ESD Report for State Significant Development Application: TOGA Central - 2&8 Lee St, Haymarket

TOGA Central

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atelier ten

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Prepared by: Victoria Norris
Signed:
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Checked

Checked by: Davis Demillo
Signed:
Date: 25.07.2022

Approved

Approved by: Davis Demillo
Signed:
Date: 25.07.2022

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Atelier Ten
Level 1
79 Myrtle Street
Chippendale, NSW 2008
Australia
T +61 2 9262 4500
W atelierten.com

Atelier Ten acknowledges the Traditional Owners of country throughout Australia and recognises their continuing connection to land, waters, and community. We pay our respect to them and their cultures, and to Elders past, present, and emerging.

Green Building Council Australia
Member 2020–2021

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Executive Summary

This ESD Report has been prepared by Atelier Ten to accompany a detailed State significant development (SSD) development application (DA) for the mixed-use redevelopment proposal at TOGA Central, located at 2 & 8A Lee Street, Haymarket (the site). The site is legally described as Lot 30 in Deposited Plan 880518, Lot 13 in Deposited Plan 1062447 and part of Lot 14 in Deposited Plan 1062447. The site is also described as 'Site C' within the Western Gateway sub-precinct at the Central Precinct.

This report has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) issued for the SSD DA (SSD 33258337).

This report concludes that the proposed mixed-use redevelopment is suitable and warrants approval subject to the implementation of the following mitigation measures:

Healthy Buildings

- Achieve high indoor environmental quality for occupant health and well-being, including high levels of thermal comfort, visual comfort and acoustic comfort
- Provide great daylight and control of sunlight and glare for all tenancies through optimised shading strategies and selection of glazing with high visual light transmission
- Enable indoor-outdoor spaces and tenancy connections to the outside by inclusion of amenity natural ventilation, including the building pills and ground floor areas. Openable windows in the hotel tower will also be a feature
- Promoting excellent alternative transport availability and end-of-trip facilities, reducing the need for private car use
- Achieve at minimum a WELL Silver Core and Shell certification

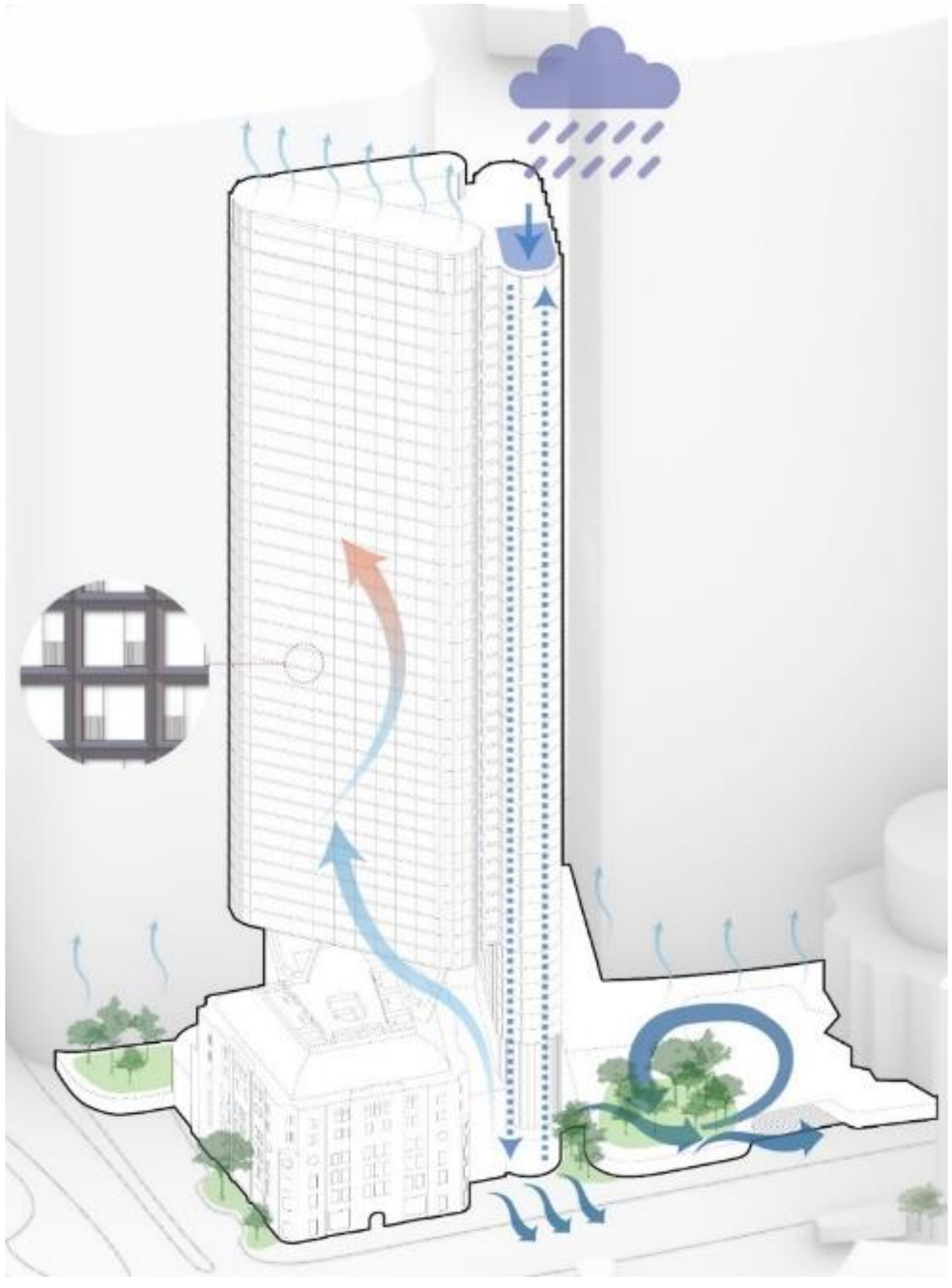
Zero Carbon Buildings

- Minimise embodied carbon through careful design, material selection, and product specifications
- Integrate passive design principles, preferably sufficient well-insulated external wall, to minimise architectural and mechanical system complexity
- Operate with minimal energy input to provide low-carbon, low energy cost tenancies
- Minimise combustion in building systems to enable zero-carbon operations through renewable power purchase
- Minimise additional peak resource loads upon local utilities and provide smart grid benefits to the network
- On-site generation of renewable energy through solar PV arrays on the tower rooftop, incorporation of batteries for power back-up and purchase of green power to reduce GHG emissions
- Achieve NABERS 5.5 Star Energy for the commercial tenancy, NABERS 4.5 Star Energy for the Hotel

Social Sustainability

- Support a vibrant, active, and healthy community through street level activation and an active vertical circulation axis
- Provide restorative spaces inside and out featuring plants, natural materials, and other biophilic elements
- Foster community resilience through engagement with local stakeholders and participation in local community programs

Following the implementation of the above mitigation measures, the remaining impacts are appropriate.



1 Introduction

1.1 General Introduction

This report has been prepared to accompany a SSD DA for the for the mixed-use redevelopment proposal at TOGA Central, located at 2 & 8A Lee Street, Haymarket.

The Minister for Planning, or their delegate, is the consent authority for the SSD DA and this application is lodged with the NSW Department of Planning and Environment (DPE) for assessment.

The purpose of the SSD DA is to complete the restoration of the heritage-listed building on the site, delivery of new commercial floorspace and public realm improvements that will contribute to the realisation of the Government's vision for an iconic technology precinct and transport gateway. The application seeks consent for the conservation, refurbishment and adaptive re-use of the Adina Hotel building (also referred to as the former Parcel Post building (fPPb)), construction of a 45-storey tower above and adjacent to the existing building and delivery of significant public domain improvements at street level, lower ground level and within Henry Deane Plaza. Specifically, the SSD DA seeks development consent for:

- Site establishment and removal of landscaping within Henry Deane Plaza.
- Demolition of contemporary additions to the fPPb and public domain elements within Henry Deane Plaza.
- Conservation work and alterations to the fPPb for retail premises, commercial premises, and hotel and motel accommodation. The adaptive reuse of the building will seek to accommodate:
  - Commercial lobby and hotel concierge facilities,
  - Retail tenancies including food and drink tenancies and convenience retail with back of house areas,
  - 4 levels of co-working space,
  - Function and conference area with access to level 7 outdoor rooftop space, and
  - Reinstatement of the original fPPb roof pitch form in a contemporary terracotta materiality.
- Provision of retail floor space including a supermarket tenancy, smaller retail tenancies, and back of house areas below Henry Deane Plaza (at basement level 1 (RL12.10) and lower ground (RL 16)).
- Construction of a 45-storey hotel and commercial office tower above and adjacent to the fPPb. The tower will have a maximum building height of RL 202.28m, and comprise:
  - 10 levels of hotel facilities between level 10 – level 19 of the tower including 204 hotel keys and 2 levels of amenities including a pool, gymnasium and day spa to operate ancillary to the hotel premises. A glazed atrium and hotel arrival is accommodated adjacent to the fPPb, accessible from Lee Street.
  - 22 levels of commercial office space between level 23 – level 44 of the tower accommodated within a connected floor plate with a consolidated side core.
  - Rooftop plant, lift overrun, servicing and BMU.
- Provision of vehicular access into the site via a shared basement, with connection points provided to both Block A (at RL 5) and Block B (at RL5.5) basements. Primary access will be accommodated from the adjacent Atlassian site at 8-10 Lee Street, Haymarket, into 4 basement levels in a split-level arrangement. The basement will accommodate:
  - Car parking for 106 vehicles, 4 car share spaces and 5 loading bays.
  - Hotel, commercial and retail and waste storage areas.
  - Plant, utilities and servicing.
- Provision of end of trip facilities and 165 employee bicycle spaces within the fPPb basement, and an additional 72 visitor bicycle spaces within the public realm.
- Delivery of a revitalised public realm across the site that is coordinated with adjacent development, including an improved public plaza linking Railway Square (Lee Street), and Block B (known as 'Central Place Sydney'). The proposal includes the delivery of a significant area of new publicly accessible open space at street level, lower ground level, and at Henry Deane Plaza, including the following proposed elements:
  - Provision of equitable access within Henry Deane Plaza including stairways and a publicly accessible lift.
  - Construction of raised planters and terraced seating within Henry Deane Plaza.
  - Landscaping works within Henry Deane Plaza.
- Utilities and service provision.
- Realignment of lot boundaries.

