



State Significant Development Application - SSDA 4 Visual and View Impact Analysis



Sydney International Convention, Exhibition and Entertainment Precinct

The Haymarket, Mixed Use Commercial Office Building and
Public Car Park

Submitted to Department of Planning and Infrastructure
On Behalf of Lend Lease

May 2013 ■ 13177

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A handwritten signature in blue ink, appearing to be 'L. Bull', written over a horizontal line.

Date 31/05/13

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1.0 Introduction

This report provides a Visual and View Impact Analysis in relation to State Significant Development Application 4 (SSDA 4) for the Sydney International Convention, Exhibition and Entertainment Precinct (SICEEP) State Significant Development Project. SSDA 4 relates to a mixed use commercial office building and public car park within the North-West Plot of The Haymarket.

The SICEEP Project (an election commitment of the NSW Government) will deliver Australia's global city with new world class convention, exhibition and entertainment facilities that can compete effectively in the national and international events markets. The SICEEP Project importantly forms a critical element of the NSW Government's aspiration to "make NSW number one again". The SICEEP Project also involves the creation of a new mixed use residential neighbourhood (known as The Haymarket).

An 'overarching' Visual and View Impact Analysis for the SICEEP Project has been submitted to the Minister for Planning and Infrastructure in relation to two concurrent SSDAs made pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The two SSDAs are for the first components of the overall SICEEP Project namely:

- A detailed SSDA 1 (SSDA 5752-2012) for the construction of the Public Private Partnership development including the new convention, exhibition and entertainment facilities with associated retail and public domain upgrades (referred to herein as the 'PPP'); and a
- Staged SSDA 2 (SSDA 5878-2013) for the establishment of building envelopes and design parameters for a new neighbourhood and a community hub including student housing, public car parking, a commercial office building and mixed use development blocks (referred to herein as 'The Haymarket concept proposal').

The overarching Visual and View Impact Analysis also provides an analysis of the cumulative visual and view impacts of the overall SICEEP Project on a site wide basis including the future International Convention Centre (ICC) Sydney Hotel component.

The overarching Visual and View Impact Analysis concluded that in the context of the SICEEP Project and delivering a new world class convention, exhibition, and entertainment precinct Staged SSDA 2 for The Haymarket concept proposal achieves a reasonable balance between protection of private views and the protection of public domain views.

SSDA4 represents one of the initial detailed 'Stage 2' DAs within The Haymarket concept proposal. It is seeking consent for the development of a mixed use commercial office building and public car park within the North-West Plot of The Haymarket (SSDA 4 Site).

Section 83D of the EP&A Act provides that while any consent granted on the determination of a staged development application for a site remains in force, the determination of any further development application in respect of that site cannot be inconsistent with that consent. Whilst the Stage 1 DA for The Haymarket (i.e Staged SSDA 4 for The Haymarket concept proposal) is still under assessment by the Department, the development the subject of this proposal has been prepared in accordance with the Stage 1 DA. Accordingly, SSDA4 is wholly consistent with the Staged SSDA 4 for The Haymarket.

The Director-General's Requirements (DGRs) dated 12 March 2013 for the SICEEP Project require that the following be addressed with respect to views and visual impacts:

- *Relevant statutory provisions.... Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005;and Darling Harbour Development Plan No1...*
- *Relevant planning provisions, goals and strategic planning objectives... Infrastructure NSW SICEEP Urban Design and Public Realm Guidelines; City of Sydney Chinatown Public Domain Plan....*
- *Address visual impact when viewed from the public domain and key vantage points surrounding the site....*
- *Identify important sight lines and visual connectivity to and through the site...*
- *Address...view loss...*
- *View Impacts, where the proponent is to:*
 - *Assess the visual impacts of SICEEP on Sydney Harbour and surrounding areas;*
 - *Assess amenity in relation to view loss..."*

The overarching Visual and View Impact Analysis that has been submitted to the Minister has been prepared to meet the above requirements.

No further DGRs relating to visual and view impacts are specified in relation to the individual detailed SSDAs that are to be prepared over time for development within The Haymarket concept proposal.

This report provides a further detailed Visual and View Analysis in relation to SSDA4. It should be read in conjunction with the overarching Visual and View Impact Analysis submitted in support of Staged SSDA 4 for The Haymarket concept proposal .

This report demonstrates that the visual and view impacts associated with the proposed residential development are consistent with / within those identified and assessed in Staged SSDA 2 for The Haymarket concept proposal. With the proposal being wholly contained within the building envelope proposed under SSDA2, the overall conclusions reached within the overarching Visual and View Impact Analysis remain valid.

1.1 The Site

The SICEEP site is located within Darling Harbour. Darling Harbour is a 60 hectare waterfront precinct on the south-western edge of the Sydney Central Business District that provides a mix of functions including recreational, tourist, entertainment and business.

With an area of approximately 20 hectares, the SICEEP Site is generally bound by the Light Rail Line to the west, Harbourside Shopping Centre and Cockle Bay to the north, Darling Quarter, the Chinese Garden of Friendship and Harbour Street to the east, and Hay Street to the south. The Site is in a highly urbanised Global CBD environment. It is a major waterfront urban renewal site.

The SICEEP Site has been divided into three distinct redevelopment areas (from north to south) – Bayside and Darling Central (which together comprise the site of the SSDA for the PPP) and The Haymarket. The SICEEP Site and the three distinct redevelopment areas including The Haymarket are as shown in **Figure 1**.



- Key
- SICEEP Site
 - PPP - State Significant DA Boundary
 - PDA - Stage 1 State Significant DA Boundary
 - Hotel Complex State Significant DA Boundary

Figure 1 – Site Location Plan

SSDA4 Development Site (SSDA 4 Site)

The SSDA4 Site generally comprises the central north portion of The Haymarket Site, fronting Pier Street. The SSDA 4 Site includes land noted as the North West Plot under the Staged SSDA 2 for The Haymarket concept proposal . An aerial view of the SSDA 4 Site is illustrated at **Figure 2**, and the location of the Site in the context of adjoining future developments in The Haymarket is illustrated at **Figure 3**.



SSDA 4 Site Boundary

Figure 2 – Aerial view of the SSDA 4 Site



Figure 3 – Location of the SSDA4 Site within the Haymarket (outlined in red)

Source: *Lend Lease Design*

1.2 Staged SSDA 2 The Haymarket concept proposal

The development proposed as part of Staged SSDA 2 for The Haymarket concept proposal will include student accommodation, public car parking, a commercial office building, and four mixed use development blocks (retail/commercial/residential podium with residential towers above) centred around a new public square to be named Haymarket Square.

More specifically concept approval is sought for the following:

- Demolition of existing site improvements, including the existing Sydney entertainment Centre (SEC), the SEC car park, and part of the pedestrian footbridge connected to the SEC car park and associated tree removal;
- North-west block – construction and use of a part public car park and part commercial/office building;
- North-east block – construction and use of a mixed use podium (comprising retail, commercial, above ground parking, and residential) with three residential buildings above;
- South-east block - construction and use of a mixed use podium (comprising retail, commercial, above ground parking, and residential) with three residential buildings above;
- South-west block - construction and use of a mixed use podium (comprising retail, commercial, above ground parking, and residential) with three residential buildings above;
- North block – construction and use of a mixed use building comprising retail, commercial and residential;
- Student accommodation – construction and use of two buildings providing for up to 1,000 beds;
- Public domain improvements including a new square, water features, new pedestrian streets and laneways, streetscape embellishments, and associated landscaping. (It is intended that a Stage 2 DA seeking approval for parts of the public domain (The Boulevard and Haymarket Square) will be lodged with the first residential stage);
- Reconfiguration and upgrade of Darling Drive (part);
- Remediation strategy; and
- Car parking.

1.3 SSDA4 - Mixed use commercial and public car park building

SSDA 4 specifically seeks approval for the following development:

- Site preparation works including demolition, minor excavation and remediation;
- Associated tree removal and replanting;
- Construction and use of a mixed use commercial building comprising:
 - ground level active (retail/commercial/television studio) uses and loading dock;
 - public car park (above ground);
 - ancillary commercial office parking (above ground); and

- commercial office space;
- building identification signage zones and 1x wall advertisement.
- Provision of vehicle access to the development from Exhibition Place;
- Public domain improvements, including provision (part) of a new east-west pedestrian laneway (known as Dickson Lane) linking Darling Drive to the Boulevard; and
- Extension and augmentation of physical infrastructure / utilities as required.

1.4 Methodology

A detailed methodology prepared by Virtual Ideas is included at Attachment 1.

1.4.1 Visual analysis

The overarching Visual and View Impact Analysis submitted as part of the PPP SSDA1 and Staged SSDA 2 for The Haymarket concept proposal analysed key public domain views, view corridors and public vantage points within and surrounding the overall SICEEP Site. It identifies the nature and scope of the existing views and the public spaces afforded with the relevant views.

From a large number of initial views and vistas identified, the key public domain views were determined based on a series of inspections of the SICEEP Site and its surrounds, and have included the key relevant views identified in the Infrastructure NSW SICEEP Urban Design and Public Realm Guidelines.

The selection of vantage points has also had regard to the location of existing heritage items within and in the vicinity of the site that are visible from the public domain including:

- Chinese Garden of Friendship, Hay and Pier Streets;
- Darling Harbour Rail Corridor;
- Darling Harbour Water Feature;
- Pumping Station No.1;
- Powerhouse Museum; and
- Pyrmont Bridge.

Photomontages were prepared for a total of 28 public domain views and vantage points. These include a number of new view corridors that will be created as a result of the overall SICEEP Project.

The key public domain views, view corridors and public vantage points within and surrounding the SICEEP Site identified within the overarching Visual and View Impact Analysis for Staged SSDA 2 for The Haymarket concept proposal that are relevant to the siting of the proposed mixed use commercial office building and public car park have been reviewed and refined in formulating updated photomontages to illustrate the visual impact of the detailed building within the envelopes proposed as part of The Haymarket concept proposal.

In summary, a total of 14 public domain vantage points have been identified for further analysis and assessment in relation to the proposed mixed use commercial office building and public car park (refer to **Figure 4**) in the following locations:

- King Street Wharf;
- Pyrmont Bridge;
- Tumbalong Park;

- Pier Street;
- Macarthur Street;
- Darling Drive (including UPN Path and UTS Corner);
- Hay street;
- Little Hay Street; and
- Quay Street.

Other public domain views identified in the overarching Visual and View Impact Analysis are not considered to be impacted on by the proposed mixed use commercial office building and public car park. This is clearly demonstrated by the 2D and 3D imagery and assessment of impact provided in the overarching Visual and View Impact Analysis.

The photomontage images for each of the identified public domain views have been taken at ground level (pedestrian eye level) to indicate what a pedestrian will see when travelling through or within the general vicinity of the SICEEP Site. Notwithstanding, they provide sufficient information to be able to reasonably assess and determine the visual impact of the proposed development from the point of view of a motorist, cyclist or seated pedestrian. The photomontage images have been produced using both a 25mm and a 50mm lens size. The format and methodology adopted is generally the same as that followed in the preparation of the images that were included in the overarching Visual and View Impact Analysis.



Figure 4 – Visual analysis – photomontage locations SSDA4

1.4.2 View analysis

As part of the overarching Visual and View Analysis accompanying The Haymarket SSDA2, seven key buildings in the vicinity of the SICEEP Site were identified as being impacted or potentially impacted on by the overall SICEEP Project in terms of private views. Refer to Figure 5.

These key buildings were identified by site inspection and were selected based on the sensitivity of land use (i.e. hotel and / or residential and serviced apartments were selected rather than commercial premises), and on the basis of both proximity to the SICEEP Site and the extent to which existing views, vistas and outlook are likely to be affected by the SICEEP Project.

The analytical process in selecting the key buildings took into account the height and orientation of the existing buildings, their location and available view corridors down streets and/or across the top of other foreground development towards the Sydney CBD, Darling Harbour or Sydney Harbour.

Detailed 3D modelling was used to determine the angles of available views and the levels within each identified building that was identified as likely to have existing views, vistas and outlook that may be impacted upon.

Where the height of potentially affected buildings was below 12 storeys, 3D model images were prepared at two different heights (lower and upper levels). Analysis of potential impacts at two different heights allows for a reasonable consideration of the impacts for the building as a whole. For buildings greater than 12 storeys in height 3D model images were prepared at three different heights (lower, middle and upper levels). Again, the analysis of potential impacts at three different heights allows for a reasonable consideration of the impacts for the building as a whole. Multiple images from different positions within the buildings were provided.

The 3D model views from each key building used a camera with a 50mm lens (representing the human eye). The 3D model images provide a rendered image of the view before and after the proposed development for representative view heights (RL), locations and angles.

2D models using view cones were also prepared for each of the potentially affected buildings identifying current view angles and any potential reduction in view angle as a result of the proposed development. Line of sight models and cross sectional building profile overlays at the same heights (RL), locations and angles as the 3D models are provided.

Access was provided to each of the individual buildings. Photographs were taken from representative apartments/ rooms in order to prepare photomontage images of the proposed buildings/envelopes imposed (via photomontages) with before and after comparisons on views. These images supplement the 3D model images. They were also used as part of the community engagement program with local residents, with presentations made to key resident groups.

Of the seven key buildings in the vicinity of the SICEEP Site identified as being impacted or potentially impacted on by the overall SICEEP Project in terms of private views, there are only two (2) that require further detailed assessment and consideration in relation to the subject SSDA4, being the Peak Apartments and The Quay (under construction). Although the proposed mixed use commercial office building and public car park may be visible in part from certain aspects of other key buildings, it is not considered to have any potential significant impact on the view or outlook from these buildings. This is clearly demonstrated by the 2D and 3D imagery and assessment of impact provided in the overarching Visual and View Impact Analysis.



Figure 5 – Key Buildings (Private Views)

1.5 Structure of this report

This report is structured as follows:

Section 2 identifies the various relevant and pre-existing planning principles with respect to views, view sharing and outlook including those contained within the City of Sydney Council Development Control Plan 2012; Sydney Regional Environmental Plan 2005 and the Infrastructure NSW SICEEP Urban Design and Public Realm Guidelines.

Section 3 provides a visual impact analysis for The Haymarket Mixed Use Office Building and Public Car Park (SSDA 4) in relation to the public views, view corridors and vantage points in and around the Site.

Section 4 provides a view impact analysis for The Haymarket Mixed Use Office Building and Public Car Park (SSDA 4) in relation to the private views for key neighbouring buildings in the vicinity of the Site.

Section 5 provides a conclusion.

2.0 Planning Context & Relevant Planning Instruments

The environmental planning instruments (EPIs), policies or guidelines of particular relevance to the consideration of visual and view impacts are Darling Harbour Development Plan No.1; Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 – now a deemed SEPP, and its accompanying DCP; Sydney Development Control Plan 2012; and the Infrastructure NSW SICEEP Urban Design & Public Realm Guidelines. These documents are addressed in detail below.

