



Study Requirements

Central Station State Significant Precinct

October 2020



Published by NSW Department of Planning, Industry and Environment

dpie.nsw.gov.au

Title: Study Requirements

Subtitle: Central Station State Significant Precinct

First published: October 2020

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Introduction

Central State Significant Precinct (SSP) is an area of over 24 hectares of Government-owned land at the southern edge of Central Sydney, covering a corridor of land running between Goulburn and Cleveland Streets.

Transport for NSW (TfNSW) is seeking to renew the precinct as it is an exceptional opportunity to deliver development with far reaching urban renewal outcomes that benefit Sydney and NSW. Renewal will allow Central Station to reach its full potential, address existing connectivity issues, make Central a new destination, support Sydney's economic competitiveness and revitalise significant heritage assets.

The SSP process allows the Department of Planning, Industry and Environment (DPIE) to consider rezoning proposals for areas that are of state or regional planning significance such as the Central Precinct.

The plans for Central SSP will be developed through an approach that recognises the unique combination of natural and built, cultural and historic factors that distinguishes the Central precinct from other places and forms the foundation of its identity.

The Study Requirements outlined in this document will guide TfNSW's investigations into new planning controls for the Central SSP Study Area shown in **Figure 1**. The Study Requirements have been prepared in collaboration with the City of Sydney (the City), Greater Sydney Commission (GSC) and Government Architect NSW (GANSW) and in consultation with other relevant state agencies.

TfNSW will prepare the necessary studies to satisfy these requirements and support the potential redevelopment of the site. These studies will form part of TfNSW's rezoning proposal and DPIE will review the studies to ensure that the Study Requirements are appropriately addressed prior to any public exhibition.

Planning for parts of Central SSP has already commenced and in October 2019, DPIE exhibited:

- The Western Gateway Rezoning Proposal which proposes new planning controls to enable potential redevelopment of the Western Gateway sub-precinct (**Figure 1**); and
- The Central SSP Strategic Vision which sets the vision for the area and identifies priorities and key planning considerations.

The Western Gateway Rezoning proposal was subsequently finalised in August 2020. The relevant documents are available on DPIE's website. TfNSW is making minor updates to the Central SSP Strategic Vision document in response to conditions of the finalisation decision. It is anticipated that the document will be finalised and published on the DPIE website later in 2020.

The Study Requirements outlined in this document will guide the next phase of investigations.

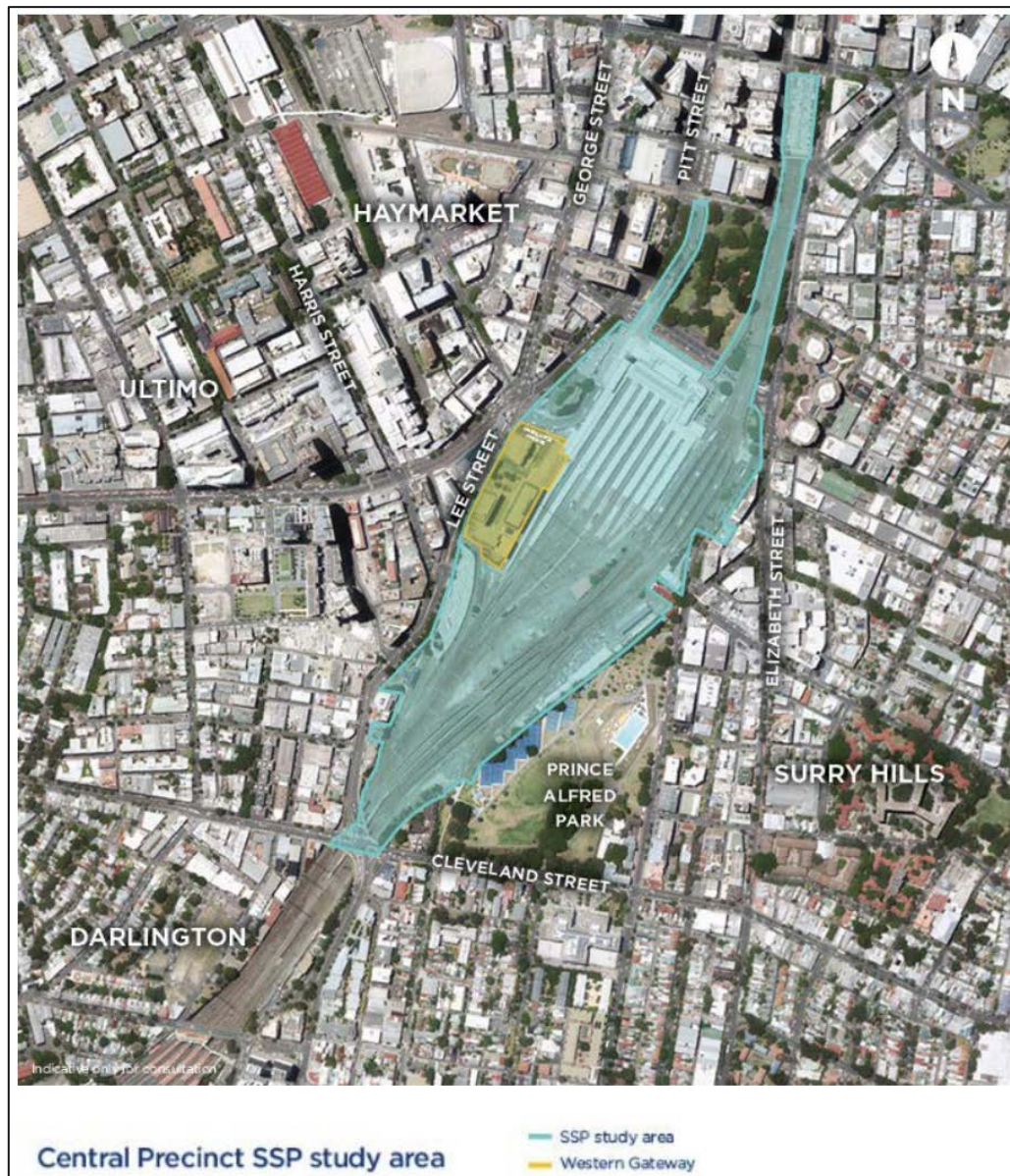


Figure 1: Central SSP Study Area

Purpose of the study

TfNSW (the applicant) is seeking new planning controls to enable the renewal of Central State Significant Precinct (SSP).

To inform the new planning framework, the applicant must prepare a detailed study which outlines the proposal and ensures that the planning and infrastructure respond to the important place issues. The study is informed by the Study Requirements which are outlined in this document.

The Study should be more than a document to justify the proposed planning changes. The Study should also ensure opportunities for a coordinated approach to public spaces, commercial, residential and civic development are integrated.

The Study Requirements detail the areas of study which must be addressed and provides guidance to ensure that when the study is lodged with DPIE for consideration, it is appropriate for public exhibition and consultation with the community. The study is expected to contain supporting material such as a Place Strategy and an Urban Design Framework.

Once the study has been lodged, DPIE, in consultation with the City, GSC, and GANSW, will review the study to ensure it has adequately addressed all study requirements outlined in this document. This review will also consider preliminary merit issues to ensure the study is appropriate for consultation with the community.

Following public exhibition of the proposal and supporting study and all issues being appropriately addressed, DPIE, the City, GSC and GANSW will undertake an assessment of the proposal. The assessment will consider all relevant planning matters (including those addressed in the Study Requirements).

Scope of the study

Any proposal for Central SSP must address the matters outlined in this document. The matters to be addressed include preparation of a Place Strategy, Urban Design Framework, master planning and a planning framework to guide the renewal of the area as well as a suite of other detailed technical studies that outline the need for change. This approach is designed to ensure the delivery of safe, resilient, welcoming, attractive and connected places for the community.

The study requirements outlined in this document will guide the study and must be addressed, however the applicant should be seeking to provide an exemplar proposal and as such it may be appropriate to undertake more detailed studies in other disciplines and examine areas beyond the study area boundary.

Study Requirements

The Study Requirements that must be addressed in the preparation of any proposal for Central SSP are detailed below along with the key deliverables. Deliverables must address the study requirements, integrate with each other where appropriate and provide the rationale and justification for the proposal.

The Study Requirements have been structured to include a hierarchy of requirements and considerations for each issue. Each requirement is broken down, as follows:

- Scope & Requirement - outlines the content that the study must include;
- Considerations - matters that should be taken into account when preparing the Study;
- Consultation - outlines specific parties that should be consulted to inform preparation of material in response to the Study Requirement;
- Author - outlines the specific experience and expertise of the person to undertake the study; and
- Guidance documents - documents that are relevant to the topic that is the subject of the Study Requirement.

