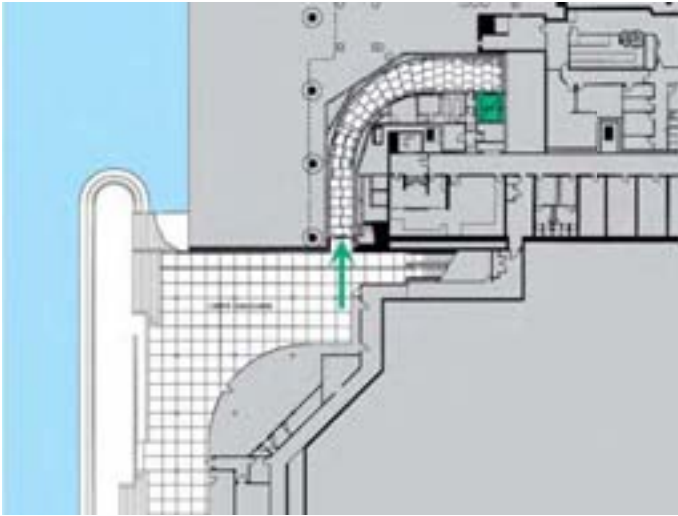
Western Foyer Upgrade

Bennelong Lift

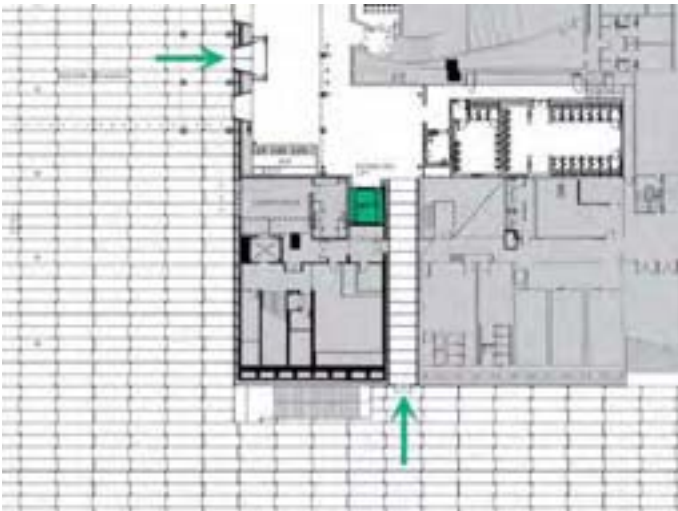
As part of the current Western Foyer Upgrade, the new Bennelong Lift provides an accessible all weather link from the Lower Concourse level to the Western Foyer / Vehicular Concourse level and to the Box Office Foyer.

Access from the Box Office Foyer to the Utzon Room is then available via a small platform lift, whilst wheelchair access to the Concert Hall and Opera Theatre auditoria is available via the Green Room with staff assistance from the Reception Desk.

Patrons requiring disabled access will no longer need to be escorted from Stage Door and the back of house Central Passage on the Vehicular Concourse level.