In addition, although they do not contain specific references to view and visual impact the Sydney City Draft Subregional Strategy and City of Sydney Chinatown Public Domain Plan have also been considered in the assessment.

With respect to potential impact on views and vistas to existing heritage items, all relevant heritage listings including those contained within Central Sydney LEP 2012 have been considered.

2.1 Infrastructure NSW SICEEP Urban Design and Public Realm Guidelines

The key provisions of the Infrastructure NSW SICEEP Urban Design and Public Realm Guidelines that are of specific relevance to the consideration of visual and view impacts are set out below.

Project Vision

The urban design of the Sydney International Convention, Exhibition & Entertainment Precinct (SICEEP) must achieve the project vision to:

- *Deliver world-class core functions of convention, exhibition and entertainment facilities that exceed the expectations of domestic and international visitors: and*
- *Reaffirm Darling Harbour as Australia's premier gathering place by creating an exciting, connected, active and vibrant precinct that brings delight to visitors and Sydney-siders alike.*
- *Context and design excellence*
- *Design Facilities and the public realm in a manner that integrates with and enriches the local urban context by:*
 - *Preserving significant view corridors;*
 - *Protecting and reinforcing views of significant heritage buildings and structures within the public realm;*
 - *Preventing loss of privacy by overlooking of adjacent properties.*

Place making

Create a place that:

- Enriches the existing public realm, recognising existing landscape, topography, open space networks, movement patterns and heritage of the CBD, Chinatown, Pyrmont, Darling Harbour and the Educational Precinct of UTS and Ultimo TAFE.

Public Realm

The design of the public realm should:

- Minimise visual, acoustic and amenity impacts on adjacent public spaces;
- Ensure that important views (to public buildings, along major streets and to the Harbour) are not obscured;
- Maintain lines of movement and sight;

Urban Design Objectives

- Re-launch the Precinct and redefine its place in the City of Sydney and in the international convention, exhibition and entertainment markets.
- Create a new 'place to be' in Sydney defined by its own unique character.
- A Precinct outcome that delivers a balanced solution for the city.
- Multi-functionality of the Precinct amenities; with a focus on flexibility and adaptability.
- Bring a new vibe and spirit to this quarter of the city.
- Provide a seamless transition between the facilities, the Precinct and the greater urban fabric.
- A quality design that provides a unique experience for the global visitor and is embraced and integrated into the lives of the people in Sydney.
- Provide the visitor with an opportunity to experience a variety of places within the Precinct with a richness in texture and activities

2.2 Sydney Development Control Plan 2012

Sydney Development Control Plan 2012 does not apply to the SICEEP site. The DCP nonetheless provides a planning context with respect to the consideration of views and the visual impact of proposed development within the broader City of Sydney. It applies to all of the land surrounding the SICEEP site, and to the buildings and public domain spaces in the vicinity of the site that are or are potentially impacted upon by the proposed development.

It has been a long standing strategic position of the City of Sydney Council that views, and view sharing, is a matter of specific and particular importance with respect to the potential impact of development on key views and vistas that are available at the street level and generally from or within the public domain.

Section 3.2.1.2 of the Sydney Development Control Plan 2012 (DCP 2012) acknowledges that:

- Buildings are not to impede views from the public domain to highly utilised public places, parks, Sydney Harbour, Alexandra Canal, Heritage Buildings and monuments including public statues, sculptures and art;
- Development is to improve public views to parks, Sydney Harbour, Alexandra Canal, heritage buildings, and monuments by using buildings to frame views. Low level views of the sky along streets and from locations in parks are to be considered;

The DCP objectives and provisions identify significant views in the Sydney CBD that are to be protected from encroachment and / or enhanced by building design.

The provisions of the DCP also encourage the siting and design of new buildings that maintain and open up significant views from the public domain to Sydney Harbour, parklands and significant objects as well as protecting silhouettes of the tops of major heritage buildings as seen against the sky.

The current planning objectives, strategies, principles and development controls for the Sydney CBD have also long recognised that ‘outlook’, as distinct from ‘views’ is the appropriate measure of residential amenity within a global CBD context.

Section 4.2.3.10 of DCP 2012 clearly articulates the following with respect to outlook and views in relation to the impact of development on existing and future residential amenity:

*“(1) Provide a pleasant outlook, as distinct from views from all apartments.
(2) Views and outlooks from existing residential development should be considered in the design of the form of the new development”*

Note: Outlook is a short range prospect, such as building to building, while views are more extensive or long range to particular objects or geographical features.”

2.3 Darling Harbour Development Plan No.1

The Darling Harbour Development Plan No.1 is the environmental planning instrument which provides land use controls for land within the Darling Harbour precinct, including the entirety of the SICEEP Site.

The Development Plan does not set any maximum height controls or building envelope controls or provisions, and does not contain any specific provisions with respect to the consideration of visual or view impacts.

A key objective of the Development Plan is to encourage the development of a variety of tourist, educational, recreational, entertainment, cultural and commercial facilities within the land to which it applies.

2.4 Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005

Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 adopts the following principles for the purpose of achieving its aims for the Foreshores and Waterways Area:

*“(a) Sydney Harbour is to be recognised as a public resource, owned by the public, to be protected for the public good,
(b) The public good has precedence over the private good whenever and whatever change is proposed for Sydney Harbour or its foreshores,
(c) Protection of the natural assets of Sydney Harbour has precedence over all other interests.” (our emphasis)*

The SICEEP site sits within the Foreshores and Waterways Area as identified in Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 (the Sydney Harbour REP). The specific clauses relevant to consideration of visual analysis or view impacts follow:

Clause 2(2)(b) – Aims of plan – the principle of precedence of public good over private good.

With respect to views, the Sydney Harbour REP articulates that amongst other things, the public good (such as public views) will have precedence over private good (private views) where change is proposed on the harbour or within its foreshores.

Whilst the genesis of this principle is largely rooted in ensuring continuous and unobstructed foreshore access to the public, the principle of view corridors tied to access to the foreshore is primary as compared to the secondary issues of private views that may not or do not align with existing or proposed public view corridors over streets.

Clause 14(d) – Foreshores and Waterways Area.

This sub-clause seeks to ensure “development along the foreshore and waterways should maintain, protect and emphasise the unique visual qualities of Sydney Harbour and its islands and foreshores”.

The PPP and The Haymarket SSDAs generally retain the approved urban structure and are consistent with the principles employed to ensure unique visual qualities are not undermined, eroded or lost.

Division 2 – Matters for Consideration for development - Clause 25 – Foreshores and waterways scenic quality

This clause requires consideration in relation to the maintenance, protection and enhancement of the scenic quality of foreshores and waterways including the scale, form, design and siting of any building. This should be based on an analysis of:

- the land on which it is to be erected;
- the adjoining land; and
- the likely future character of the locality.

The impact of the proposal on the scenic qualities of the Harbour and its foreshores must be seen in the balanced context of the site’s CBD location, and the consistency of the preferred SICEEP Precinct when compared to the established planning framework.

Division 2 – Matters for Consideration for development - Clause 26 – Maintenance, protection and enhancement of views

The matters to be taken into consideration in relation to the maintenance, protection of views include:

- development should maintain and protect views (including night views) to and from Sydney Harbour;
- development should minimise any adverse impacts on views and vistas to and from public places, landmarks and heritage items; and
- the cumulative impact of development on views should be minimised.

Each of these matters have been considered and are addressed in this report.

Clause 59 – Development in vicinity of heritage items

Clause 59 requires the consent authority to assess the impact of development on the setting of heritage items including the impact on any significant view to or from the item.

Having regard to the context of existing planning controls and requirements, a fundamental approach in relation to the overall SICEEP Project has been to protect, retain and enhance significant public domain views and view corridors.

3.0 Visual Analysis

The location of the 14 photomontage images for each of the identified key ground level public domain views, view corridors and vantage points that have been identified to be relevant to the consideration and assessment of the subject SSDA4 are shown on **Figure 4**.

For the purpose of this report the public domain views have been generally grouped as follows:

- King Street Wharf and Pyrmont Bridge;
- Tumbalong Park;
- Macarthur Street;
- Hay, Little Hay & Quay Streets; and
- Darling Drive, UPN Path and UTS Corner.

The following section provides a visual analysis in relation to these key areas in relation to the development proposed as part of SSDA4.

3.1 King Street Wharf & Pyrmont Bridge

The view towards proposed mixed use commercial office building and public car park from King Street Wharf and Pyrmont Bridge is illustrated by Ground Views 1 and 28.

Existing public domain views from the King Street Wharf precinct toward Darling Harbour look over Pyrmont Bridge towards the existing Darling Harbour convention centre and exhibition centre buildings to the west and south west; and beyond the M4 western distributor ramps through to the southern CBD skyline terminated by the UTS tower.

The existing public domain views from King Street Wharf and Pyrmont Bridge are expansive. The existing Darling Harbour precinct is highly urbanised and highly utilised by pedestrians. It is characterised by relatively low scale development in the foreground with taller development including UTS Tower, The Peak Apartments and the Cross City Tunnel Stack forming a CBD skyline backdrop behind. Views to and across the water are available along the entire length of the Darling Harbour waterfront on both sides of the harbour, with low scale built form set back to form a wide pedestrian promenade.

When walking through the King Street Wharf and Darling Harbour precinct towards Pyrmont Bridge and the SSDA 5 site beyond, views to, from and across the waterway of Darling Harbour change in angle, extent and depth of view and are partially obstructed by a variety of structures and also by moored water craft. Pyrmont Bridge itself creates a structural barrier to southerly views across Darling Harbour towards the proposed Mixed Use Residential Building.

The existing southern CBD skyline established by UTS Tower, The Peak Apartments and the Cross City Tunnel Stack does not encroach into any of the significant elements of existing public domain views – the existing buildings do not encroach into views to or from the water, or across the Darling Harbour public domain and its adjoining street network. They do, however, form part of the highly urbanised context of Darling Harbour which is framed by significant built form elements to the east, west and south.

As part of the overall The Haymarket concept proposal the proposed commercial office building and public car park will contribute to the permanent change in the southern CBD skyline / backdrop urban form of the Darling Harbour precinct when viewed from these locations.

The new International Convention Centre and Exhibition buildings proposed as part of the PPP SSDA1 will change the scale and height of the skyline along the western side of Darling Harbour creating visual interest. The creation of the new urban precinct at the southern end of Darling Harbour through The Haymarket concept proposal will result in a new southern CBD skyline. It is considered that the new southern CBD skyline will contribute in a positive way to the overall built form of the southern end of the CBD.

Located beyond the edge of Darling Harbour and its associated public domain, the SSDA 4 Site does not encroach into or obstruct any important elements of the views of or from the public domain, but will rather form part of the overall southern CBD urban skyline backdrop to the Darling Harbour precinct. The proposed building will not obstruct or obscure any views or sight lines to significant public domain buildings.

As is illustrated by Ground Views 1 and 28, although it will be visible the proposed commercial office building and public car park sits well within the maximum envelope proposed as part of The Haymarket concept proposal and will not result in any change to the existing views and vistas of the Darling Harbour waterway or foreshore public domain that are available from the public domain areas of King Street Wharf, Pyrmont Bridge or generally along the eastern side of Darling Harbour, which will be retained and enhanced by the proposal. There will be no interruption to or alteration of any public domain street or pedestrian corridors.

In particular, it is also noted that as the detailed design of the proposed building does not fill the maximum proposed envelope, separation is achieved between the proposed building and proposed adjoining buildings.

It is considered that the proposed building will not obstruct any significant public domain views and will result in no loss or detracting from the significant aspects or aesthetics of existing public domain views when viewed from King Street Wharf, Darling Harbour and Pyrmont Bridge. Consistent with the planning context and relevant planning instruments that are of relevance to the consideration of visual and view impacts, the proposed commercial office and public car park building will maintain and protect views to and from the harbour, and will not impact on any significant views and vistas to and from public places, landmarks and heritage items.

3.2 Tumbalong Park

Due to its central location and circular configuration existing public domain views are available in a 360 degree cone from Tumbalong Park to the north, west, east and south within the SICEEP site. The three key views from Tumbalong Park are 1) looking north towards the M4 western distributor freeway and under the freeway to Harbourside; 2) looking west toward the existing exhibition centre and; 3) looking south towards Pier Street and through to the existing Sydney entertainment centre building. Views are available from both a standing and a seated position in all directions providing for a high degree of visual connectivity across the Darling Harbour Precinct. Tumbalong Park is a public domain space that is intensely used for both passive recreation and in terms of pedestrian movement from the western edge of the CBD through the Darling Harbour Precinct. Ground View 12 shows the view back towards The Haymarket from Tumbalong Park.

As a key area of public open space sitting within a broader public domain area, the nature and extent of views available from Tumbalong Park are both expansive and open in character, with the space framed by landscaping and existing relatively low scale development that provides a sense of enclosure. The CBD skyline surrounding the park to the east is a dominant feature, with open sky above treetops the predominant characteristic to the south. The skyline is encroached into by The Peak Residential Apartments tower, and the roof top structures of the existing Exhibition Centre.

As illustrated, the new buildings in The Haymarket will create a new skyline for the southern CBD, framed by landscaped public domain along the southern edge of Tumbalong Park. The proposed commercial office building and public car park will be visible from Tumbalong Park, forming part of the frame of new buildings in The Haymarket when looking south. The proposed building presents a low scale form that relates well to the height of The Theatre (proposed as part of SSDA 1) that frames the western edge of the park, providing an appropriate transition in scale along the public domain edge.

The proposed commercial office building and public car park does not fill the maximum envelope of The Haymarket concept proposal. When viewed together the detailed design of the proposed building, along with the detailed design of the mixed use residential buildings to be located in the South West Plot (proposed as part of SSDA 5) provide for breaks between buildings and views to sky when looking south.

The dominant public domain character of an expansive open space framed by development and landscaping, with a high degree of openness to the sky will be retained by the proposal. The proposed commercial office and public car parking building, whilst contributing to the new urban form to the south, will not encroach upon the public domain views through or to the park and will not significantly detract from the important elements in the view or reduce the visual connectivity across the Darling Harbour Precinct established by the park.

It is noted that existing public domain views and vistas to the Chinese Friendship Garden of Friendship on Day and Pier Streets and to Pumping Station No.1, both of which are identified heritage items are also not affected by the proposed SSDA4 development.

3.3 Macarthur Street

One of the main public domain / pedestrian access and vantage points to Darling Harbour from Ultimo Pyrmont in the west is from Macarthur Street. A photomontage image of the proposed development viewed from Macarthur Street is provided at Ground View 29.