1. Public Domain, Place and Urban Design

Study Requirement	Public Domain, Place and Urban Design
	Scope and Requirement
1.1	Prepare a Place Strategy that guides future planning and approval processes, identifies how development may facilitate the future character of each sub-precinct and any implementation strategies.
1.2	<p>Prepare an Urban Design Framework for the precinct that:</p> <ul style="list-style-type: none"> • Includes a detailed site and context analysis that identifies strategic context, opportunities and constraints and key issues to be considered; • Includes a set of urban design principles that underpin the proposed development; • Includes a detailed master plan that integrates all other urban design related study requirements and demonstrates that the proposed Gross Floor Area (GFA) to be included in the planning framework can achieve high quality place outcomes; and • Includes a benchmarking assessment of the proposed development against international best practice precedent studies.
1.3	<p>Prepare a Public Domain Strategy that guides future planning and approval processes and seeks to achieve high quality public domain outcomes that;</p> <ul style="list-style-type: none"> • Includes a vision statement and a series of goals to achieve the vision; • Includes a separate chapter focusing specifically on public space, specifically what currently exists, what will be upgraded and what new public space will be delivered; • Includes a detailed site and context analysis that identifies strategic context, opportunities and constraints and key issues to be considered; • Includes a movement plan setting out the proposed movement corridors and connectivity network throughout the precinct, the types of movements to be captured through the precinct (i.e. walking, cycling, vehicles, machinery, employees etc. during a 24-hour period). How squares or plazas could play a role in movement and include emphasis on creating strong pedestrian corridors linking outside areas to Central Station's entrances and exit points; • Includes a landscape master plan for the precinct locating public space (open space, plazas, squares) that have been derived from site analysis, benchmarking assessment and urban design principles. The master plan is to include (but not limited to) public space connections, deep soils zones, urban canopy outcomes and targets, Water Sensitive Urban Design principles; • Includes a benchmarking assessment of the proposed development against international best practice precedent studies for open space design in similar high dwelling density environments. The assessment should also identify the specific initiatives used by case study and identify both the positive and negatives effects that occurred during the budget, design and construction stages to ensure that it can be translated to an Australian setting; • Identifies wind comfort criteria for the entire precinct and all adjacent areas affected by the proposed development; • Includes a shade study to ensure comfort and usability of public space; • Includes a high-level safety and security strategy that outlines how potential future crime and safety risks in relation to the development will be addressed. Strong

emphasis should be placed on developing actions in the strategy that address the most vulnerable people who use Central Station i.e. women and girls, people with disabilities, the homeless, schoolchildren etc, and enabling safe, 24/7 use of the precinct. The Strategy should have regard to Crime Prevention Through Environmental Design (CPTED) guidelines and integrate closely with other studies;

- Includes a Heritage Interpretation strategy framework for the precinct identifying key themes, social values, interpretive opportunities, measures and locations. The strategy should include actions to preserve heritage items of value identified; and
- Is derived from cooperative work with the City of Sydney on the development of the future square given affected land is owned by both state and local governments.

- 1.4 Prepare a high-level **Public Art Strategy** that identifies opportunities and an overarching conceptual approach for the public art within the Precinct in future stages.
- 1.5 Prepare an **Indicative Staging Strategy** that identifies how staging may occur; includes detail of how the delivery of public domain will be considered and coordinated across individual development sites and considers construction staging.
- 1.6 Provide **physical and 3D CAD models** to fit into the City of Sydney's physical and 3D CAD model. Include animations and photomontages of key parts of the proposal from eye level positions in the public domain.
- 1.7 Prepare a **Design Excellence Strategy** for the precinct.
- 1.8 **Central Precinct Design Review Panel** Undertake an independent design review process led by the GANSW to advise on design work in progress. Design review sessions are to commence as soon as possible after the issue of these Study Requirements and held regularly to:
- Review key stages of the process; and
 - Update the panel on discussions with NSW Heritage Council and the Place, Design and Public Spaces (PDPS) Group within DPIE.
- Prepare a **Design Review Report** to include all design advice letters and a record outlining how the issues raised by the panel have been addressed.
- 1.8 Prepare a **Designing with Country Framework**, in consultation with the GANSW. to embed Country into the renewal of Central SSP. The Designing with Country narratives and themes that emerge from the Framework must be interwoven throughout the Central SSP planning package.

Considerations

All studies are to demonstrate the consideration of:

- Designing with Country, to guide how the design and operation of the precinct are informed by an understanding and acknowledgement of the Aboriginal cultural connections to the Country within which the precinct lies;
- The surrounding context of the precinct, in particular, the precinct's relationship to the southern CBD and its immediate context, setting, streetscape and visual and physical character (and pre-contact landform and use), and the social significance of the precinct;
- Facilitating a collaborative, high amenity environment with strong identity and attractiveness to global talent and scalable businesses, reflective of its role as one of Sydney's pre-eminent economic engines;

- A diversity of building typologies and spaces which caters to different users (from university students to start-up entrepreneurs to technology corporations, makerspaces and R&D facilities);
- Development options for the precinct and sub-precincts, including testing various land use scenarios, building envelope forms and distributions of the proposed GFA, in relation to the public domain provision in the precinct;
- Assessment of the likely impacts resulting from the proposal including the benefits and constraints of each option in relation to the urban design principles;
- Options for public open space and street layout; including detailed sections and plans for typical conditions in each type of street and intersection demonstrating innovative and best practice design for high density, highly connected, and active transport priority environments. Options identified for public open space should respond to scale and be of a size and quality comparable to the needs of the number of people (high density) and daily users of the precinct;
- Goals that identify opportunities for new and upgraded public space and actions that outline the process and funding arrangements to deliver the projects;
- Breaking down types of public space into the three types used by the Department's Public Spaces Division which include:
 - Public open spaces: active and passive (including parks, gardens, playgrounds, and outdoor playing fields and courts);
 - Public facilities: public libraries, museums, galleries, civic/community centres, showgrounds and indoor public sports facilities; and
 - Streets: streets, avenues and boulevards, squares and plazas, pavements, passages and lanes, and bicycle paths.
- Assessment of the accessibility (including inclusive Design) of the proposed locations of public spaces in relation to matters including but not limited to, maximising connections to the broader network of new and existing public spaces, topography, entry points to the Station, key destinations and transport interchange points;
- Suitability of the size, location, flexibility and extent of use of public spaces for the number and types of users and relationship to existing public spaces and parks;
- Suitability of potential connections over the railway tracks, including the need for any connection from the Western Gateway to Devonshire Street to incorporate a minimum 30m separation between future building envelopes and space for additional setbacks above podium levels as indicated by the Central Project Review Panel to ensure to protect views and ensure suitable future wind conditions;
- Provision of tree canopy over major pedestrian routes/ desire lines with additional areas of canopy cover over the remaining public places to enable shade. It is highly desirable to provide for areas of continuous tree canopy at appropriate locations across the precinct;
- Provision of public space that provides opportunities for activation, programming that is flexible, affordable and inclusive. These areas should be specifically identified on the master plan with further content included in the strategy on what uses can occur in these public spaces i.e. markets, festivals, etc;
- Specific consultation with the City of Sydney in relation to Sydney 2030 and its subsequent revisions and on key matters such as the section on Central Square showing the provision of a major new public square. at street level, with the following criteria:
 - A primary space associated with the alignment of Central Walk, excavated at the level of Central Walk north to the alignment of the existing brick heritage Station building;

- A secondary space associated with the alignment of the existing Railway Square;
- A secondary space associated with the north-western terrace (Grand Concourse) of the existing Station; and
- A clear connection between the primary and secondary spaces.
- New public space as part of any over station development in addition to the new public plaza at the western forecourt with the following criteria:
 - Parks, plazas, walkways, shaded areas, benches, cyclist paths, lanes and streets;
 - Potential locations for public domain and open space, demonstrating how accessibility of the spaces can be maximised (including the use of wayfinding and signage) and how spaces are suitable for the expected number and type of users;
 - Public spaces with connections to key destination and interchange points; and
 - Midwinter lunchtime sunshine to City Development Control Plan and Draft Central Sydney Planning Strategy standards.
- Wind criteria including:
 - Criteria for standing at all building entrances;
 - Criteria for walking for the entire sub precinct and extending to the west to the building faces on the western side of George Street, extending to the north to the intersection of George Street and Eddy Ave, and to the south to the southern face of the Mercure;
 - Criteria for sitting for the entire western forecourt area, both upper and lower plazas, with southern boundary defined by the northern alignment of Central Walk West;
 - Criteria for sitting for the upper plaza adjacent to the Grand Concourse; and,
 - Criteria for sitting for the area bounded by the western footpath of Lee St, the Mercure building face, the eastern footpath to Broadway and the alignment of Central Walk West.
- Retention of existing trees and provision of new trees, the capacity of the proposal to allow for the growth of new trees; the provision of sufficient soil volumes and quality to provide for long term tree health. Canopy design concepts that improve streetscape amenity; and how the plan can address the key strategies such as the City of Sydney Urban Forest Strategy, GSC Green Canopy targets and the Premier's priority for greening our city;
- The safety and security of vulnerable groups, particularly the safety and security of women and girls, noting evidence that the area is or is perceived to be unsafe (Free to Be, Monash University and Plan international). Any public domain, open space or publicly accessible private spaces proposed should ensure that the highest safety standards can be met in future stages of development. These safety standards should be informed by design principles and incorporated into any design guide/development control plan to increase both the safety of the most vulnerable people who use Central Station (i.e. women and girls, people with disabilities, the homeless, schoolchildren etc) and the perception of safety, including but not limited to:
 - Fundamental design to create feelings of safety and security and attract diverse groups to use the space 24/7 with confidence;
 - Ensuring the built environment allows for comfortable lines of sight, continuous safe pathways through places, avoidance of blind spots, good legibility and wayfinding and allowing access to facilities and places of refuge; and
 - Ensuring the built environment is safe and perceived to be safe day and night.
- Consideration of collected evidence indicating the severity of incidents women and girls experience (and any other vulnerable groups) in the area and how these incidents can be decreased by the design of the built environment and renewal of the precinct.

