4.0
BUILDING DESIGN PRINCIPLES

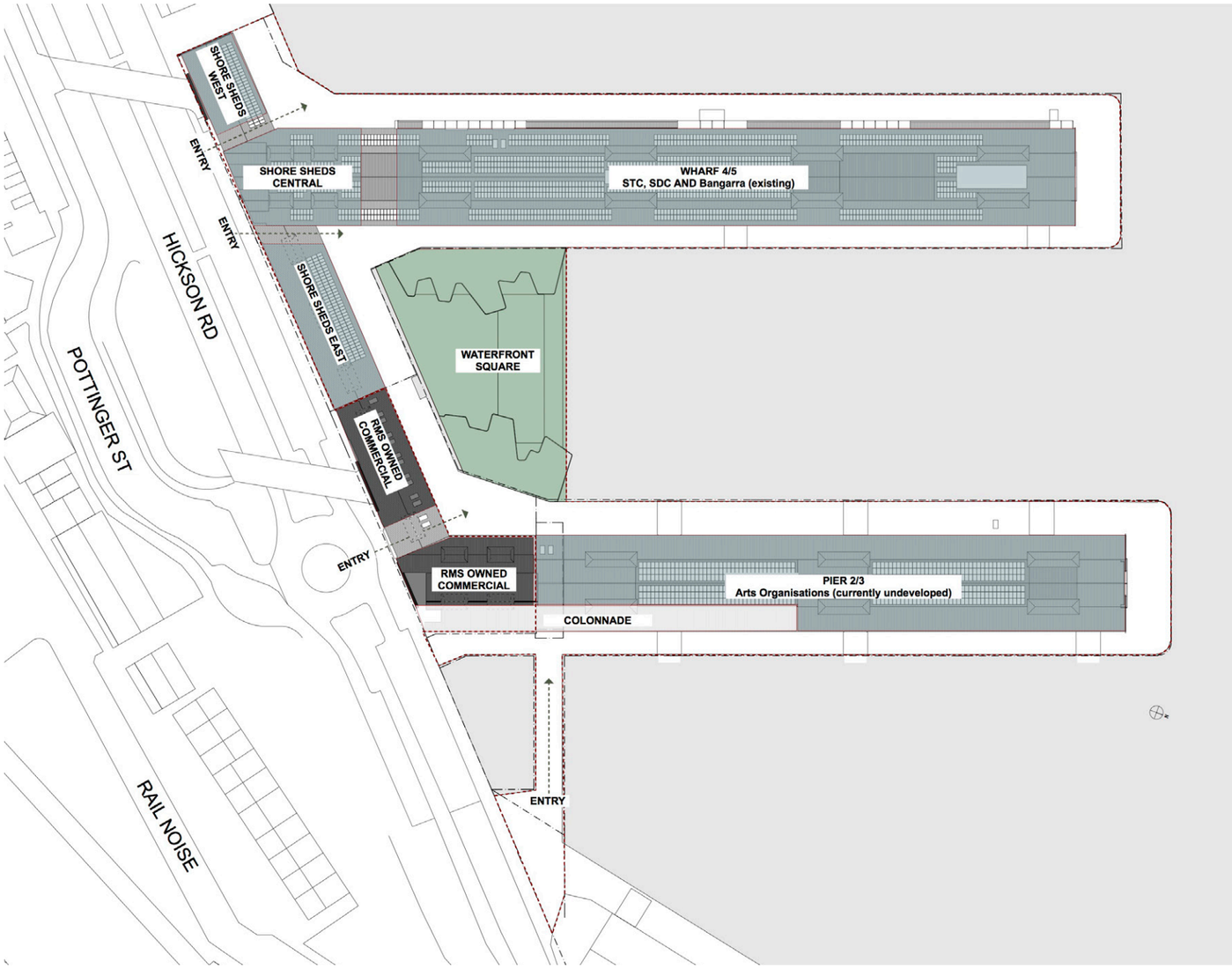

Figure 78 Site plan.

4.1 BUILDING ANALYSIS

The Walsh Bay Arts Precinct is accommodated within a series of waterfront buildings and piers immediately north of Hickson Road. Wharf 4/5 currently accommodates the Sydney Theatre Company, Sydney Dance Company and Bangarra Dance Theatre. Pier 2/3 is the last remaining undeveloped finger wharf in Sydney.

The continuous band of buildings fronting Hickson Road and linking the finger wharves are collectively known as the Shore Sheds. The shore sheds are linked at the upper level but have several openings at ground level which provide access to the wharf aprons. These entrances break up the shore sheds at ground level into several smaller tenancies, some of which (shown in grey) are owned by RMS, leased to commercial tenants and outside the scope of this project. Within the project boundary are three sections of the shore sheds. This report refers to them as 'Shore shed west', 'shore shed central' and 'shore shed east'.

The project proposes a new waterfront square, providing an outdoor performance space linking the existing aprons of Pier 3, Pier 4 and the shore sheds.

The drawing below shows an indicative section through Pier 2/3. Wharf 4/5 is similar. The finger wharf buildings have two primary storeys which are referred to as the Upper Shed and the Lower Shed. Both levels have just sufficient storey height to accommodate a mezzanine level. In describing the design, this report refers to the existing lower shed level as 'Ground Level', the lower mezzanine as 'Mezzanine', the existing upper shed level as 'Level 1', and the upper mezzanine as 'Level 2'. A roof mezzanine designated level 3 accomodates plant.

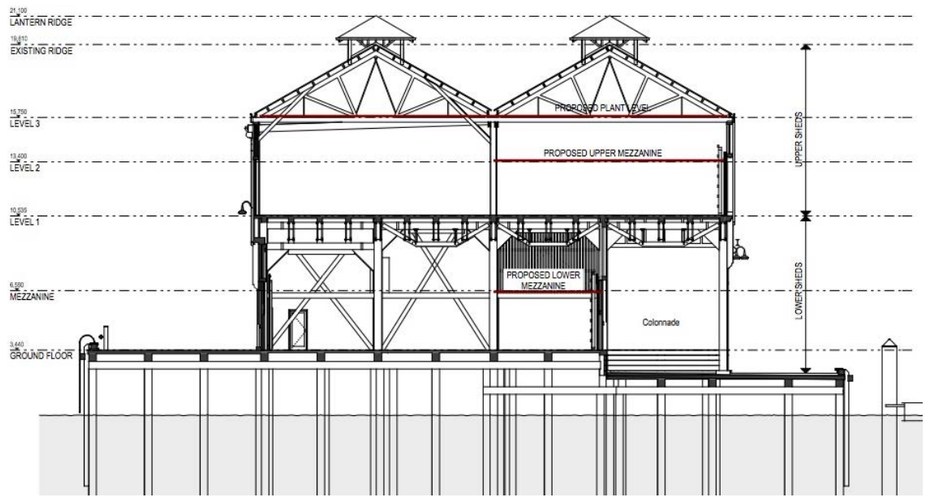

Figure 79 Existing section Pier 2/3

Figure 80 Pier 2/3 northern elevation.

