

Visual and View Impact Analysis



Sydney International Convention, Exhibition and Entertainment Precinct

Darling Square

Submitted to Department of Planning and Environment
On Behalf of Lend Lease (Haymarket) Pty Ltd

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1.0 Introduction

This report provides a Visual and View Impact Analysis in relation to Darling Square, within the broader Sydney International Convention, Exhibition and Entertainment Precinct (SICEEP). More specifically it has been prepared in support of the following applications which have all been lodged concurrently:

- State Significant Development Application (SSDA 9) – construction and use of a mixed use residential development within the South-East Plot;
- State Significant Development Application (SSDA 10) – construction and use of a mixed use community/lifestyle development within the North Plot and public domain works to create a new square and associated public domain; and
- S96 modification application (MOD 2) to State Significant Development Application (SSDA 1) – concept proposal for Darling Square.

The SICEEP Project 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 also involves the creation of a new mixed use residential neighbourhood (known as Darling Square).

An 'overarching' Visual and View Impact Analysis was submitted in support of the Concept Proposal for Darling Square (SSDA 2 - 5878-2013), approved by the Minister for Planning on 5 December 2013. The Concept Proposal established building envelopes and design parameters for a new neighbourhood including student housing, public car parking, a commercial office building and mixed use development blocks (referred to herein as 'Darling Square concept proposal' of the 'Concept Proposal'). In approving the Concept Proposal, the Department of Planning/Minister accepted the conclusions reached within the overarching Visual and View Impact Analysis that Darling Square achieved a reasonable balance between the protection of private views and the protection of public domain views.

The overarching Visual and View Impact Analysis also provided an analysis of the cumulative visual and view impacts of the overall SICEEP Project on a site wide basis including the core facilities (comprising the Convention, Exhibition and Entertainment facilities) and 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, the Darling Square concept proposal achieved a reasonable balance between the need for the development and its requirements and the protection of private views and the protection of public domain views.

Since the Darling Square Concept Proposal was approved, there have been four (4) detailed Stage 2 DAs approved, relating to Building W2 in the Western Plot (Darling Drive) – SSDA 3, North West Plot – SSDA 4, South-West Plot – SSDA 5 and North-East Plot SSDA7. Development consent for Building W1 within the Western Plot is expected to be issued shortly.

SSDA 9 and SSDA 10 represent the final detailed stages under the Darling Square concept proposal. The modification application to SSDA 2 in the main relates to a minor increase in GFA (to be mainly allocated across the North Plot and South-East Plot) and adjustment to the North Plot parameter plan (to reflect the re-imagining of this important building).

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. With the Concept Proposal for Darling Square now approved, the development the subject of this proposal has been prepared in accordance with the Concept Proposal (as proposed to be modified). The North Plot and South-East Plot developments are wholly consistent with the Concept Proposal (SSDA 2) for Darling Square, including in relation to visual and view impacts.

The Secretary's Environmental Assessment Requirements (SEARs) dated 13 May 2015 for the North Plot (SSDA 7021) and the SEARs dated 19 August 2014 for the South-East Plot (SSDA 6633) 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....
- Address impacts on views...

The overarching Visual and View Impact Analysis was prepared to meet the above requirements as these requirements are similar to those which were contained in the Director General's Environmental Assessment Requirements issued on 26 March 2013 for the Concept Proposal.

This report provides a further detailed Visual and View Impact Analysis in relation to SSDA 9 and SSDA 10 and the proposed modified Concept Proposal SSDA 2. It should be read in conjunction with the overarching Visual and View Impact Analysis submitted in support of Staged SSDA 2 for Darling Square.

This report demonstrates that the visual and view impacts associated with the proposed development are consistent with / within those identified and assessed in Staged SSDA 2 for Darling Square concept proposal. With the proposal being largely contained within the building envelope approved 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 Darling Square. The SICEEP Site and the three distinct redevelopment areas including Darling Square are shown in **Figure 1**.