Level 01' universal access



Level 12' universal access

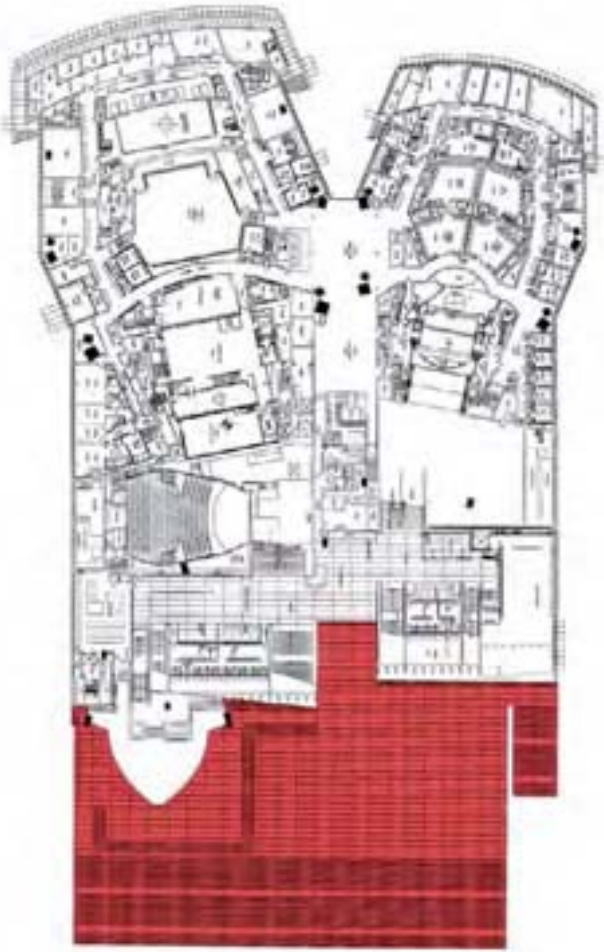


Level 30' universal access

Escalator design guidelines

Utzon has recommended that escalator access is possible between the Box Office Foyer and the Southern Foyers of the Concert Hall and Opera Theatre within the following guidelines:

- No escalators should be placed into the external steps;
- New escalators between the Box Office Foyer and the Southern Foyers should be located to the East and West sides of the stairs as to not obstruct the visual experience of arrival up the stairs from the vehicular concourse through the Box Office to the Southern Foyers;
- The different geometry of the escalator and stairs should be separated and contained with the use of a new precast wall matching the existing side walls;
- The new wall should relate to the geometry of the canopy above but not touch it;
- The existing handrails should be retained and extended where necessary for safety requirements.



No escalators are to be placed on the external steps

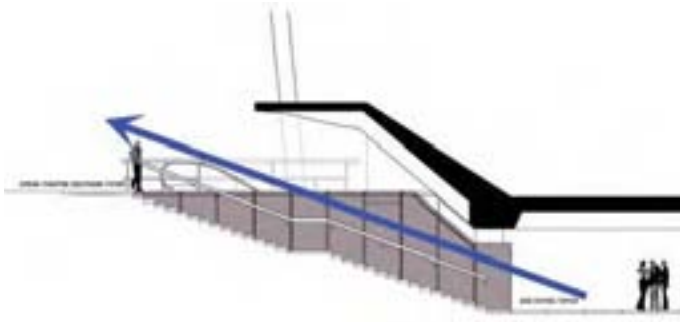
Response to brief

The Box Office Foyer Facility Brief (Issue 2.1 January 2005) specified a minimum step width of 1000mm as a functional requirement for accessibility. The design proposal maintains this 1000mm as an industry standard step width achievable with a number of alternative contractors.

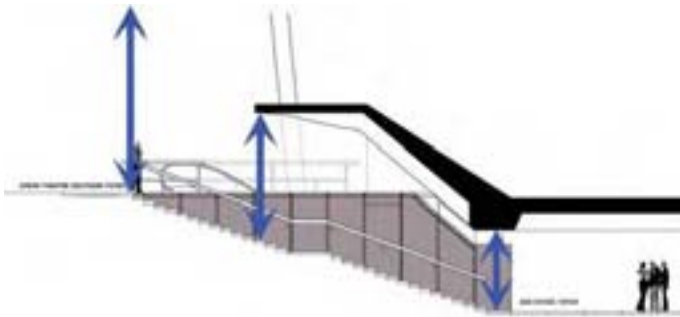
The brief also asked for investigation into a 'Wheelchair' escalator which could provide a wheelchair accessible platform. This was investigated but no supplier could be found in Australia due safety concerns, legislative constraints and servicing difficulties.

There would also be operational and efficiency of movement difficulties caused by the time taken for such escalators to reconfigure between conventional and wheelchair capable modes.