Figure 81 Pier 2/3 western elevation.

Figure 82 Wharf 4/5 viewed from Pier 2/3 western apron.

Figure 83 Wharf 2/3 viewed from Lower Fort Street.

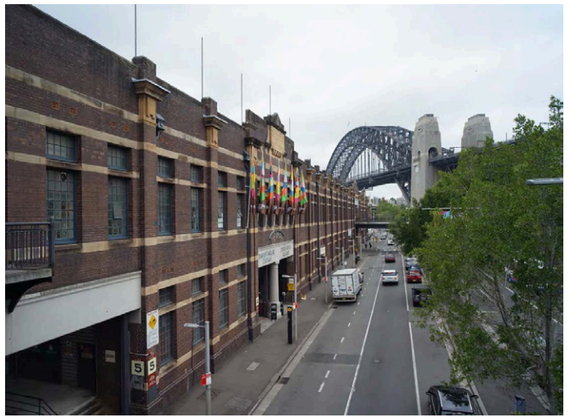

Figure 84 Hickson Road Shore Sheds facade

Figure 85 Pier 2/3 upper shed interior

Figure 86 View from Pier 2/3 upper shed towards Harbour Bridge

Figure 87 Checkerboard pattern of Wharf 4/5

Figure 88 Pier 2/3 lower shed interior

Figure 89 View from Pier 2/3 upper shed towards Harbour Bridge

Figure 90 Pier 2/3 western elevation

The Piers are modular, constructed using a regular structural module of 20 feet by 20 feet (6x6m). the module is evident in the column grid of the lower shed, while the upper shed drops intermediate columns in the lateral direction to provide a column grid of 40 feet by 20 feet.

The structure of the lower shed is defined by 5 rows of columns at 20 foot centres. Each of the four bays is capped with strongbacks and a composite steel and timber floor structure.

The upper shed is defined by 3 rows of columns at 40 foot centres, capped by two open trusses that meet at a central valley.

The pier substructure employs a 10 by 10 feet pile grid which is further braced by tapering piles.

The Pier 2/3 building originally contained a long loading bay within the building footprint at both the upper and lower levels. In the lower shed, this has been partially retained as the space which now serves as the eastern colonnade.

The upper shed loading bay was inside the building on the western side, accounting for the different floor structure in this bay. The floor was subsequently raised and the cargo doors removed.

The eastern elevation of Pier 2/3 employs a checkerboard rhythm which is typical of the Walsh Bay finger wharves. There are cargo doors in every second bay with the lower and upper sheds in alternate positions. This arrangement enabled simultaneous use of both levels with minimal risk of cargo being dropped on workers on the lower deck. On both levels, clerestory windows are located immediately above the solid bays, further reinforcing the checkerboard rhythm.

On the western elevation, the lower level bays alternate between solid and cargo doors. The upper floor has no openings at floor level, a legacy of the long loading bay having been inside this side of the building. Both levels have a continuous clerestory window which admits daylight, together with a series of upper level roof lanterns.