1.2 Sustainability Framework

1.2.1 Design Competition Strategy

The report has been prepared to align with the Environmentally Sustainable Design (ESD) Brief issued by Atelier Ten (November 2020) for the successful Design Competition. This document outlines the specific ESD initiatives that the project must achieve, including benchmarking targets for various building rating tools such as Green Star, WELL and NABERS.

The sustainability brief focuses on the following three key goals which are:

- Healthy Buildings;
- Zero Carbon Buildings; and
- Social Sustainability

The objectives under each of these are further detailed in Section 2 below.

1.2.2 SEARS Requirements

This report has been prepared in response to the requirements contained within the Secretary's Environmental Assessment Requirements (SEARs) dated 17 December 2021 and issued for the SSD DA. Specifically, this report has been prepared to respond to the SEARs requirement issued below.

Table 1.1 SEARS Requirements Summary

SEARS Section	Description of Requirement	Section Reference (this report)
10. Ecologically Sustainable Development (ESD)	• Identify how ESD principles (as defined in clause 7(4) of Schedule 2 of the EP&A Regulation) are incorporated in the design and ongoing operation of the development.	3.1
	• Demonstrate how the development will meet or exceed the relevant industry recognised building sustainability and environmental performance standards.	3.2
	• Demonstrate how the development minimises greenhouse gas emissions (reflecting the Government's goal of net zero emissions by 2050) and consumption of energy, water (including water sensitive urban design) and material resources.	3.3

1.2.3 Principal Guiding Documents

There are a number of national and local authorities that require compliance for planning approval. Some of these are compulsory, some are preferential, and some are design guidelines to facilitate approval.

The main material documents which refer to sustainability performance standards include:

- BCA 2022 National Construction Code (NCC) Section J
- Environmental Planning and Assessment (EP&A) Regulation Schedule 2 Clause 7(4)
- SEARs (SSD-33258337)
- Central Precinct Renewal Program - Framework Agreement
- Western Gateway Sub-Precinct, Design Guide (Transport for NSW, Sep 2021)

1.2.4 Benchmarking Tools and Guidelines

The following guidelines will be referenced throughout the project for the purposes of targeting benchmarks from various building rating tools and achieving certification, where relevant:

- Green Star Design & As-Built (v1.3)
- WELL v2 for commercial spaces
- NABERS Energy and Water
- Eastern City District Plan
- Urban Green Cover in NSW Technical Guidelines (Office of Environment and Heritage, 2015)
- ND Greener Places (Government Architect NSW)
- Draft Greener Places Design Guide (Government Architect NSW)

1.3 The Site

The site is located within the City of Sydney Local Government Area (LGA). The site is situated 1.5km south of the Sydney CBD and 6.9km north-east of the Sydney International Airport within the suburb of Haymarket.

The site is located within the Western Gateway sub-precinct, an area of approximately 1.65ha that is located immediately west of Central Station within Haymarket on the southern fringe of the Sydney CBD. Immediately north of Central Station is Belmore Park, to the west is Haymarket (including the University of Technology, Sydney and Chinatown), to the south and east is rail lines and services and Prince Alfred Park and to the east is Elizabeth Street and Surry Hills.

Central Station is a public landmark, heritage building, and the largest transport interchange in NSW. With regional and suburban train services, connections to light rail, bus networks and to Sydney Airport, the area around Central Station is one of the most-connected destinations in Australia.

The site is located at 2 & 8A Lee Street, Haymarket and is legally described as Lot 30 in Deposited Plan 880518, Lot 13 in Deposited Plan 1062447 and part of Lot 14 in Deposited Plan 1062447.

The land that comprises the site under the Proponent's control (either wholly or limited in either height or depth) comprises a total area of approximately **4,159sqm**.

The location of the TOGA Central site is illustrated in Figure 1.

The site currently comprises the following existing development:

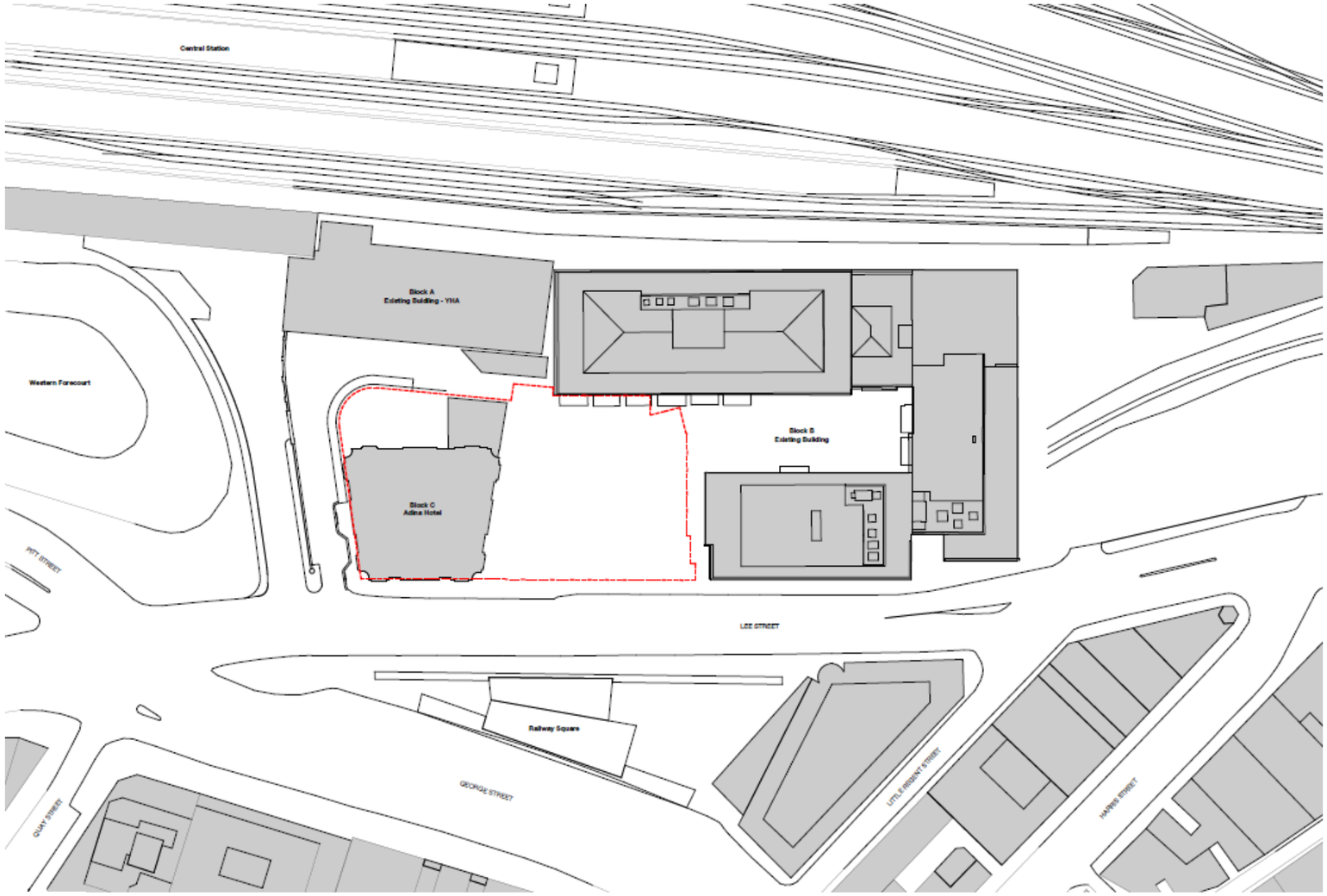
- Lot 30 in Deposited Plan 880518 (Adina Hotel building): the north-western lot within the Western Gateway sub-precinct accommodates a heritage-listed building which was originally developed as the Parcels Post Office building. The building has been adaptively re-used and is currently occupied by the Adina Hotel Sydney Central. The eight-storey building provides 98 short-stay visitor apartments and studio rooms with ancillary facilities including a swimming pool and outdoor seating at the rear of the site.
- Lot 13 in Deposited Plan 1062447 and part of Lot 14 in Deposited Plan 1062447 (Henry Deane Plaza): the central lot within the Western Gateway sub-precinct adjoins Lot 30 to the south. It accommodates 22 specialty food and beverage, convenience retail and commercial service tenancies. The lot also includes publicly accessible space which is used for pop-up events and a pedestrian thoroughfare from Central Station via the Devonshire Street Tunnel. At the entrance to Devonshire Street Tunnel is a large public sculpture and a glazed structure covers the walkway leading into Railway Square. This area forms part of the busy pedestrian connection from Central Station to Railway Square and on to George and Pitt Streets, and pedestrian subways.

The site is listed as an item of local significance under Schedule 5 of the Sydney Local Environmental Plan 2012 'Former Parcels Post Office including retaining wall, early lamp post and building interior', Item 855.

The site is also included within the Central Railway Station State heritage listing. This is listed on the State Heritage Register 'Sydney Terminal and Central Railway Station Group', Item SHR 01255, and in Schedule 5 of the Sydney Local Environmental Plan 2012 'Central Railway Station group including buildings, station yard, viaducts and building interiors' Item 824.

The site is not however listed independently on the State Heritage Register. There is an array of built forms that constitute Central Station, however the Main Terminal Building (particularly the western frontage) and associated clocktower constitute key components in the visual setting of the Parcel Post building.

Figure 1 - Site Location



Source: Bates Smart

2 Methodology

Toga Central development is required to meet a number of sustainability targets based on the requirements of the development authorities, Toga, and the necessary Standards and Codes.