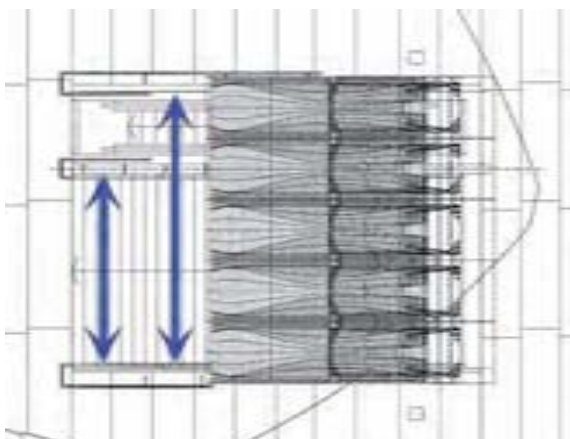
Wheelchair access is improved with the new Bennelong Lift to the Box Office Foyer, which then allows for access to the Concert Hall and Opera Theatre auditoria via the Green Room with staff assistance from the Reception Desk.



Upward movement



Vertical compression and expansion



Horizontal width is less important

Visual sequence

The escalators are located towards the outer edge of visual focus to maintain the visual sequence of the journey from the Concourse level to the Podium. This journey is an experience of:

- Upward movement;
- Vertical compression of space opening up to the Southern Foyers;
- The horizontal width is less important.

Separation wall

Investigations were conducted into alternative designs for the separation wall between stairs and the escalator, confirming:

- The form and materiality of the wall should duplicate the nearby existing reconstructed granite precast end wall;
- The position of the separation wall should align with the strong geometry of the folded beam canopy above;
- The separation wall must not extend beyond the Southern Foyers finished floor level in order to maintain important existing sightlines.

Handrails

The reconfiguration of the handrails to address current code requirements has to be in synergy with its heritage values:

- Departure from existing details would require a building-wide coordinated approach;
- Concealed lighting should be maintained to match existing.

Escalator

To ensure that the new escalators do not visually dominate the existing stairs and foyer spaces:

- Materials will be selected with a receding finish to respect the original dramatic architectural and structural features;
- Lighting will be subtly provided for safety at skirting level.

Southern Foyers egress

The proposed escalators will result in a loss of egress width from the Southern Foyers down the existing stairs to the Box Office Foyer level.

Careful consideration of how to replace this loss of egress has led to the proposal for the modification of the existing door niches from the Southern Foyers to the Podium to incorporate more clear opening width.



Typical existing Level 42 Southern Foyer egress door



Level 42 Southern Foyer fire egress exits

Southern Foyers door niches

The egress width is increased through the Southern Foyers door niches by introducing three new door leafs where there are presently two, and five new door leafs where there are presently four.

For a successful intergration of the new doors into the existing building fabric, the bronze and glass finish to the doors will be manufactured to match existing.



Isometric view of typical existing door niche



Isometric view of typical proposed door niche



Isometric view of typical existing door niche



Isometric view of typical proposed door niche

The design complies with the Sydney Opera House Utzon Design Principles May 2002 in the following ways:

Orientation and Movement

- Approach, openness, fluidity of people's movement
- Human experience
- Disabled access

The escalators are carefully located at the outer edge of visual focus to maintain the important visual sequence of the journey from the Concourse level to the Podium. This journey is an experience of upward movement and vertical compression of space opening up to the Southern Foyers.

Additive architecture

- Expression of elements, produced industrially
- Harmony / uniformity giving intrinsic whole to building
- Modular coordination / standardisation
- Under control by strict geometry

The stair/escalator separation wall embodies these principles in the use of precast modular panels to match the existing geometry and finish. Its location is defined by the position and geometry of the folded beams above.

Light

- Light to flatter human form of skin and hair
- General indirect with custom design fittings
- Sculptural effect accented by light

General lighting will be provided through light fixtures within the handrails and within the escalators to maintain and enhance the primary lighting of the concrete canopy above.