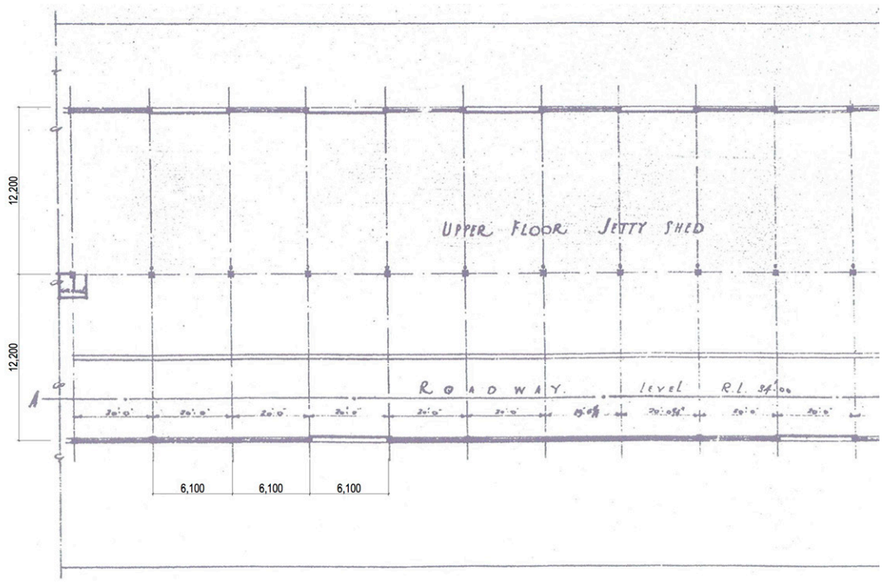

Figure 91 Portion of original upper floor plan

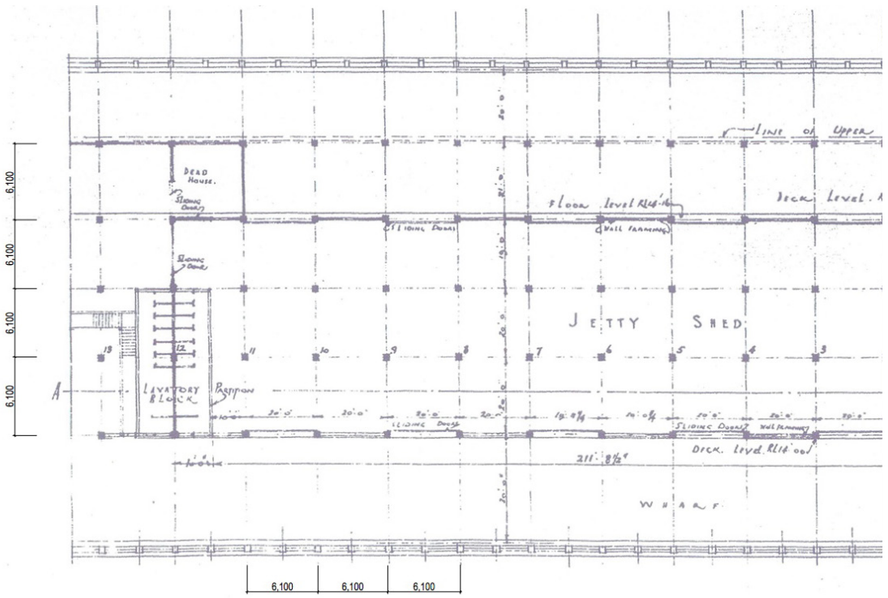

Figure 92 Portion of original lower floor plan

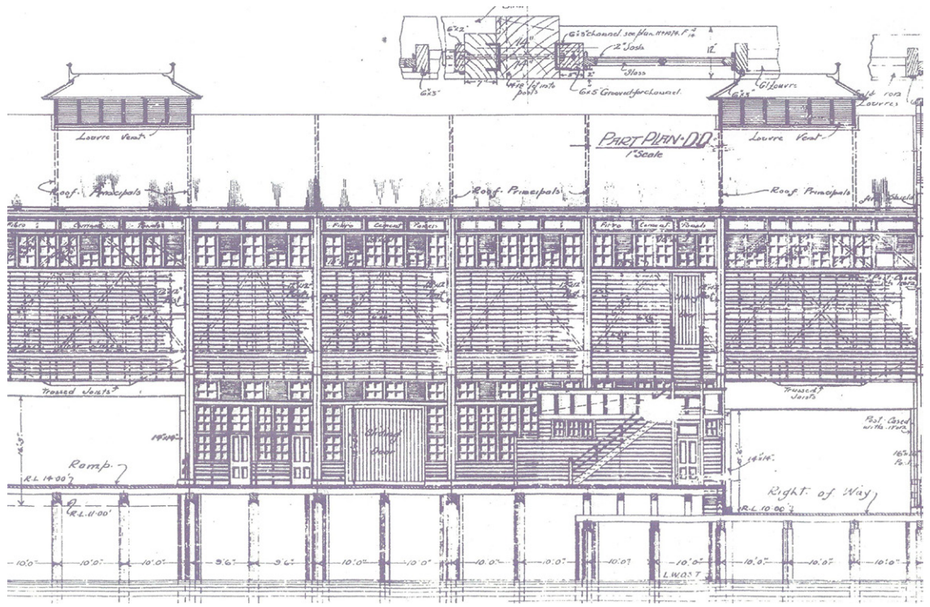

Figure 93 Part of original elevation

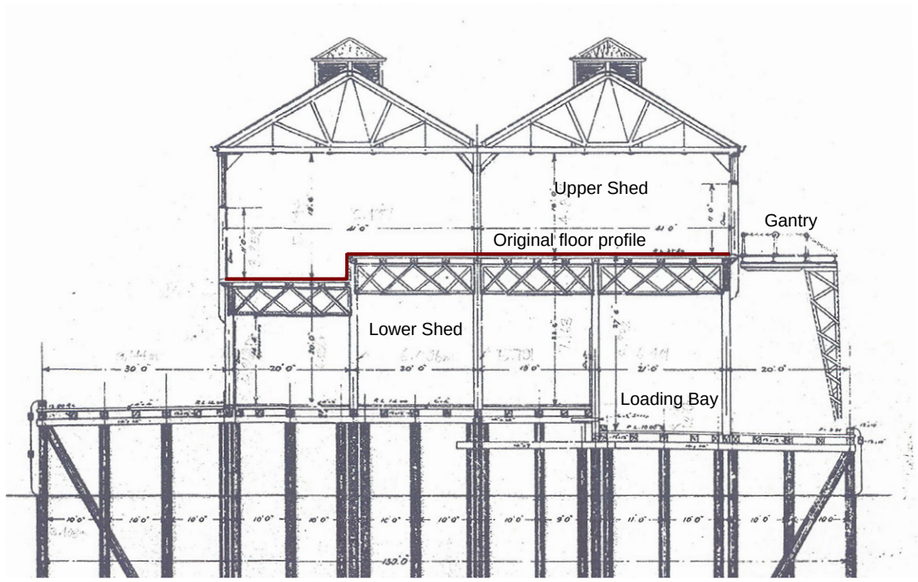

Figure 94 Original section showing floor profile with lowered floor to the west

4.2 HERITAGE APPROACH

Acknowledging the heritage significance of the Walsh Bay Wharves, the new uses are carefully inserted into the historic containers, with a clear separation between original and new fabric.

Pier 2/3, the last remaining undeveloped wharf, contains several heritage features which have been retained and incorporated into public areas and significant spaces. The superstructure itself is of the highest heritage value, thus the removal of structure is only proposed where absolutely necessary to accommodate the proposed arts and cultural uses.

The proposal is accompanied by a Statement of Heritage Impact prepared by Tropman & Tropman Architects. The following excerpt from this report summarises the heritage approach for the Walsh Bay Arts Precinct.

The adaptive reuse of 19th and early 20th century industrial buildings for cultural uses, with their large spans and pragmatic functional elements, has become an increasingly accepted technique for housing performance arts spaces and galleries.

These buildings lend themselves readily to new uses, insertions and adaptation as old functions become redundant.

The Wharves and Shore Sheds at Walsh Bay fall into this genre and as such can be benchmarked against others both locally and internationally.

With the new uses comes the need for alteration and change to the fabric and original layouts. While the Burra Charter requires to "do no harm", the nature of the activities almost always requires some areas of significant alteration to the buildings' historic fabric.

All such changes should be informed by a well developed design philosophy for each situation rather than an accidental discovery process with individual resolution of the detail. Preplanning and a three dimensional recognition of the interaction with new and original fabric is therefore essential.

Because of the working performance spaces and theatres, their needs range from being intensely populated to the need for clear and uninterrupted spans with all functions requiring an overlay of acoustic isolation.

Under these circumstances and with the permanency of the new Walsh Bay Arts Precinct cultural uses confirmed, it must be recognised that not all changes will be readily reversible. The design must therefore identify and have clarity as to what is... a 'permanent change' and what is 'reversible'.

Walsh Bay in the 1970s with its maritime use declining became the haunt of the rebel artist squatter and this "heritage" was formally adopted and realised in the Pier 4/5 creation by Vivian Fraser and others.