In line with expectations from both the Australian market for premium workplace buildings and the facility requirements of leading global technology companies, and meeting with the requirements of Transport for NSW's Design Guide for the Western Gateway Sub-precinct (dated September 2021), this project will achieve the following key goals and objectives:

Healthy Buildings

- Achieve high indoor environmental quality for occupant health and well-being, including high levels of thermal comfort, visual comfort and acoustic comfort
- Provide great daylight and control of sunlight and glare for all tenancies through optimised shading strategies and selection of glazing with high visual light transmission
- Enable indoor-outdoor spaces and tenancy connections to the outside by inclusion of amenity natural ventilation, including the building pills and ground floor areas. Openable windows in the hotel tower will also be a feature
- Promoting excellent alternative transport availability and end-of-trip facilities, reducing the need for private car use
- Achieve at minimum a WELL Silver Core and Shell certification

Zero Carbon Buildings

- Minimise embodied carbon through careful design, material selection, and product specifications
- Integrate passive design principles, preferably sufficient well-insulated external wall, to minimise architectural and mechanical system complexity
- Operate with minimal energy input to provide low-carbon, low energy cost tenancies
- Minimise combustion in building systems to enable zero-carbon operations through renewable power purchase
- Minimise additional peak resource loads upon local utilities and provide smart grid benefits to the network
- On-site generation of renewable energy through solar PV arrays on the tower rooftop, incorporation of batteries for power back-up and purchase of green power to reduce GHG emissions
- Achieve NABERS 5.5 Star Energy for the commercial tenancy, NABERS 4.5 Star Energy for the Hotel

Social Sustainability

- Support a vibrant, active, and healthy community through street level activation and an active vertical circulation axis
- Provide restorative spaces inside and out featuring plants, natural materials, and other biophilic elements
- Foster community resilience through engagement with local stakeholders and participation in local community programs

These key goals and objectives are embedded into the project and aligned with the sustainability vision that was established for the design competition.

In order to meet the requirements of the SSDA and achieve the sustainability vision goals, Atelier Ten have adopted the following key steps:

Establish sustainability vision and goals early during the design competition and embed throughout the project.

Brainstorm design options across a range of environmental issues, such as massing & orientation, building envelope, thermal comfort and conditioning systems, lighting design, equipment and plug loads, energy systems and renewables, water systems, site and landscape design, materials, carbon emissions

Assess design options and prioritise the most effective solutions

Coordinate with the project team to implement solutions through workshops and regular weekly meetings

Benchmark performance and assurance (to be achieved through Green Star, WELL and NABERS certification.

3 Assessment & Findings

3.1 SEARS - ESD Principles

The EP&A Regulation Schedule 2 Clause 7(4) requires the development to address the following principles of ecologically sustainable development.

Table2.2 EP&A Regulation Schedule 2 Clause 7(4) Strategy

Principle	Requirements	Design Response (Mitigation Measures)
Precautionary principle	• If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. • Careful valuation to avoid irreversible damage to the environment • An assessment of risk-weighted consequences.	• Contractor will follow best practice and develop a site-specific construction environmental management plan • The project will develop and incorporate measures of resilience to extreme events and climate change through Climate Adaptation and Resilience Workshops. This process includes a risk assessment and register in the Climate Adaptation Plans to be developed in accordance with Green Star requirements. The parameters will include: – Climate-related events such as bushfires, floods, temperature rise, solar radiation, etc. – Potential impacts, responses required, key criteria in accordance with AS5334 and assessed against NARCLiM climate change projections; – Flood Risks: Preliminary assessment indicates the site is above the flood plain and mitigation strategies will be developed based on PMF. • Social Sustainability: Provision of EOT facilities for ease of access to and from the site during high-risk situations and to promote active transport (less fossil fuelled cars. There is currently provision for 22 showers (includes two unisex showers), 165 bike storage facilities and lockers, however, this is likely to be increased for Green Star and WELL requirements to be determined during Detailed Design. • Operations Environmental Management Plans will be developed by the operator to avoid irreversible damage to the environment
Inter-generational equity	• The present generation should ensure the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations.	• The key project design features align with a WELL Building Core and Shell Silver rating, and enable potential future higher level certification in partnership with program operator of hotel and key commercial tenants • Foster community resilience through engagement with local stakeholders and participation in local community programs • Vehicle charging bays will be provided with electric vehicle charging infrastructure, with capacity provision for future increase
Conservation of biological diversity and ecological integrity	• The conservation of biological diversity and ecological integrity should be a fundamental consideration.	• The existing site within the Central Station precinct has little to no biological diversity. Therefore, proposed landscaping has no impact on local species or ecological integrity. However, the proposed landscaping schemes will improve biological diversity and provide better environments for local ecosystems. • Irrigation systems will be designed to incorporate monitoring devices to detect sub-soil moisture, weather and other environmental data to efficiently control irrigation regimes. This is further detailed within the landscaping report. • Major materials and products will be responsibly sourced for low environmental impact with third-party accreditation • Chiller plant and all refrigeration systems in the base buildings will be selected on the basis of minimising environmental impacts through the selection of low ozone depletion potential (low ODP) and low global warming potential (low GWP) refrigerants and through implementing leak detection and management measures • Landscaping of the Henry Deane Plaza public domain to promote green corridors and reduce heat island effects – Series of 9 large trees along the Street shading Henry Deane Plaza and the entrances to it. – Garden bed along the retaining wall elevating Henry Deane Plaza facing the street and a large garden bed surrounded by smaller trees within the plaza. – Series of trees within the plaza aligned with geometric axis. • Reduce stormwater impacts through Water Sensitive Urban Design guidelines
Improved valuation, pricing and incentive mechanisms	• Environmental factors should be included in the valuation of assets and services such as: the polluter pays, users of goods and services should pay prices based on life cycles, established ESD goals should be pursued in the most cost-effective ways.	• A whole of life integrated waste management system that facilitates circular economy approach to material reduction and recycling • During building operation, minimise waste-to-landfill through the provision of recyclable waste, organics, e-waste and non-recyclable waste storage at each level of the building as appropriate • Minimise and where possible eliminate combustion and air pollution emission sources from regularly used building systems, including heating, cooling, and hot water generation • Smart platform to enable intelligent use of sensors and data across the development for enhanced social connectivity opportunities, enhanced environmental management and economic performance benefit

3.2 Sustainability and Environmental Performance Standards

3.2.1 SEARS Requirement

Demonstrate how the development will meet or exceed the relevant industry recognised building sustainability and environmental performance standards.

3.2.2 Project Response

The project is targeting the following minimum requirements for building rating tools, which are also aligned with the *Western Gateway Sub-Precinct Design Guide* requirements.

- 5.5-star NABERS Energy rating for commercial uses with a Commitment Agreement
- 4.5-star NABERS Energy rating for hotel uses with a Commitment Agreement
- 4-star NABERS Water rating for commercial uses
- 4-star NABERS Water rating for hotel uses
- Target a 6-star Green Star Design and As-Built rating (version 1.3) but achieve a minimum 5-star Green Star Design and As Built rating (version 1.3) - refer to Appendix A for Green Star Appraisal
- Silver core and shell WELL rating (or equivalent industry standard) for commercial uses - Refer to Appendix B for WELL Appraisal

Sustainability Category	Design Response (Mitigation Measures)
Greenhouse Gas Emissions	• Minimise combustion in building systems to enable zero-carbon operations through renewable power purchase • Solar PV panels will be installed on the tower roof to provide renewable energy that further reduces GHG emissions. At this stage, it is estimated that the current usable roof space allowance is 135m² and based on 370w panels, approximately 25kW could be accommodated. • Develop a Climate Adaptation and Resilience Plan in accordance with Green Star credit requirements, including NARCLiM climate change projections. – *Climate change mitigation measures discussed in Section 2.1 and detailed in 2.4.* – Reduced Urban Heat-Island Affect through increased landscaping and lighter materiality in construction.
Energy Consumption	• Integrate passive design principles: sufficient well-insulated external wall, to minimise architectural and mechanical system complexity. This has been optimised through coordination between the architect, ESD consultant and façade engineer to achieve the following outcomes: – Façade and building openings designed to maximise natural ventilation and minimal mechanical HVAC use – Horizontal and vertical passive solar shades to reduce heat loads. High performance envelope that maximises solar control while maintaining great daylight. – Glazing and structure materiality has been catered to ensure both high visual comfort and comfortable levels of solar gain. Minimises electrical lighting needs. • Operate with minimal energy input to provide low-carbon, low energy cost tenancies – Future proofing to enable net-zero carbon through development of a net zero strategy plan during Detailed Design. The building will be designed to achieve net zero emissions in accordance with the Design Guide. – Further coordination between ESD consultant and Building Services during Detailed Design to ensure design meets the NABERS target for benchmarking assurance. – Substations and infrastructure to enable transition to 100% renewables • Minimise additional peak resource loads upon local utilities and provide smart grid benefits to the network
Water Consumption	• Water conservation considerations include fixtures and fittings selected for high WELS ratings as appropriate to minimise water consumption, low water-use species for landscaping, rainwater harvesting and re-use. • Stormwater capture and recycling on roof and within landscape. Reused throughout building and for irrigation
Material Resources	• The project will be pursuing credits in Green Star that relate to the minimisation of embodied carbon and water in materials and sourced from sustainability certified manufacturers/suppliers, where possible. This will also involve a robust Life Cycle Analysis of materials. • Waste recycling targets of 90% for construction materials in accordance with Green Star requirements and a 75% target for the recycling rate for commercial operations. • The project will be pursuing features in the WELL building rating tool that relate to healthy building materials, such as low-VOC products, and development of product specifications. • Use of low-carbon concrete and cements through material specification to maximise Green Star points in the materials category, including sourcing of sustainably certified materials or through sustainable procurement processes. Suppliers.