Consultation

The studies are to demonstrate consultation with:

- The City of Sydney; with particular regard to the City's current and future public domain and infrastructure upgrade works in the precinct (and surrounds); provision of any public spaces which will be under the City's management; Sydney 2030 and the forthcoming Sydney 2050 reference document;
- DPIE's demographics team and PDPS Group;
- The Greater Sydney Commission;
- Government Architect NSW; with particular regard to design matters, any published guidance materials and including the forthcoming Connecting with Country (Government Architect NSW). Advice should also be sought from the Central Precinct Design Review Panel at key points in the process. Particularly, in relation to studies informing urban design and public domain;
- NSW Treasury's Trade, Tourism Investment and Precincts (TTIP) Division;
- Members of the Camperdown Ultimo Collaboration area alliance to ensure alignment with other master planning work in the wider area; and
- The Heritage Council of NSW (or its delegate).

Given the importance of safety and security in the renewal of Central Precinct, it is recommended that specific consultation be undertaken with vulnerable groups. In particular, the renewal of Central Precinct is an opportunity to address safety and security issues associated with girls and young women using the area. Specific consultation should be undertaken with girls and young women including a typical range of potential users. Consultation should ensure that girls and young women from different economic backgrounds, races, abilities and identities are considered. Acknowledging that girls and young women commonly experience harassment in public spaces from the age of 11 to 33, consultation working groups should include girls and young women (18-33 years old) from, but not limited to;

- High Schools and Universities in the vicinity of the location;
- Workplaces in the vicinity of the location;
- Girls travelling from regions who are less frequent or familiar users of the space;
- Consultation should also occur with safety place design experts and the Greater Sydney Commission's Sydney Women's Safety Charter Working Group.

Author

The public domain, place and urban design studies are to be prepared by suitably qualified urban and landscape design professional(s) with the necessary experience and expertise to undertake the required works.

Guidance documents

The following documents provide guidance for this Study:

- Central Precinct Strategic Framework, TfNSW 2020
- Central Station Precinct Renewal: Vision and Strategic Framework Study (GANSW for TfNSW, 2018);
- Draft Central Sydney Planning Strategy and draft DCP;
- City of Sydney Open Space, Sports and Recreational Needs Study (CoS, 2016);
- City of Sydney Public Art Strategy;

- City of Sydney Art Policy;
- Interim Guidelines for Public Art in Private Developments (City of Sydney);
- Transport for London Pedestrian Comfort Guidance Tool;
- Green Cover Technical Guidelines (NSW Government);
- Draft Greener Places (Government Architect NSW);
- Better Placed (Government Architect NSW);
- District and regional Plan Strategies and actions on open space;
- Sydney Green Grid: Spatial Framework and Project Opportunities prepared by Tyrrell Studio for DPIE in association with NSW Office of Government Architect (2017);
- Sydney Development Control Plan 2012;
- City of Sydney public domain codes including: Streets Code and Technical Specifications, Legible Sydney Wayfinding Strategy and Design Manual, Street Tree Masterplan, Urban Forest Strategy;
- City of Sydney Community Safety Action Plan (2019-2023);
- Guidelines for Acquisitions and Deaccessions (City of Sydney);
- Evaluating Good Design Guideline (Government Architect NSW);
- Implementing Good Design (Government Architect NSW);
- Government Architect NSW Advisory Notes;
- A City for All – towards a socially just and resilient Sydney (City of Sydney);
- State Environmental Planning Policy No 65—Design Quality of Residential Apartment Development;
- Apartment Design Guide;
- GANSW Advisory Note on Design Excellence;
- Designing with Country, discussion paper prepared by GANSW (2020);
- The Sydney Innovation and Technology Precinct Panel Report (2018);
- Free to Be Sydney Map Plan International Australia;
- Safe Public Transit principles UN Women;
- Making Cities Safer for Girls and Women ARUP;
- Lighting Cities, Monash University; Unsafe in the City Plan International Australia; and
- Designing with Country Discussion Paper (GANSW).

2. Planning

Study Requirement	Planning
2.1	<p>Scope and Requirement</p> <p>Prepare a Planning Report for the precinct that:</p> <ul style="list-style-type: none"> • Identifies the existing planning framework, applicable strategic plans, key planning issues and relevant background; • Assesses the proposed planning framework (see study requirement 2.2 below) against relevant State and local strategic plans, strategies and policies; • Outlines the vision and priorities for the Precinct; • Considers the State and regional planning significance of the precinct;

<p>2.2</p> <p>2.3</p>	<ul style="list-style-type: none"> • Responds to the study requirements; • Explains and justifies the proposed approach to the master plan, planning controls, sub-precinct planning, development standards (height, FSR, heritage etc); • Identifies and addresses the implications of any proposed land uses; • Considers a range of initiatives to address affordable rental housing; • Confirms or updates the vision for the precinct and each-sub-precinct included in the Strategic Framework; and • Summarises the key outcomes of the various studies undertaken and how these have informed the planning controls for the precinct. <p>Prepare draft planning controls for the precinct which includes zoning, maximum building heights, FSR, and car parking to be enacted by a SEPP amendment. The draft controls are to be described in the Planning Report and in an Explanation of Intended Effect (EIE). The draft planning controls must be supported by documentation demonstrating the degree of consistency of the proposal with the approach outlined in the Central Sydney Planning Strategy and the extent to which the planning framework may need to be amended for the Central Precinct. The documentation should justify any proposed deviations from the approach outlined in the Central Sydney Planning Strategy.</p> <p>Prepare a draft Development Control Plan or Design Guideline, including appropriate development controls to inform future development of the precinct, including: public domain, street hierarchy and typologies, connectivity, car parking, accessibility, building footprints, development heights, street frontage, setbacks, building typologies, open space and public domain, biodiversity, waste management, sun access, public art, sustainability, heritage and heritage interpretation.</p> <p>An alternative approach to delivering more detailed planning in a draft Development Control Plan or Design Guideline may be considered with agreement from the Central Project Working Group.</p> <p>Prepare a Design Excellence Strategy that:</p> <ul style="list-style-type: none"> • Ensures design excellence is achieved for future development in the precinct; and • Is consistent with the relevant competitive design policy of the consent authority.
	<p>Considerations</p> <p>The Studies are to demonstrate the consideration of:</p> <ul style="list-style-type: none"> • Suitability of the Precinct for any proposed land use taking into consideration environmental, social and economic factors, and any State or regional planning strategy; • Guidelines from the Government Architect NSW and City of Sydney Competitive Design Policy; and • NSW Treasury's vision and objectives for Tech Central.
	<p>Consultation</p> <p>The Study is to be informed by consultation with the DPIE's demographics team, the City of Sydney, the Greater Sydney Commission, the NSW Government Architect the Heritage Council of NSW (or delegate) and NSW Treasury's TTIP division.</p>

	<p>Author</p> <p>The planning documents, controls and guidelines are to be prepared by suitably qualified planning professional(s) with the necessary experience and expertise to undertake the required works.</p>
	<p>Guidance documents</p> <p>The following documents provide guidance for this Study:</p> <ul style="list-style-type: none"> • Greater Sydney Region Plan; • Eastern City District Plan; • Draft City of Sydney Local Strategic Planning Statement; • Draft City of Sydney Local Housing Strategy; • Draft Central Sydney Planning Strategy; • Sustainable Sydney 2030; • State Environmental Planning Policy No 65—Design Quality of Residential; Apartment Development; • Apartment Design Guide; • NSW Economic Blueprint; • Global NSW Strategy; and • Tech Central Strategic Framework (in development).