By his own admission Fraser's work was a struggle between complexity and simplicity. He has stated that "simple" did not mean easy to achieve . His insertions of theatre spaces and workshops removed and changed many things but his hand always touched the fabric lightly. The building form in Pier 4/5 is always recognisable and able to be interpreted.

The ensuing 30 years saw what can best be described as Sydney's intangible cultural heritage[1] grow within that extraordinary and ground breaking adaptive reuse. Each of the initial tenant companies has endured and Wharf 4/5 is now considered as 'home' for the companies and the idea of reinstating the former use as a wharf is inconceivable. There is now a cultural and historic synergy between the physical heritage and the cultural icons of STC, ATYP, Bangarra and SDC.

Pier 2/3 was identified as an extension of both these cultural streams. When DUAP announced the approval of the Walsh Bay Precinct Master Plan it emphasised the correlation between the historic wharves around the water court and the creation of the cultural precinct reflected as a continuum of the Wharf 4/5 cultural uses.

The new Walsh Bay Arts Precinct can be considered as an extension and development of the concept of physical and intangible cultural heritage. The same challenges apply in finding simplicity in the adaptive reuse for Pier 2/3 and like Fraser's experience to achieve simplicity is one of the primary challenges. What also applies similarly is the recognition of the fact that the new functions and uses will alter the building into the future.

The Wharf buildings of Pier 2/3, like Pier 4/5 will become for the foreseeable future, permanent performing arts venues and are not likely therefore to be returned to be Long Shore wharves. Finally through skilled architectural design and empathic treatments the heritage fabric can be seen, understood,admired and interpreted.

Key to this, however, is the need to approach the design process and its complexity holistically with special emphasis on the insertion of services and acoustic treatment the implementation of which must be recognition of the architectural heritage. This holistic design philosophy should be singularly directed to allow the least interference with the built form, fabric and context and aid in the interpretation of the building in its historic context.

1 Traditional, contemporary and living at the same time: intangible cultural heritage does not only represent inherited traditions from the past but also contemporary rural and urban practices in which diverse cultural groups take part;

http://www.unesco.org/culture/ich/doc/src/01851-EN.pdf

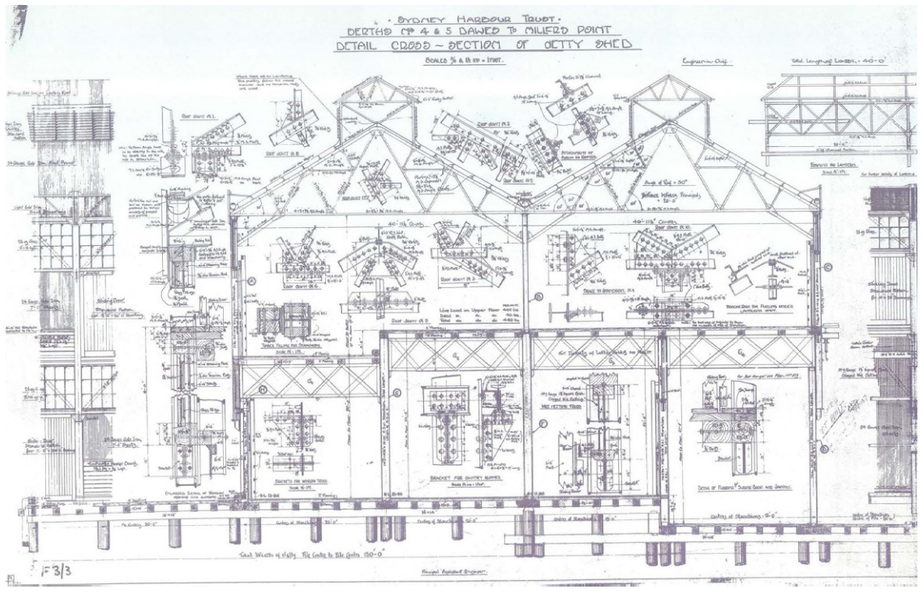

Figure 95 Wharf 4/5 historic section, Sydney Harbour Trust

CONSTRAINTS ARISING FROM SIGNIFICANCE

These are the important constraints which must be addressed in WBAP Development and in the Phase 2 Heritage Impact Assessment.

PIER 2/3

Extract from CMP Wharf 2/3, by Tropman and Tropman Architects November 2000:

"8.1.1 No activity should be allowed that will confuse the fact that Wharf 2/3 site is an important component of the local cultural development of Walsh Bay, Millers Point, The Rocks, Port Jackson and Sydney.

8.1.2 No activity should be allowed that will confuse the fact that Walsh Bay Precinct was designed not as a series of individual buildings but as a whole large engineering work.

8.1.3 No activity should be allowed that will confuse the former general cargo berth uses of Wharf 2/3.

8.1.4 No activity should be allowed that will confuse the fact that Wharf 2/3 has been associated with the Sydney Harbour Trust and Maritime Services Board operations, with wharf owners and labourers and generally with the maritime history of Sydney and Australia.

8.1.5 The early planning and detailing features of Wharf 2/3 site should be appropriately conserved.

8.1.6 The maximum amount of significant fabric of Wharf 2/3 should be retained in-situ and conserved.

8.1.7 Significant industrial items and artefacts items should be retained in-situ and conserved.

8.1.8 No activity should take place that could destroy a potential archaeological resource.

8.1.9 Any new building, services, landscaping or activities aU or in the vicinity of Wharf 2/3 site should have regard to the setting, design, scale and character of the site, precinct and urban water surrounds.

8.1.10 The regard the public of Sydney are likely to have for this area should be addressed in future uses, activities and works at the site."

WHARF 4/5

These are the constraints by Graham Brooks and Associates which must be addressed in the alterations to Wharf 4/5.

