

State Significant Development Application - SSDA 12



Sydney International Convention, Exhibition and Entertainment Precinct

Darling Square, Residential Building W1 (Student Accommodation)

Submitted to Department of Planning and Environment
On Behalf of Urbanest Darling Harbour No. 2

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This report has been prepared by:

A handwritten signature in blue ink, appearing to read 'B. Hoskins'.

Brendan Hoskins

9/11/2015

This report has been reviewed by:

A handwritten signature in blue ink, appearing to read 'Alexis Cella'.

Alexis Cella

9/11/2015

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1.0 Introduction

This report provides a Visual and View Impact Analysis in relation to State Significant Development Application (SSDA 12) for the Sydney International Convention, Exhibition and Entertainment Precinct (SICEEP) State Significant Development Project. SSDA 12 relates to the construction and use of a residential building (student accommodation) to be operated by Urbanest, a commercial student accommodation provider, and provision of public domain works.

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 (which included the Western Plot building envelope) 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 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.

SSDA 12 represents a further detailed 'Stage 2' DA made pursuant to the Darling Square concept proposal. SSDA 12 seeks consent for the development of a residential development (Building W1) within the Western Plot (Darling Drive) of Darling Square (SSDA 12 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. 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. Building W1 is 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 20 July 2015 for Building W1 in the Western Plot (Darling Drive) (SSDA 7133) 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 12. It should be read in conjunction with the overarching Visual and View Impact Analysis submitted in support of Staged SSDA 2 for Darling Square concept proposal.

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 wholly 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

SSDA 12 Development Site (SSDA 12 Site)

The SSDA 12 development site generally comprises a portion of the western boundary of the Darling Square Site. The SSDA 12 Site is land noted as the Western Plot under the Concept Proposal. The location of the Site is illustrated at **Figure 2**.

The SSDA 12 Site is legally described as Lot 900 DP1132344, Lot 800 DP1164281, and Lot 331 DP1192146 – all of which are owned by the Sydney Harbour Foreshore Authority.



Figure 2 – Aerial view of the SSDA 12 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.

1.3 Residential Building W1 (Student Accommodation)

SSDA 12 specifically seeks approval for the construction and use of one of the two student accommodation buildings (Building W1), including the following development:

- Site preparation works including demolition of existing site improvements;
- Construction and use of one residential building (known as Building W1) within the Western (Darling Drive) Plot, to be used for student accommodation purposes;
- Public domain improvements, including:
 - provision of a new urban park (known as north park) located to the north of Building W1; and
 - provision of a central courtyard between Buildings W1 and W2;
- Provision of signage zones; and
- Extension, realignment 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 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 the siting of proposed Building W1 have been reviewed and refined in formulating updated photomontages to illustrate the visual impact of the detailed building within the envelopes approved as part of the Darling Square Concept Proposal.

In summary, a total of 13 public domain vantage points have been identified for further analysis and assessment in relation to proposed Building W1 (refer to **Figure 3**) in the following locations:

- King Street Wharf;
- Western Distributor;
- Freeway (Western Distributor);
- Darling Drive (including UTS Corner, south-west corner of the previous Sydney Entertainment Centre car park and roundabout);
- Factory Street;
- Pyrmont Bridge;
- Macarthur Street;
- William Henry Street;
- Pier Street;
- Pier Street overpass; and
- Corner of William Henry Street and Harris Street.

Other public domain views identified in the overarching Visual and View Impact Analysis are not considered to be impacted on by the proposed Building W1. 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 3 – Visual analysis – photomontage locations SSDA 12

1.4.2 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 4**.

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 been 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 the subject SSDA 12. These two buildings are The Peak Apartments and The Quay (recently completed). Although the proposed Building W1 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 4 – 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 Residential Building W1 (Student Accommodation) in relation to the public views, view corridors and vantage points in and around the Site.

Section 4 provides a view impact analysis for Residential Building W1 (Student Accommodation) 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 13 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 12 are shown on **Figure 3**.

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

- King Street Wharf, Pyrmont Bridge and Western Distributor;
- Macarthur Street;
- Pier Street;
- Factory Street; and
- Darling Drive.

The following section provides a visual analysis in relation to these key areas in regard to the residential (student accommodation) development proposed as part of SSDA 12.

3.1 King Street Wharf, Pyrmont Bridge & Western Distributor

The view towards the proposed Residential (Student Accommodation) Building W1 from King Street Wharf and Pyrmont Bridge 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 Mixed Use Residential Building.

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 Residential (Student Accommodation) Building W1 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 12 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, 8, 9b and 28, although Building W1 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.