3. Amenity

Study Requirement	Amenity
	<p>Scope and Requirement</p> <p>3.1 Prepare a wind study that undertakes an analysis of land within the Precinct and in affected adjacent areas including surrounding streets, Railway Square, Prince Alfred Park and Belmore Park, particularly the future City's Third Square – the area including the current railway Square, Lee Street and the Western Forecourt.</p> <p>The study must examine wind speeds in relation to the standards for wind safety, wind comfort including walking, standing and sitting, as set out in the Draft Central Sydney Planning Strategy and related documents. The study must examine wind speeds in relation to criteria set out in Study Requirement 1. The wind study must demonstrate that the proposed scale of redevelopment of the Precinct is able to be undertaken in a manner that ensures streets, public places and walking spaces within and surrounding the precinct have wind conditions that are safe and comfortable for walking and where appropriate have conditions that are comfortable for sitting or standing and will not negatively affect any areas that do not currently meet these conditions. The study must compare proposed wind conditions to other areas in Central Sydney and propose wind development standards to be applied to subsequent development stages.</p> <p>3.2 The wind study must be supported by wind modelling which may include computer modelling and/or wind tunnel testing. The selected approach must be appropriately justified.</p> <p>Prepare a noise and vibration assessment for the proposal that:</p>

3.3

- Identifies the existing situation, both within the Precinct and in affected adjacent areas, showing constraints, opportunities and key issues and maps any sensitive receptors;
- Assesses the likely noise and vibration impacts on future development, particularly in relation to over station development;
- Models and assesses the efficacy of the likely future noise, and vibration measures to minimise negative impacts on comfort and to minimise harm to people or property;
- Ensures there that the proposal does not impact the stability of existing rail related structures and infrastructure; and
- Recommends appropriate noise, vibration and pollution development standards to be applied to subsequent development stages.

3.4

Prepare a **pollution assessment** for the proposal that identifies and assesses any potential pollution impacts resulting from the proposal including but not limited to water, air and light pollution and which includes an analysis of the potential impact on adjoining uses and recommends development standards to be applied to subsequent development stages.

Prepare a **view and visual assessment** (VIA) for the Precinct that assesses visual impact as a result of the proposal.

The assessment must review and identify important views to be protected in the context of the changing CBD environment and present an analysis of views in relation to relevant parts of the Central Precinct Strategic Framework, the Draft Central Sydney Planning Strategy and the Government's aspirations for the Sydney Innovation and Technology corridor.

The assessment must describe and assess visual impact of the proposal using a clear and consistent methodology adopted from best practice national or international methodology. It should determine the level of visual impact against criteria such as sensitivity and magnitude.

3.5

Where visual impacts are identified, an assessment against the principles of visual amenity should be undertaken and should recommend mitigation measures to reduce visual impact, where appropriate. Any visualisations relied upon by the VIA must meet Land and Environment Court policy or other relevant quality assurance requirements.

The study must propose visual impact development standards to be applied to subsequent development stages.

Prepare a **daylight, sky view, solar access analysis** for areas within the Precinct and in affected adjacent areas. The analysis should examine daylight, sky view and solar access using the City of Sydney Council's preferred methodology or an alternate approach from an accepted and agreed national or international standard. The analysis must take into consideration the Central Precinct Strategic Framework and the Draft Central Sydney Planning Strategy, and must demonstrate that redevelopment of the Precinct is able to be undertaken in a manner that ensures:

- a) Sun access protection to Prince Alfred Park is consistent with the Central Sydney Planning Strategy;
- b) Other areas of public domain and open space (i.e. the Western Forecourt and the future City's Third Square) receive an appropriate level of sun access and solar amenity for their intended purpose; and
- c) Areas within and adjacent to the precinct achieve an acceptable level of daylight and sky view.

The study must propose daylight, sky view and solar access development standards to be applied to subsequent development stages.

Considerations

The studies are to demonstrate how the studies inform and support the preparation of the proposed planning framework including any recommended planning controls or DCP/Design Guideline provisions.

The **view and visual assessment** should consider:

- Employing a methodology consistent with that set out in the Draft Central Sydney Planning Strategy and associated Draft DCP documentation; and
- Conserving significant views including but not limited to the Clock Tower and Parcel Post building from surrounding streets and from within the site (including visual connection between significant heritage items). The Visual assessment should also consider how the proposal impacts on the wider visual setting of the site including on the adjacent heritage conservation areas and heritage items.

The **wind study** should consider:

- Developing an acceptable and agreed wind criteria and methodology in consultation with relevant parties to test building envelopes/massing such as:
 - Criteria for standing at all building entrances;
 - Criteria for walking for the entire sub precinct and extending to the west to the building faces on the western side of George Street, extending to the north to the intersection of George Street and Eddy Ave, and to the south to the southern face of the Mecure;
 - Criteria for sitting for the entire western forecourt area, both upper and lower plazas, with southern boundary defined by the northern alignment of Central Walk West;
 - Criteria for sitting for the upper plaza adjacent to the Grand Concourse; and
 - Criteria for sitting for the area bounded by the western footpath of Lee St, the Mecure building face, the eastern footpath to Broadway and the alignment of Central Walk West.
- Employing a methodology consistent with that set out in the Draft Central Sydney Planning Strategy and associated Draft DCP documentation;
- The careful arrangement of the public domain to address wind impacts generated by the proposal;
- Identifying and testing amelioration measures to address wind impacts considering building location, orientation, massing and building setbacks as the primary mitigation measure to address impacts, prior to considering any ancillary or secondary treatments to address wind;
- Measures to ensure the suitability of areas for their intended use such as public space areas intended to be used for seating (i.e. outdoor dining areas on footpaths and public plazas) and standing (i.e. building entries); and
- No generation of unacceptable wind conditions on areas within the development, and areas surrounding the development that may be wind affected as a result of the proposal.

The **noise, vibration and pollution impact assessment** should:

- Identify, map and describe current and approved sensitive receptors;

	<ul style="list-style-type: none"> • Identify map and describe current and likely future noise and vibration affecting the precinct, including sources nature and impact, including potential cumulative impacts; • Include 3D mapping to clearly communicate these impacts; and • Include noise monitoring results for busy roads such as Cleveland Street and Regent Street, as well as the railyards area within the precinct.
	<p>Consultation</p> <p>The Studies are to be informed by consultation with:</p> <ul style="list-style-type: none"> • The City of Sydney; particularly in relation to establishing and agreeing on a methodology for wind, view and solar access analysis; • DPIE (in particular the Public Spaces team, Government Architect, Green and Resilient Public Places team where relevant); and • NSW Environment Protection Authority (where relevant). <p>Advice should be sought from the Central Precinct Design Review Panel throughout the process, particularly in relation to the outcomes of amenity studies as they relate to and inform the urban design of the precinct.</p>
	<p>Author</p> <ul style="list-style-type: none"> • The wind study is to be prepared by suitably qualified wind professional(s) with the necessary experience and expertise to undertake the required works including wind tunnel testing; • The noise and vibration assessment is to be undertaken and signed off by a suitably qualified acoustic and vibration professional(s) with the necessary experience and expertise to undertake the required works; • The view and visual assessment is to be prepared by a suitably qualified professional(s) with the necessary experience and expertise to undertake the required works; and • The daylight, sky view factor and solar access analysis is to be undertaken by a suitably qualified professional(s) with the necessary experience and expertise to undertake the required works.
	<p>Guidance documents</p> <p>The following documents provide guidance for this Study:</p> <ul style="list-style-type: none"> • State Environmental Planning Policy (Infrastructure) 2007 (DPIE, 2007); • City of Sydney Open Space, Sports and Recreational Needs Study (CoS, 2016); • Assessing Vibration: A Technical Guideline (DEC, 2006); • Development Near Rail Corridors and Busy Roads – Interim Guideline; • City of Sydney Public Design Manual and Public Domain Design; • Guidelines from NSW Govt Architect and City of Sydney Competitive Design Policy; • Guidelines for Landscape and Visual Impact Assessment (LI & IEMA 2013); • NSW Land and Environment Court photomontage policy; • NSW Green Cover Technical Guidelines; • NSW Greener Spaces; • District and regional Plan Strategies and actions;

- Greater Sydney Green Grid Spatial Framework;
- Sydney Development Control Plan 2012;
- City of Sydney public domain codes including: Streets Code and Technical Specifications, Legible Sydney Wayfinding Strategy & Design Manual, Street Tree Masterplan, Urban Forest Strategy & any other relevant Sydney Code; and
- Draft Central Sydney Planning Strategy and draft DCP.