- Wharf 4/5 and associated shoresheds should continue to operate as an integral component of the whole of the Walsh Bay Precinct.
- Wharf 4/5 is an integral part of the historic fabric of the area and should continue to relate both visually and functionally to the area.
- The primary significance of Wharf 4/5 as a former commercial industrial maritime wharf and warehouse facility should be respected in any future modifications to the building. As the reuse of the building is now part of its cultural significance, there is no requirement to return the building to its original spatial configuration

Building elements

- External detailing of the buildings should be respected with the retention of original building material where possible. Where replacement of original material is required, matching materials should be sought.
- Building elements of identified significance should continue to be conserved.
- Wharf 4/5 has been successfully adapted and reused as a performing arts space. Although it has been recognised as a centre for the performing arts, future uses of the site should not be limited to use as a venue for the performing arts. Other compatible uses could be considered in the future.
- Wharf 4/5 is a strong visual element on the foreshore of Sydney Harbour. The site is clearly visible from Observatory Hill, the Sydney Harbour Bridge, Hickson Road, McMahon's Point, North Sydney and Sydney Harbour.
- Aspect (east/west). The aspect of the building is east west which contributes to problems regarding extreme heat from the westerly sun.
- Location in close proximity to residential apartments in newly constructed Wharf 6/7 has contributed to issues of noise pollution from the Dance Rehearsal Studios on the western side of the Lower Deck Level. Recent complaints from residents in these apartments have been recently addressed by Art NSW which has insulated some sections of the rehearsal studios and modified the volume of sound speakers by computer controlling the volume through a central computer system.

Extract from 2007 CMP Wharf 4/5 by Graham Brooks and Associates:

Arts and Performing Arts in particular have repurposed the precinct over the past 35 years. Adaptive reuse – as opposed to restoration to the original condition – is the preferred model in significant buildings which cannot be used as singular exhibition pieces, or be sustained from either a benefactor or the State purse. There is a well reasoned argument generally in accordance with ICOMOS and Burra Charter principals that by adaptive reusing a building its life and usefulness is extended and its present maintained.

Figure 96 North elevation of Pier 2/3

Figure 97 Detail of Pier 2/3 facade

4.3 BUILDING DESIGN APPROACH

4.3.1 PIER 2/3

PUBLIC SPACES

In the lower shed, the main foyer has been located in the centre of the building visually integrating the heritage deadhouse and other elements. Access to the 'raw' event space is framed by an existing opening in the original timber screen. Lifts and a stair provide access to the upper foyer.

In the upper shed, the main Level 1 foyer has been located under the central lanterns. Public circulation to the south of the foyer is on the eastern side of the building, taking advantage of the cargo door openings and a panoramic view of the Sydney Harbour Bridge. This public corridor leads to Bell Shakespeare's rehearsal spaces at the southern end of the pier and to the ACO's auditorium to the north. Western access is also provided to this space.

The ATYP Theatre is accessed via Level 2- the upper level of the foyer.

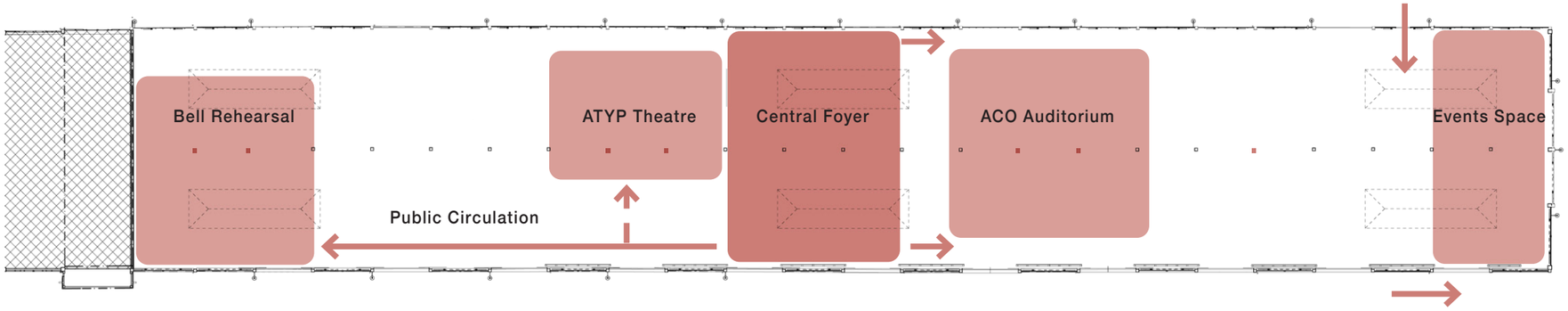

Figure 98 Public spaces Level 1 Pier 2/3

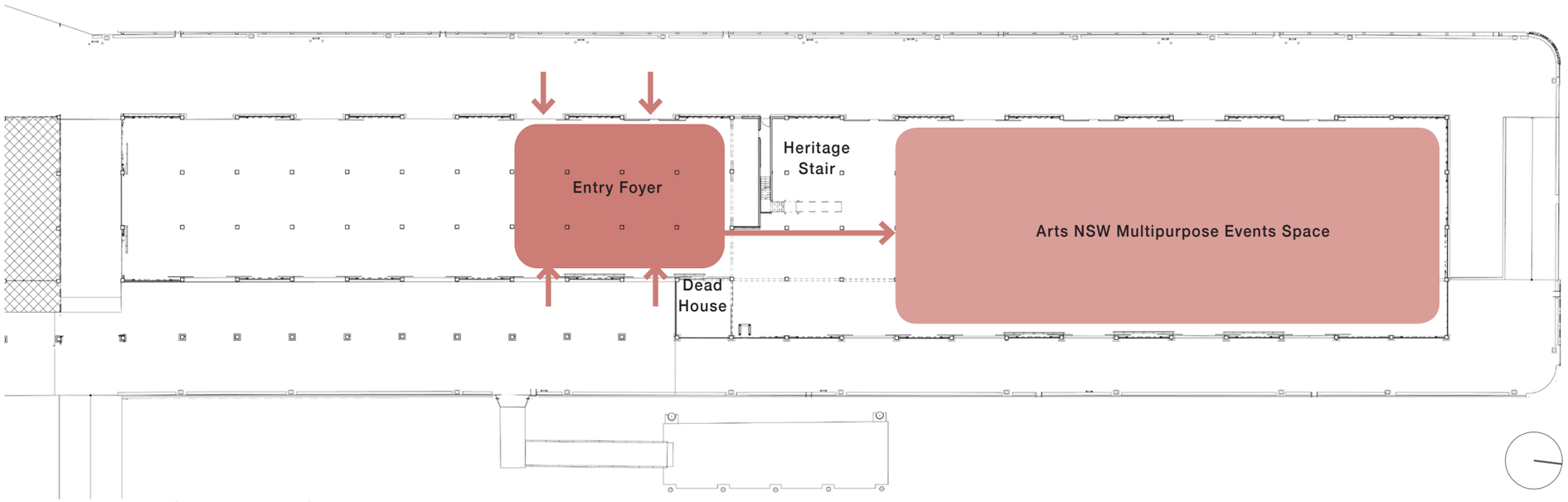

Figure 99 Public spaces Ground Floor Pier 2/3

RAW SPACE

A large 'raw' space for temporary events is retained at the nothern end of the lower shed beyond the heritage timber screen and 'dead house'. This space, which spans the full width of the building, has minimal interventions to reveal and celebrate the heritage structure and to capture views both into the precinct and toward the Sydney Harbour Bridge.