The existing public domain view from Macarthur Street is toward the southern CBD skyline with Centrepont Tower visible to the far north east of the field of view. The existing skyline and foreground view is of limited visual interest and does not provide for any particular pedestrian visual connectivity to or through the SICEEP Site. The Macarthur Street corridor is not a high intensity public domain corridor. Whilst it is used by pedestrians moving from the Darling Harbour precinct through to Pyrmont, the stronger pedestrian environment is via the raised walkway to the Powerhouse Museum forecourt. As a pedestrian thoroughfare it is not highly utilised, and therefore does not provide a key public domain vista for pedestrians. As a pedestrian moves through the corridor the views are obstructed in part by the raised pedestrian walkway to the Powerhouse Museum. Vehicular traffic passes relatively quickly along Macarthur Street, with views to and from the CBD relatively limited in scope and duration. It is not considered that these views are significant.

As illustrated by Ground View 29 the proposed commercial office building and public car park will not be visible from Macarthur Street once the Residential (Student Accommodation) building proposed under SSDA 3 is constructed, as it sits behind this building.

3.4 Hay, Little Hay & Quay Streets

Photomontage images viewed from various key vantage points within The Haymarket Precinct are included at Ground Views 23 and 24 (Quay Street), 26 (Little Hay Street) and 27 (Hay Street). The precinct is relatively intensely used by pedestrian traffic moving through to the Entertainment Centre from China Town and the CBD generally, including that exiting the monorail station. The vistas along the streets do not however provide views that terminate with buildings or public domain spaces that are of particular interest or visual importance.

The existing public domain view from the termination of Quay Street looking north is of the existing monorail station and the rear of the entertainment centre with an associated open forecourt area (Ground View 23). This view / vista is not considered to be significant. Terminated by a large scale building element that is of limited architectural merit or quality and interrupted by the monorail structure, there are no important elements identified within the vista.

The Haymarket concept proposal will enhance the view corridor to the north through the creation of the central boulevard that extends all the way through the proposed Haymarket precinct toward the proposed Darling Harbour live precinct. The monorail station is to be demolished and the rails removed and the creation of the new public domain link will provide a key new visual connection through the SICEEP Site. The proposed commercial office and public car park building forms part of the new street wall to The Boulevard when looking north along Quay Street. The proposed building will make a positive contribution to the visual definition and enclosure of this future pedestrianised public domain space. It will result in the removal of structural encroachments into the public domain, and create a new public domain corridor and associated street vista. The proposed commercial office and public car park development is not considered to detract from the aesthetics or quality of the wider public domain of Darling Harbour but rather to enhance them.

Further to the south along Quay Street looking north the public domain comprises a wide thoroughfare (Ground View point 24). The Haymarket concept proposal development will appropriately frame the edges of the street and create an improvement in the pedestrian scale and sense of enclosure of the street by the addition of The Haymarket development along the west and east of Quay Street. The key visual connection along the street will be retained. Limited views of the proposed commercial office building and public car park development will be available when moving down Quay Street to the north. As above, where visible, the building will contribute to the visual definition and enclosure of the Boulevard public domain space which functions as a pedestrianized extension of Quay Street. The proposed commercial office and public car park building will not encroach into the public domain vista or obstruct the space. It is considered that the proposed building will improve the overall aesthetics of the vista.

The existing public domain view from the centre of Little Hay Street looking west (Ground View 26) is towards the front facade of the existing entertainment centre. The Haymarket concept proposal will enhance the public domain view and visual connectivity through the SICEEP site via the creation of the new central boulevard through the proposed south western mixed use residential building within The Haymarket precinct. This new visual connection will contribute to both the legibility and functionality of the public domain. The proposed SSDA4 development is not visible from this vantage point.

The existing public domain view from Hay Street looking west (Ground View 27)) is a streetscape fronted by Paddy's Markets to the south and variety of eateries and retail to the north. The Haymarket concept proposal will add to the streetscape by the addition of new built form on the northern side of the street at a height and scale that assists enclose the street to the north with the view to the west and south unchanged. The proposed SSDA4 development is not visible from this vantage point.

3.5 Darling Drive, UPN Path & UTS Corner

Photomontage images of the proposed commercial office and car park development are provided as viewed from Darling Drive (Ground Views 16, 22 and 32), UTS Corner (Ground View 31) and UPN Path (Ground View 30).

Darling Drive is not a key pedestrian thoroughfare. It has relatively low pedestrian use. Vehicles travelling along Darling Drive are predominantly using the street to access the rear of development at Darling Harbour. The existing views and vistas along Darling Drive are not significant in terms of aesthetics or quality. They are characterised by street tree planting and relatively low scale development. The vistas along the streets do not provide views to buildings or public domain spaces that are of interest or visual importance, and the elements of the existing vista do not contribute in any material way to the overall quality or aesthetics of the wider Darling Harbour public domain.

The existing public domain view from the roundabout at the intersection of Darling Drive and William Henry Street looking to the south will be redefined by The Haymarket concept proposal which will improve this view corridor establishing a new urban environment with built form defining the street which will continue to provide visual connectivity through the SICEEP precinct to the south. As is illustrated by Ground View 16, the proposed SSDA4 development will frame Darling Drive, establishing a new street wall and definition to the public domain street corridor in this location.

The current view from Darling Drive directly behind UTS library looking north is of the library to the east and tree lined to the west (Ground Views 22 and 32). The Haymarket concept proposal adds to the view by the addition of the height and scale of the proposed Haymarket mixed use residential development to the east with the view to the north and west unchanged. As is illustrated by Ground View 22 the proposed SSDA4 development is discernible in the far view of the image, and will form part of the new urban street wall when travelling in a northerly direction along Darling Drive.

The development proposed as part of The Haymarket SSDAs will alter the public domain sight lines and view corridors along Darling Drive, with an improvement in visual connectivity to the south. The proposed commercial office and public car park building will contribute to the definition and enclosure of Darling Drive in a positive manner, without interrupting or encroaching upon the public domain street corridor in any way.

The proposed commercial office building and public car park does not form part of the public domain view from the UPN Path or UTS corner (Ground Views 30 and 31).

3.6 Pier Street

The SICEEP Site can be viewed when travelling in both directions along Pier Street. Pier Street is accessible by pedestrians, however is not primarily a pedestrian public domain thoroughfare. It is relatively low intensity in pedestrian use, and is utilitarian in nature. It is a noisy, uninviting environment, meaning that pedestrians do not use it for the primary purpose of viewing the city or Darling Harbour precinct. Vehicles travelling along Pier Street move along the street at relatively high speed, with views and vistas towards the proposed Mixed Use Building being of relatively limited duration and extent. The existing public domain view when travelling east towards the CBD includes the existing entertainment centre car park as well as views to some office towers at the southern end of the CBD. The southern end of the existing exhibition centre is also visible. When looking west along Pier Street the existing public domain view is of the rear of the Powerhouse Museum in Ultimo, which is a heritage item.

The Haymarket concept proposal will be highly visible when travelling along Pier Street. The existing SEC car park will be replaced by The Haymarket mixed use residential development which will create a new urban skyline in the south eastern CBD. The Theatre building will frame the view to the north east.

The proposed commercial office and public car park building will partially replace the current view to the rear of the Powerhouse Museum although vistas from Pier Street to the Powerhouse will be retained in some locations for both pedestrians and motorists when travelling along Pier Street. Notwithstanding, as the basis for the heritage significance of the Powerhouse Museum is its association with the city tramwork and the view of the museum that will be blocked is of its utilitarian side, it is considered that there will be no adverse impact on the significance of the item. Similarly, the vistas of the rear of the museum available from Pier Street are not considered to add to the overall aesthetics of the public domain quality of Darling Harbour. The reduction in these views /vistas is not therefore considered to significantly detract from or result in any adverse impact to the visual quality of the precinct.

Whilst The Haymarket concept proposal will change the nature of the urban form when viewed from Pier Street, and establish a new bulk and scale (and associated urban skyline) within the overall Darling Harbour precinct, it is not considered that the Pier Street public domain views are significantly impacted on.

As is illustrated by Ground View 18, the proposed SSDA4 development will form part of the new street wall defining the north south Boulevard when viewed from Pier Street looking south. The proposed building establishes a human podium scale to the pedestrianized environment, and will not result in any loss of or encroachment into public domain corridors or views. To the contrary, it contributes to the creation of a significant new north south public domain corridor.

4.0 View Impact

The locations of the key buildings that are impacted or potentially impacted by the proposed SSDA4 development in terms of private views are shown on **Figure 5** and include:

- The Peak Apartments; and
- The Quay (under construction).

The following section provides a view impact analysis in relation to these two (2) key buildings in relation to the development proposed as part of SSDA4.

4.1 The Peak Apartments

The Peak Apartments are located on Ultimo Road to the south of The Haymarket precinct of the SICEEP site. Refer to **Figure 4**.

The 2D and 3D modelling views and photomontage images have been prepared showing existing and future views from the Peak Apartments in relation to the proposed development.

Existing views from the Peak are available to the north, north east and north west and can be generally categorised as those occurring at the low rise levels of the building (generally RL 60 and below), medium rise levels (RL 60 to RL 100) and high rise levels (generally RL 100 and above).

Three key view locations have been identified on the northern façade of the building and shown in the 3D model images: one at the north western corner of building (location P1), one in the centre of the building (location P2), and one at the north eastern corner of the building (location P3). For each of these locations, 3D model images have been provided showing the view impact at every fifth level of the building starting at Level 10 (low rise) to Level 45 (high rise).

Photomontage images are provided for six locations including Apartments 1202 and 1212 (Level 12), Apartment 2910 (Level 29), Apartment 3101 (Level 31), Apartment 4202 (Level 42) and Apartment 4209 (Level 42). The location of selected apartments and camera positions are shown on the plans prepared by Rygate. All photomontage images have been taken from the balconies of the relevant apartments and therefore illustrate the maximum extent of the available view.

The 3D model images and the photomontage images show the full or maximum extent of the building envelopes for which consent is sought under The Haymarket SSDA2, and also the detailed building designs within the maximum envelopes proposed as part of this SSDA4 and also SSDAs 3 and 5 which have been submitted to the Minister concurrently.

As is illustrated by the 2D and 3D images, the potential impact arising to The Peak as a consequence of the development proposed as part of SSDA 4 occurs when looking in a north westerly direction (location P1A and B), and below approximately Level 20 of The Peak).

The Concept Proposal includes supporting Design Guidelines that have been developed by Denton Corker Marshall to guide the future development of The Haymarket. The Design Guidelines set out objectives and related controls for key elements such built form, articulation, ground plane, materials, public realm, amenity, traffic, car parking and access, and sustainability. Future detailed development applications (Stage 2 DAs) need to demonstrate consistency with the objectives and controls.

It is not intended for the controls to be prescriptive, but rather provide for flexibility and recognise that there are alternative solutions (supporting creativity and innovation) that can still achieve the overarching objectives.

Working in support of the maximum parameter/envelope plans, the Design Guidelines provide the next level of detail down in terms of ensuring buildings achieve design excellence and a built form that is appropriate within the context of the existing Darling Harbour, Haymarket and CBD precincts that surround the site as well as responding to human scale.

The design guidelines provide for the detailed design of built form to maintain adequate building separation between built forms for view sharing. Minimum building separations within the maximum building envelopes are specified, and the broadest face of towers within the envelopes is limited in length.

The detailed design of proposed commercial office and public car park building in SSDA4 has been prepared in accordance with the Design Guidelines.

Existing views

Existing views from the Peak apartments towards the proposed commercial office and public car park building are available across Darling Harbour and part of the harbour water way above Level 20. The apartments in the north western corners of the building are dual aspect, meaning that they have views both to the north and also to the west (Ultimo Pyrmont). Existing views are available from a standing or sitting position on the balconies of each apartment, as well as from living areas within the apartments.

From the north western portion of the building northerly views (P1A) are available across Darling Harbour, Pyrmont Bridge and across Sydney Harbour. At the medium and high rise levels views looking west (P2A) are available across to the Anzac Bridge and Rozelle Bay. At the lower levels of the building only the top of the Anzac Bridge is visible. Views looking east (P1C) are of the southern CBD skyline through to the central CBD, including Centrepoint Tower. Above approximately Level 20 the existing views are relatively expansive to both water and the horizon and to the land and water interface. Below Level 20 views to water and the horizon / land and water interface are available in part, although the views are increasingly interrupted by existing built form particularly at the lowest levels of the building.

Proposed views

The proposed commercial office and public car park building will have an impact on existing views / outlook from a number of The Peak Apartments that have a north westerly aspect. As can be seen from the view impact analysis drawings, the impact varies based on the varying height of the proposed buildings in The Haymarket, and depending on the angle of view. Outlook and view sharing is however achieved from all apartments. In particular, westerly views across to Ultimo Pyrmont are unaffected. Views from the balconies in an easterly direction towards the CBD skyline will also be retained.

For the north western portion of the building (location P1) at the upper levels (Level 20 and above) although it will be visible when looking down across the site, the proposed building has no impact on views or outlook. The proposed building comes into the field of view at approximately Level 25, however it will merely form part of the overall backdrop of urban development on the western side of Darling Harbour.

Below Level 15, the proposed building will result in a loss of views towards the north west horizon.

The proposed commercial office building and public car park does not, however, result in any loss of water views at any level of The Peak, nor any loss or reduction of views towards Anzac Bridge or the western edge of the CBD.

The photomontage images provided for Apartments 1212, 2910 and 4209 illustrate views available on the north western side of the building at the lower, medium and upper levels.

As is shown, although visible in part, the proposed development results in negligible impact on views and outlook. The building will, at the lower levels of The Peak encroach on the view to the horizon. Given that it does not fill the maximum building envelope proposed under The Haymarket the detailed design of the building has sought to minimise this impact.

The proposed commercial office and car park development will have no impact on the current views looking north or east through to the central CBD and Centrepoint Tower at any levels. The proposed development therefore retains and protects all existing CBD skyline views.

It is noted the apartments on the north western portion of the building are dual aspect, with balcony areas and windows that face to the west as well as those that face to the north. A broad expanse of view and outlook will be retained from all affected apartments in a westerly direction.

It is considered that the detailed design of the proposed commercial office and public car park building achieves principles for view sharing and outlook commensurate with the location of the development in a highly urbanised CBD location. The impact of the proposed building is considered to be reasonable both in respect of achievement of the principles of outlook and view sharing, and also with specific reference to the aims and objectives of the planning controls that apply to the site as set out at Section 2 of this report.

4.2 The Quay (under construction)

The Quay Apartments are located at the corner of Quay Street and Ultimo Road to the south of The Haymarket precinct of the SICEEP site. Refer to **Figure 4**.

2D and 3D modelling views and photomontage images showing existing and future views from The Quay in relation to the development proposed as part of SSDA4 are provided .

The Quay is an approved development that is currently under construction. Therefore there are no existing views. Nonetheless, future views have been identified as being available from the northern elevation of the Quay apartments and can be generally categorised as those occurring at the low rise levels (generally RL 35 and below), medium rise levels (RL 35 to RL 50) and high rise levels (generally RL 50).