4. Population and demographics

Study Requirement	Population and demographics
4.1	<p>Scope and Requirement</p> <p>Prepare a Population and Demographics Study that:</p> <ul style="list-style-type: none"> • Identifies the existing situation (the baseline), including constraints, opportunities and key issues; • Outlines the likely impacts of the proposal in relation to population and demographics; and • Informs and supports the preparation of the proposed planning framework including any recommended planning controls or DCP/Design Guideline provisions.
	<p>Considerations</p> <p>The Study is to demonstrate the consideration of:</p> <ul style="list-style-type: none"> • The employment and population profile of the Precinct and surrounding communities including age, ethnicity, education, employment, income, trip to work mode and other relevant information; • Key employment and population drivers and trends impacting the Precinct and surrounding communities; • NSW Treasury's vision and objectives for Tech Central; • Time series (5 year increments) employment and population forecasts of the future Precinct and local area based on existing development capacity without the proposal; • Time series (5 year increments) employment and population forecasts of the future Precinct and local area with the proposal; and • Comparisons of forecasts with the remainder of the City of Sydney LGA and Greater Sydney Metropolitan Region for the purposes of comparison including the City's Floor Space Employment Survey (FES) and Census Occupation and Industry data aligned with predicated rates of growth as per GSC estimates.
	<p>Consultation</p> <p>The Study is to be informed by consultation with the DPIE's demographics team, the City of Sydney, the Greater Sydney Commission and NSW Treasury.</p>
	<p>Author</p> <p>The study is to be prepared by suitably qualified professional(s) with the necessary experience and expertise to undertake the required works.</p>

Guidance documents

The following documents provide guidance for this Study:

- The 2017 Floor Space Employment Survey;
- Sydney DCP 2012 section 3.15 Late Night Trading Management; and
- Tech Central Strategic Framework (in development).

5. Heritage

Study Requirement	Heritage
	<p>Scope and Requirement</p> <p>5.1 Prepare an Aboriginal Cultural Heritage Study for the Precinct that:</p> <ul style="list-style-type: none"> • Undertakes an assessment of Aboriginal cultural heritage within or near the site including archaeology, culture, country, and including intangible and social heritage, using existing resources or new research as necessary; • Includes a Statement of Heritage Impact to assess the likely impact of the precinct redevelopment on this identified cultural heritage; • Provides recommendations to guide the management of Aboriginal heritage significance, in the context of the precinct development, and taking into account the findings of the Study, any items of significance, the likely impact on Aboriginal heritage as a result of the proposal and consultation; • Includes results of consultation with relevant Aboriginal stakeholders and knowledge holders for the precinct and surrounds; and • Informs and supports the preparation of the precinct planning framework (including any DCP) and any management strategies. <p>5.2 Prepare a Non-Aboriginal Heritage Study for the Precinct that:</p> <p>Using existing research and reports, compile a Non-Aboriginal Heritage Study of the precinct, identifying all heritage items (state, local and potential) and conservation areas within and near the site, including built heritage, landscapes and archaeology. It should include detailed mapping of these items and an assessment of why the items and site(s) are of heritage significance.</p> <ul style="list-style-type: none"> • Includes a precinct wide Statement of Heritage Impact (SoHI) to assess the impact of the precinct redevelopment with recommendations for the management of the cultural heritage of the site and mitigations measures to minimise heritage impact; • Includes a comprehensive whole of site archaeological plan and framework strategy to capture and collate all recent archaeological investigations and guide the management of potential archaeological resources; • Provides recommendations to guide future development or planning of the site with specific consideration to the bulk, height and scale of the existing significant elements of the site, including its setting, context, streetscape and visual and physical character of the locality, surrounding conservation areas and heritage items. This should be integrated with the Urban Design Plan, and draft Development Control Plan or Design Guidelines; • Integrates with the view and visual assessment and seeks to preserve and enhance key views to and from heritage buildings (including visual connection

<p>5.3</p> <p>5.4</p>	<p>between items). The visual analysis should also consider how the proposal impacts on the wider visual setting of the site including the adjacent heritage conservation areas; and</p> <ul style="list-style-type: none"> • Informs and supports preparation of the planning framework provisions for the precinct (including recommended development control provisions for any future DCP). <p>Update the existing Conservation Management Plan for the Precinct (Central Station Conservation Management Plan - June 2013 prepared by NSW Transport RailCorp).</p> <p>Prepare a detailed Heritage Interpretation Strategy for the Precinct that:</p> <ul style="list-style-type: none"> • Provides the strategic direction for heritage interpretation across the entire precinct having regard to the precinct's historic significance (particularly its social, intangible, industrial and engineering values) and regard to the place's relationship with nearby heritage items, as an integral component of the development of detailed design; • Recognises and celebrates Aboriginal connection to the precinct and its spiritual, intangible and cultural values to Aboriginal people and addresses the full story of the place (i.e. landscape through the eyes of indigenous inhabitants); • Accounts for existing and planned (where possible) interpretive approaches as part of other projects within and in the vicinity of the precinct; and • Integrates with broader design responses where relevant such design elements (form and fabric), public art, landscaping and cultural design principles.
	<p>Considerations</p> <p>The studies should demonstrate consideration of:</p> <ul style="list-style-type: none"> • The significance of cultural heritage values for Aboriginal people who have a cultural association with the land; • Any direct and/or indirect impacts (including cumulative impacts) to the heritage significance of the Station buildings, structures including the viaducts adjacent to Belmore Park and other heritage items and conservation areas in the vicinity of the site. This should include visual impacts, vibration, demolition, archaeological disturbance, altered historical arrangements and access, visual amenity, landscape and vistas, setting, and curtilage (as relevant); • The cumulative impact of change, development density and erosion of the readability (legibility) of the heritage cultural landscape; • If the SOHI identifies impact on potential historical archaeology, an historical archaeological assessment should be prepared by a suitably qualified archaeologist in accordance with Heritage NSW, Heritage Guidelines 'Archaeological Assessment' 1996 and 'Assessing Significance for Historical Archaeological Sites and Relics' 2009. This assessment should identify what relics, if any, are likely to be present, assess their significance and consider the impacts from the proposal on this potential archaeological resource. Where harm is likely to occur, it is recommended that the significance of the relics be considered in determining an appropriate mitigation strategy. If harm cannot be avoided in whole or part, an appropriate Research Design and Excavation Methodology should also be prepared to guide any proposed excavations or salvage program; • Appropriate mitigation measures including retention and re-use, use of setbacks and heights to respect heritage scale, mass and views, implementing heritage

	<p>interpretation techniques in the contemporary design of the precinct and management of historical relics;</p> <ul style="list-style-type: none"> • Any relevant Conservation Management Plan, addressing any proposed adaptive reuse and measures to minimise impacts on the site; • Attempts to avoid and/or mitigate impacts to the heritage significance or cultural heritage values of the site and surrounding heritage items and heritage conservation areas; • Measures to facilitate the conservation of items, areas, objects and places of heritage significance or cultural heritage values; and • The Studies should be informed by a site inspection and documentary research.
	<p>Consultation</p> <p>The studies are to be undertaken in consultation with Local Aboriginal Lands Councils, the Heritage NSW, the Heritage Council of NSW, the City of Sydney Aboriginal and Torres Strait Islander Advisory Panel and GANSW.</p>
	<p>Author</p> <p>The Aboriginal Heritage Study is to be prepared by a suitably qualified professional(s) with extensive experience in Aboriginal Heritage within the Sydney context.</p> <p>The Non-aboriginal Heritage Study is to be prepared by a suitably qualified heritage architect or professional(s) with extensive experience in European Heritage within the Sydney context.</p>
	<p>Guidance documents</p> <p>The following documents provide guidance for this Study:</p> <ul style="list-style-type: none"> • The Guide to investigating, assessing and reporting on Aboriginal Cultural heritage in NSW; • Aboriginal Cultural Heritage Consultation Requirements for Proponents; • Guidelines set out in the NSW heritage manual, “The Conservation Plan” and the Burra Charter; • Interpreting Heritage Places and Items Guidelines; • NSW Heritage Manual; • ‘The Conservation Plan’ (J S Kerr 1996); • Australia ICOMOC Charter for the Conservation of Places of Cultural Significance; • Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (DECCW, 2011); • Statement of Heritage Impact Guideline; • Central Station Conservation Management Plan - June 2013 (NSW Transport RailCorp); • GANSW Design Guide for Heritage; • Central Precinct Heritage Framework; and • Designing With Country Discussion Paper (GANSW).