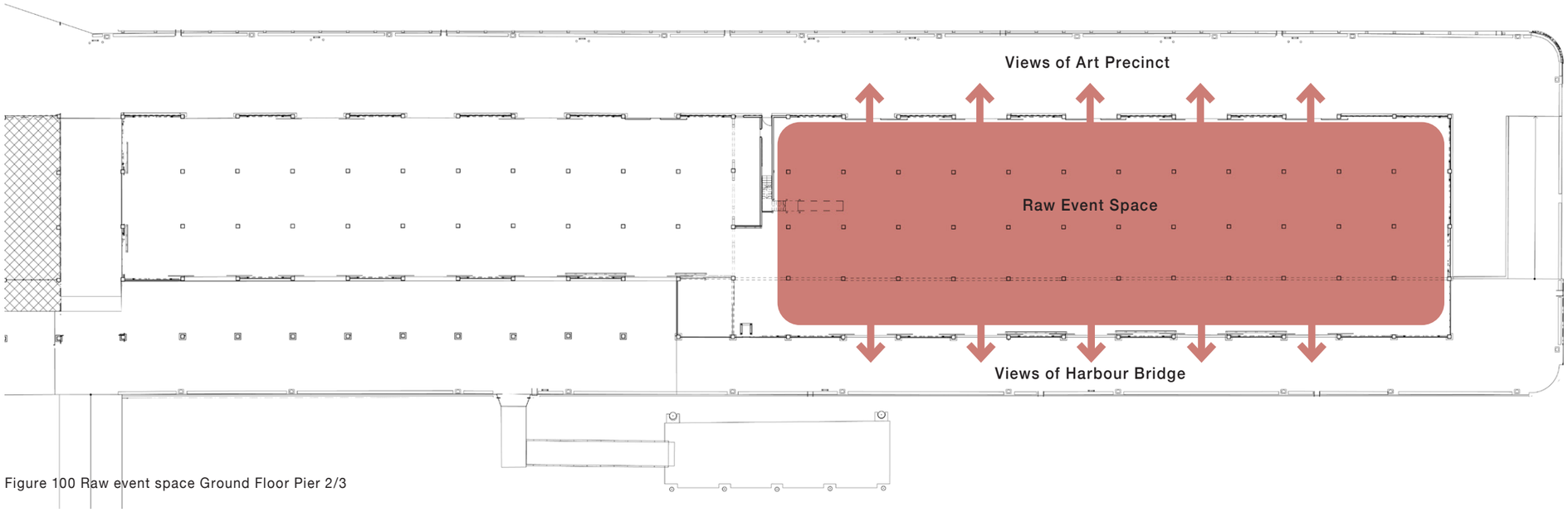

Figure 100 Raw event space Ground Floor Pier 2/3

MEZZANINES

At the south end of the lower shed, mezzanines are carefully located to reveal the full height space immediately inside the cargo doors.

The mezzanine floor structure is separated as far as possible from retained heritage elements in accordance with the requirements of the Conservation Management Plan.

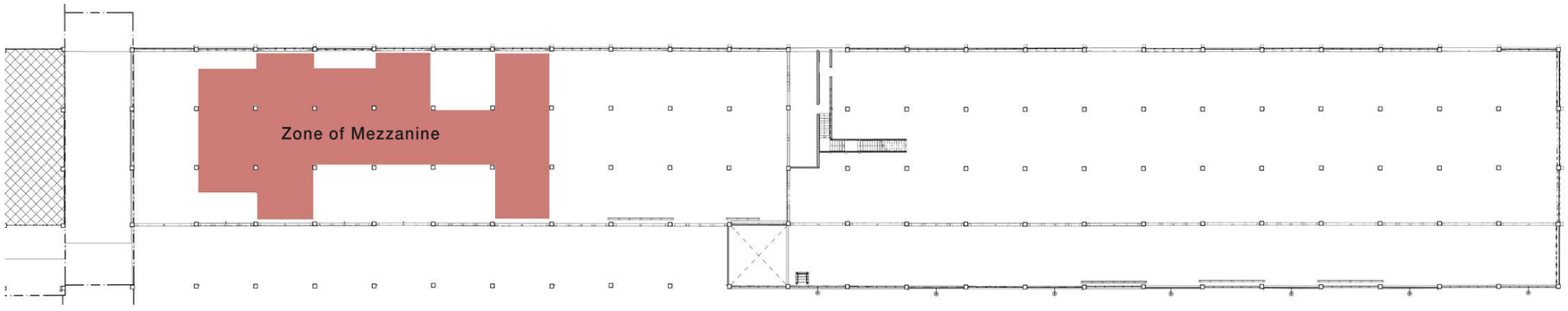

Figure 101 Mezzanines Pier 2/3

GANTRY BALCONIES

Upper level gantry balconies have been located on the facades relating to the central Foyer, the northern function space and Bell's smaller rehearsal room. On the west facade, they provide break-out spaces for staff and performers while to the east they serve a more public function. These balconies reference the travelling gantries that once moved along the wharf aprons.