3.3 GHG and Resource Management

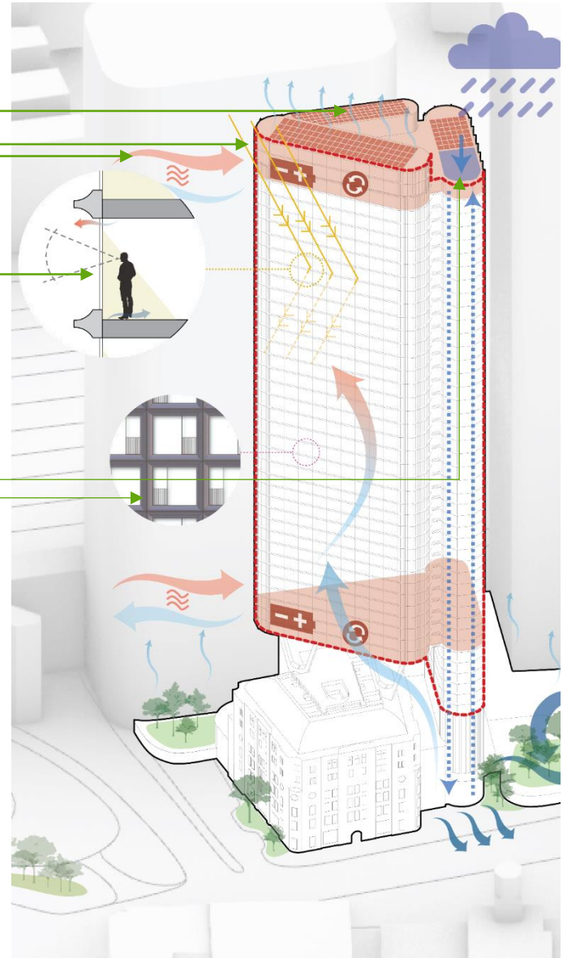
3.3.1 SEARS Requirement

Demonstrate how the development minimises greenhouse gas emissions (reflecting the Government's goal of net zero emissions by 2050) and consumption of energy, water (including water sensitive urban design) and material resources.

3.3.2 Project Response

The table presented below provides a project response against each of the SEARS requirements for the various sustainability categories.

Table 3.1 Sustainability Initiatives



3.4 Western Gateway Sub-Precinct Strategy

The development will meet the objectives and design guidance requirements specified in the Western Gateway Sub-Precinct Design Guide based on the following design responses.

Table 3.2 Western Gate Sub-Precinct Design Responses

Objectives	Design Response (Mitigation Measures)
Development should seek to achieve Actions 68, 69 and 72 of the Eastern City District Plan: • Net-zero emissions by 2050 • Renewable energy generation, and energy and water efficiency • Low-carbon, high efficiency strategies to reduce emissions, optimise the use of water, reduce waste and optimise carparking provisions	• The project will achieve net-zero emissions by 2050 through a net zero carbon in operations plan to be developed as part of Green Star requirements. This will include a strategy to transition into 100% renewable energy by 2030 • The project will incorporate solar PV on the tower rooftop to generate on-site renewable energy. At this stage, it is estimated that the current usable roof space allowance is 135m² and based on 370w panels, approximately 25kW could be accommodated. • Project will target high NABERS Energy and Water ratings to demonstrate operational performance on energy and water efficiency • Life cycle analysis will be carried out to reduce upfront carbon emissions during construction and operation • A 60kL rainwater tank is proposed to capture roof drainage for water reuse for irrigation in landscaped areas, cooling towers and toilet flushing. Further reduction in potable water use will be achieved through high WELS rated fixtures and fittings, and low water-use species in landscaped areas for water efficiency. • The site is easily accessible for public transport, has reduced parking provision in accordance with the LEP and provision of 165 bicycle storage facilities and 22 showers.
Development incorporates best practice sustainability and environmental performance measures and initiatives: • Minimise greenhouse gas emissions • Demonstrate innovation in reducing greenhouse gas emissions through energy efficiency, renewable energy, and other measures • Reduce the urban heat island effect • Achieve high levels of waste separation and diversion from landfill • Minimise consumption of mains potable water • Improve air quality	• These will be achieved through various relevant credits being pursued in the Green Star rating tool as per the Green Star appraisal developed for the project. • Indoor Environment Quality and building wellness will be achieved through various features of the WELL building rating tool for commercial spaces. • Energy consumption and equivalent carbon emissions will be benchmarked against similar buildings through the NABERS rating scheme. • Renewable energy through solar PV panels on the tower rooftop • Urban heat island effect reduced through landscaping in Henry Deane Plaza • Construction and operational waste reduced through Green Star benchmarks • A 60kL rainwater tank is proposed to capture roof drainage for water reuse for irrigation in landscaped areas, cooling towers and toilet flushing. Further reduction in potable water use will be achieved through high WELS rated fixtures and fittings, and low water-use species in landscaped areas for water efficiency. • Air quality improved through natural ventilation of foyer entrances and openable windows in hotel. Provision of high air quality as per WELL and Green Star requirements
	• Horizontal and vertical passive solar shades to reduce heat loads. High performance envelope that maximises solar control while maintaining great daylight. • Glazing and structure materiality has been catered to ensure both high visual comfort and comfortable levels of solar gain. Minimises electrical lighting needs. • Façade and building openings designed to maximise natural ventilation and minimal mechanical HVAC use.

Design Guidance Requirements	Design Response (Mitigation Measures)
Ecologically Sustainable Development: • 5.5-star NABERS Energy rating for commercial uses with a Commitment Agreement • 4.5-star NABERS Energy rating for hotel uses with a Commitment Agreement • 4-star NABERS Water rating for commercial uses • 4-star NABERS Water rating for hotel uses • Silver core and shell WELL rating (or equivalent industry standard) for commercial uses • Target 6 Stars, but achieve a minimum 5-star Green Star Design and As Built rating (version 1.3)	The project is targeting the minimum requirements for benchmarking specified within the Design Guide.
Achieve net zero emissions by being highly efficient and using a minimum of 100% renewable electricity (by maximising on-site generation and offsite renewable energy procurement)	The project will develop a strategy to transition into 100% renewable energy and achieve net zero in carbon operations by 2030. This is aligned with minimum Green Star requirements. The capacity of solar PV panels will be maximised on the roof of the tower and the remaining energy demand will be met through purchase of offsite renewable energy and detailed in the net zero carbon strategy to be developed.
Incorporate suitable self-shading elements to minimise undesirable solar gain and improve the passive sustainability performance of buildings	Detail workshops were carried out between Atelier Ten (ESD consultant), Bates Smart (architect) and Apex (façade engineers) to optimise the design through parametric analysis and detailed shading design of the proposed Adina Roof refurbishment and new tower façades. By incorporating suitable self-shading elements, including internal blinds, throughout the proposed development, uncomfortable summer temperatures and glare can be minimised to maximise thermal comfort for occupants and save building energy. Ultimately, carefully designed terracotta frames and precise shading elements minimise undesirable solar gain and improve the passive sustainability performance of the proposed development.
Apply the principles of biophilia in design, such as incorporating green walls and roofs	The design of Henry Deane Plaza and the urban surroundings of the proposed development focuses on fundamental principles of biophilic design. By enabling individuals to re-connect with natural surroundings through imitating natural elements and processes, the design

Design Guidance Requirements	Design Response (Mitigation Measures)
	triggers ultimately a strong positive impact on health and wellbeing. Framed by notions of being 'guided by trees and light', the landscape reimagines a natural experience for individuals transitioning from a concrete and asphalt heavy environment into the foyer of the proposal.
Consider Urban Green Cover in NSW Technical Guidelines (OEH, 2015) ND Greener Places (OGA), and the draft Greener Places Design Guide	There were challenges of extending urban tree canopy due to lack of sufficient space within existing tree corridors. However, with reference to the design of the landscaped areas of Henry Deane Plaza, there are 9 large trees along the Street shading Henry Deane Plaza and the entrances to it as well as 5 smaller trees aligned along the plaza's geometric axes. There are a series of Garden beds along the retaining wall elevating Henry Deane Plaza facing the street and a large garden bed surrounded by smaller trees within the plaza.
Protect current or future residents and workers from noise, vibration, and air pollution	A site-specific Construction Environmental Management Plan (CEMP) has been prepared by TOGA to address any noise, vibration, and air pollution issues during construction. Likewise, an Operations Environmental Management Plan will be developed to mitigate these issues during the building's lifetime. In terms of the building occupants, the building will be designed in accordance with Green Star and WELL requirements to minimise impacts from external noise and vibration, including ingress of air pollution. Further detail regarding noise and vibration impacts can be found in the relevant consultant's report.

3.5 Conclusion

The Toga Central development will meet the sustainability targets based on the requirements of the development authorities, Toga, and the necessary Standards and Codes. The sustainability performance of the project will be benchmarked against the targets set for Green Star, WELL and NABERS for assurance and demonstration of the projects commitment to the sustainability vision set for the design competition.

Implementation of the design responses (mitigation measures) will render the proposed development acceptable in addressing the ESD SEARS requirements.

Appendices

Appendix A Green Star Appraisals

A.1 Appendix 2

The following Green Star credit assessment for the Toga Central development has been based on a combination of the DA and a typical Business As Usual approach to commercial office building with PCA Premium Grade services in Sydney.

The credit analysis is based on current design initiatives and does not rely on implementing strategies to solely seek Green Star Credit points. It is worth noting that the main credit point benefit is due to the commitment of off-setting all greenhouse gas emissions through off-site renewables.

The following Green Star pathway demonstrates that the building as currently designed, can achieve a 6 Star Green Star rating (minimum 75 points) but specific points may be subject to change through the design development phase.

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5 Star Achievability

Four Star 45 to 59 points **Five Star** 60 to 74 points **Six Star** 75 or more points

Achievability rating: **Hi** = 90%, **Med** = 60%, **Low** = 10%, **NP** = not possible.