One key view location has been identified and shown in the 3D model images at the north eastern corner of the building (location P1) looking north down Quay Street towards Darling Harbour and east up Ultimo Road towards the CBD. 3D model images have been provided at Levels 4, 8, 12 and 16 of the building in this location.

Existing views

Future views looking north (P1A) from The Quay Apartments at the medium and high rise levels will be across Darling Harbour to Sydney Harbour and North Sydney beyond. Views from the lower rise levels are limited due to existing foreground buildings with only the distant peak of Star City Casino visible.

Views looking east from the Quay apartments (P1B) at the medium and high rise levels will be up Ultimo Road looking across Haymarket to the southern CBD skyline. Views from the low rise levels are limited due to existing buildings with only the southern CBD skyline visible.

Proposed views

The development proposed as part of SSDA4 will have no impact on the current northerly views towards Darling Harbour at any levels of The Quay. Views will be retained across Sydney Harbour which will be framed by The Haymarket development. At the low rise levels there is no reduction in the existing field of view.

The proposed commercial office and car park building will not generally be visible from apartments at The Quay given the proposed development on the South West Plot, and it will not interrupt the identified key view towards Darling Harbour / CBD.

5.0 Conclusion

The urban design principles for the overall SICEEP Project have sought to preserve significant public domain street corridors, as well as to protect and reinforce views to and from key public domain open spaces, and significant heritage buildings and structures within the public domain.

The urban and architectural design approach has been to both ensure that important views to public buildings, along major streets and to the harbour are not obscured, and to enrich the existing public domain through improvements in visual connectivity within and to the site and maintaining lines of sight wherever possible.

In the planning for the overall SICEEP Project, design emphasis has been placed on the retention and protection of key views and vistas at the street level and generally from or within the public domain from encroachment by the new building forms, and also to the siting and design of the new buildings in terms of maintaining and opening up views from the public domain to Sydney Harbour. Consideration has also been given to views and outlook available from existing private residences and other adjoining private development.

Consistent with the overarching Visual and View Impact Analysis provided as part of The Haymarket concept proposal development (SSDA2) the proposed mixed use commercial office building and public car park development provides for:

- Existing important views from the public domain at street level to the most significant and highly utilised public domain spaces within and in close proximity to the Site to be retained;
- Existing public domain views to key heritage buildings and places are retained or unaffected by the proposal including to the Darling Harbour Water Feature, Chinese Garden of Friendship, and Pumping station No.1 in the southern part of the Site;
- Visual connectivity to other heritage items in the vicinity is not generally affected by the proposed new built form;
- The proposed new building will frame existing public domain views and enclose street adjoining creating a pedestrian scale. It will also contribute to a new southern CBD skyline and redefine the skyline on the western side of Darling Harbour;
- Continuous and unobstructed sightlines to the foreshore are maintained to the public, and views to, through and over the Site are retained such that the public / pedestrians will continue to enjoy the visual qualities of the harbour and its foreshores. The principle east west public domain view corridors providing both physical and visual access to the foreshore are retained; and
- The continuation of existing streets into and through the SICEEP Site (eg Hay Street, Little Hay Street, Quay Street, Quarry Street etc) establishing new sightlines, visual permeability and views and vistas throughout the precinct are unaffected by the proposal.

Where the proposed building does encroach within or reduce partial existing public domain views towards the Sydney CBD skyline, these impacts are considered to be minor. It will not detract from the overall visual connectivity for pedestrians in the public domain nor result in any significant adverse impact.

Generally, the affected vantage points are not key places for pedestrians to stop and view the CBD or its skyline, and the wide range of different viewing points available within the Darling Harbour precinct and its approaches will continue to provide for variety and interest in the different views, vistas and sightlines available to pedestrians approaching and moving through the precinct from the north, south, east and west.

Low, medium and high level views of the sky along streets and from public domain places (squares, parks etc.) are retained, created or enhanced in a variety of contexts. The siting and design of the new building has sought to preserve important views of the Sydney CBD from encroachment and to both maintain and open up significant views from the public domain.

With respect to private views:

- The siting and design of the building has sought to respond to view sharing principles and to provide for an appropriate outlook from adjoining private development as practicable in a highly urbanised inner city environment;
- The impacts associated with the proposed development are considered to continue to provide for a reasonable 'outlook' from apartments that may nonetheless have a change in 'view', consistent with current planning objectives, strategies, principles and development controls for the CBD which recognise that outlook, as distinct from views, is the appropriate measure of residential amenity within a global CBD context. Outlook is retained from all affected apartments with an appropriate distance separation between towers and with space / daylight provided between the proposed new built form elements;
- There will be a reduction in some views available from, in particular, the lower and middle levels of The Peak when looking towards the north westerly horizon. This results from the creation of an entirely new urban precinct in The Haymarket where there are only currently low rise buildings in existence. The interruption of existing private views/outlook that are currently unimpeded by any development is inevitable in the context of an urban renewal project and is not unreasonable having regard to the highly urbanised global CBD environment of Sydney within which the land is situated. Notwithstanding, the proposed commercial office and public car park development has a relatively minor impact on existing views and has accommodated view sharing between and above buildings, and has sought to retain a combination of water, horizon and CBD skyline views. It is considered that the development provides for view sharing as appropriate in an highly urbanised CBD location.

It is considered that the proposed development has achieved a reasonable balance between the protection of private views and the protection of public domain views in the delivery of a new world class entertainment precinct on the foreshore of Darling Harbour.

The detailed design of the building within The Haymarket concept proposal envelope has sought to provide for view sharing, having regard to the detailed design guidelines that have been proposed as part of the concept. The maximum envelope has not been filled.

The development proposed is acceptable in terms of visual and view impacts.

Visual Impact Photomontage Methodology for the SICEEP Planning Application

BACKGROUND

This document was prepared by Virtual Ideas to describe the processes used to create the visual impact photomontages and illustrate the accuracy of the results, and show media to allow assessment of visual impact..

Virtual Ideas is a highly experienced 3D visualisation company which commonly prepares material for both application and court use, and is familiar with requirements to provide 3D visualisation media that will communicate the visual impact of proposed developments. Our methodologies and results have been inspected by various court appointed experts in a variety of cases and have always been found to be accurate and acceptable.

OVERVIEW

The process of creating accurate photomontage renderings begins with the creation of an accurate, real world scale digital 3D model. We then take site photographs from known locations and place cameras in the digital 3D model that match the real world position of the site photography.

By matching the lens properties of the cameras in the digital 3D software, to that of the real world photography, and rotating the cameras in the software so that surveyed points in 3D space align with the corresponding points on the photograph, we can create a rendering that is correct in terms of position, scale, rotation, and perspective. Time and data information is also recorded during the site photography so that accurate lighting conditions can be reproduced in the 3D rendering.

A digital image is then rendered from the camera in the 3D software application that is then superimposed into the real world photo to generate an image that represents accurate form and visual impact.

DESCRIPTION OF COLLECTED DATA

To create the 3D model and establish accurate reference points for alignment to the photography, a variety of information was collected. This includes the following:

- 1) 3D model of the SSDA2 SEPP massing blocks
 - Supplied by: DCM Architects
 - Format: DWG
 - Content: 3D model of the SSDA2 SEPP massing blocks
- 2) Ortho-corrected aerial photography of the city of Sydney and surrounds
 - Created by: Department of Lands
 - Supplied by: Department of Lands
 - Format: ecw
 - Content: Ortho-corrected aerial photography
- 3) Digital terrain model of the city of Sydney and surrounding suburbs
 - Created by: Department of Lands
 - Supplied by: Department of Lands
 - Format: DWG
 - Content: 3D contours of the ground plane only (no buildings)
- 4) Surveyed 3D model of the city of Sydney buildings and ground plane
 - Created by: AAM Hatch
 - Supplied by: Lend Lease
 - Format: DWG
 - Content: 3D model of the city of Sydney buildings and ground plane
- 5) 3D model of the Student Accommodation Building (SSDA3)
 - Created by: AJC Architects
 - Supplied by: AJC Architects
 - Format: 3D Studio Max File
 - Content: 3D model of the Student Accommodation buildings
- 6) 3D model of the NW Plot Building (SSDA4)
 - Created by: Lend Lease Design
 - Supplied by: Lend Lease Design
 - Format: Sketch up file
 - Content: 3D model of the SSDA4 building
- 7) 3D model of the SW Plot Building (SSDA5)
 - Created by: DCM Architects
 - Supplied by: DCM Architects
 - Format: 3D Studio Max File
 - Content: 3D model of the SSDA5 building
- 8) 3D model of the PPP PA Buildings
 - Created by: Hassel Architects
 - Supplied by: Hassel Architects
 - Format: 3D Studio Max File
 - Content: 3D model of the PPP PA buildings and site
- 9) Site photography (LL Photos)
 - Created by: Lend Lease
 - Format: JPEG file
 - Content: High resolution photo
- 10) Site photography (VI Photos)
 - Created by: Virtual Ideas
 - Format: JPEG file
 - Content: High resolution photo

CREATION OF THE DIGITAL 3D MODEL

Creating the surrounding terrain model

Using our software application (3D Studio Max) we imported the Lands 3D topographical CAD data and created a three dimensional terrain model at real world scale. This model was referenced back to MGA co-ordinates using a common reference point that all project drawings are being referenced to. The ortho-corrected aerial photography was then mapped to this model giving us a relatively accurate source for referencing camera positions in both position and height.

Creating the Sydney city buildings 3D model

To have sufficient survey data that would allow us to accurately align the 3D model to the photography, a surveyed 3D model was purchased from AAM hatch and positioned into the 3D scene using the common MGA reference point as the origin. In addition a surveyed ground plane from AAM Hatch was also purchased and positioned under the buildings.

The building survey was created by AAM Hatch using photogrammetric mapping equipment and techniques.

Creating the SICEEP SEPP Block and Building 3D models

The SICEEP SEPP block and building models were supplied by AJC, Hassel, DCM and Lend Lease. The massing blocks and buildings were relocated to the correct MGA reference position and the correct height and scale.

SITE PHOTOGRAPHY

Some of the photographic backgrounds for the photomontages were supplied by Lend Lease (LL Photos), and additional site photography was taken by Virtual Ideas (VI Photos), from positions agreed with Lend Lease. The positions were selected to fulfil the Director General Requirements provided by the department of planning. The DGR requirements did not specify a lens size for the photographs.

The lens selection for each shot was based on the following criteria:

- The on-site location for the photograph should be as close as possible to the instructed location.
- The entirety of the proposed buildings, including the approved concept plan envelope should be in view in each photo where possible.
- Surrounding existing buildings should also be visible in each photomontage to allow for fair and accurate comparison to existing built form.

The lens size selected for each shot ranges from 17-50mm.

In most cases we consider that a 17-24mm lens is a fair representation of the focal length of the human eye. It is difficult to define the exact focal length of the eye as we have to consider the distance to the subject and peripheral vision. There are many studies to support that 17mm is acceptable. Also many scientists consider 20-24mm acceptable when looking at a specific item in the distance. - Please see appendix A.

CREATION OF PHOTOMONTAGES

The positions of the real world photography were located in the 3D scene using the lands and AAM Hatch 3D models, and the ortho-corrected photography.

Cameras were then created in the 3D scene to match the locations and height of where the photographs were taken from and the lens data stored in the metadata of the photograph. The cameras was then aligned in rotation so that the points of the 3D model aligned with their corresponding objects that are visible in the photograph.

A realistic sun & skylight light system was then created in the 3D scene and matched to the precise time and date of when each photograph was taken.

3D renderings of the new built form was then created from the selected cameras, at the exact pixel dimensions and aspect ratio of the original digital photograph.

The 3D renderings were then place into the digital photography, and masked out where existing form appeared in front of the buildings.

In conclusion, it is my opinion as an experienced 3D architectural visualisation professional that the images provided accurately portray the level of visibility and impact of the built form with respect to the surrounds.

Yours sincerely

Grant Kolln,
Director Virtual Ideas

Locations of Groundview Photomontage Cameras



NOTE: THESE IMAGES ARE FOR INFORMATION ONLY.
They have been prepared for view analysis purposes only.
Proposed outer parameters for built form ("parameter boxes") shown form part of
State Significant Development Application SSD13_5878

and do not form part of this development application.
Building form shown within parameter boxes are shown for information and
broader contextual and illustrative purposes only.