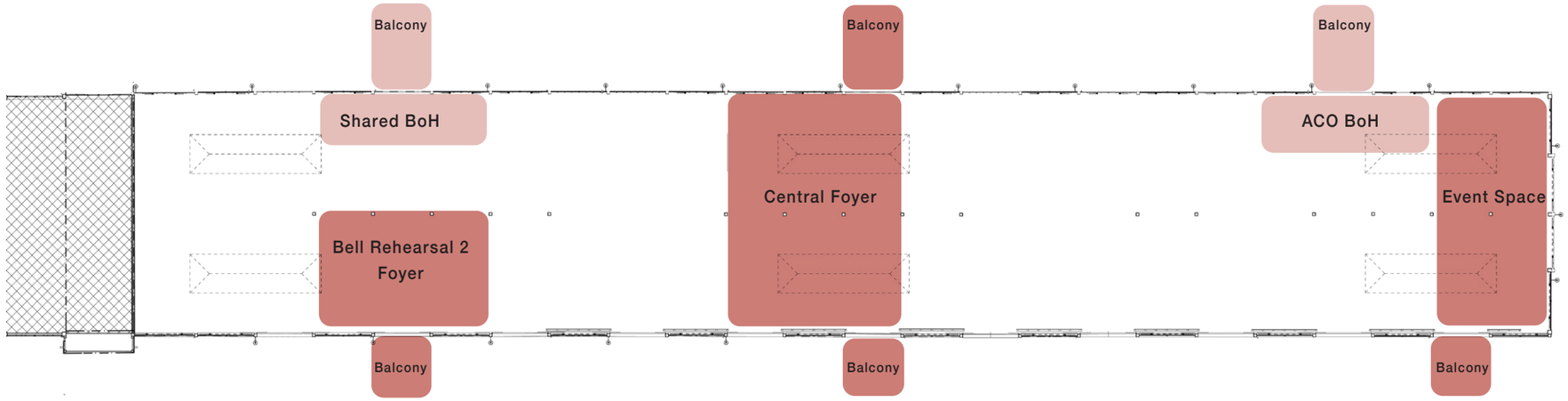

Figure 102 Level 1 Gantry Balconies Pier 2/3

PERFORMANCE SPACES

Auditoria and rehearsal spaces are required to be column free and are thus located in the upper shed to minimise removal of existing structure. Removal of storey posts is only proposed in the upper shed, and limited to accommodate the arts companies' requirements.

New insertions such as auditoria will be expressed as distinct architectural elements that will read as objects independent of the original fabric. This clearly articulates the new from the old, reading as containers within the historic shed and allows for periodic condition inspection of the original timber structure.

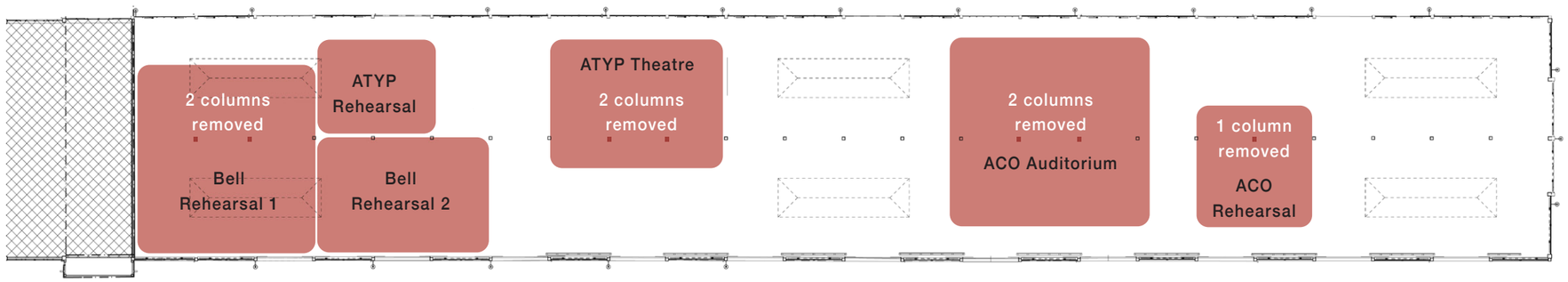

Figure 103 Level 1 Performance Spaces Pier 2/3

FACADE RHYTHM & PATTERN

In some instances, the existing cargo doors are opened up with new glazing installed in the opening, reinforcing the checkerboard façade pattern of the original building.

The existing upper floor western façade has no openings below the clerestory windows. New openings are proposed in a checkerboard rhythm respecting the rhythm of the wharves. A louvred screen over some of the new openings makes the new windows appear more solid than the clerestory or open cargo doors.

Balconies are designed as a contemporary interpretation of the original gantries. Combined with required access stairs, these create a sculptural contemporary architectural intervention which reads distinctly from the original building fabric.

The locations of the stairs and balconies have been modified since the Stage 1 consent in order to better relate to internal planning arrangements. The principle of responding to the checkerboard rhythm of the facade, has however been adhered to.

A new canopy is proposed adjacent the main goods lift and loading area on the east facade. The canopy will be a contemporary element that interprets the historical loading platforms that were once present.

New external lifts are proposed to provide accessible travel to offices and the function space on Level 1. The steel framed shafts are glazed to maximise transparency and to minimise visual impact on both piers.

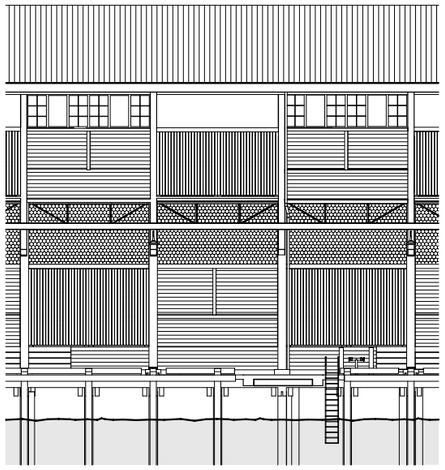

Figure 105 Pier 2/3 eastern elevation detail

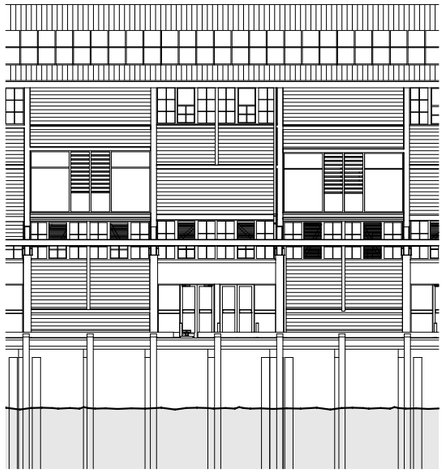

Figure 106 Wharf 4/5 eastern elevation detail.

ROOF PROFILE

The existing roof profile has been maintained where ever possible, however, the STC Theatres and Workshop, ACO auditorium and ATYP theatre all require additional volume for acoustics and mechanical plant associated with them. Amendments to the existing roof have been minimised and changes to the profile are within the central valley and between the existing lanterns.

Common detailing between roof alterations is proposed for both Pier 2/3 and Wharf 4/5 to maintain a consistent architectural language, in accordance with the Stage 1 Conditions of Consent.