6. Social sustainability and infrastructure

Study Requirement	Social infrastructure
<p>6.1</p> <p>6.2</p>	<p>Scope and Requirement</p> <p>Prepare a Social Infrastructure Study that:</p> <ul style="list-style-type: none"> • Defines an appropriate study area for the purposes of the assessment, incorporating the precinct and broader catchment/s as appropriate to assessment of particular infrastructure types; • Identifies the existing situation (the baseline), including constraints, opportunities and key issues; • Outlines the likely impacts and social infrastructure requirements resulting from the proposal; • Assesses needs and/or demands of the existing and future population and capacity and/or supply of the service in the precinct; • Defines the objectives, strategies, timeframes, implementation, performance indicators, and responsibilities for social and health services; • Identifies and assesses mechanisms available to maximise provision of Affordable Rental Housing, noting GSC targets; and • Informs and supports the preparation of the proposed planning framework including any recommended planning controls or DCP/Design Guideline provisions that would deliver an appropriate sustainability outcome. <p>Prepare a preliminary Equity-Focused Health Impact Assessment that:</p> <ul style="list-style-type: none"> • Outlines the likely impacts on health and health infrastructure, including the likely impacts of the proposal on the health of existing community, future population and neighbouring community, including an assessment of the severity and likelihood of identified positive and negative impacts; • Assesses the distribution of impacts; and • Recommends mitigation measures.
	<p>Considerations</p> <p>The Studies are to demonstrate the consideration of:</p> <ul style="list-style-type: none"> • Local workforce and business needs, and opportunities to deliver a public benefit and support economic inclusion, particularly for Aboriginal and Torres Strait Islander communities and other specific sectors of the community, including through apprenticeships, training and education during the construction phase; • Priority service, business and employment groups within the community, delivering public benefit; • Existing and future populations in need of health (including medical) infrastructure and services, including but not limited to, vulnerable communities, young people, older people etc; • Supply and demand for social infrastructure and services (including but not limited to within the defined study area catchment/s), including but not limited to open space (active and passive, indoor and outdoor), community facilities, libraries,

	<p>health facilities, primary health care services, childcare, other health and wellbeing services;</p> <ul style="list-style-type: none"> • Measures to achieve diverse, inclusive, healthy, socially connected and sustainable precinct; • Mitigation measures to maximise positive health impacts and minimise negative health impacts; • How the proposal will deliver a healthy built environment and support healthy active lifestyles for residents, including consideration of the relevant guidelines; • Location of a public building for the provision of community services within the precinct; • Program and size requirements for public space, noting demand for spaces under 200sqm in size, and spaces facilitating cultural production by Aboriginal and Torres Strait Islander communities; • Inclusion of apprenticeships, training and education during the construction phase; • The UN Sustainable Development Goals; and • Shared spaces and infrastructure which facilitate inclusivity, continual learning, innovation and collaboration.
	<p>Consultation</p> <p>The Study is to be informed by consultation with the DPIE's demographics team, the City of Sydney's demographics (and other social infrastructure related teams) and the Greater Sydney Commission, Sydney Local Health District and NSW Health and NSW Treasury's TTIP Division.</p>
	<p>Author</p> <p>The study is to be prepared by suitably qualified professional(s) with the necessary experience and expertise to undertake the required works.</p>
	<p>Guidance documents</p> <p>The following documents provide guidance for this Study:</p> <ul style="list-style-type: none"> • City of Sydney Open Space, Sports and Recreational Needs Study (CoS, 2016); • Healthy Urban Development Checklist and Building Better Health Guidelines; • A City for All: Social Sustainability Policy and Action Plan 2018-2028; • City of Sydney Community Safety Action Plan (2019-2023); • Resilient Sydney Strategy; and • Tech Central Strategic Framework (in development).

7. Transport

Study Requirement	
7.1	<p>Scope and Requirement</p> <p>Prepare a comprehensive transport strategy and transport impact assessment for the precinct that:</p> <ul style="list-style-type: none"> • Identifies the existing situation, including constraints opportunities and key issues;

- Reviews the trip generating potential for all proposed modes and purposes, develops mode share targets and measures to achieve these targets;
- Provides an understanding of the travel behaviours and patterns (all modes) of future workers, visitors and residents of the proposal through benchmarking, forecast modelling tools and other sources of evidence;
- Identifies and assesses the impacts resulting from the proposal with an appropriate level of pedestrian and traffic analysis;
- Provides details of the proposed transport strategy including, any necessary transport infrastructure and servicing improvements; the proposed approach to pedestrian and bicycle facilities, car parking; and access and egress requirements; and
- Informs and supports the preparation of the proposed planning framework including any recommended planning controls or DCP/Design Guideline provisions that would deliver an appropriate planning outcome.

Considerations

The Study is to demonstrate consideration of:

- A “vision and validate” approach to the precinct and adjacent street network to develop a street user hierarchy, including movement and place considerations, for the precinct;
- Inclusion of pedestrian analysis at development and station access/egress points, at intersections with the road network along key desire lines;
- Measures to safeguard future transport infrastructure and traffic changes (for example any planned/future road closures, pedestrianised street sections, one way/ two-way traffic operation etc. to the adjacent transport network);
- The overall interchange function of the precinct, with priority to pedestrian access, safety, connectivity, wayfinding and signage;
- Limitation of parking and overall reduction in vehicular traffic;
- Access to key destinations and infrastructure in the local area, in particular schools, community facilities and other local services;
- The safety of all road users, in particular pedestrians and cyclists;
- The performance of the existing and future cycling, public transport and road network surrounding the precinct, including potential improvements;
- Cumulative growth of the surrounding area based on committed and planned developments (such as development of Tech Central and the potential renewal of the area subject to the Pyrmont planning review) and proposed infrastructure (such as WestConnex, Sydney Metro, and associated projects);
- The role of shared vehicles in managing travel demand and implementation of shared vehicle solutions;
- Potential impacts of construction traffic including a strategic construction approach and potential staging;
- Access for people with disability, older people, pram users and people travelling with luggage;
- Allowance for potential future infrastructure including rail service upgrades, very fast train, future light rail, relocation of coach services, and changes to bus services;
- Light rail stops, bus stops, bicycle parking areas, kerbside areas for ‘kiss and ride’ and day and late-night taxis (including secure taxi rank/PtP); and

	<ul style="list-style-type: none"> Integration with the cycle network, including consideration of direct and safe cycle ways along the eastern and western side of Central Station and provision of end of trip facilities.
	<p>Consultation</p> <p>Consultation with the City of Sydney and NSW Treasury should be undertaken. In particular, the City of Sydney should be consulted with, and agreement sought from City of Sydney and DPIE, on the methodology for the study.</p> <p>Specific consultation should be undertaken with the City of Sydney in relation to its forthcoming Sydney 2050 reference document and on key matters such as mode share targets and study methodology.</p>
	<p>Author</p> <p>The study is to be prepared by a suitably qualified transport professional(s) with the necessary experience and expertise to undertake the required works.</p>
	<p>Guidance documents</p> <p>The following documents provide guidance for this Study:</p> <ul style="list-style-type: none"> Future Transport 2056; City of Sydney Cycling Strategy and Action Plan 2018-2030; Sydney's Cycling Future 2013; City of Sydney Walking Strategy and Action Plan 2015-2030; Sydney City Centre Access Strategy 2013; NSW Road Planning Framework; The Movement and Place Practitioner's Guide, March 2020 (Government Architect NSW and Transport for NSW); Legible Sydney- Wayfinding Strategy; and A City for All Inclusion (Disability) Action Plan 2017-2021 (CoS).

8. Environmental Sustainability, Climate Change and Waste Management

Study Requirement	Sustainability, Climate Change and Waste Management
8.1	<p>Scope and Requirement</p> <p>Prepare an Environmental Sustainability Study for the Precinct that:</p> <ul style="list-style-type: none"> Identifies the existing situation, including constraints, opportunities and key issues; Outlines the likely impacts of the proposal in relation to energy use, greenhouse gas emissions, water use, waste water, solid waste and climate change resilience; Provides detail of proposed sustainability principles and how they will be incorporated into the proposal; Includes an integrated water cycle management strategy; Includes an integrated waste management strategy that maximises resource recovery;

- Includes measures to address the impact of climate change including urban heat and extreme weather events;
- Informs and supports the preparation of the proposed planning framework including any recommended planning controls or DCP/Design Guideline provisions that would deliver an appropriate sustainability outcome; and
- Identify appropriate sustainability benchmarks for each development type within the precinct.

Considerations

The Study is to demonstrate consideration of:

- The NSW Government's net zero emissions target, by creating a low-carbon precinct;
- The goal of achieving a water -positive precinct, strategies to achieve 100% renewable energy supply for the precinct including maximising on-site generation and securing a supply of off-site renewable electricity;
- How sustainability principles will be incorporated into the design, construction and ongoing operation phases of the redevelopment to achieve sustainability best practise initiatives;
- High benchmark sustainability performance targets for the precinct;
- Compliance with BASIX and opportunities to deliver beyond BASIX scores;
- The incorporation of Green Roofs, Cool Roofs and Green Walls into the design of any future buildings;
- Climate change, including the urban heat island effect, changing temperatures and rainfall patterns;
- Urban forest and biodiversity;
- Taking a whole-of-life- approach to sustainability through planning design, construction and ongoing precinct management;
- Maximising resource efficiency to contribute to net zero emissions by 2050;
- The protection and enhancement of biodiversity through the greening of public and private spaces;
- The replacement of any trees removed at a ratio greater than 1:1;
- The use of local native plant species in street tree planting and landscaping (rather than exotic species and non-local natives);
- Water, waste water and stormwater plus options for potential alternative water supply including potential to achieve a water positive precinct;
- Opportunities for and assessment of the feasibility of a precinct-scale recycled water scheme including the possibility of connecting to the recycled water pipeline that runs along the CBD light rail route;
- Precinct scale measures to ensure effective operational waste management; and
- Options for achieving net zero buildings and net zero precinct.