Process

- Full-size mock-ups - as both design and construction tool
- Models
- Work in collaboration with manufacturer

The design development, documentation and construction will follow Jørn Utzon's process of design, which integrates drawings, models, samples, prototypes, materials, research and close collaboration with manufacturers. This process enables Jørn Utzon to maintain a critical and active role throughout the total design and construction stages.

The following policies are relevant:

Policy 1.1

All work on the Sydney Opera House should be carried out within the framework of Utzon's Design Principles as endorsed in 2002.

Complies.
See statement related to Design Principles.

Policy 1.4

In any adaption or modest functional improvement, interiors designed by Hall should retain or recover the character of his original design regimes with their co-ordinated detailing.

Complies.
See statement related to Design.

Policy 1.5

Major works within the auditoria and podium are acceptable when technical advance, expert advice, design quality, adequate resources and meticulous construction can be combined to create performance and service facilities that will improve function and reinforce or enhance the significance of the Sydney Opera House, provided that:

- *The work is planned in the context of an overall plan for the place*
- *The scheme is developed in accordance with Policy 56.1 on the management of change*

Complies.
See statement related to Strategic Building Plan.

Policy 17.1

Both the original arrival sequences with their different and changing experiences should be retained:

- *Forecourt, grand staircase, podium, box office foyer, and auditoria foyers*
- *Vehicle concourse, stairways, box office foyers and auditoria foyers*

Complies.

See statement related to Design Principles - "Orientation and Movement".

Policy 18.1

Any proposal to improve access between levels should not:

- *Vitiate Utzon's concept for the sequence of public spaces*
- *Interrupt or obscure any of the original structural systems*
- *Result in the sub-division or cramping of spaces with an assessed significance of considerable (B) or exceptional (A)*

Complies.

See statement related to Design Principles - "Orientation and Movement".

Concert Hall Stairs

The Concert Hall stair is reinforced concrete spanning between primary reinforced concrete beams at the top and bottom and an intermediate beam at the half landing. The top and bottom beams also support the adjacent level 42' and level 30' floor structure.

All three beams will require some demolition in order to introduce the escalator. The upper beam will be slightly notched at the top and will require local strengthening. The intermediate and lower beams will be completely cut by the escalator pit and will be replaced with new steel or reinforced concrete beams installed at a level below the escalator pit.

A reinforced concrete wall and slab will be constructed between the escalator and the stair to create the fire rated escalator pit and to provide support to the new precast wall panels.

Opera Theatre Stairs

The Opera Theatre stair and support structure is similar to the Concert Hall stair, but the stair is narrower and the base of the stair is supported on a reinforced concrete wall for over half the stair width.

The escalator pit construction will be similar, but the strengthening measures will not be as extensive, as those for the Concert Hall since the Opera Theatre stair is narrower and the lower support beam is a shorter span and much less heavily loaded.

Materials and finishes schedule

Escalators

Balustrade	- Clear safety glass
Skirting	- Stainless steel with receding finish
Decking	- Stainless steel with receding finish
Treads	- Aluminium with receding finish
Handrail	- Rubber with dark finish

Staircases

Treads	- Reconstructed granite precast panels to match existing
Walls	- Reconstructed granite precast panels to match existing
Balustrade	- Bronze to match existing
Floor	- Reconstructed granite precast panels to match existing

Doors

Frames	- Bronze to match existing
Hardware	- Bronze to match existing
Leafs	- Safety glass with bronze detailing to match existing
Sidelights	- Safety glass with bronze detailing to match existing