Figure 1 – Site Location Plan



■ Darling Square ■ SSDA10 Site

Figure 3 – Aerial view of the SSDA 10 site

1.2 Staged SSDA 2 Darling Square Concept Proposal

The approved Darling Square 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.

More specifically the approved concept proposal includes 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, above ground parking, and residential) with three residential buildings above;
- South-east block - construction and use of a mixed use podium (comprising retail, above ground parking, and residential) with three residential buildings above;
- South-west block - construction and use of a mixed use podium (comprising retail, 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 around 1,000 beds;

- Public domain improvements including a new square, water features, new pedestrian streets and laneways, streetscape embellishments, and associated landscaping;
- Reconfiguration and upgrade of Darling Drive (part);
- Remediation strategy; and
- Car parking rates.

MOD 2 to SSDA 2

MOD 2 to SSDA 2 seeks approval for:

- Increase in the total maximum non-residential and residential Gross Floor Area by 4,443m² and 6,681m² respectively;
- adjustments and increase to the maximum height of the north plot parameter plan/building envelope;
- minor administrative correction to the alignment of Little Hay Street; and
- minor consequential amendments to the approved Darling Square Design Guidelines.

Of consequence in this modification application to this Visual and View Impact Analysis is the proposed adjustment to the envelope of the North Plot building envelope.

1.3 SSDA 9 – Mixed Use Residential Development

SSDA 9 specifically seeks approval for the following components of development:

- Any associated remediation as may be required;
- Associated tree removal and planting;
- Staged construction and use of a predominantly 5 storey mixed use podium, including:
 - retail floor space and residential lobbies on Ground Level;
 - above ground parking;
 - residential apartments; and
 - communal facilities.
- Staged construction and use of three residential buildings above podium;
- Public domain improvements including:
 - Footpath along Harbour Street within the site;
 - Conceptual design for Harbour Street (located outside the site) to include paving, planting of four street trees, installation of lighting; and
 - Paving within the colonnade walkway; and
 - provision of vehicular access to the SSDA9 Site from Harbour Street.
- Landscaping works to the podium roof level; and
- Extension and augmentation of physical infrastructure / utilities as required.

1.4 SSDA 10 – Community/Lifestyle Building

SSDA 10 specifically seeks approval for the following components of development:

- Construction and use of a six (6) storey building (known as The Darling Exchange) containing the following uses:
 - Retail tenancies/market hall (such as market stalls, food and beverage premises and restaurant/bar operations);
 - Community uses (such as a library including IQ Hub and child care); and
 - Fitout of the ground level and mezzanine market hall and the food and beverage offering (restaurant/bar) within The Darling Exchange.
- Public domain improvements, including:
 - Creation of a new publically accessible square (The Square) with space for markets, outdoor events, passive and active recreation;
 - Provision of a timber canopy extending from The Darling Exchange along the western edge of The Square;
 - Provision of two kiosk-style retail pods below the canopy;
 - Creation of Little Hay Street, a new pedestrian only laneway between the North-East Plot and South-East Plot; and
 - Completion of general interface works to connect areas of new public domain with the existing public domain.
- Remediation as may be required; and
- Extension and augmentation of physical infrastructure/utilities as required.

1.5 Methodology

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

1.5.1 Visual analysis

The overarching View and Visual Impact Analysis submitted as part of the PPP SSDA1 and Staged SSDA 2 for the Darling Square concept proposal analyses 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 addressed in the analysis 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 SSDA 2 for the Darling Square Concept Proposal that are relevant to SSDA 9, SSDA 10 and the modification to SSDA 2 have been reviewed and refined in formulating updated photomontages to illustrate the visual impact of the detailed buildings within the approved (SSDA 9) and proposed modified envelope (SSDA 10) of the Darling Square Concept Proposal.

In summary, a total of 21 public domain vantage points have been identified for further analysis and assessment in relation to proposed SSDA 9, SSDA 10 and s96 to SSDA 2 (refer to **Figure 4**) in the following locations:

- King Street Wharf;
- Pyrmont Bridge;
- Western Distributor;
- Tumbalong Park;
- Harbour Street;
- Macarthur Street;
- Pier Street;
- The Boulevard;
- Quay Street;
- Hay Street;
- Factory Street; and
- Little Hay Street.