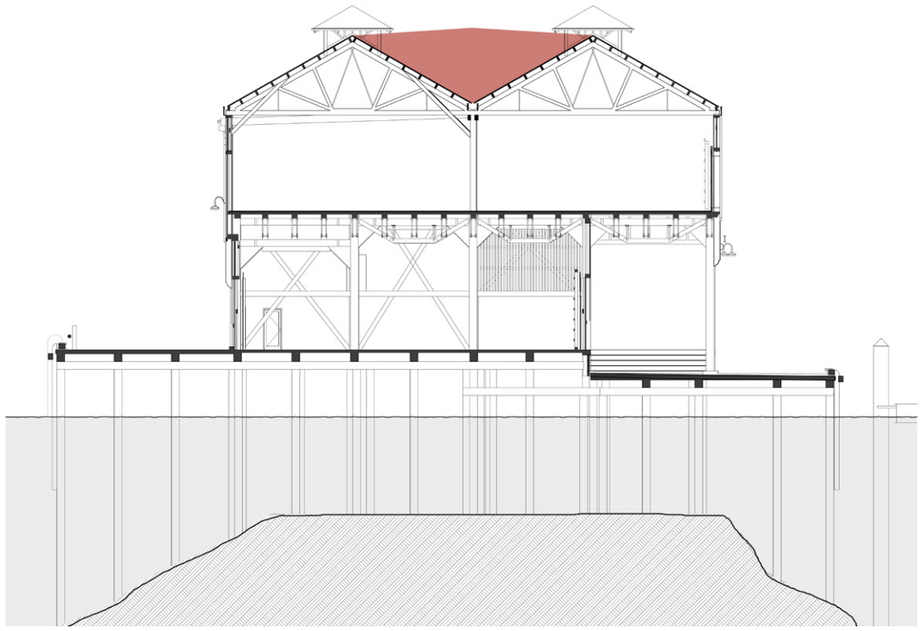

Figure 104 Section through raised section of roof.

4.3.2 WHARF 4/5

UPPER SHED

Externally, the design for Pier 4/5 Upper Shed responds to the functional needs for the renewal of the STC tenancy, as developed in the separate SSDA for STC50 and to the architectural language developed by Viv Fraser. The new elements are generally in accordance with the proposals for Pier 2/3, and consistent with the conservation strategies for the precinct. They include:

- Three new external lifts
- New egress and access stairs: two to east and two to west
- New internal valley roof 'pop-ups'
- Localised new external glazing
- Renewal of glazed elements at the lower levels to improve access and thermal performance

Internally, this SSDA includes for the removal and relocation of a number of Upper Shed columns as set out in the attached drawings, and the strengthening of the existing timber roof trusses to allow for the required spaces for performance and production spaces. Similar detailing of new elements is proposed across the precinct.

LOWER SHED

Within the Lower Shed, the refurbishment works are consistent with the Stage 1 DA consent. Three occupancies are proposed, each accessed separately from the wharf aprons, as well as public toilets and some service areas.

The Sydney Dance Company tenancy remains substantially as existing, with upgrades to improve security and access, and reworking of the current workshop space to create a new large Studio facing east onto the main public focus of the Precinct.

The Bangarra tenancy is more substantially altered, with the main rehearsal/performance space reconfigured to improve functionality, a column removed from the smaller rehearsal studio as per the Stage 1 consent, and the remaining spaces reconfigured to provide better foyer exhibition space and a new function room at the north end of the Pier, opening out onto the wharf apron.

Figure 107 Wharf 4/5 cargo doors

Figure 108 SDC Workshop to be converted to Studio 5

4.3.3 SHORE SHEDS

The work proposed to the Shore Sheds is confined to those related to Wharf 4/5. The work is mainly internal and will have minimal impact on the external heritage fabric of the building.

New entry glazing to the Choirs tenancy to Hickson Road will improve their access, presentation and acoustics. The work related to the STC50 development will improve the address of STC, with the removal of the intrusive fire tunnel and its egress onto Hickson Road.

New glazing is proposed to the new commercial spaces to give them a presence in the public domain, whilst service rooms are located behind.

Public amenities are proposed in the central Shore Shed to service the Waterfront Square whilst a Precinct Managers Office is proposed in the western Shore Shed, with secure bicycle storage adjacent.

Figure 110 Choirs Rehearsal Room

Figure 109 Choirs Rehearsal Room

4.4 IMPACTS

OVERVIEW

The development will have a number of minor impacts on the broader precinct, most of which are assessed in detail in separate specialist consultants' reports, provided as appendices to the Environmental Impact Statement (EIS).

This Design Report contains only an overview of these impacts.

VIEWS AND VISTAS

There will be only minor changes to most of the principal views and vistas, and these are assessed in the Visual Impact Analysis prepared by Richard Lamb & Associates and the Heritage Impact Assessment prepared by Tropman & Tropman Architects.

The major impacts will be limited to those within the Walsh Bay Arts Precinct itself, and result from the new Waterfront Square and its shading canopy, which will also be visible from Sydney Harbour to the north.

ACOUSTIC IMPACTS

These impacts are discussed in detail in the separate acoustic report prepared by Arup.

OVERSHADOWING

As there is no additional building bulk proposed beyond the extent of the existing envelope, other than lifts, stairs and gantry balconies, there will be no increase in overshadowing of public or private space beyond the boundaries to the Walsh Bay Arts Precinct itself. Within the Precinct, existing non-WBAP tenancies will have minor overshadowing from the new shade Canopy in the Waterfront Square, but this is regarded as an improvement to amenity. Refer Shadow Diagrams, included in the drawings issued for consent.

PRIVACY

The adjoining occupants beyond the Walsh Bay Arts Precinct itself comprise a range of uses and occupation types, and the impact on their privacy will be minimal:

- Adjoining RMS tenancies in the Pier 2/3 Shore Sheds: there will be change to the existing overlooking of these tenancies, possible only from the public domain.
- Occupants to the south of Hickson Road: there will be no change to the overlooking of these occupants as there are no changes proposed to the building facades facing them.
- Pier 1, east of Pier 2/3: this hotel is located some 70m from Pier 2/3 over a significant water body. Whilst additional glazed openings replacing existing cargo doors will increase overlooking, the relative distance will mean any impact will be minimal.
- Pier 8/9, west of Pier 4/5: there will be no change to the overlooking of these occupants as there are no significant changes proposed to the building facades facing them.

TRAFFIC AND PARKING

These impacts are discussed in detail in the separate report by GTA, included as an appendix to the EIS.

EVENTS

These impacts are discussed in detail in the separate report by MI Associates, included as an appendix to the EIS.

Figure 111 Aerial photograph.

Figure 112 View showing proposed roof alterations including installation of photovoltaics.