APPENDIX A PHOTOMONTAGES

Concert Hall Stairs viewed from Box Office Foyer

Photograph - Existing

Photomontage - Proposed

Concert Hall Stairs viewed from Southern Foyer

Photograph - Existing

Photomontage - Proposed

Opera Theatre Stairs viewed from Box Office Foyer

Photograph - Existing

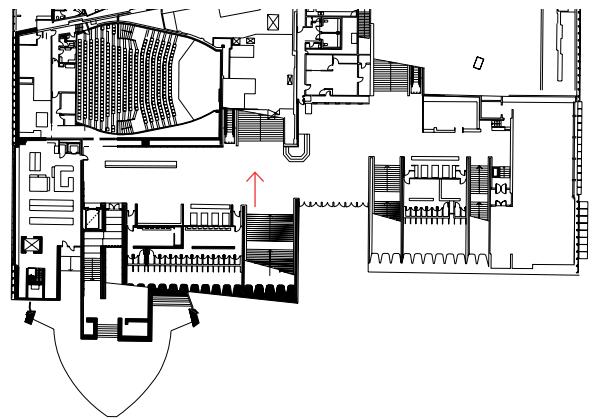
Photomontage - Proposed

Opera Theatre Stairs viewed from Southern Foyer

Photograph - Existing

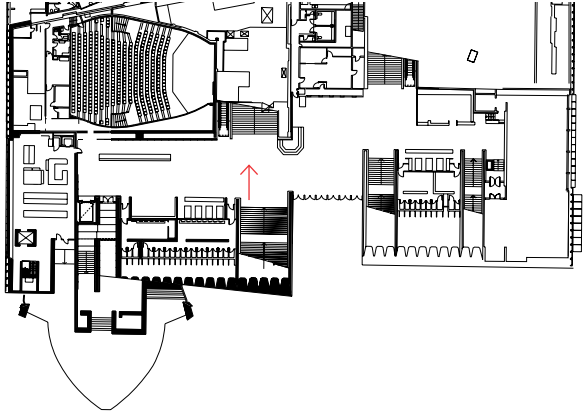
Photomontage - Proposed

**CONCERT HALL STAIRS
PHOTOGRAPH - EXISTING**



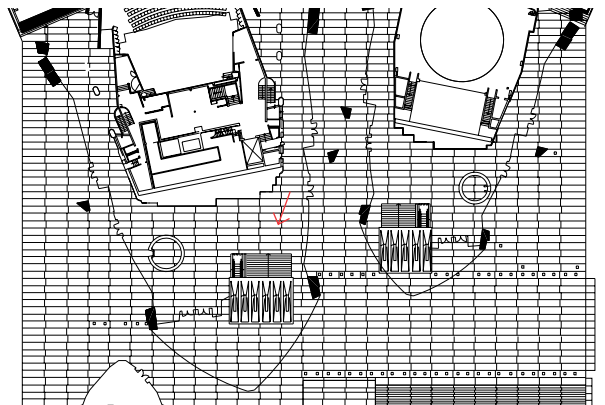
Key Plan - Level 30'

**CONCERT HALL STAIRS
PHOTOMONTAGE - PROPOSED**



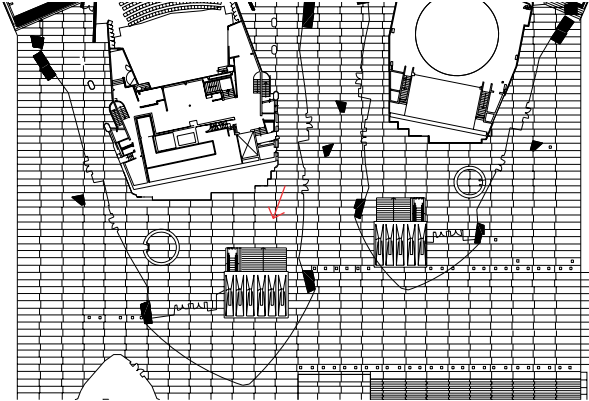
Key Plan - Level 30'