Hi	Med	Low	No	Total
59	0	0	0	59
90%	50%	10%	0%	
65	0	0	37	102
Hi	Med	Low	No	Possible

Projected Points

% prob

Subtotals

6 Star Achievability

Hi	Med	Low	No	Total
72	0	0	0	72
90%	50%	10%	0%	
80	0	0	23	102
Hi	Med	Low	No	Possible

5 Star Hi	5 Star Med	5 Star Low	5 Star No	5 Star Total	Management			Explanation	Responsible Party	Comments	Next Steps	Achievability (Technical)	Documentation Difficulty	Added Cost Risk	6 Star Hi	6 Star Med	6 Star Low	6 Star No	6 Star Possible
14	0	0	0	14	**Management**			**Explanation**	**Responsible Party**	**Comments**	**Next Steps**	**Achievability (Technical)**	**Documentation Difficulty**	**Added Cost Risk**	14	0	0	0	14
1				1	**Green Star Accredited Professional**	1.1	Accredited Professional	Green Star Accredited Professional active in all stages of project.	A10	Achieved	A10 continued engagement	high	low	low	1				1
Y	-	-	-	-	**Commissioning and Tuning**	2.0	Environmental Performance Targets	Establish and documented project environmental performance targets	A10			high	med	low	Y	-	-	-	-
1				1		2.1	Services and Maintainability Review	Perform comprehensive design review of services, maintainability, etc	Project Team	Best Practice	Include in DD	high	med	low	1				1
1				1		2.2	Building Commissioning	Comprehensively pre-commission and commission nominated building systems	Commissioning Provider	Best Practice		high	low	low	1				1
1				1		2.3	Building Systems Tuning	Commit to perform building systems tuning for no less than one year after occupancy	Commissioning Provider / Owner	12 month tuning period		high	low	med	1				1
1				1		2.4	Independent Commissioning Agent	Engage independent Commissioning Agent to oversee commissioning process	Commissioning Provider	Engage Specialist ICA	A10 give Toga advice re costs, consultants - Get ICA on board for Design Development review	high	low	high	1				1
2				2	**Adaptation and Resilience**	3.1	Climate Adaptation Plan	A project specific climate adaptation plan has been developed in accordance with a recognized standard	A10		CAP workshop with design team at kickoff to next stage - TBC	high	med	Low	2				2
1				1	**Building Information**	4.1	Building Information	Make current building user information is available to all relevant stakeholders	Project Team / Facilities Manager	Best Practice		high	high	low	1				1
1				1	**Commitment to Performance**	5.1	Environmental Building Reporting	Commit to reporting building environmental performance metrics over two years;	Owner		Toga to commit to NABERS Energy and Water	high	low	low	1				1
1				1		5.2	End of Life Waste Management	Commit to measurably reducing construction waste building upgrades and tenant end of Building	Owner		Can be achieved through a clause in lease agreement - 80% of demolition waste	high	low	high	1				1
Y	-	-	-	-	**Metering and Monitoring**	6.0	Metering Strategy	Provide water and energy meters for all major end users or uses	A10 / Services Engineer			high	med	low	Y	-	-	-	-
1				1		6.1	Monitoring Strategy	Provide monitoring strategy to capture and process metered energy and water use	A10 / Services Engineer	Monitoring Strategy to be confirmed		high	med	low	1				1
Y	-	-	-	-	**Construction Environmental Management**	7.0	Environmental Management Plan	Comprehensive Environmental Management Plan in place for construction	Contractor	Contractor Best Practice		high	med	low	Y	-	-	-	-
1				1		7.1	Formalised Environmental Management System	Environmental Management System from EMP used through all stages of design and construction	Contractor	Contractor Best Practice		high	high	low	1				1
1				1		7.2	High Quality Staff Support	Staff support practices are in place that; promote positive mental and physical health and knowledge of sustainable practices	Owner	Contractor Best Practice	Toga as contractor could implement as part of site induction	high	med	med	1				1
1				1	**Operational Waste**	8.1	Waste in Operations	Provide facilities to collect, process, and store multiple waste streams	Owner / Waste Auditor	OWMP required for building		high	low	low	1				1

5 Star Hi	5 Star Med	5 Star Low	5 Star No	5 Star Total	Indoor Environment Quality			Explanation	Responsible Party	Comments		Achievability	Documentation Difficulty	Added Cost Risk	6 Star Hi	6 Star Med	6 Star Low	6 Star No	6 Star Possible
10	0	0	7	17	**Indoor Environment Quality**			**Explanation**	**Responsible Party**	**Comments**		**Achievability**	**Documentation Difficulty**	**Added Cost Risk**	13	0	0	4	17
1				1	**Quality of Indoor Air**	9.1	Ventilation System Attributes	Outdoor pollutants mitigated; ventilation system designed for cleaning + maintenance; ventilation system cleaned prior to use	Mech Eng.	Best Practice design for maintainability		high	med	low	1				1
1			1	2		9.2	Provision of Outside Air	Provide 50-100% additional outdoor air, or maintain C02 levels at 800-700 PPM. Natural ventilation spaces must comply with AS1668.2 for 2 pts	Mech Eng.	'Open issue for team discussion	Mechanical engineer to confirm outside air rates + C02 sensors and OA control system throughout building	high	med	med	1			1	2
1				1		9.3	Exhaust or Elimination of Pollutants	Direct exhaust kitchens, photocopier areas, other pollution point source zones	Mech Eng.		Build requirement into tenant agreement	high	med	low	1				1
1				1	**Acoustic Comfort**	10.1	Internal Noise Levels	Internal ambient noise levels, including outside and building systems sources, are suitable for activities	Services Engineer	Open issue for team discussion		high	med	low	1				1
			1	1		10.2	Reverberation	Reverberation levels meet AS/NZ 2107:200 Reverberation Time tables	Acoustic Consultant			NP	med	med	1				1
			1	1		10.3	Acoustic Separation	Reduce crosstalk between nominated spaces to weighted sound reduction index (Rw) of 45	Acoustic Consultant			NP	med	high	1				1

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Energy			Explanation	Responsible Party	Comments		Achievability	Documentation Difficulty	Cost Risk	5 Star Hi	5 Star Med	5 Star Low	5 Star No	5 Star Possible	6 Star Hi	6 Star Med	6 Star Low	6 Star No	6 Star Possible
Lighting Comfort	11.0	Minimum Lighting Comfort	Flicker free and high colour rendition lighting	A10 / Services Engineer	Best Practice		high	low	low	Y	-	-	-	-	Y	-	-	-	-
	11.1	General Illuminance and Glare Reduction	Lighting levels and quality comply with best practice; glare is eliminated	A10 / Services Engineer	Review with lighting designer - possibly include in tenant guidelines TBC		high	med	low	1				1	1				1
	11.2	Surface Illuminance	Improve lighting uniformity through fixture type and surface properties	A10 / Services Engineer	Increased luminaires to meet this credit not recommended for cost and energy reasons.	Track this as extent of base building offering is determined, look to pursue if general lighting is included	NP	med	high				1	1				1	1
	11.3	Localised control	Occupants provided individual control of lighting	A10 / Services Engineer		Track this as extent of base building offering is determined, look to pursue if general lighting is included	NP	low	low				1	1	1				1
Visual Comfort	12.0	Glare Reduction	Fixed shares or blinds minimize direct sunlight into building	Architect / A10	Blinds required - either by Toga or tenant guideline		high	low	low	Y	-	-	-	-	Y	-	-	-	-
	12.1	Daylight	40% / 60% of nominated area receives high daylight levels during 80% of day	Architect / A10	Office tower depth may only achieve 1 point	A10 to check daylight	high	high	low	1			1	2	1			1	2
	12.2	Views	Direct line of sight to high quality internal or external views	Architect / A10		A10 to check views	high	med	low	1				1	1				1
Reduced Exposure to Pollutants	13.1	Paints, adhesives, sealants and carpets	Internally applied products meet stipulated VOC limits	Architect / Contractor	Best Practice		high	high	low	1				1	1				1
	13.2	Engineered wood products	95% of products meet stipulated formaldehyde limits	Architect / Contractor	Best Practice		high	high	low	1				1	1				1
Thermal Comfort	14.1.2B	Thermal Comfort - Mechanical Performance	For 95% of nominated space, 98% of year, achieve 80% Acceptability in ASHRAE 55, OR PMV between +1 and -1; OR NatHERS 7 Star	A10 / Services Engineer			high	low	low	1				1	1				1
	14.2	Advanced Thermal Comfort	For 95% of nominated space, 98% of year, achieve 90% Acceptability in ASHRAE 55, OR PMV between +0.5 and -0.5; OR NatHERS 8 Star	A10 / Services Engineer		TBC in design development	NP	med	low				1	1				1	1
Greenhouse Gas Emissions	15D.0	Conditional Requirement: NABERS Pathway	Meet DTS energy efficiency requirements -- OR -- NABERS Energy Commitment Agreement for a minimum of 4.5 Stars.	Project Team			high	med	low	Y	-	-	-	-	Y	-	-	-	-
	15D.1	NABERS Energy Commitment Agreement Pathway	Reduction of greenhouse gas emissions compared to NABERS 5-star baseline Building. 11pts = 55% ghg reduction. 'Use Green Star - Greenhouse Gas Emissions Calculator	Project Team	5.5 Star NABERS = 5 points. 6 Star NABERS = 10 pts		high	med	low	5			16	20	5			8.5	20
	15D.2	Off site renewables	Procure 100% offsite renewable energy for 10 years from PC. 1.5pts for every 1pt achieved in 15D.1 up to 20 pts.	Owner	Estimated cost premium for off site renewables ~$200,612/year (based NABERS 5.5 star predicted energy consumption x $0.05/kWh)		NP	med	med						7.5				
	15D.3	Transition plan	Public commitment to a transition away from fossil fuels by 2030. Transition plan is integrated into building O&Ms and replacement schedules.	Owner			NP	med	low					1					1
	15D.4	Fuel Switching	No fossil fuels are burned on site to generate electricity, heating or cooling. Cooking and emergency generators can be offset with RECs for 10 years.	Owner		Toga to commit to transitioning gas out of F&B and immediately paying for offsets for gas	NP	med	low					2					2
	15D.5	On site storage	Battery storage is provided, sized to add value and store surplus of onsite renewable energy. Stored energy is used to reduce peak electricity demand.	A10			NP	med	high					1					1
Peak Electricity Demand Reduction	16B	Performance Pathway - Reference Building	20%=1pt, 30%=2pts	A10		Requires 15E	NP	high	low				2	2				2	2
										5	0	0	18	23	12.5	0	0	11	23