24mm - Original Image



24mm



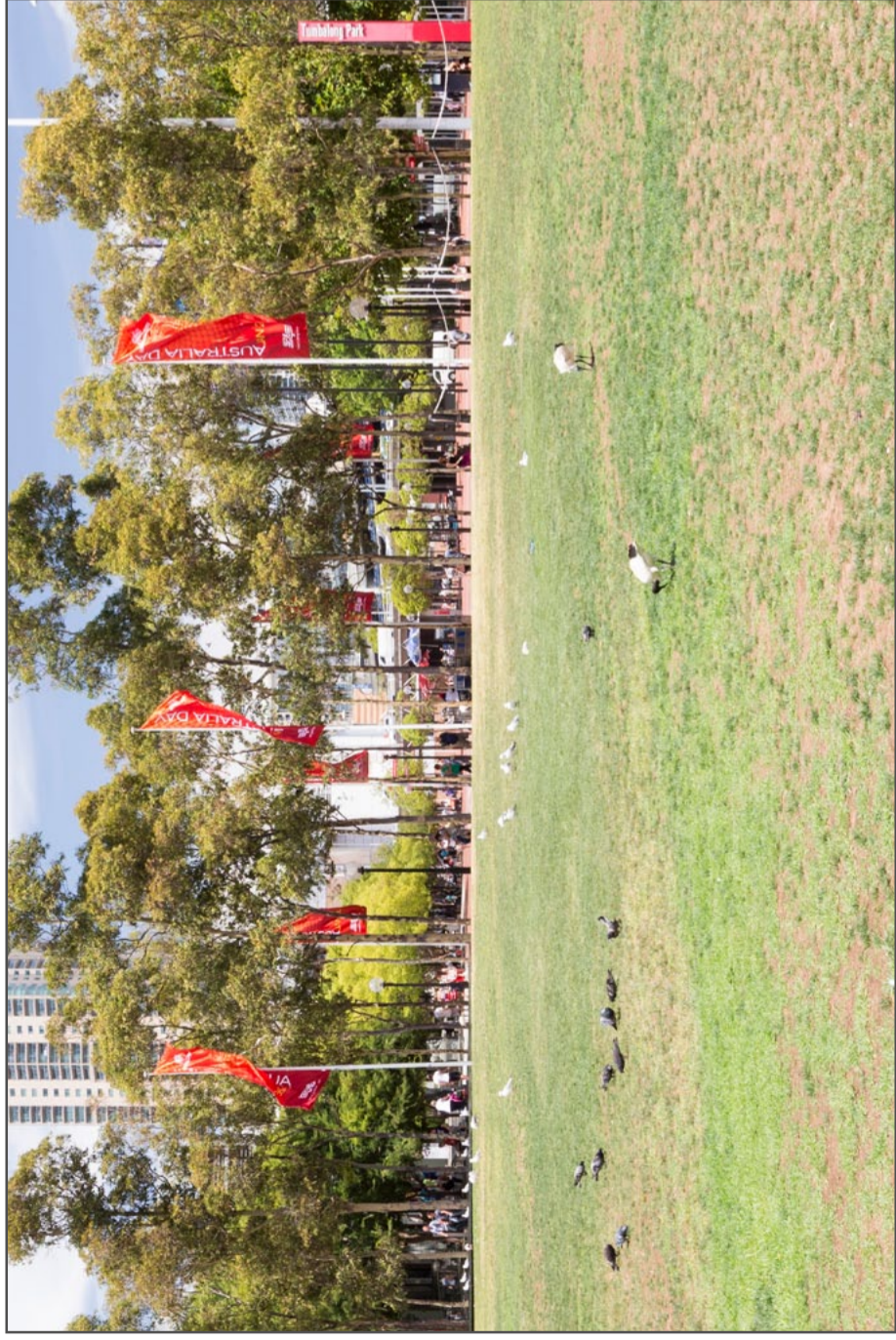
50mm - Original Image



50mm



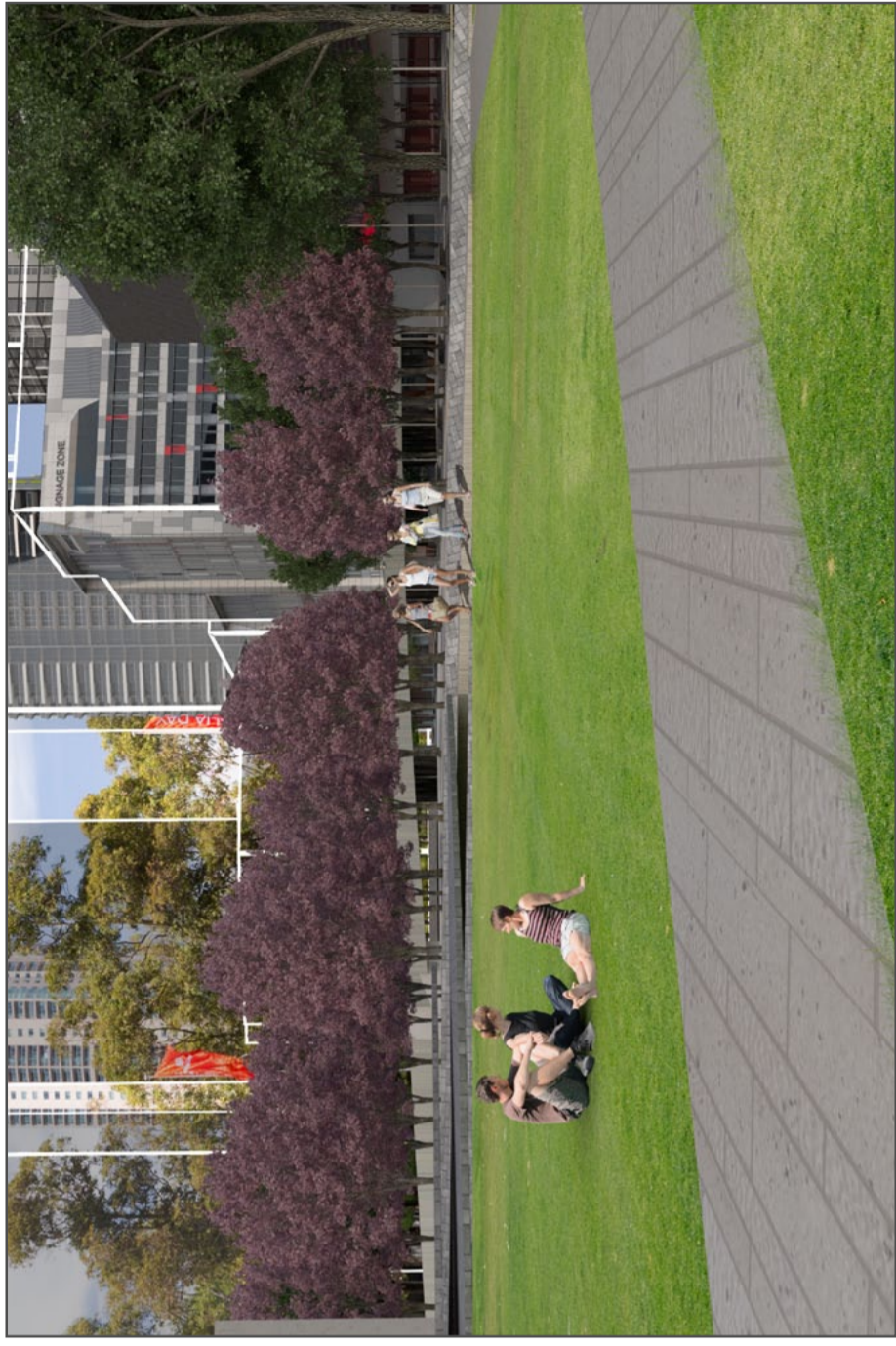
24mm - Original Image



50mm - Original Image



24mm



50mm



23mm - Original Image



23mm



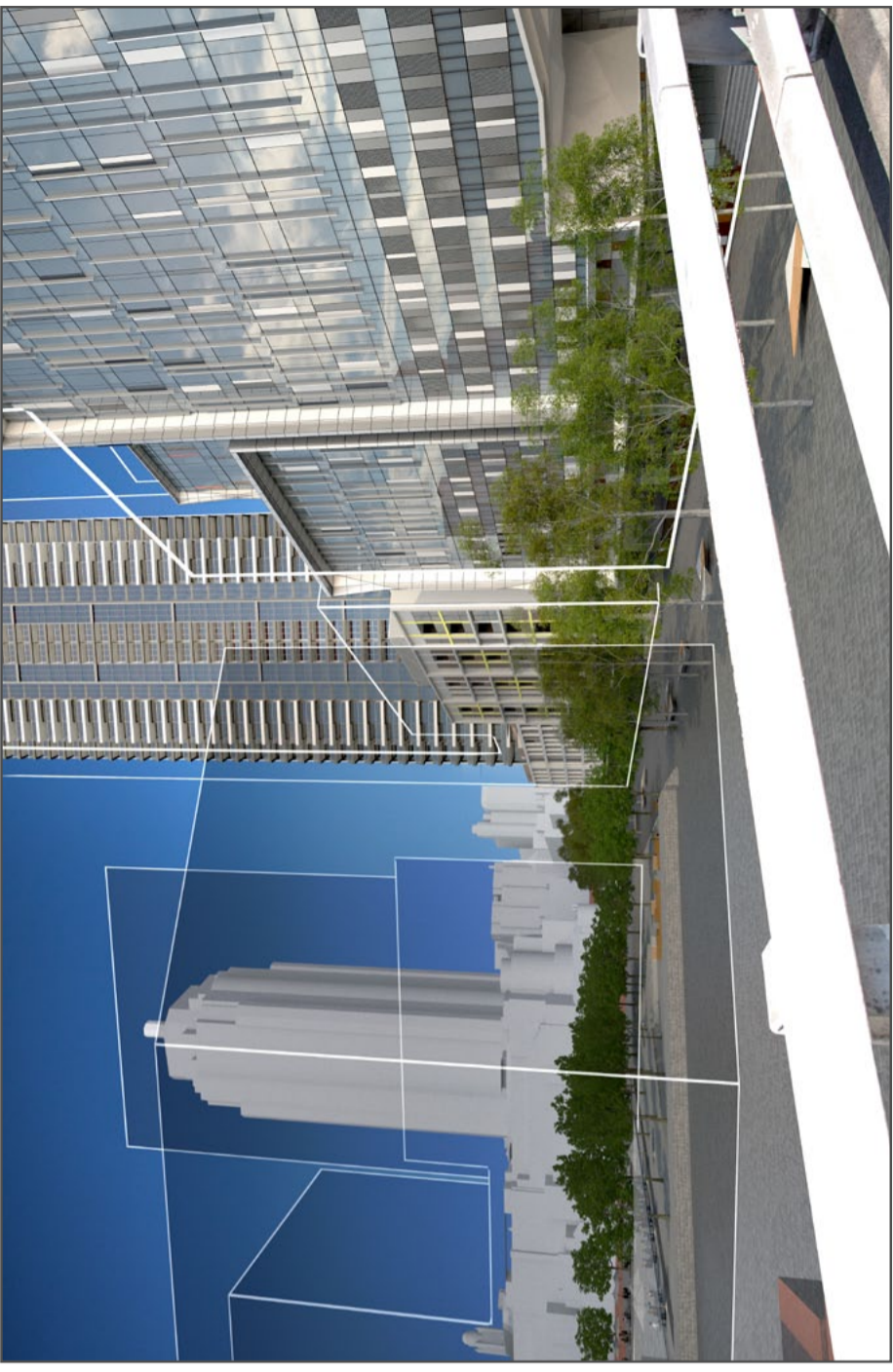
50mm - Original Image



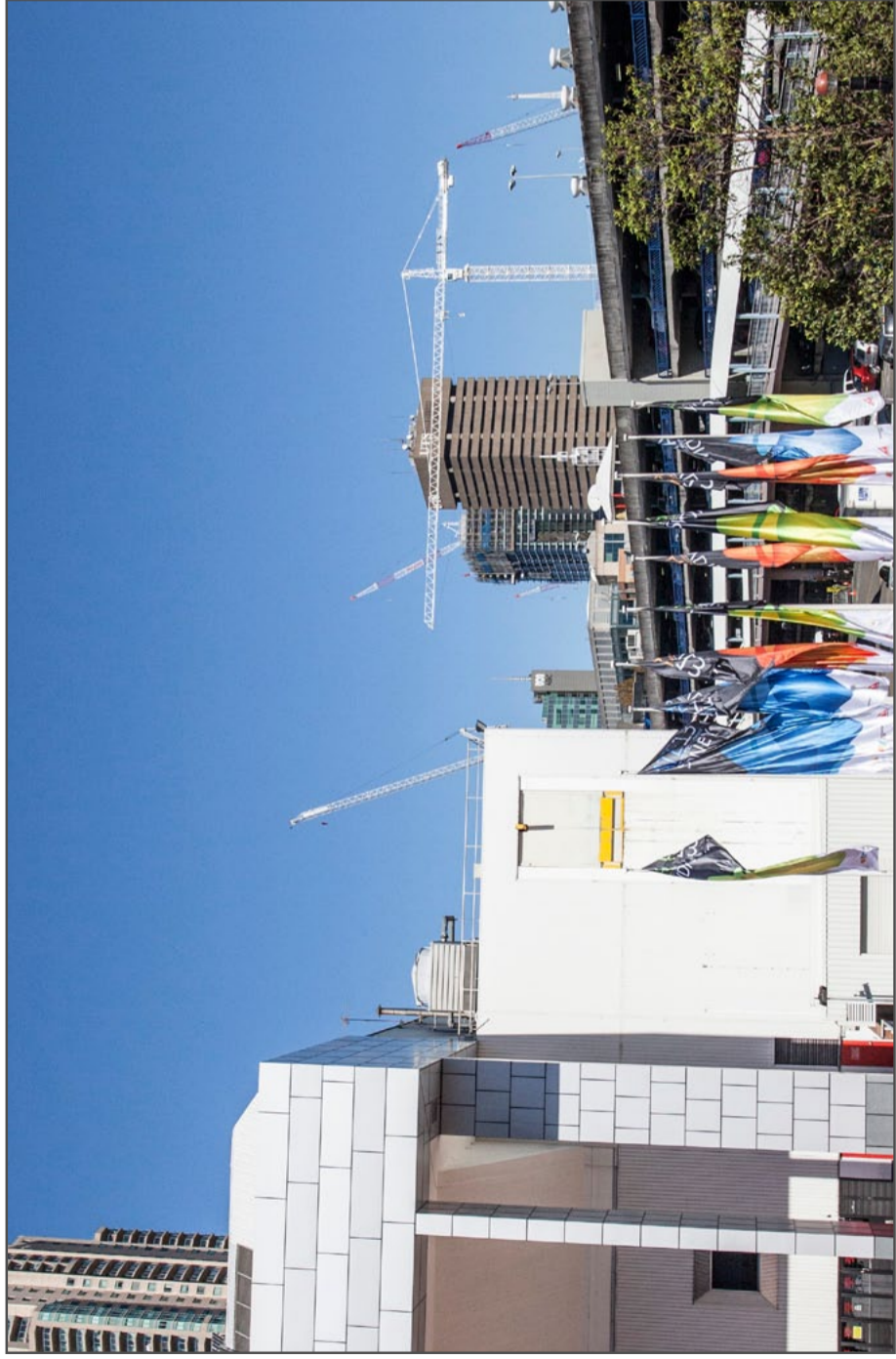
50mm