Other public domain views identified in the overarching Visual and View Impact Analysis are not considered to be impacted on by the proposed development or amendments. 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 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 24mm 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 View and Visual Analysis.



Figure 4 – Visual analysis – photomontage locations SSDA 12

1.5.2 View analysis

As part of the overarching Visual and View Impact Analysis accompanying the Darling Square Concept Proposal (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 enjoy 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 use 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 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 all 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 in the overarching Visual and View Impact Analysis as being impacted or potentially impacted on by the overall SICEEP Project in terms of private views, there are only two (2) that are considered to require further detailed assessment and consideration in relation to SSDA 9. These two buildings are The Peak Apartments and The Quay.

The North Plot building (SSDA 10) including its adjustments proposed under MOD 2 to SSDA 2, will not be readily visible from any of the key buildings given its overall low scale in comparison to surrounding taller buildings.



Figure 5 – Key Buildings (Private Views)

1.6 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 SSDA 9, SSDA 10 and the adjustments to the North Plot building envelope under SSDA 2 in relation to the public views, view corridors and vantage points in and around the Site.
- Section 4 provides a view impact analysis for SSDA 9 only 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. Impacts on private views (being those that may not or do not align with existing or proposed public view corridors over streets) will require further consideration when detailed building designs are resolved.

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 Darling Square 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 21 photomontage images for the key ground level public domain views, view corridors and vantage points that require further consideration and assessment as part of SSDA 9, SSDA 10, and SSDA 2 (as proposed to be modified) are shown on **Figure 4**.

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

- King Street Wharf, Pyrmont Bridge and Western Distributor;
- Tumbalong Park;
- Macarthur Street;
- Pier Street;
- Harbour Street, Hay Street, Little Hay Street, Factory Street;
- Quay Street; and
- the Boulevard and Square.

The following section provides a visual analysis in relation to these key areas in regard to the development proposed as part of SSDA 9, SSDA 10 and the amendments to SSDA 2 (is adjustment to the North Plot building envelope).

3.1 King Street Wharf, Pyrmont Bridge & Western Distributor

The view towards SSDA 9 and SSDA 10 is illustrated by Ground Views 1, 8, 9b and 28.

Existing public domain views from the King Street Wharf precinct toward Darling Harbour look over Pyrmont Bridge towards the International Convention Centre (ICC) and ICC Exhibition buildings currently under construction to the west and south west; and beyond the M4 western distributor ramps through to the southern CBD skyline terminated by the UTS tower and One Central Park.

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, 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 development.

The existing southern CBD skyline established by UTS Tower, One Central Park, 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 Darling Square Concept Proposal, the proposed SSDA 9 and SSDA 10 buildings 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 (ICC) and ICC Exhibition buildings currently under construction as part of the PPP 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 will result in a new expanded southern CBD skyline, which 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 9 and SSDA 10 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 development will not obstruct or obscure any views or sight lines to significant public domain buildings.

As is illustrated by Ground Views 1, 8, 9b and 28, although SSDA 9 will be visible, it sits within the maximum envelope approved as part of the Darling Square 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, the Western Distributor or generally along the eastern side of Darling Harbour, which will be retained and enhanced by the proposal. In terms of SSDA 10 and the adjustment to the approved building envelope proposed under MOD 2 to SSDA 2, it is clear that this building continues to be of a pedestrian scale and size (at 6 storeys) and therefore not readily visible from these vantage points and/or sits within the foreground of larger buildings behind.

It is considered that the proposed SSDA 9 and SSDA 10 developments 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 in the locality. Consistent with the planning context and relevant planning instruments that are of relevance to the consideration of visual and view impacts, the proposed development (which is contained well within or largely within the approved parameter plan envelopes), 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, east, west 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 (now under demolition). 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 12c shows the view back towards Darling Square 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 (now demolished).