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% prob

Subtotals

6 Star Achievability

Hi	Med	Low	No	Total
72	0	0	0	72
90%	50%	10%	0%	
80	0	0	23	102
Hi	Med	Low	No	Possible

5 Star Hi	5 Star Med	5 Star Low	5 Star No	5 Star Total	Transport			Explanation	Responsible Party	Comments	Achievability	Documentation Difficulty	Added Cost Risk	6 Star Hi	6 Star Med	6 Star Low	6 Star No	6 Star Total
7	0	0	0	7										7	0	0	0	7
3				3	Sustainable Transport	17B.1	Access by Public Transport	Accessibility of the site by public transport. The points score is determined by completing the *Access by Public Transport Calculator*	A10		high	N/A	N/A	3				3
1				1		17B.2	Reduced Car Parking Provision	Reducing number of car parks from allowable in planning provision	A10		high	low	low	1				1
1				1		17B.3	Low Emission Vehicle Infrastructure	parking spaces and/or dedicated infrastructure is provided to support the uptake of low-emission vehicles	Services Engineers	16 motorcycle spaces and 95 car parking spaces. Of the 95 car parking spaces, 12 spaces need to be clearly designated for fuel-efficient and electric vehicles.	high	low	med	1				1
1				1		17B.4	Active Transport Facilities	Bicycle parking and associated facilities are provided to a proportion of regular occupants and visitors	Architects	220 bicycle parking required and only 132 shown on drawings	high	low	med	1				1
1				1		17B.5	Walkable Neighbourhoods	Walk Score of at least 80 as determined by the website www.walkscore.com. OR the project is located so that at least eight (8) amenities are within 400m of the project.	A10	Walk Score of 99 (https://www.walkscore.com/AU-NSW/Sydney/Zetland)	high	N/A	N/A	1				1
4	0	0	2	6	Water									4	0	0	2	6
1				1	Potable Water	18B.1	Sanitary Fixture Efficiency	Taps, Urinals, Toilets and Showers are within 1 star of WELS rated 6, 6, 5 and 3 stars respectively	Project Team		high	low	low	1				1
1				1		18B.2	Rainwater Reuse	Rainwater tank is to be installed to collect and reuse rainwater	Project Team		high	low	low	1				1
			2	2		18B.3	Heat Rejection	2pts where no potable water is used for heat rejection	Project Team		NP	N/A	N/A				2	2
1				1		18B.4	Landscape Irrigation	Drip irrigation with moisture sensor override is installed, or where no potable water is used for irrigation	Project Team		high	low	low	1				1
1				1		18B.5	Fire System Test Water	Test system does not expel water, or stores 80% of routine test water for reuse onsite	Fire Engineer		high	med	med	1				1
12	0	0	2	14	Materials									12	0	0	2	14
4				4	Life Cycle Impacts	19.A.1	Comparative Life Cycle Assessment	Reduce building material and product environmental impacts across a range of categories through LCA or proscriptive pathways	A10		high	high	low	4				4
3				3		19.A.2	Additional Life Cycle Impact Reporting	Report environmental impacts across five additional categories	A10		high	high	low	3				3
1				1	Responsible Building Materials	20.1	Structural and Reinforcing Steel	60% of steel (by mass) from responsible manufacturers	Contractor	Achievable with Australian steel suppliers and manufacturers Contractor consideration	high	high	med	1				1
1				1		20.2	Timber	95% of timber (by cost) from sustainable sources	Contractor	Best Practice Contractor consideration	high	high	low	1				1
1				1		20.3	Cables, pipes, floors and blinds	90% (by cost) of cables, pipes, floors, blinds either PVC free or meet Best Practice Guidelines		Best Practice Contractor consideration	high	high	low	1				1
1			2	3	Sustainable Products	21.1	Sustainable Products	3, 6, 9% products are recycled, reused, third-party certified, come with EPDs, or through stewardship programs	Contractor		high	high	high	1			2	3
1				1	Construction and Demolition Waste	22B	Percentage Benchmark	at least 90% of the waste generated during construction and demolition has been diverted from landfill	Contractor	Contractor consideration	high	med	low	1				1

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Projected Points

6 Star Achievability

Hi	Med	Low	No	Total
72	0	0	0	72
90%	50%	10%	0%	% prob
80	0	0	23	102
Hi	Med	Low	No	Possible

5 Star					Land Use & Ecology			Explanation	Responsible Party	Comments		Achievability	Documentation Difficulty	Added Cost Risk	6 Star				
3	0	0	3	6											3	0	0	3	6
Y	-	-	-	-	Ecological Value	23.0	Endangered, Threatened or Vulnerable Species	demonstrate that no endangered or vulnerable species, or ecological communities were present on the site	A10 review			high	low	low	Y	-	-	-	-
1			2	3		23.1	Ecological Value	the ecological value of the site is improved by the project	A10 review		Landscape to document balance of natives with exotics, before and after development.	high	med	low	1			2	3
Y	-	-	-	-	Sustainable Sites	24.0	Conditional Requirement **Mandatory Requirement**	project site did not contain prime agricultural land, wetland, or impact 'Matters of National Significance'	A10 review			high	low	low	Y	-	-	-	-
1				1		24.1	Reuse of Land	75% of the site was previously developed land at the date of site purchase or, for previously owned land				high	low	low	1				1
1				1		24.2	Contamination and Hazardous Materials	the site, or an existing building, was previously contaminated and the site has been remediated		haz materials on site?		high	low	low	1				1
			1	1	Heat Island Effect	25.0	Heat Island Effect Reduction	75% of the total project site area comprises elements that reduce the impact of the heat island effect	A10		75% of site area to be vegetated, PV or light coloured - light coloured materials is hard to deal with visually. To confirm with architects and landscape architects	NP	med	low				1	1

3	0	0	2	5	Emissions			Explanation	Responsible Party	Comments		Achievability	Documentation Difficulty	Added Cost Risk	4	0	0	1	5
1				1	Stormwater	26.0	Stormwater Peak Discharge	Post-development peak ARI event discharge does not exceed the pre-development peak ARI event discharge.	A10		Overflows to Council stormwater catchments to be balanced against current outflows	high	low	low	1				1
1				1		26.1	Stormwater Pollution Targets	All stormwater discharged from site meets specified pollution reduction targets	A10			high	med	low	1				1
Y	-	-	-	-	Light Pollution	27.0	Light Pollution to Neighbouring Properties	Outdoor lighting complies with AS 4282:1997	Lighting Designer			high	med	low	Y	-	-	-	-
1				1		27.1	Light Pollution to Night Sky	Minimise upward light OR Minimize light trespass skyward and across project boundary	Lighting Designer		Lighting designer to consider in DD	high	high	low	1				1
			1	1	Microbial Control	28.1	Microbial Control	Building is naturally ventilated OR use waterless heat re-jection OR building heat rejection systems include control measures for Legionella	Services Engineer		Microbial control for legionella	NP	low	low	1				1
			1	1	Refrigerant Impacts	29.1	Refrigerant Impacts	Minimize environmental impacts of refrigerants by choosing low ODP and GWP refrigerants and implementing leak detection measures	Services Engineer		can we get low GWP and low ODP refrigerants? Should have refrigerant leak detection and capture in plant room anyway.	NP	med	med				1	1

7	0	0	3	10	Innovation			Explanation	Responsible Party	Comments		Achievability	Documentation Difficulty	Added Cost Risk	10	0	0	0	10
			1	-	Market Transformation	30.B	Soft Landings Framework	Building is designed, built, commissioned and tuned by adopting a 'Soft Landings' approach	Contractor			NP	med	med	1				-
1				-	Improving on Green Star Benchmarks	30.C	Stormwater Pollution Reduction	Demonstrate pollution reduction to column B for 1 point, Column C for 2 points. Column C generally requires extensive biofiltration - few mechanical devices on market achieve this.	Contractor			high	med	low	1				-

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Hi	Med	Low	No	Possible

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Projected Points

5 Star Hi	5 Star Med	5 Star Low	5 Star No	5 Star Possible								6 Star Hi	6 Star Med	6 Star Low	6 Star No	6 Star Possible
			1	-		30.D	Marketing Excellence	To engage, educate and sell the benefits of sustainable building practices and Green Star to building occupants and the wider community through marketing information developed on the basis of comprehensive market research.	Contractor	NP	med	med	1				-
			1	-		30.D	Community Benefits	Provide publicly accessible amenities such as: Open space, roof terrace, Wi-Fi, workspace.	Owner	NP	med	med	1				-
1				-	Innovation Challenge	30.D	Incorporation of Indigenous Design	Demonstrate the project addresses the following principles form the Australian Indigenous Design Charter: 1. Indigenous Led 2. Community Specific 3. Impact of Design 4. Shared Knowledge	Contractor	high	med	med	1				-
1				-		30.D	Financial Transparency	Anonymously disclose material and consulting costs of pursuing Green Star certification for GBCA annual reporting	Owner	high	med	low	1				-
1				-		30.D	High Performance Site Offices	Site sheds meet 75% of the Green Star criteria on the checklist, including for responsible materials, indoor air quality, comfort, and energy performance	Contractor	high	low	med	1				-
1				-		30.D	Reconciliation Action Plan	Contractor must use this project in a central role for their new or ongoing/current RAP outcomes.	Contractor	high	med	low	1				-
1				-	Global Sustainability			WELL - M02 Nature and Place (WELL precondition)	Owner	high	med	med	1				-
1				-				WELL - X01 Material Restrictions (WELL precondition)	Owner	high	med	med	1				-

Appendix B WELL Appraisal

WELL v2 | **CD APPRAISAL_v00** | **DRAFT**

1349.2 TOGA Central | **Tuesday, 8 March 2022**

Gold Achievability

Certified 40 to 49 Silver 50 to 59 Gold 60 to 79 Platinum 80 +

Achievability rating: **Hi** = 90%, **Med** = 60%, **Low** = 10%, **NP** = not possible.