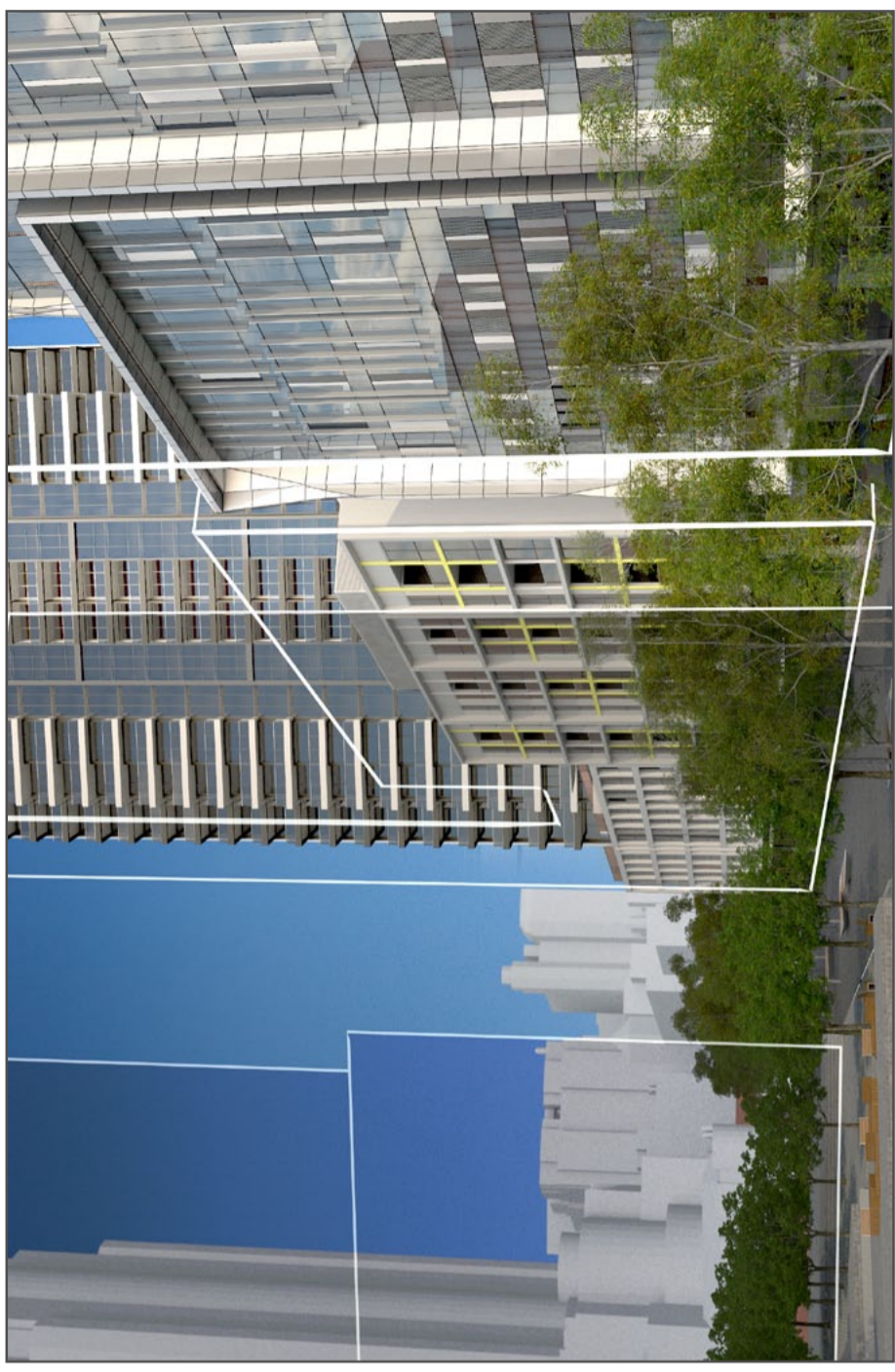
25mm - Original Image



25mm



50mm - Original Image



50mm



24mm - Original Image



24mm



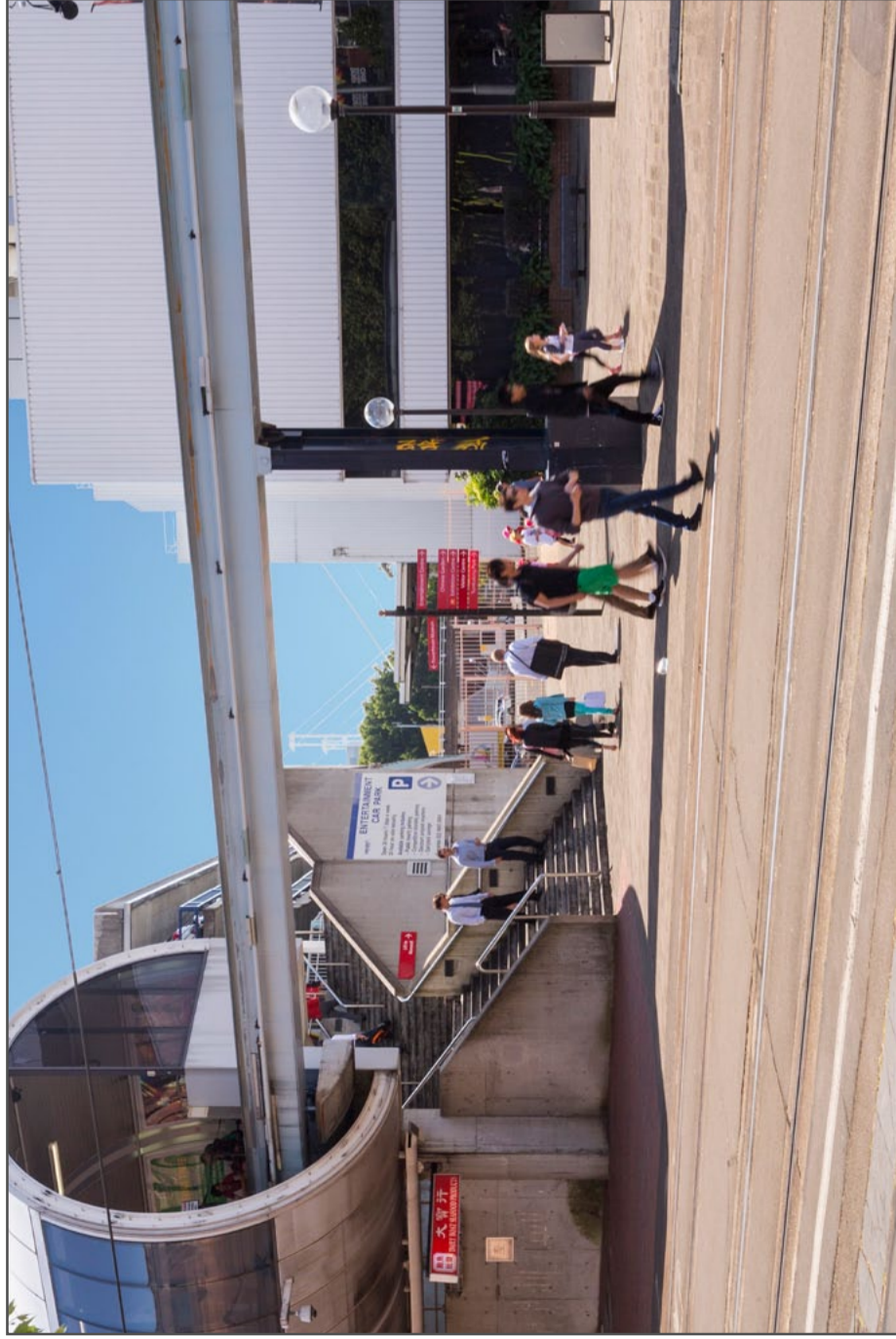
50mm - Original Image



50mm



24mm - Original Image



50mm - Original Image



24mm



50mm



24mm - Original Image



24mm



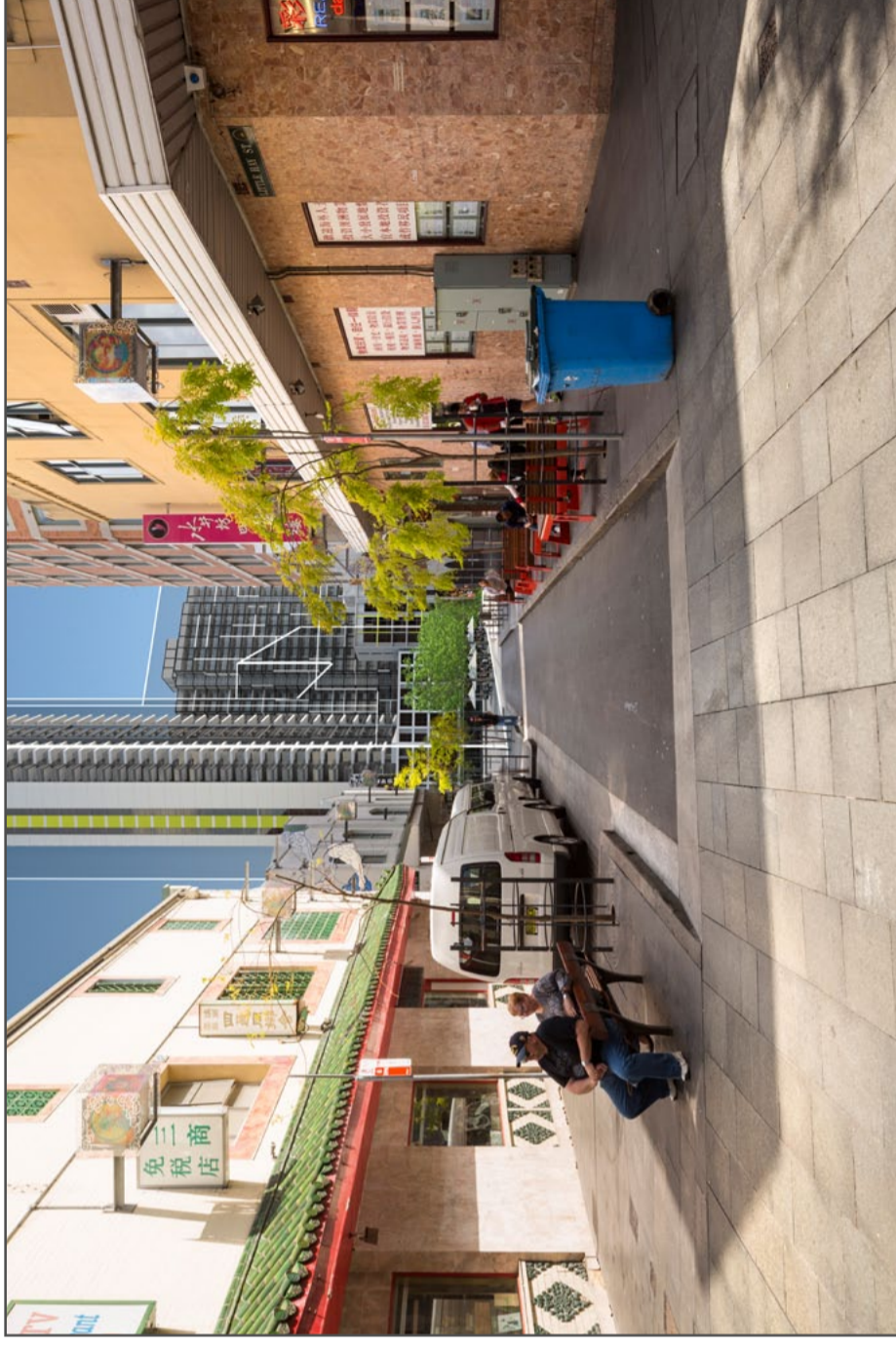