As illustrated in Ground View 12c, the new buildings in Darling Square will create a new skyline for the southern CBD, framed by landscaped public domain along the southern edge of Tumbalong Park. The proposed Mixed Use Residential building in the South-East Plot (SE1) will be visible from Tumbalong Park, forming part of the frame of new buildings in Darling Square when looking south. The proposed mixed use community/lifestyle building (including its adjustment to align with the proposed amendment North Plot building envelope) will largely not be visible given its low scale.

The proposed Mixed Use Residential buildings within the South-East Plot do not fill the maximum envelope of Darling Square concept proposal. When viewed together the detailed design of the proposed buildings, along with the detailed design of the approved Stage 2 SSDAs (SSDA 3, SSDA 4, SSDA 5, and SSDA 7) provide for breaks between buildings and views to sky when looking south.

Whilst introducing new building form nearby to Tumbalong Park, 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 SSDA 9 Mixed Use Residential 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 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 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 development proposed as part of Darling Square, including proposed SSDA 9 and SSDA 10 viewed from Macarthur Street is provided at Ground View 29.

The existing public domain view from Macarthur Street is toward the southern CBD skyline. 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 up until recently was not a high intensity public domain corridor, although with the completion of the Goods Line it has become more heavily used offering improved east west connection from Pyrmont through to Darling Harbour and the CBD along with north-south connections between Darling Square and Broadway/Central.

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.

The proposed mixed use community/lifestyle building (SSDA 10) is not visible in Ground View 29 due to the low scale of the proposal. The mixed use residential buildings of SSDA 9 (SE 1) is visible in the background of the frame – siting behind the South-West Plot. The proposed development (SSDA 9) will further enclose/terminate the public domain view from this vantage point and remove the existing CBD skyline.

This development is however wholly contained within the approved Concept Proposal building envelope.

3.4 Pier Street

The overall 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 ordinarily 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 North Plot and South-East Plot being of relatively limited duration and extent.

The public domain view when travelling east towards the CBD did include the entertainment centre car park (recently demolished) as well as views to some office towers at the southern end of the CBD. The southern end of the exhibition centre (demolition underway) is also visible from certain vantage points. 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 proposed development of Darling Square will be highly visible when travelling along Pier Street towards the CBD. The entertainment centre and associated car park will be replaced with the approved mixed use developments (SSDA 4, SSDA 5 and SSDA 7) and student accommodation building (SSDA 12¹) which will create a new urban skyline in the south western CBD. The approved Theatre building (part of SSDA1) will frame the views to the north.

The adjustment of the North Plot building envelope will not alter the building's appreciation and relationship with the public domain. SSDA 9 is not readily visible from Pier Street given its position behind the North-East Plot.

As is illustrated by Ground Views 33, 34, and 18 the proposed development and amendment to SSDA 2 will only partially screen some view corridors and not adversely impacting any significant public domain corridors given the low amenity and value of Pier Street.

3.5 Harbour Street, Hay Street, Little Hay Street and Factory Street

Photomontage images viewed from various key vantage points surrounding the Darling Square Precinct are included at Ground Views 20 (Factory Street), 25 (Harbour Street/Hay Street), 26 (Little Hay Street) and 27 (Hay Street/Sussex Street).

The precinct is relatively intensely used by pedestrian traffic moving through to the Sydney Entertainment Centre from Chinatown and the CBD generally. 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 looking from the termination of Hay Street to the north (vantage point 25) is of Harbour Street fronted by the existing Sydney Entertainment Centre (now under demolition) to the west with distant views to the southern edge of the CBD beyond.

The proposed development will replace the current view with the new form and design of the proposed mixed use residential development to the west, with the view to the north and east unchanged. The detailed design approach and materials being adopted within the proposed SSDA 9 development will create a more harmonious streetscape and reinforce the predominant masonry character of the area.

¹ Development consent expected to be issued shortly.