Consultation

The Study is to be informed by consultation with the City of Sydney and the NSW Environment Protection Authority.

	<p>Author</p> <p>The Study is to be prepared by suitably qualified sustainability professional(s) with the necessary experience and expertise to undertake the required works.</p>
	<p>Guidance documents</p> <p>The following documents provide guidance for this Study:</p> <ul style="list-style-type: none"> • Eastern City District Plan (in particular, actions 69 and 72); • City of Sydney Guidelines for Waste Management in New Developments; • The Better Practice Guide for Waste Management in Multi-Unit Dwellings (DECC 2008); • Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities (EPA, December 2012); • Better Practice for Public Place Recycling (DEC 2005); • NSW Climate Change Policy Framework, October 2016; • Draft Central District Plan “Creating an efficient Central District” to achieve net-zero carbon emissions by 2050; • NSW and ACT Regional Climate Modelling: NARCLI; • Urban Green Cover in NSW Technical Guidelines (OEH, 2015); • Greener Places (Government Architect NSW); • The Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Environment Protection and Heritage Council, the Natural Resource Management Ministerial Council and the Australian Health Ministers’ conference 2006); • United Nations Sustainable Development Goals; • Future Transport 2056; • Government Resource Efficiency Plan; and • NSW Circular Economy Policy Statement.

9. Green Infrastructure, Ecology, Urban Forest and Greening

Study Requirement	Green Infrastructure
9.1	<p>Scope and Requirement</p> <p>Prepare a Green Infrastructure Study for the Precinct that:</p> <ul style="list-style-type: none"> • Identifies the existing situation, including constraints, opportunities and key issues; • Outlines the likely impacts of the proposal in relation to climate change, heat impacts and community health needs (i.e. mental and physical health); • Provides detail of proposed green infrastructure principles and how they will be incorporated into the proposal (consistent with Greener Places); • Includes an urban forest and greening strategy – which outlines the percentage of greening and canopy cover across each land classification (e.g. streets, parks, private land) and private property zoning type;

	<ul style="list-style-type: none"> • Includes measures to address storm water retention management and opportunities for beneficial reuse; • Includes an Ecological Assessment for the Precinct; and • Informs and supports the preparation of the proposed planning framework including any recommended planning controls or DCP/Design Guideline provisions that would deliver an appropriate green infrastructure and sustainability outcome.
	<p>Considerations</p> <p>The Study is to demonstrate consideration of:</p> <ul style="list-style-type: none"> • Relevant case studies and transferrable principles that will apply to the proposal; • Percentage and distribution of greening and canopy cover across all private (including green roofs and walls) and public domain areas within the precinct; • Retention of existing trees and provision of new trees, the capacity of the proposal to allow for the growth of new trees to maturity; • The provision of sufficient soil volumes and quality to provide for long term tree health; • Canopy design concepts that improve streetscape amenity; • Taking a whole-of-life- approach to green infrastructure through planning design, construction and ongoing precinct management; • Impacts on biodiversity and measures to avoid and minimise impacts, protect and enhance biodiversity through the greening of public and private spaces and the retention of existing habitat including habitat provided by built structures; • The use of a diversity of local native plant species in street tree planting, open space areas and any site landscaping; • The use of advanced sized trees in any street, open space and site landscaping; • The potential habitat linkage provided by the railway corridor outlined in the City's Urban Ecology Strategic Action Plan, currently under review as an important biodiversity corridor; • The bush restoration works at Prince Alfred Park that includes the native meadow; • Protection of microbats near central station; • Water sensitive urban design and integration with the flood study, plus options for potential alternative water supply; and • The Premier's priorities for 'Greening our city' and 'Greener public spaces'.
	<p>Consultation</p> <p>The Study is to demonstrate that it has been undertaken in consultation with the City of Sydney, key agencies, the local community and any other key stakeholders.</p>
	<p>Author</p> <p>The Study is to be prepared by suitably qualified landscape architect with specialist advice and input as necessary from an ecologist, arborist, Water Sensitive Urban Design engineer, soil scientist and urban forestry professionals with the necessary experience and knowledge of the site and expertise to undertake the works.</p>
	<p>Guidance documents</p> <p>The following documents provide guidance for this Study:</p>

- City of Sydney Urban Forest Strategy (and draft revised targets), Urban Ecology Strategic Action Plan, Green Roof and Walls Strategy, and Landscape Code;
- Greater Sydney Commission – District Plans and Greener Places - Urban Tree Canopy Guide;
- Guidelines set out in Southern Sydney Regional Organisation of Councils (SSROC) Connected Corridors for Biodiversity and the City's Urban Ecology Strategic Action Plan; and
- Government Architect NSW – Greener Places.

10. Utilities Servicing

Study Requirement	Services and utilities
<p>10.1</p>	<p>Scope and Requirement</p> <p>Prepare a utilities and infrastructure servicing report that:</p> <ul style="list-style-type: none"> • Identifies the existing situation, including constraints, opportunities, key issues and existing network capacity; • Assesses the capacity of the relevant service infrastructure networks to service the Precinct, impacts on the networks resulting from the proposal and identify any augmentation and servicing options proposed to support the proposal; • Assesses the implications of any proposed land use for local and regional infrastructure and service delivery; and • Informs and supports the preparation of the proposed planning framework including any recommended planning controls or DCP/Design Guideline.
	<p>Considerations</p> <p>The Study is to demonstrate consideration of:</p> <ul style="list-style-type: none"> • Key service infrastructure including electricity, alternative energy systems, water, sewer, gas and telecommunications; • Digital and telecommunications infrastructure which is inclusive of and not limited to precinct-wide Wi-Fi, fibre to the premises and supporting data centres; • Forecast peak demand and generation forecasts based on proposed yields; • On-site electricity generation and storage, facility site requirements, easement requirements and any asset locations required; • Integrated water cycle management, alternative water supply, on-site generation and water recycling, end uses of drinking and non-drinking water. The potential for the precinct to connect to the recycled water pipeline that runs along the CBD light rail route; • The location of service assets in the precinct and outline how asset risk is managed; and • Costs, timing and delivery.
	<p>Consultation</p> <p>The Study is to demonstrate that it has been undertaken in consultation with Ausgrid and Sydney Water, digital infrastructure and telecommunications providers and any other relevant providers.</p>

	<p>Author</p> <p>The study is to be prepared by a suitably qualified professional(s) with the necessary experience and expertise to undertake the required works. In particular:</p> <ul style="list-style-type: none"> • The water utilities component should be prepared by a suitably qualified hydraulic consultant; and • The power utility requirements should be prepared by a suitably qualified (ASP) consultant.
	<p>Guidance documents</p> <p>The following documents provide guidance for this Study:</p> <ul style="list-style-type: none"> • TfNSW to consult with relevant utility providers for details of contemporary guidance documents.

11. Infrastructure

Study Requirement	Infrastructure
<p>11.1</p> <p>11.2</p>	<p>Scope and Requirement</p> <p>Prepare a local infrastructure schedule that:</p> <ul style="list-style-type: none"> • Identifies the local infrastructure required to meet the needs of the proposal; and • Identifies the proposed contributions framework to deliver local infrastructure. <p>Prepare a state and regional infrastructure schedule that:</p> <ul style="list-style-type: none"> • Identifies the state infrastructure required to meet the needs of the proposal; and • Identifies the proposed contributions framework to deliver state infrastructure.
	<p>Considerations</p> <p>The Study is to demonstrate consideration of:</p> <ul style="list-style-type: none"> • Local infrastructure items such as recreation, open space, community facilities, libraries, childcare, local pedestrian, cycling and transport facilities and local drainage; • Shared spaces and infrastructure which facilitate inclusivity, continual learning, innovation and collaboration; • State and regional infrastructure such as public transport, roads, hospitals and schools; • Estimated costs and timing of any required works; and • Outline any mechanisms to ensure delivery.
	<p>Consultation</p> <p>The local infrastructure schedule should be developed in consultation with the City of Sydney and NSW Treasury.</p> <p>The state and regional infrastructure schedule should be developed in consultation with key agencies including transport, education and health and Department of Planning, Industry and Environment.</p>

	<p>Author</p> <p>The studies are to demonstrate that they have been undertaken in consultation with the City of Sydney in relation to local infrastructure and DPIE in relation to state infrastructure.</p>
	<p>Guidance documents</p> <p>There are no specific guidance documents for this study requirement.</p>