It is considered that the proposed Residential (Student Accommodation) Building W1 will not obstruct any significant public domain views and will result in no loss or detract 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 Residential Building W1, which is contained within the approved Western Plot (Darling Drive) parameter plan envelope, 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 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 Residential (Student Accommodation) Building W1 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 is not a high intensity public domain corridor, although with the planned works to this area and future connection into the Ultimo Pedestrian Network (UPN or otherwise known as the Goods Line) it will 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 Residential (Student Accommodation) Building W1 development is not largely visible in Ground View 29 due to existing landscaping in Harris Street. Existing trees in the public domain effectively shield the majority of the view to Building W1, ensuring the proposed SSDA 12 development will not obstruct any significant public domain views and will result in no loss or detract from the significant aspects or aesthetics of existing public domain views in the locality. The location of the proposed building away from the alignment of Macarthur Street also limits its impacts on this view corridor.

3.3 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 proposed Building W1 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 existing exhibition centre 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 car park will be replaced with the approved mixed use developments (SSDA 4 and 5) 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 proposed Residential (Student Accommodation) development will partially screen the current view to the rear of the Powerhouse Museum, with vistas and part views from Pier Street to the Powerhouse retained in some locations for both pedestrians and motorists when travelling along Pier Street. 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 proposed Building W1 will alter the nature of the urban form when viewed from Pier Street, it essentially contributes to the approved cluster of built form in Darling Square, comprising the developments on the North-West Plot, South-West Plot, North-East Plot and Building W2 in the Western Plot (Darling Drive). As is illustrated by Ground Views 2a, 3a, 16, 33 and 34, the proposed SSDA 12 development will only partially screen some view corridors, not adversely impacting any significant public domain corridors given the low amenity and value of Pier Street. It is important to note that proposed Building W1 is completely contained within the approved Western Plot (Darling Drive) parameter plan envelope and therefore the conclusions of the approved Concept Proposal remain relevant and valid.

3.4 Factory Street

A photomontage image viewed from a key vantage point in Factory Street has been provided at Ground View 20. Factory Street is relatively intensely used by pedestrian traffic moving through to the Sydney Entertainment Centre from Chinatown and the CBD generally. The vista along the street does not however provide a view that terminates with buildings or public domain spaces that are of particular interest or visual importance.

The proposed SSDA 12 development is not discernible in Ground View 20, screened by the approved North-West Plot building (SSDA 4). Given that the proposed Building W1 will not be visible in this view, no further assessment is required.

3.5 Darling Drive

Photomontage images of the proposed Residential (Student Accommodation) Building W1 development as viewed from Darling Drive (Ground Views 1a, 16 and 32) and UTS Corner (Ground View 31) are provided.

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 access ramps to Pier Street looking to the south will be redefined by the proposed development of Darling Square 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 Views 1a, 16, 31 and 32, the proposed SSDA 12 development will frame Darling Drive along with approved Building W2, establishing a new street wall in this location. The inclusion of Building W1 in each of these views reinforces the street wall along Darling Drive whilst at the same time not impacting or obstructing the view of any significant buildings or public domain spaces.

The proposed development, in conjunction with the other approved buildings in Darling Square, will make a vast improvement to the definition of the public domain through enhanced visual connectivity and framing of the public domain. Building W1 will particularly assist in framing Darling Drive along with the approved Building W2.

4.0 View Impact

The locations of the key buildings that are impacted or potentially impacted by the proposed Residential (Student Accommodation) SSDA 12 development in terms of private views are shown on **Figure 4** and include:

- The Peak Apartments; and
- The Quay (recently completed).

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 12.

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).

One key view location has been identified on the north western corner of building (location P1). 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 1212 (Level 12), Apartment 2910 (Level 29), 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 both the full or maximum extent of the approved detailed design of buildings or the approved building envelope under the Darling Square Concept Proposal, as relevant.

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 12 occurs when looking in a north westerly direction (location P1B), and only at (or below) approximately Level 25 of The Peak. Above Level 25, although the proposed Residential (Student Accommodation) Building W1 will remain partially visible in the foreground lower level development, it has no impact on views or outlook.

The Darling Square 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. 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 Building W1 in SSDA 12 has been prepared in accordance with the Design Guidelines.

Existing views

Existing views from the Peak apartments in the general direction towards Building W1 are available from the north western apartments across to Anzac Bridge and part of the harbour waterway. It is noted that 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.

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 Building W1 will have limited to negligible impacts on existing views from The Peak Apartments that have a north and north-westerly aspect. As can be seen from the view impact analysis drawings, this is due to the positioning of the building in the background of existing approved development at Darling Square (namely Student Accommodation Building (W2) and South-West Plot Mixed Use development).