**CONCERT HALL STAIRS
PHOTOGRAPH - EXISTING**



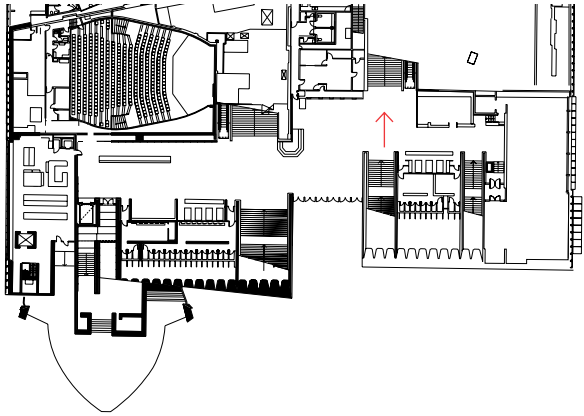
Key Plan - Level 42'

**CONCERT HALL STAIRS
PHOTOMONTAGE - PROPOSED**



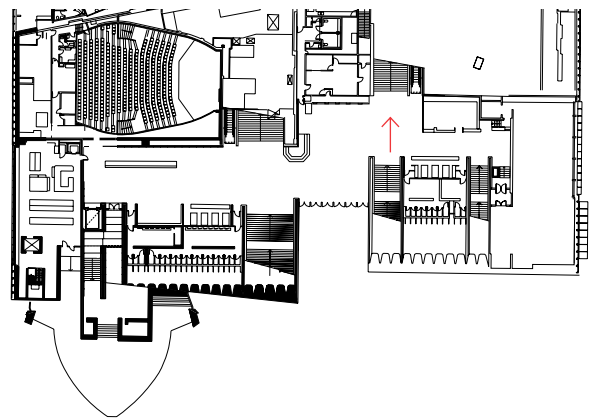
Key Plan - Level 42'

**OPERA THEATRE STAIRS
PHOTOGRAPH - EXISTING**



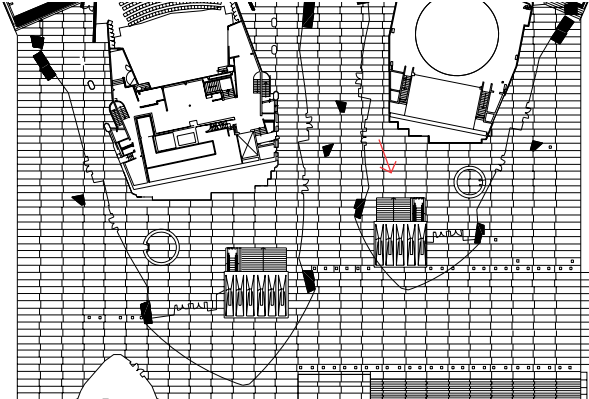
Key Plan - Level 30'

**OPERA THEATRE STAIRS
PHOTOMONTAGE - PROPOSED**



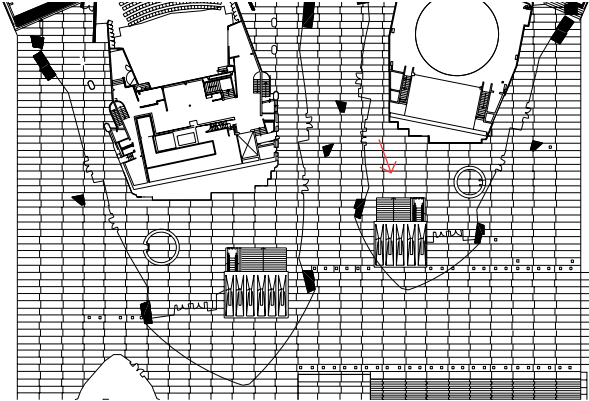
Key Plan - Level 30'

**OPERA THEATRE STAIRS
PHOTOGRAPH - EXISTING**



Key Plan - Level 42'

**OPERA THEATRE STAIRS
PHOTOMONTAGE - PROPOSED**



Key Plan - Level 42'

APPENDIX B ARCHITECTURAL DRAWINGS

DA 001 Rev 000 Level 12' & 21' Location Plans
DA 002 Rev 000 Level 30' & 42' Location Plans
DA 003 Rev 000 Escalator to Opera Theatre Southern Foyer
DA 004 Rev 000 Escalator to Concert Hall Southern Foyer

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