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 Sydney entertainment centre (now under demolition). The proposed SSDA 9 Mixed Use Residential development will partly terminate the vista looking along Little Hay Street to the west (noting that Little Hay is being extended into the Darling Square site, running north along the SSDA 9 site). It will not interrupt or encroach on this existing vista, however will change the skyline when viewed from this approach (reducing the amount of sky above/beyond the existing SEC – although it is noted that SSDA 9 sits in the foreground of the approved South-West Plot development). It is considered that the new built form will make a positive contribution to the urban environment providing visual interest and variety in the streetscape. The extension of Little Hay Street into Darling Square will also enhance the visual interest and pedestrian experience.

The existing public domain view from Hay Street looking west (vantage point 27) is a streetscape fronted by Paddys markets to the south and variety of eateries and retail to the north. The proposed development (SSDA 9) 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 SSDA 9 Mixed Use Residential development will be a prominent feature in the skyline when viewed from this vantage point. It will establish new built form that terminates the Hay Street vista with a landmark tower element. It is considered to provide visual interest in the streetscape and variety in the CBD skyline. The prominent low scale street wall of existing development along the corridor will however remain largely uninterrupted ensuring that the streetscape character is retained.

In terms of the public domain view from the western end of Hay Street looking east (vantage point 30), the proposed development (SSDA 9) continues (along with SSDA 5) to establish a street-wall/enclose the street. The view to the south and further beyond to the east remain unchanged.

3.6 Quay Street

Photomontage images of key southern vantage points surrounding Darling Square are included at Ground Views 23 and 24.

The existing public domain view from the termination of Quay Street looking north is of the existing monorail station (now removed) and the rear of the entertainment centre (under demolition) 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 approved concept proposal enhances the view corridor to the north through the creation of the central boulevard that extends all the way through the Darling Square precinct toward the Darling Harbour live precinct.

The creation of the new public domain link will provide a key new visual connection through the SICEEP site. The proposed SSDA 9 Mixed Use Residential building will form part of the new street wall to the Boulevard when looking north along Quay Street.

The proposed SSDA 9 Mixed Use Residential development 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 SSDA 9 Mixed Use Residential development is not considered to detract from the aesthetics or quality of the wider public domain of Darling Harbour but rather to enhance them.

It is clear from ground view 23 that the adjustments to the height of the North Plot has no material impact, with the building remaining of a low scale and continuing to provide northern views of the sky.

Further to the south along Quay Street looking north the public domain comprises a wide thoroughfare (Ground View point 24). The approved concept proposal appropriately frames the edges of the street and creates an improvement in the pedestrian scale and sense of enclosure of the street by the addition of development along the west and east of Quay Street.

The key visual connection along the street will be retained. The proposed SSDA 9 Mixed Use Residential development will form a key part of the streetscape when moving down Quay Street to the north providing a focal point at the end of the public domain vista. As above, the building will contribute to the visual definition and enclosure of the Boulevard public domain space which functions as a pedestrianised extension of Quay Street.

It is considered to provide a landmark element in the public domain and to contribute in a positive way to the termination of the Hay Street corridor. The proposed SSDA Mixed Use Residential building will not encroach into the public domain vista or obstruct the space. It is considered that the proposed SSDA 9 Mixed Use Residential development will improve the overall aesthetics of the vista.

3.7 The Boulevard and Square

With the approved Concept Proposal opening up the Darling Square site through the provision of new pedestrian connections and creation of a new square, it obviously means that existing internal views are not available. Therefore, ground views 19, 35, and 37 all represent new public domain vantage points that will be delivered through the overall project.

The new Square proposed under SSDA 10 will deliver significant public benefit to existing and future residents and visitors to the area, with its legibility achieved through its enclosure by low scale podium buildings (such as that proposed under SSDA 9 and SSDA 10).

The re-imagined North Plot building also ensures that it supports visual connectivity within and through the Square.

It is clear from ground view 23 that the adjustments to the height of the North Plot has no material impact, with the building remaining of a low scale and continuing to provide northern views of the sky.