12. Economic productivity and job creation

Study Requirement	Economic productivity and job creation
<p>12.1</p> <p>12.2</p>	<p>Scope and Requirement</p> <p>Prepare an economic assessment of the proposal that:</p> <ul style="list-style-type: none"> • Identifies the existing situation, including constraints, opportunities and key issues; • Outlines the likely impacts of the proposal including economic benefits and job creation (particularly in relation to Tech Central); and • Informs and supports the preparation of the proposed planning framework including any recommended planning controls or DCP/Design Guideline provisions. <p>Prepare a high-level development feasibility study that outlines the market demand and demonstrates that the new planning controls will result in feasible development.</p>
	<p>Considerations</p> <p>The Studies are to demonstrate consideration of:</p> <ul style="list-style-type: none"> • Likely wider economic benefits of the proposal in relation to employment, commercial, retail impacts; • The job creating potential of the proposal and the role of the precinct in delivering the Tech Central; Tech Central's vision and objectives including: <ul style="list-style-type: none"> ○ 250,000m² of NLA for technology companies; ○ 50,000m² of NLA as affordable workspace for start-ups and early stage companies; ○ Affordable floorspace beyond the above mentioned 50,000m² with government support; ○ 25,000 additional innovation jobs; ○ 25,000 new students with a focus on STEM and life sciences; ○ Accelerating the growth of a technology, innovation, entrepreneurial ecosystem; ○ The role of the precinct in being a 'living lab' where cutting edge ideas, prototypes, POC products are able to be tested; and ○ Concentration of R&D activity within Central SSP and its relationship with the broader Tech Central precinct; • The role of the precinct in supporting the 24-hour economy, including through food, beverage, entertainment, retail activation of the precinct; appropriate public space,

	<p>cultural infrastructure, cultural production and presentation spaces, entertainment, live music venues, creative services and diversity of cultural activation;</p> <ul style="list-style-type: none"> • Market feasibility and development feasibility of the proposal; • Land uses that allow for appropriate space for business, including mixed use business models, visitor services and tourism; • Active frontages at ground level and interchange levels where appropriate; • Measures to achieve diverse, inclusive, creative, socially connected and sustainable precinct; and • Demographics of existing and future populations.
	<p>Consultation</p> <p>The study is to demonstrate that consultation has been undertaken with:</p> <ul style="list-style-type: none"> • DPIE's demographics team, the City of Sydney's demographics and the Greater Sydney Commission; • Create NSW; • Major public and private cultural infrastructure – Carriage works, Museum of Applied Arts and Sciences, and small to medium arts sector, such as neighbourhood studios, galleries, production and presentation spaces; • Aboriginal and Torres Strait islander organisations and groups; and • Creative Arts, music and design schools of Universities and TAFE NSW.
	<p>Author</p> <p>The study is to be prepared by a suitably qualified professional(s) with the necessary experience and expertise to undertake the required works.</p>
	<p>Guidance documents</p> <p>The following documents provide guidance for this Study:</p> <ul style="list-style-type: none"> • City of Sydney Local Strategic Planning Statement; • The City's Draft City Strategic Framework; • Camperdown-Ultimo Collaboration Place strategy – GSC; • NSW Economic Blueprint; • Global NSW Strategy; • Tech Central Strategic Framework (in development); • Sydney Innovation and Technology Precinct Panel Report (2018); • Local Strategic Planning Statement, Liveability chapter; • City of Sydney Creative Work Space Study: Preliminary Report (2017); • Planning Cultural Creation and Production in Sydney (Western Sydney University, 2018); • Mapping Cultural Venues and Infrastructure in the City of Sydney (Sydney (Western Sydney University, 2016) Making Space for Culture – Cultural Infrastructure Study 2020; • Create NSW Cultural Infrastructure Plan 2025+; • The 2017 Floor Space Employment Survey (FES); • Census Occupation and Industry data aligned with predicated rates of growth as per GSC estimates;

- Western Sydney Institute for Culture and Society, Cultural Mapping Report, 2016;
- University of Tasmania, Cultural and Economic Impact Studies, 2016;
- Sydney Fringe, Festival Findings of the Temporary Theatres Pilot Project Report, 2015;
- National Association for the Visual Arts Small to Medium Report, 2016;
- Sydney DCP 2012 section 3.15 'Late Night Trading Management;'
- City of Sydney Smart City Strategic Framework; and
- OPEN Sydney: Future directions for Sydney at night: Strategy and Action Plan 2013-2030.

13. Water Quality, Flooding and Stormwater

Study Requirement	Water Quality, Flooding and Stormwater
<p>13.1</p>	<p>Scope and Requirement</p> <p>Prepare a water quality, flooding and storm water report that:</p> <ul style="list-style-type: none"> • Identifies the existing situation, including constraints, opportunities, key issues and existing network capacity; • Assesses the potential impacts of the proposal on the hydrology and hydrogeology of the precinct and adjoining areas; • Includes a concept stormwater management plan outlining the general stormwater management measures for the proposal; • Includes a flood risk assessment identifying flooding behaviours and flood impacts resulting from the proposal and providing recommendations for appropriate flood planning levels; • Provides concept level details of drainage to address stormwater flows on the precinct; • Informs and supports the preparation of the proposed planning framework including any recommended planning controls or DCP/Design Guideline; and • Provides an analysis of the proposal measured as % difference in flooding shown in flood depth contours and hazard maps.
	<p>Considerations</p> <p>The Study is to demonstrate consideration of:</p> <ul style="list-style-type: none"> • A particular focus on water quality, the extent to which proposed development protects, maintains or restores water health and the community's environmental values and use of waterways for Sydney Harbour (also known as the NSW WQO); • No increase to existing flooding and that flooding is reduced where possible; • Flood risk impact across the catchment area and all adjoining land uses; • How the planning framework will address water quality targets in Sydney DCP 2012; and • WSUD options for the proposal.
	<p>Consultation</p> <p>The Study is to demonstrate that it has been undertaken in consultation with the City of Sydney's relevant specialists.</p>

	<p>Author</p> <p>The study is to be prepared by a suitably qualified professional(s) with the necessary experience and expertise to undertake the required works.</p>
	<p>Guidance documents</p> <p>The following documents provide guidance for this Study:</p> <ul style="list-style-type: none"> • The City's Interim Flood Policy; • NSW Environment Protection Authority's Risk-based Framework for Considering Waterway Health Outcomes in Strategic Land-use Planning Decisions; • Sydney DCP 2012; • Sydney Streets Technical Specifications; • the NSW State Government's Flood Prone Lands Policy and Floodplain Development Manual; • Blackwattle Bay Flood Study and Floodplain Management Study; and • City of Sydney Central Sydney Planning Strategy.

14. Aeronautical

Study Requirement	Aeronautical
14.1	<p>Scope and Requirement</p> <p>Prepare an Aeronautical Study that:</p> <ul style="list-style-type: none"> • Identifies constraints associated with the operations of Sydney Airport; • Advises on measures, if necessary, to ensure the precinct does not have an adverse impact on the operations of Sydney Airport; and • Certifies that, subject to any recommended measures, the proposal will not have an adverse impact on the operations of Sydney Airport.
	<p>Considerations</p> <p>The Study is to demonstrate consideration of:</p> <ul style="list-style-type: none"> • Appropriate mapping to demonstrate the OLS, PANS OPS and other relevant Sydney Airport height limitation layers; and • Pathways required to secure approval from relevant bodies as part of subsequent development applications processes.
	<p>Consultation</p> <p>The study is to demonstrate that it has been informed by consultation with the Sydney Airport to ensure the precinct will not have an adverse impact on the operations of Sydney Airport and demonstrate that consultation informs the preparation of the proposed planning framework including any recommended planning controls or DCP/Design Guideline.</p>
	<p>Author</p> <ul style="list-style-type: none"> • The study is to be prepared by a suitably qualified professional(s) with the necessary experience and expertise to undertake the required works.

Guidance documents

The following documents provide guidance for this Study:

- Airports Act 2996;
- Airports (Protection of Airspace) Regulations 1996; and
- Sydney Airport Master Plan 2033.

15. Consultation

Study Requirement	Consultation
<p>15.1</p> <p>15.2</p>	<p>Scope and Requirement</p> <p>Prepare a consultation strategy that:</p> <ul style="list-style-type: none"> • Outlines the proposed community consultation strategy to undertake an appropriate and justified level of consultation with the public, the City of Sydney, other relevant State and Federal government agencies, non-government groups and community stakeholders. <p>Provide a consultation outcomes report that:</p> <ul style="list-style-type: none"> • Includes evidence of consultation (including letters, minutes of meetings, charrette/drop in event summaries and formal advice) and provide a summary of and outline the general outcomes of early consultation and demonstrate how the outcomes have been incorporated into the proposal.
	<p>Considerations</p> <p>The consultation should:</p> <ul style="list-style-type: none"> • Address key aspects of the proposal including spatial arrangement of development, staging, public domain and open space, amenity, transport, and community facilities; and • Incorporate ongoing consultation with the local Aboriginal community, including Elders and organisations, into the community consultation strategy.
	<p>Consultation</p> <p>The Study is to demonstrate that it has been undertaken in consultation with the City of Sydney, key agencies, the local community and any other key stakeholders.</p>
	<p>Author</p> <p>There are no specific requirements for the author of these studies.</p>
	<p>Guidance documents</p> <p>N/A</p>