50mm - Original Image



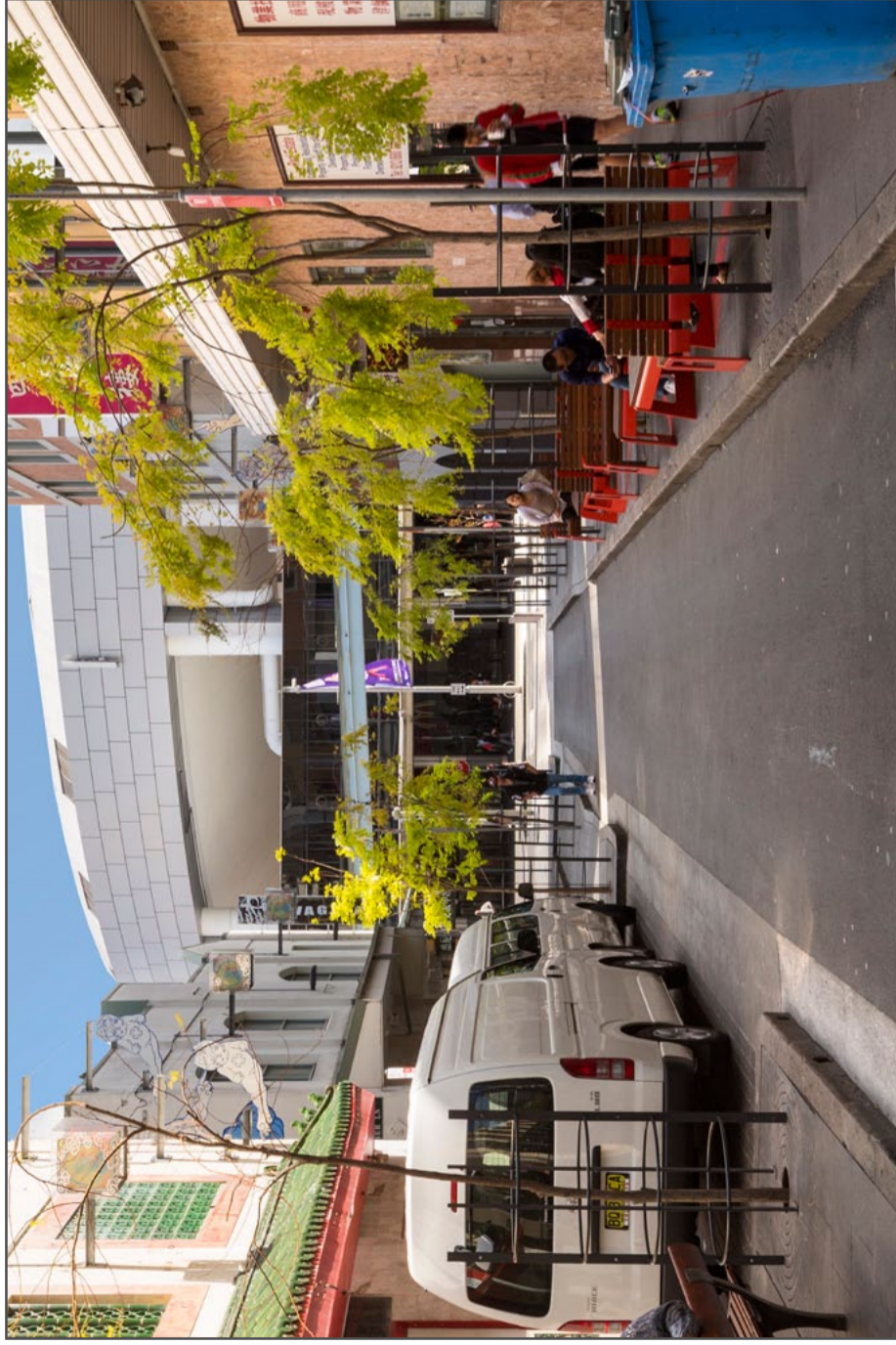
50mm



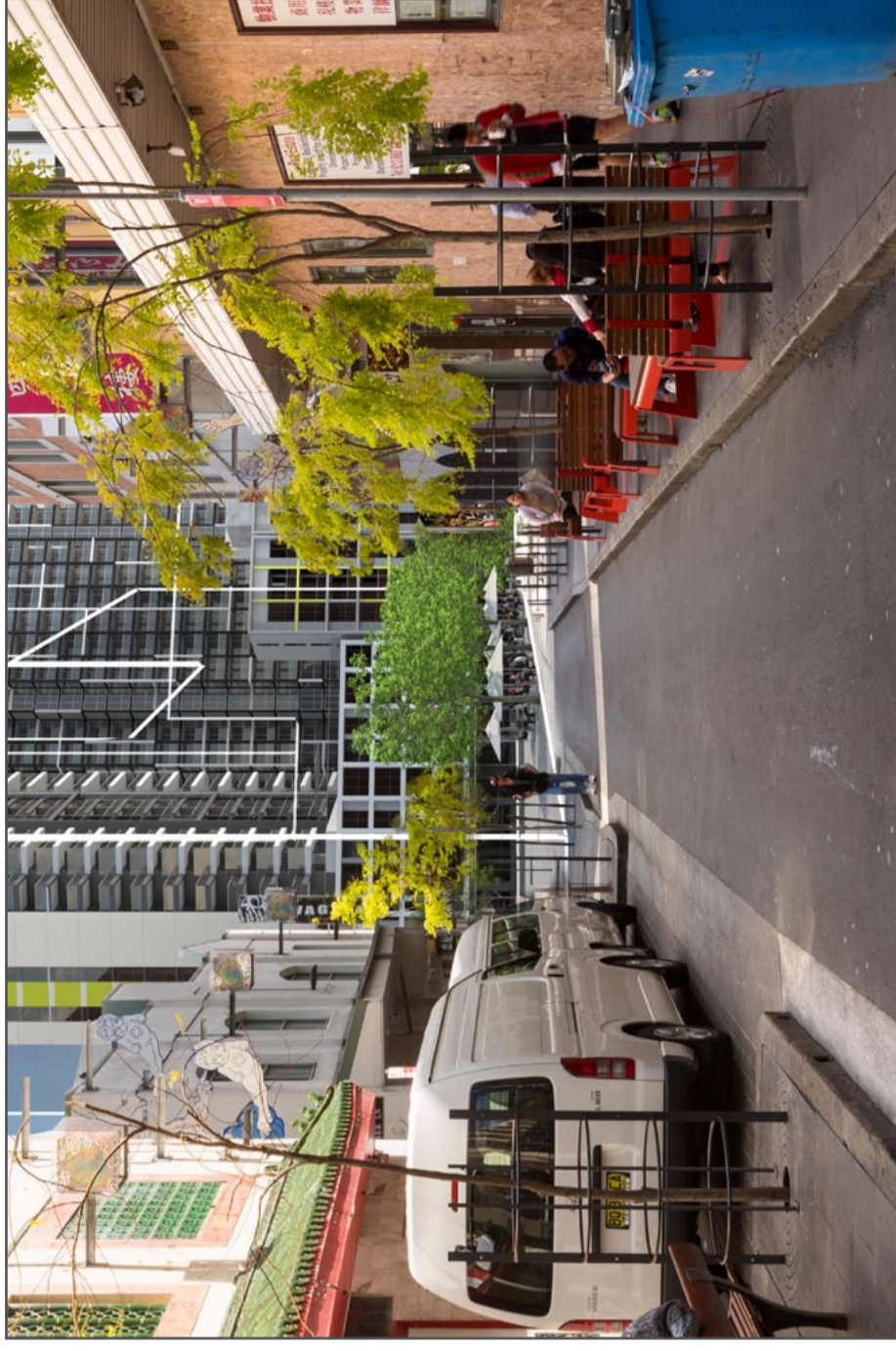
24mm - Original Image



24mm



50mm - Original Image



50mm



24mm - Original Image



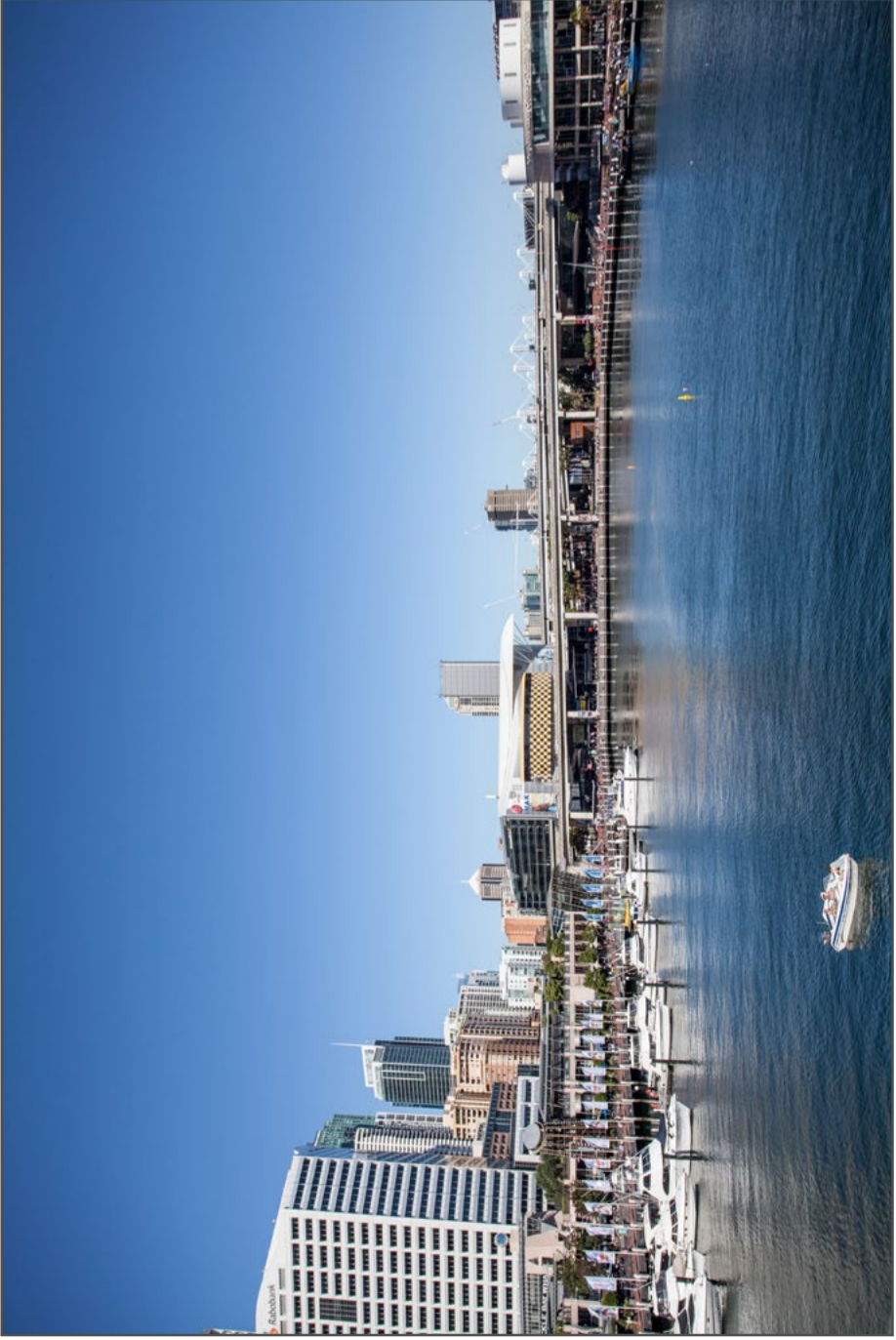
24mm



50mm - Original Image



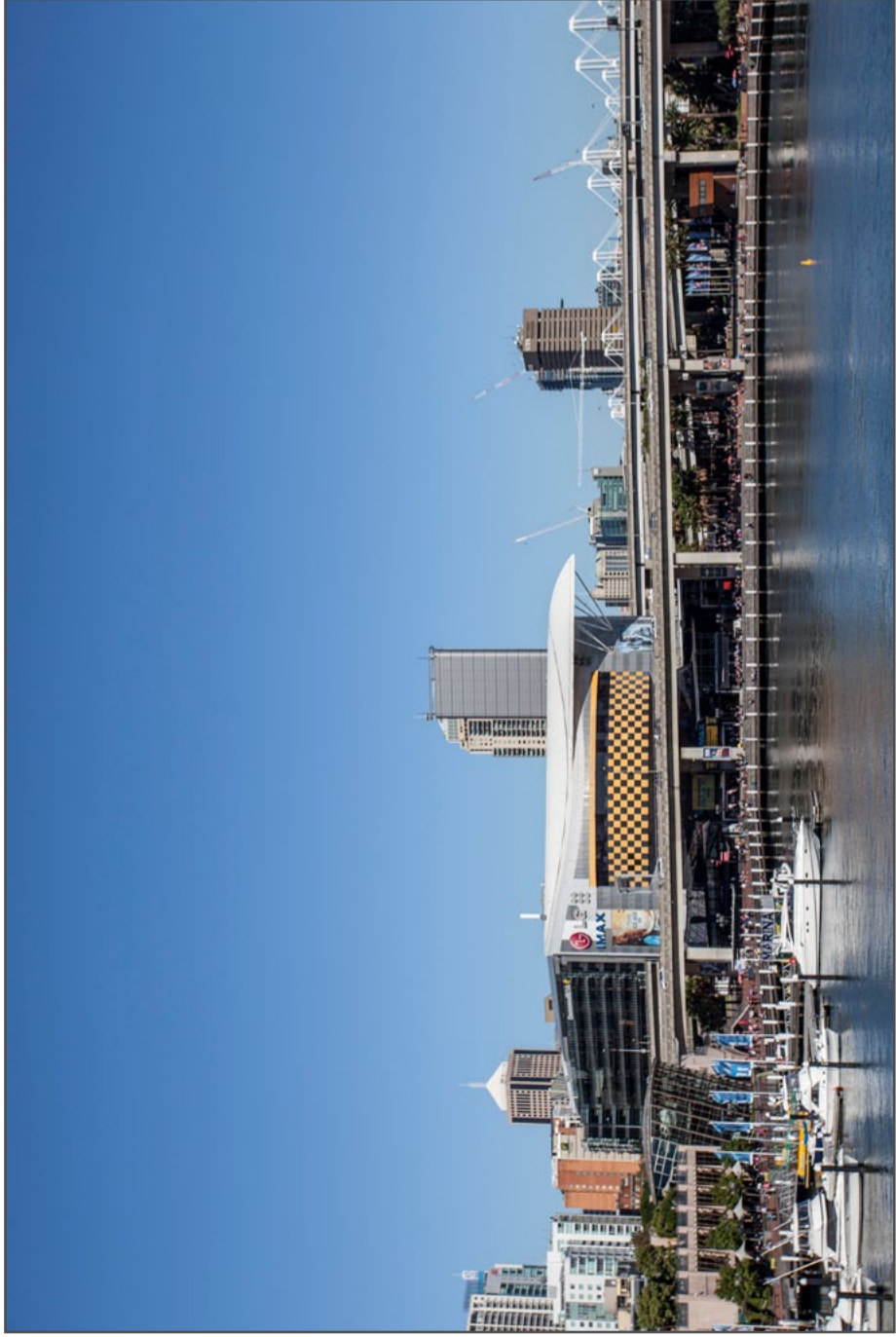
50mm



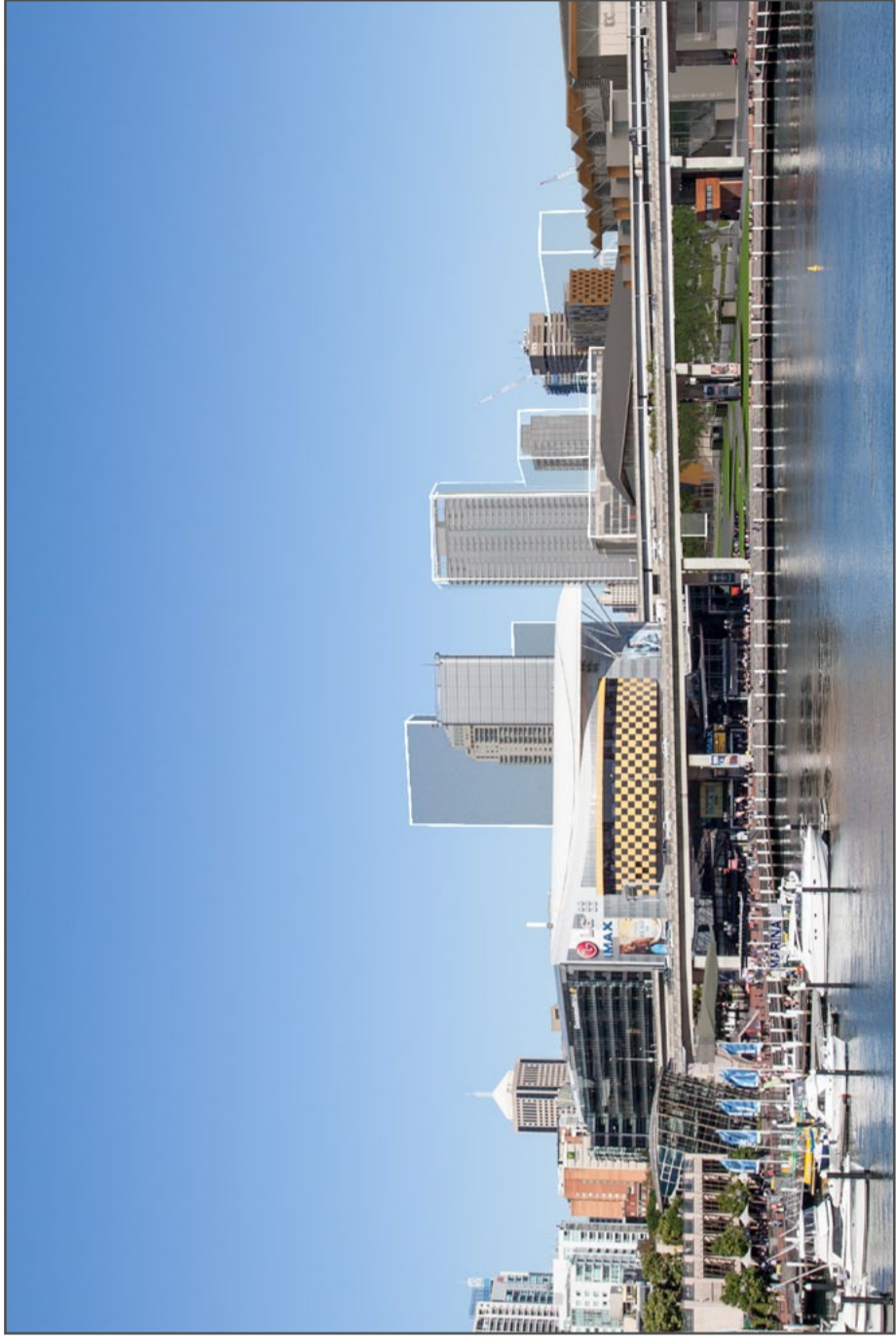