The proposed SSDA 9 Mixed Use Residential building will form part of the new street wall to the Boulevard when looking south. The proposed SSDA 9 Mixed Use Residential development will make a positive contribution to the visual definition and enclosure of this future pedestrianised public domain space.

4.0 View Impact

The locations of the key buildings that are impacted or potentially impacted by the proposed mixed use Residential development SSDA 9 development in terms of private views are shown on **Figure 4** and include:

- The Peak Apartments; and
- The Quay.

The following section provides a view impact analysis in relation to these two (2) key buildings in regard to the development proposed as part of SSDA 9.

4.1 The Peak Apartments

The Peak Apartments are located on Ultimo Road to the south of the Darling Square 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 this location, 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 four locations including Apartment s 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 attached to this report. 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 approved building envelopes and also the detailed building designs proposed under SSDA 9 and for the approved Stage 2 detailed SSDAs (i.e. SSDA 3 – 5 and SSDA 7).

As is illustrated by the 2D and 3D images, the proposed SSDA 9 development impacts on views and outlook from The Peak when looking north (locations P1A, P2A & P2B and P3A & P3B).

The approved Concept Proposal includes supporting Design Guidelines that have been developed by Denton Corker Marshall to guide the future development of Darling Square. 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 in the Design Guidelines.

It is not intended for the controls in the Design Guidelines 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 and consistency with the Concept Proposal.

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 SSDA 9 has been prepared in accordance with the Design Guidelines.

Existing views²

Existing views from the Peak apartments towards the proposed Mixed Use Residential building are available across Darling Harbour and parts of Sydney Harbour. The apartments in the north eastern corners of the building are dual aspect, meaning that they have views both to the north and also to the east. 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, P2B and P3B) are available across Darling Harbour, Pyrmont Bridge and across Sydney Harbour. At the medium and high rise levels views looking west (P1B) 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 are of the southern CBD skyline through to the central CBD including Centrepont 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 SSDA 9 Mixed Use Residential building will have an impact on existing views from a number of The Peak Apartments that have a north or north westerly/easterly aspect. As can be seen from the view impact analysis drawings, the impact varies depending on the angle of view. Outlook and view sharing is however achieved from all apartments. In particular, westerly views across to Ultimo and Pyrmont are unaffected. Views from the balconies in an easterly direction towards the CBD skyline will also be retained. Important in the consideration of any view impacts is that the proposed development follows on from and is consistent with an approved concept proposal that established building envelopes across the Darling Square Site, including for the South-East Plot.

View impacts for The Peak Apartments vary. With the creation of a significant new urban precinct at the southern end of Darling Harbour where there is currently only relatively low scale development in existence, some impact on views and outlook (particularly at the lower and medium levels of the building) is inevitable.

The approved Darling Square Concept Proposal has sought to provide for reasonable view sharing and to create view corridors through the SICEEP site in a northerly direction towards Darling Harbour and Sydney Harbour through the positioning of building footprints and the configuration of public domain corridors.

² It is noted that the Darling Harbour Concept Proposal along with four detailed Stage 2 SSDAs have now been approved and therefore existing views from the Peak Apartments need to be considered in this context.

Given the orientation of apartments within The Peak development, at the medium and upper levels in particular views remain available to the north west, west, north east and east. At the lower levels, loss of some existing views and change in outlook is inevitable from some apartments and would occur with the establishment of even relatively low scale buildings in these locations.

It is considered that reasonable amenity is retained to the apartments in The Peak and that the proposed development (and more broadly the approved Concept Proposal) retains an appropriate outlook from affected apartments. The balance achieved between the retention of private views and private outlook in the context of delivery of a major new urban renewal precinct in the southern part of the CBD is acceptable.

It is noted that the affected apartments on the northern corners of the building are dual aspect, with balcony areas and windows that face to the west and east in addition to those that face to the north. A broad expanse of view and outlook will be retained from all affected apartments in a north easterly and easterly direction.

Overall, the view impact associated with the proposed Mixed Use Residential development (SSDA 9) 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. Further, impacts are also considered to be reasonable/acceptable in light of the proposed development's consistency with the approved Darling Square Concept Proposal (noting that the proposal, in particular SE3, is contained well within the approved building envelope).