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76	**24**	**8**	**0**	**108** Projected Points
90%	50%	10%	0%	% prob
85	**48**	**84**	**19**	**235** Subtotals
Hi	Med	Low	No	Possible

17	6	4	0	27	Air	Link		Explanation	Responsible Party	Alignments	Comments
Y	-	-	-	-	**Air Quality**	A01.1	Meet Thresholds for Particulate Matter	Acceptable air quality levels, as determined by public health authorities.	LCI		Meet these requirements in non-leased spaces provided
Y	-	-	-	-		A01.2	Meet Thresholds for Organic Gases		LCI		
Y	-	-	-	-		A01.3	Meet Thresholds for Inorganic Gases		LCI		
Y	-	-	-	-		A01.4	Meet Thresholds for Radon		LCI		
Y	-	-	-	-		A01.5	Measure Air Parameters		LCI		
Y	-	-	-	-	**Smoke-Free Environment**	A02.1	Prohibit Indoor Smoking	Ban indoor smoking and ban or restrict outdoor smoking within its boundaries.	Toga (Design and Construct)		Meet these requirements in the whole building
Y	-	-	-	-		A02.2	Prohibit Outdoor Smoking		Toga (Design and Construct)		
Y	-	-	-	-	**Ventilation Design**	A03.1	Ensure Adequate Ventilation	Bring in fresh air from the outside through mechanical and/or natural means in order to dilute human- and product-generated air pollutants.	LCI	E - 8.2 Provision of outdoor air GS CW: (Missing) A03.2 Conduct System Balancing E - 2.2. Commissioning and 2.3 Systems Tuning	Meet these requirements in the whole building. If the project uses mechanical or mixed mode ventilation, it must provide leased spaces with sufficient outdoor air but is not required to install ducts and diffusers within leased spaces.
Y	-	-	-	-	**Construction Pollution Management**	A04.1	Mitigate Construction Pollution	Protect indoor air quality during building construction and renovation through a combination of strategies, such as duct protection, moisture and dust management, filter replacement, and proper equipment selection.	Toga (Design and Construct)	A - 9.1.3 Cleaning prior to use and occupation; 7.1 Environmental management system GS CW: (Additional) WELL requires air flush, vehicle emissions management and/or moisture and dust management	Meet these requirements for the extent of developer build out
2				2	**Enhanced Air Quality**	A05.1	Meet Enhanced Thresholds for Particulate Matter	Go beyond current guidelines to provide enhanced air quality levels that have been linked to improved human health and performance.	LCI		Requires verification test and bushfire smoke filtration (beyond normal filtration) Meet these requirements in the whole building. Achievement requires access to at least 10% of leased space for testing as identified by the project
1				1		A05.2	Meet Enhanced Thresholds for Organic Gases		LCI		
1				1		A05.3	Meet Enhanced Thresholds for Inorganic Gases		LCI		

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Hi	Med	Low	No	Possible

Hi	Med	Low	No	Possible							
3				3	**Enhanced Ventilation Design**	A06.1	Increase Outdoor Air Supply	Implementation of advanced ventilation strategies that can achieve higher air quality levels and thus benefit human health and productivity.	LCI	E - 9.2A Provision of outdoor air GS CW: Must use Comparison with industry standards pathway. Can alternatively be used for A06.2 but not both	Meet these requirement in the whole building. If the project pursues Option 1 or Option 2, it must provide leased spaces with sufficient outdoor air and a compatible control system (as applicable) but is not required to install ducts and diffusers within leased spaces
2				2		A06.2	Improve Ventilation Effectiveness		LCI		Meet these requirements in the whole building
		2		2	**Operable Windows**	A07.1	Provide Operable Windows	Buildings with operable windows to increase the supply of high-quality outdoor air and promote a connection to the outdoor environment, by encouraging building users to open windows when outdoor air quality is acceptable.	Bates Smart	A - 9.2C Natural ventilation GS CW: (Additional) WELL requires specific percentages of windows and includes considerations for air quality and universal design	Meet these requirements in the whole building
		2		2		A07.2	Manage Window Use		Bates Smart	A - 5.1 Environmental Fitout Performance GS CW: (Additional) WELL requires specific air quality parameters to be met	
0.5				0.5	**Air Quality Monitoring and Awareness**	A08.1	Install Indoor Air Monitors	Ongoing measurement of contaminant data to educate and empower occupants about their environmental quality.	LCI		Meet these requirements in non-leased spaces
1				1		A08.2	Promote Air Quality Awareness		LCI		
2				2	**Pollution Infiltration Management**	A09.1	Design Healthy Entryways	Reduce transmission of air and pollutants from outdoors to indoors through the building envelope and entrance.	Bates Smart	E - 2.2 Building commissioning GS CW: Part 1a only	Meet these requirements in the whole building. Doors that open directly from the pedestrian network to a single tenant (in a multi-tenant project) do not need to comply
	2			2		A09.2	Perform Envelope Commissioning		Apex		Best practice Verify if this is a substantial challenge Meet these requirements in the whole building.

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Gold Achievability

Certified 40 to 49 Silver 50 to 59 Gold 60 to 79 Platinum 80 +

Achievability rating: **Hi** = 90%, **Med** = 60%, **Low** = 10%, **NP** = not possible.

Hi	Med	Low	No	Total	
76	24	8	0	108	Projected Points
90%	50%	10%	0%		% prob
85	48	84	19	235	Subtotals
Hi	Med	Low	No	Possible	

2				2	**Combustion Minimisation**	A10.1	Manage Combustion	Utilise low-emission combustion products or eliminate combustion-based products entirely.	LCI		Outcome of all electric building for net zero carbon purposes Meet these requirements in the whole building.
0.5				0.5	**Source Separation**	A11.1	Manage Pollution and Exhaust	Strategies that isolate key sources of odours, germs, pollution or humidity through doors or dedicated exhaust.	LCI	E - 9.3 Exhaust or elimination of pollutants	Meet these requirements in non-leased spaces
2				2	**Air Filtration**	A12.1	Implement Particle Filtration	Mechanically ventilated spaces to implement adequate air filtration and document a maintenance protocol for installed filters.	LCI		Pursue to manage bushfire smoke Design with bypass to minimise energy penalty when outdoor air is clean Meet these requirements in the whole building. Up to 10% of the total area occupied by tenants can be excluded from the feature scope
	2			2	**Enhanced Supply Air**	A13.1	Improve Supply Air	Use supply air that is not recirculated or that is treated with carbon filters, media filters and/or Ultraviolet Germicidal Irradiation (UVGI).	LCI		Post COVID design expectation. Requires more energy and space Meet these requirements in the whole building. Up to 10% of the total area occupied by tenants can be excluded from the feature scope
	2			2	**Microbe and Mold Control**	A14.1	Implement Ultraviolet Treatment for HVAC Surfaces	Utilise UVGI systems and/or conduct regular inspections on components of the cooling system to reduce or eliminate growth of microbes and mold.	LCI		We'll get this credit if we purse 13.1 (using UV treatment) Meet these requirements in the whole building. Up to 10% of the total area occupied by tenants can be excluded from the feature scope.

12	6	0	0	18	**Water**	**Link**		**Explanation**	**Responsible Party**	**Alignments**	**Comments**
Y	-	-	-	-	**Water Quality Indicators**	W01.1	Verify Water Quality Indicators	Water that meets thresholds for turbidity and coliforms for all water likely to come in contact with building occupants and verifies performance using on-site tests.	NDY		Meet these requirements in the whole building

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Hi	Med	Low	No	Possible							
Y	-	-	-	-	**Drinking Water Quality**	W02.1	Meet Chemical Thresholds	Provide drinking water that meets thresholds on chemicals as published by research and regulatory organisations.	NDY		Meet these requirements in the whole building. Water will be sampled from non-leased spaces and the project must either: 1. Confirm that the same water treatment system (if applicable) will be used in all leased spaces. 2. Provide an allowance to tenants to purchase the same type of treatment system (if applicable) in leased spaces. If there is no water supply in non-leased spaces, water will be sampled from leased spaces.
Y	-	-	-	-		W02.2	Meet Thresholds for Organics and Pesticides		NDY		
Y	-	-	-	-	**Basic Water Management**	W03.1	Monitor Chemical and Biological Water Quality	Proactively test drinking water and to manage recirculating hot water systems against Legionella colonization.	NDY		Meet these requirements in non-leased spaces
Y	-	-	-	-		W03.2	Implement Legionella Management Plan		NDY	A - 28 Microbial control GS CW: WELL requires strategies applied to in-premise plumbing systems and other sources of exposure beyond heat rejection systems	Meet these requirements in the whole building
2				2	**Enhanced Water Quality**	W04.1	Meet Thresholds for Drinking Water Taste	Provide drinking water that meets thresholds on chemicals that affect aesthetics and taste concerns.	NDY		Meet these requirements in the whole building. Water will be sampled from non-leased spaces and the project must either: 1. Confirm that the same water treatment system (if applicable) will be used in all leased spaces. 2. Provide an allowance to tenants to purchase the same type of treatment system (if applicable) in leased spaces. If there is no water supply in non-leased spaces, water will be sampled from leased spaces.