25mm - Original Image



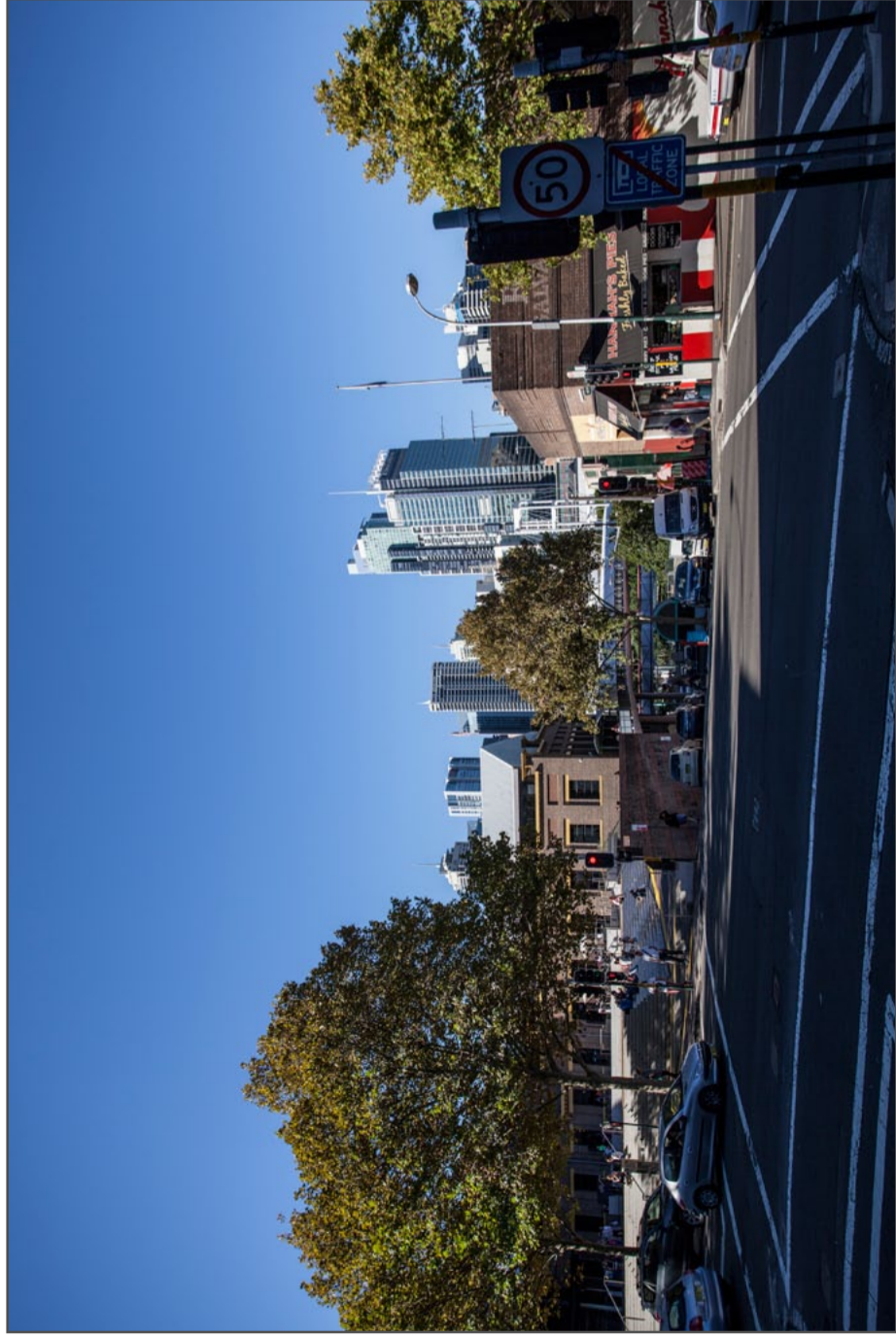
25mm



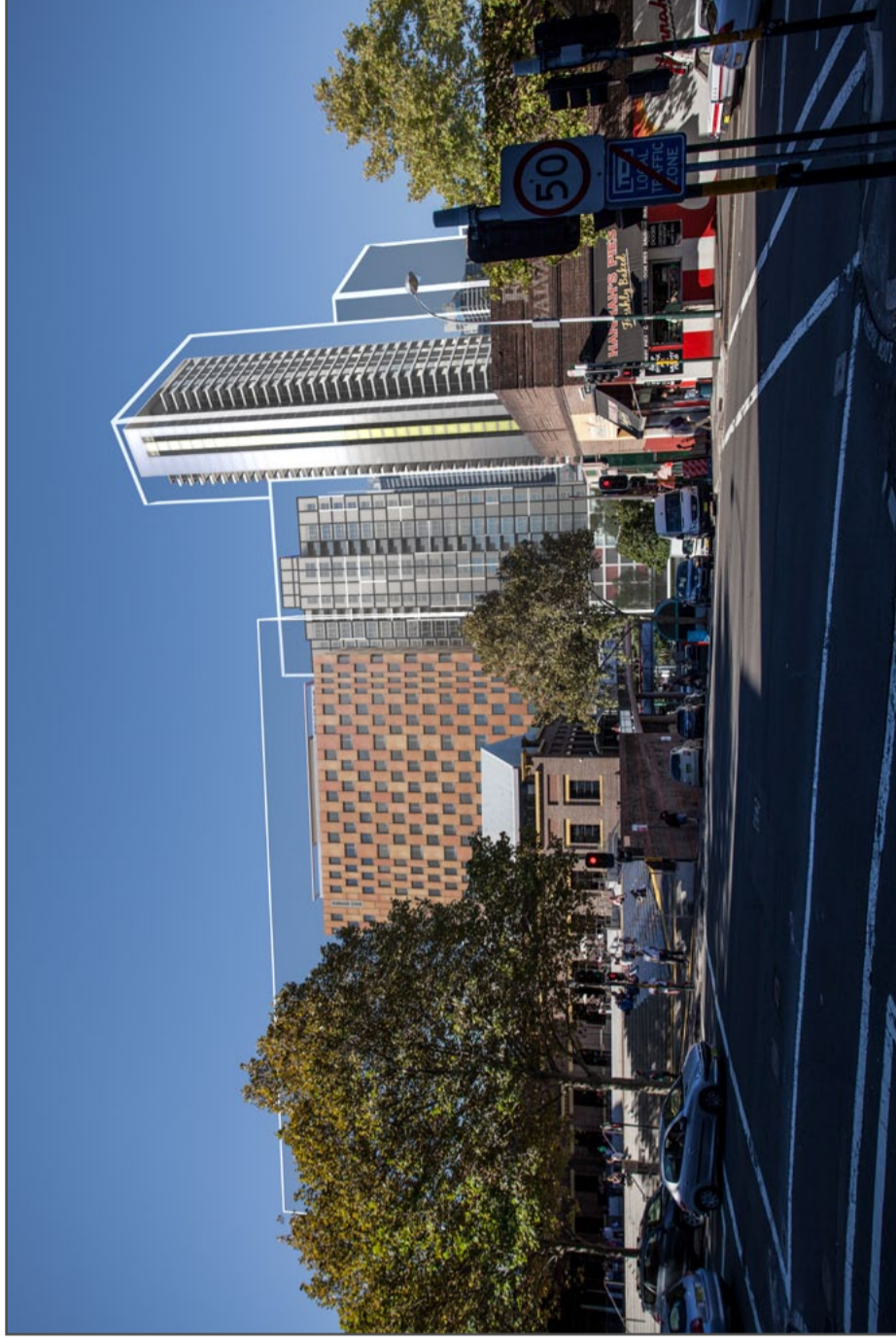
50mm - Original Image



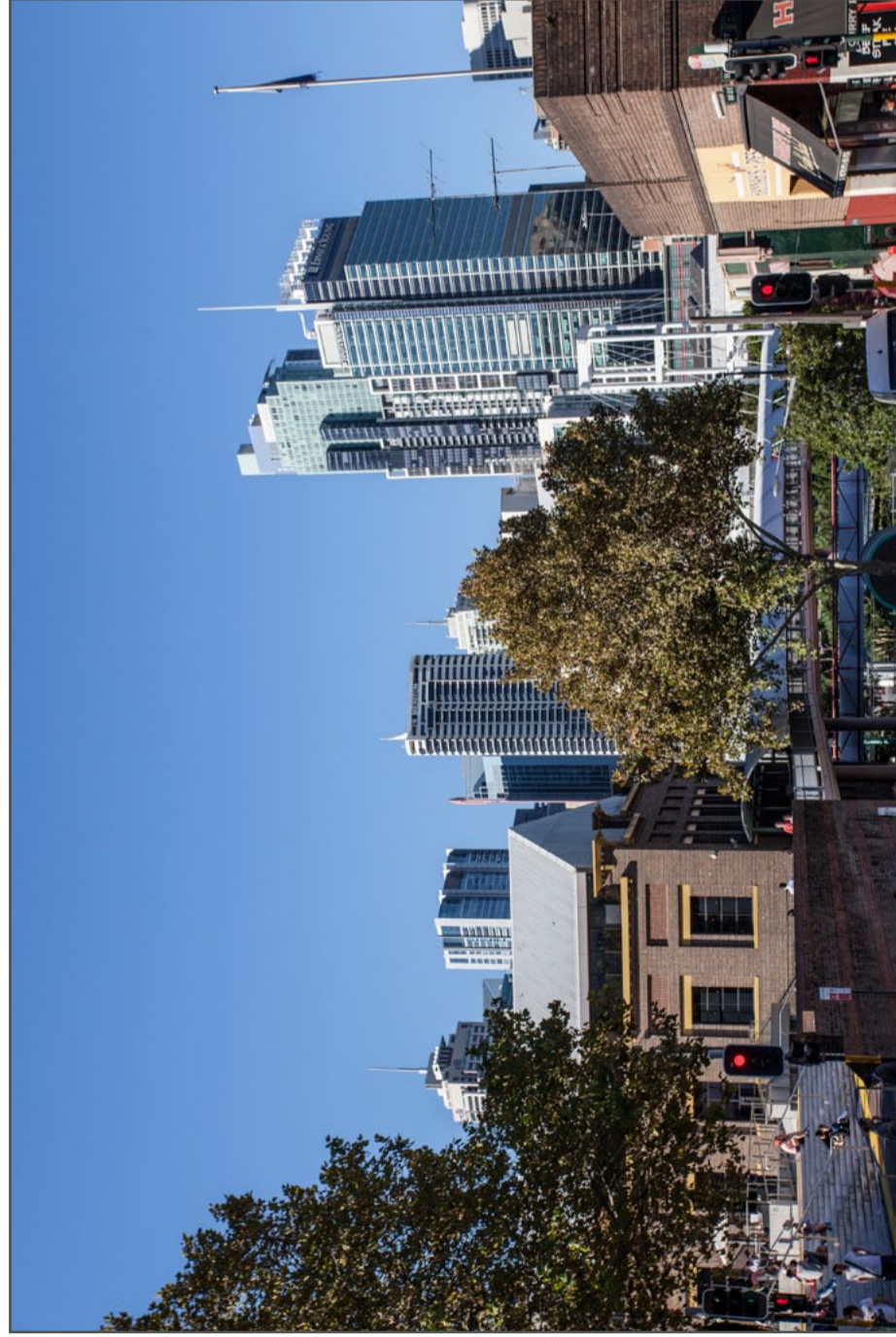
50mm



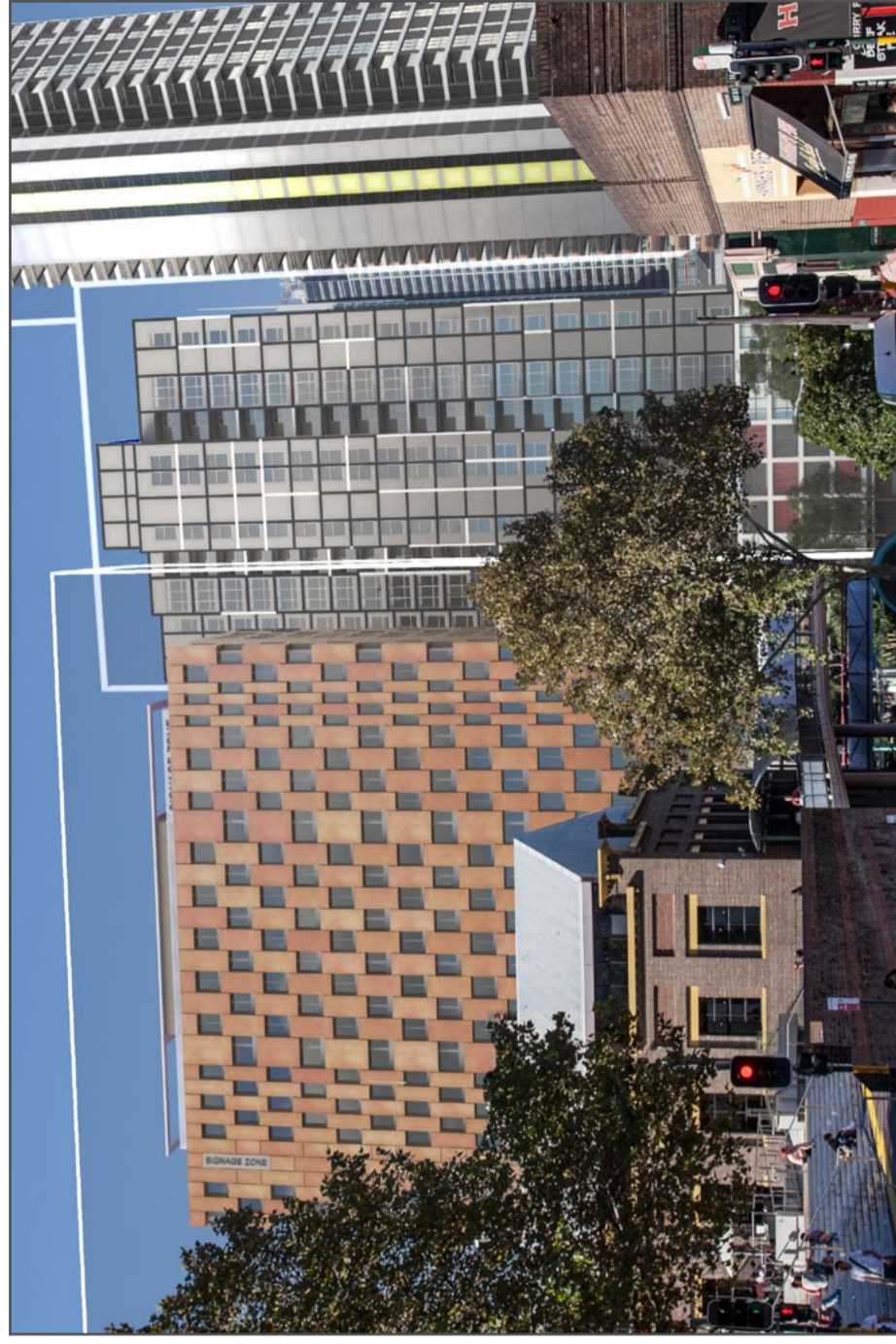
24mm - Original Image



24mm



50mm - Original Image



50mm



25mm - Original Image



25mm



50mm - Original Image



50mm