4.2 The Quay

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 5**.

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 SSDA9 are provided.

The Quay is an approved development that has recently been completed. 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. Photomontage images are provided for two locations including Apartment s 1503 (Level 14) and 1801 (Level 16)

Existing views³

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 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.

³ It is noted that the Darling Harbour Concept Proposal along with three detailed Stage 2 SSDAs have now been approved and therefore existing views from the Quay need to be considered in this context.

Proposed views

The development proposed as part of SSDA 9 will have a limited impact on the current northerly views towards Darling Harbour and the western edge of the CBD. This is due to the fact that the proposed SSDA 9 Mixed Use Residential Buildings are in the main located in the foreground of the approved North-East Plot development (SSDA 7).

As illustrated within the 2D and 3D images and photomontages, a northern view corridor will be retained through to Darling Harbour. Further, it is noted that outlook above Level 8 to the north will remain excellent for future residents [at the low rise levels there is no reduction in the existing field of view]. The proposed development will have no impact on the easterly views up Ultimo Road towards the CBD.

5.0 Conclusion

The urban design principles for the overall SICEEP Project seek 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. The proposed Residential development has been designed to minimise impacts on existing views in so far as the detailed design of the building has not filled the maximum proposed envelope.

Consistent with the Visual and View Impact Analysis provided with the Darling Square Concept Proposal (SSDA2) the proposed SSDA 9, SSDA 10 and MOD 2 to SSDA 2 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; whilst visual connectivity to the Powerhouse Museum is affected by the proposed new built form, the impact on the museum building is not considered to be significant given the basis of its heritage significance and that it is the view to the rear of the building that is being partially obstructed. The building will remain visible in part from various vantage points when moving along Pier Street;
- The proposed new building will frame existing public domain views and 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;
- The continuation of existing streets into and through the SICEEP Site (e.g. 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 Sydney 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. The proposed building does not fill the maximum extent of the proposed envelope, and has been sited to clearly define and frame the Boulevard and Square.

It is considered that the proposal in its totality will result in no loss or detracting from the significant aspects or aesthetics of existing public domain views in the locality.

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 to the greatest extent 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 Sydney CBD which recognise that outlook, as distinct from views, is the appropriate measure of residential amenity within a global CBD context;
- There will be a reduction in some north-westerly/easterly views available from, in particular, the lower and middle levels of The Peak and the Quay. This results from the creation of an entirely new urban precinct in Darling Square where there are only currently low rise buildings in existence. The interruption of existing private views 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 SSDA 9 development has accommodated view sharing between and above buildings, and has sought to retain a combination of water, horizon and CBD skyline.

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 SSDA 9 Mixed Use development within Darling Square has sought to provide for view sharing, having regard to the detailed design guidelines that have been approved as part of the Darling Square Concept Proposal. The proposed SSDA 9 development is completely contained within the approved parameter plan envelope and overall, the maximum envelope has not been filled. The development proposed is acceptable in terms of visual and view impacts and reasonable in the circumstances.

Visual Impact Photomontage Methodology for the Darling Square Planning Application

BACKGROUND

This document was prepared by Virtual Ideas to describe the processes used to create photomontages for visual impact assessment, as well as to justify the accuracy of this process.