Outlook and view sharing is however achieved from all apartments. Further, westerly views across to Ultimo Pyrmont are unaffected. Views from the balconies in an easterly direction toward the CBD skyline will also be retained.

For the north western portion of the building (location P1) at the upper levels (Level 25 and above) expansive views are retained across Rozelle Bay, Sydney Harbour and the horizon. The maximum extent of the building envelope proposed for building W1 will result in no reduction in the view to the Anzac Bridge and only minimal impacts on harbour/water views.

The proposed Residential (Student Accommodation) Building W1 has sought to meet view sharing principles, with the detailed design of the building not filling the full extent of the proposed envelope.

The photomontage images provided for Apartments 1212, 2910, 4202 and 4209 illustrate views available on the north western side of the building at the lower, medium and upper levels.

As is shown, at the lower level (Apartment 1212) the proposed development being set behind the approved W2 Student Accommodation building will have no direct impacts on views available to the north-west. In any event, view sharing and outlook to the skyline is achieved between buildings commensurate with the development's location in the CBD. The view to the CBD skyline to the north east will also largely be retained.

At the medium levels (Apartment 2910), the existing views towards Anzac Bridge and further to the west will be retained.

At the upper level (Apartment 4202 and 4209) the existing views to the water and the horizon, including to Anzac Bridge will be unaffected.

The proposed SSDA 12 development will have no impact on the current views looking north or east through to the central CBD and Centrepont Tower at any levels. The proposed development therefore retains and protects all existing CBD skyline views.

It is noted that 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.

The view impact associated with the proposed Residential (Student Accommodation) development 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.

4.2 The Quay (recently completed)

The Quay Apartments are located at the corner of Quay Street and Ultimo Road to the south of the Darling Square 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 SSDA 12 are provided.

The Quay has been recently completed. As such, at the time of approval for the Darling Square Concept Proposal (SSDA2) there were no existing views. Nonetheless, future views were identified as being available from the northern elevation of the Quay apartments and are now 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 60).

One key view location has been identified and shown in the 3D model images in the centre of the north elevation – looking in a north-westerly direction down Darling Drive and out across to Anzac Bridge. 3D model images have been provided at Levels 4, 8, 12 and 16 of the building in this location.

Since completion, access into some of the key apartments within the Quay has now been possible. The photomontage images provided for Apartments 1503 and 1801 illustrate views available on the north and north-west side of the building at the medium and upper levels.

Existing views

Existing views looking north-west (P1B) from The Quay Apartments at the medium and high rise levels will be across Ultimo/Pymont to Sydney Harbour beyond (with only limited). Views from the lower rise levels are limited due to existing foreground buildings with only the distant Anzac Bridge visible (partially) of note.

Proposed views

The development proposed as part of SSDA 12 for Darling Square will have minimal impact on the current norther-westerly views towards Ultimo and Pymont. Proposed Building W1 will sit behind the approved Building W2 development, slightly reducing some sky views. The overall reduction in sky views is minimal and on balance, a large expanse of sky views are maintained. District and CBD views will generally be retained which will be framed by the future Darling Square development. At the low rise levels there is no reduction in the existing field of view.

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 (Student Accommodation) 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 Residential (Student Accommodation) Building W1 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; 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 assist approved Building W2 in creating a street wall along Darling Drive, in turn, reinforcing 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;
- 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 the newly aligned Darling Drive with approved Building W2. The creation of a new public domain space adjacent to Darling Drive will assist in providing visual connectivity within the precinct.

It is considered that the proposed Residential (Student Accommodation) Building W1 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 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 Building W1 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 Residential (Student Accommodation) Building W1 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 Building W1 is completely contained within the approved Western Plot (Darling Drive) 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 SICEEP Planning Application

BACKGROUND

This document was prepared by Virtual Ideas to describe the processes used to create the visual impact photomontages, 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: Revit File
 - Content: 3D model of the Student Accommodation buildings
- 6) 3D model of the NW Plot Building (SSDA4)
 - Created by: Woods Bagot
 - Supplied by: Woods Bagot
 - Format: Revit file
 - Content: 3D model of the SSDA4 building
- 6) 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
- 7) 3D model of the ICC Hotel base building (SSDA6)
 - Created by: FJMT
 - Supplied by: FJMT
 - Format: Din3D file
 - Content: 3D model of the SSDA6 building
- 8) 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
- 9) 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
- 10) Site photography (LL Photos)
 - Created by: Lend Lease
 - Format: JPEG file
 - Content: High resolution photo
- 11) 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





24mm - Original Image



24mm



50mm - Original Image



50mm



24mm - Original Image



24mm



50mm - Original Image



50mm