Virtual Ideas is a highly experienced 3D visualisation company which commonly prepares material for both application and court use, and is familiar with the 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 SSDA3 buildings
- 6) 3D model of the NW Plot Building (SSDA4)
 - Created by: Woods Bagot Architects
 - Supplied by: Woods Bagot Architects
 - Format: Revit 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) 3D model of the NE Plot Building (SSDA7)
 - Created by: Tzannes Associates
 - Supplied by: Tzannes Associates
 - Format: FBX File
 - Content: 3D model of the SSDA7 building
- 10) 3D model of the SE Plot Building (SSDA9)
 - Created by: FJMT
 - Supplied by: FJMT
 - Format: Din3D File
 - Content: 3D model of the SSDA9 building
- 11) 3D model of the North Plot Building (SSDA10)
 - Created by: Kengo Kuma and Associates
 - Supplied by: Kengo Kuma and Associates
 - Format: Rhino File
 - Content: 3D model of the SSDA10 building
- 12) 3D model of the Darling Square Public Domain (SSDA10)
 - Created by: Aspect Studios
 - Supplied by: Aspect Studios
 - Format: Sketchup File
 - Content: 3D model of the Darling Square Public Domain
- 13) Site photography (LL Photos)
 - Created by: Lend Lease
 - Format: JPEG file
 - Content: High resolution photo
- 14) 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, FJMT, Kengo Kuma, Woods Bagot, Aspect Studios 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 refer to appendix A for further information.

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 were 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 were then created from the selected cameras, at the exact pixel dimensions and aspect ratio of the original digital photograph.

The 3D renderings were then placed 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

APPENDIX A - DIGITAL CAMERA LENSES FOR PHOTOMONTAGES AND VISUAL IMPACT ASSESSMENTS

The intention of a photomontage rendering is to visually communicate how proposed built form sits in respect to its surroundings. To achieve this, a digitally rendered image from a digital 3D model is accurately superimposed into a digital photograph to provide an accurate representation in terms of light, material, scale, and form. Camera lens selection also plays an important part in creating a photomontage that communicates visual impact. There are several things to consider with respect to lens selection.

Field of View of the Human Eye

The field of view of the human eye is a topic that varies depending on the source of information. In many cases, the field of view of the eye is stated to be 17mm. Other sources claim a smaller field around 22-24mm. Whichever the case, it is widely accepted that the human eye has a wide field of view and when standing close to a subject - for instance a building - our vision can potentially see all of the top, sides and bottom of the building at one glance. In addition to this, the human eye can change focus and target direction extremely quickly, allowing us to view a large structure in a very short period of time, effectively making our perceived field of view even larger.

The Perspective of the human eye

It is difficult to accurately reproduce what the human eye sees by the means of a printed image. As the back of the human eye is curved and the sensors on cameras are flat, the perspective of a photograph can look quite different to how we see things in the real world, especially with a larger field of view, or wider lens.

In digital photography circles, it is commonly stated that using a longer lens (approx 50mm) reduces the amount of perspective in an image and therefore looks more like the human eye would see in reality, but this is concerned with perspective only, and does not consider the field of view of the eye. If you take a photo using a 50mm lens, print the photo, and hold the print out against the actual view in the same location as the photo was taken, it becomes very clear that the human eye can see much more of the surrounding information than what is shown on the print out.

Changing the FOV on a digital camera

The main difference in using a 'longer lens vs. a wider lens', is the amount of information that is displayed at the edges of the subject. Changing the lens to a smaller FOV produces the same result as cropping in on the wide angle image, providing that the position and the angle of the camera remains constant while taking the photographs. In short, a lens with a wider FOV does not create an image that has incorrect perspective; it simply means that the perspective is extended at the edges of the image showing more of the surrounds in the images.

What all of this means for visual assessment, is that there is no definitive solution for lens selection. If we follow the opinion that a longer lens produces images that are closer to the perspective of the human eye, we will inevitably be in a situation where we cannot show the entirety of our subject and enough of the surrounds in which the subject resides.

Also, if we strictly stick to a 17mm lens, we will have situations where the subject is far away and looks very small in the image, again making it difficult to assess visual impact. For these reasons, we have taken the view that we can never totally represent what the human eye will see on a piece of paper, and for visual impact photomontages we should select lenses that strike a balance between the two and can accurately display the built form in its surroundings.

The most effective way to accurately gauge visual impact and get a real world feeling for scale would be to take prints of the photomontages to the exact site photography locations and compare the prints with the scale of the existing built form.





24mm - Original Image (2012)



24mm



50mm - Original Image (2012)



50mm



24mm - Original Image (2013)



24mm



50mm - Original Image (2013)



50mm