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Gold Achievability

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	2			2	**Drinking Water Quality Management**	W05.1	Assess and Maintain Drinking Water Quality	Pre-testing of water quality parameters to determine treatment needs, monitoring at a more frequent interval and disclosure of water results.	NDY	Requires drinking water dispenser or fountains and quarterly water quality testing Meet these requirements in the whole building. Project may sample water from non-leased spaces and either: 1. Confirm that the same water treatment system (if applicable) will be used in leased spaces 2. Provide an allowance to tenants to purchase the same type of treatment system (if applicable) in leased spaces. If the non-leased spaces have no water supplies, project must sample water from leased area.
	1			1		W05.2	Promote Drinking Water Transparency		NDY	Publish water quality testing results. Get this point if we pursue credit 5.1 Meet these requirements in non-leased spaces. Data displays must be placed in tenant-accessible areas or otherwise be made available to tenants
1				1	**Drinking Water Promotion**	W06.1	Ensure Drinking Water Access	Pre-testing of water quality parameters to determine treatment needs, monitoring at a more frequent interval and disclosure of water results.	NDY	Meet these requirements in the whole building. For each 930 m² of leased spaces, projects may provide one water supply and drainage point that can be connected to a drinking water dispenser, or budget to install a drinking water dispenser
2				2	**Moisture Management**	W07.1	Design Envelope for Moisture Protection	Develop strategies to minimize the presence of unintentional water and, when unavoidable, to manage it through material selection and inspections.	Apex	Meet these requirements in the whole building
2				2		W07.2	Design Interiors for Moisture Management		Bates Smart	Meet these requirements in the whole building. Feature requirements may be communicated within tenant lease agreements
2				2		W07.3	Implement Mold and Moisture Management Plan		Toga (Design and Construct)	Good practice Meet these requirements in the whole building

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90%	50%	10%	0%		% prob
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Hi	Med	Low	No	Possible	

Hi	Med	Low	No	Possible						
1				1	**Hygiene Support**	W08.1	Provide Bathroom Accommodations	Provide bathrooms that accommodate users with diverse needs and to improve hygiene by offering large sinks, soap containers, hand drying support and reduced touch points.	Bates Smart	Bathroom details to be reviewed by Bates Smart Meet these requirements for the extent of developer buildout
	1			1		W08.2	Enhance Bathroom Accommodations		Bates Smart	Requires family bathroom for public area of building (F&B) Meet these requirements for the extent of developer buildout
1				1		W08.3	Support Effective Handwashing		Bates Smart	Meet these requirements for the extent of developer buildout
1				1		W08.4	Provide Handwashing Supplies and Signage		Toga	Meet these requirements for the extent of developer buildout
	2			2	**Onsite Non-Potable Water Reuse**	W09ß.1	Implement Safety Plan for Non-Potable Water Capture and Reuse	Implement a safety plan when capturing and using non-potable water within the project boundary.	NDY	A10 to verify if purchased system water is eligible. Purse if accepted due to best practice hygiene Meet these requirements for the extent of developer buildout

2	0	12	1	14.5	**Nourishment**	Link		Explanation	Responsible Party	Alignments	Comments
Y	-	-	-	-	**Fruits and Vegetables**	N01.1	Provide Fruits and Vegetables	Provision and promotion of fruits and vegetables, if food is sold or provided on a daily basis.	Toga		Meet these requirements in non-leased spaces
Y	-	-	-	-		N01.2	Promote Fruit and Vegetable Visibility		Toga		
Y	-	-	-	-	**Nutritional Transparency**	N02.1	Provide Nutritional Information	Provision of detailed nutritional information, calorie labelling for standard menu items and sugar content labelling for all foods and beverages sold or provided on a daily basis.	Toga		Meet these requirements in non-leased spaces
Y	-	-	-	-		N02.2	Address Food Allergens		Toga		
Y	-	-	-	-		N02.3	Label Sugar Content		Toga		
		1		1	**Refined Ingredients**	N03.1	Limit Total Sugars	Adequately limiting sugar and refined grains in all foods and beverages.	Toga		Meet these requirements in non-leased spaces
		1		1		N03.2	Promote Whole Grains		Toga		
		1		1	**Food Advertising**	N04.1	Optimize Food Advertising	Healthy food advertising and nutritional messaging.	Toga		Meet these requirements in non-leased spaces
		1		1	**Artificial Ingredients**	N05.1	Limit Artificial Ingredients	Label and phase out or restrict artificial ingredients.	Toga		Meet these requirements in non-leased spaces
		1		1	**Portion Sizes**	N06.1	Promote Healthy Portions	Reduced-size food options when food is sold or provided and limits dishware sizes when food is self-serve.	Toga		Meet these requirements in non-leased spaces

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90%	50%	10%	0%		% prob				
85	**48**	**84**	**19**	**235**	Subtotals				
Hi	Med	Low	No	Possible					
		1		1	**Nutrition Education**	N07.1	Provide Nutrition Education	Provision of nutrition education.	Toga	Meet these requirements in the whole building. Education must be made available to all tenants
		1		1	**Mindful Eating**	N08.1	Support Mindful Eating	Dedicated eating space that contains tables and chairs and the provision of daily meal breaks.	Toga	Meet the Dedicated eating space requirements for building management staff and meet the Daily meal break requirements for direct staff
		1		1	**Special Diets**	N09.1	Accommodate Special Diets	Provision of meal alternatives and food allergen labelling.	Toga	Meet these requirements in non-leased spaces
		1		1		N09.2	Label Food Allergens		Toga	
		0.5		0.5	**Food Preparation**	N10.1	Provide Meal Support	Food preparation area, storage space and other amenities to support the reassembly or reheating of meals on-site.	Toga	Meet these requirements in non-leased spaces
		1		1	**Responsible Food Sourcing**	N11.1	Implement Responsible Sourcing	Sourcing and labelling certified organic and certified sustainable foods.	Toga	Meet these requirements in non-leased spaces
			1	1	**Food Production**	N12.1	Provide Gardening Space	Provision of space, infrastructure and tools for on-site food production.	Toga	Meet these requirements in non-leased spaces
2				2	**Local Food Environment**	N13.1	Ensure Local Food Access	Take into consideration the local food environment during site selection or programming.	Toga	Based on project location near food markets Meet these requirements in the whole building
		1		1	**Red and Processed Meats**	N14ß.1	Limit Red and Processed Meats	Providing plant-based food options, limiting the portion size of red meat and decreasing the prominence of red and processed meats.	Toga	Meet these requirements in non-leased spaces
4.5	**5.5**	**7.5**	**0**	**17.5**	Light	Link		Explanation	Responsible Party	Alignments	Comments

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Y	-	-	-	-	**Light Exposure**	L01.1	Provide Indoor Light	Provide appropriate light exposure in indoor environments through lighting strategies.	LCI	E - 12.1 Daylight	Meet these requirements in the whole building. Projects pursuing daylighting options are required to meet the requirements in each floor or for each tenant, whichever is smaller. If finishes have not finalized, projects may use the following default surface reflectances: Ceilings: 80% Floors: 20% Walls: 50% The entire floorplate, except circulation areas in non-leased spaces, is to be considered regularly occupied
Y	-	-	-	-	**Visual Lighting Design**	L02.1	Provide Visual Acuity	Provide appropriate illuminances on work planes for regular users of all age groups, as required for the tasks performed in the space.	LCI	E - 11.1.1 General illuminance	Meet these requirements in non-leased spaces
		4		4	**Circadian Lighting Design**	L03.1	Meet Lighting for Day-Active People	Provide users with appropriate exposure to light for maintaining circadian health and aligning the circadian rhythm with the day-night cycle.	LCI		Costly and not much evidence that this is meaningful in the workplace Meet these requirements in the whole building. Projects must have access to at least 10% of leased space for testing (as identified by the project). In tenant areas, if a sample furniture layout with workstations is not available, light levels must be achieved in the center of the room at a height of 140 cm
1				1	**Electric Light Glare Control**	L04.1	Manage Glare from Electric Lighting	Manage glare by using strategies, such as calculation of glare and choosing the appropriate light fixtures for the space.	LCI	W - 12.0 Glare reduction (Missing) L04.2 Manage glare from electric lighting	Meet these requirements in non-leased spaces

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76	24	8	0	108
90%	50%	10%	0%	% prob
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Projected Points

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	2	1		3	**Daylight Design Strategies**	L05.1	Implement Daylight Plan	Design spaces to integrate daylight into indoor environments, so that daylight may be used for visual tasks along with electric lighting. It also provides individuals with a connection to outdoor spaces through windows.	A10	E - 12.1 Daylight GS CW: Need to achieve 2 pt. in GS 12.1 to gain point	A10 to undertake modelling Meet these requirements in the whole building
2	1			3		L05.2	Integrate Solar Shading		A10	E - 12.1 Daylight (Missing) L05.3 Ensure views	One point for providing glare blinds on the window, and the second point is for automating blinds Meet these requirements in the whole building. Projects can either install shading in tenant spaces or provide a budget to tenants tied to the implementation of feature requirements
	2	1		3	**Daylight Simulation**	L06.1	Conduct Daylight Simulation	Conduct daylight simulation calculations to make informed decisions around fenestration and shading, so as to provide appropriate daylight exposure for occupants.	A10		A10 to undertake modelling. Meet these requirements in the whole building. If finishes have not finalized may use the following default surface reflectances: Ceilings: 80% Floors: 20% Walls: 50% The entire floorplate, except circulation areas in non-leased spaces, is to be considered regularly occupied.
	0.5			0.5	**Visual Balance**	L07.1	Balance Visual Lighting	Develop and implement strategies to create a visually comfortable lighting environment.	LCI	E - 11.1.1 General illuminance and 11.2 Surface illuminance GS CW: GS does not consider R9 when using a CRI > 80	A10 to confirm if high quality base building lighting is sufficient
0.5				0.5	**Electric Light Quality**	L08.1	Enhance Colour Rendering Quality	Take into account characteristics of electric light used in the space, such as colour rendering and flicker.	LCI	A - 11.0 Minimum lighting comfort GS CW: LED driver requirements differ	Meet these requirements in non-leased spaces
1				1		L08.2	Manage Flicker		LCI	A - 11.0 Minimum lighting comfort Crosswalks guide mis-numbers	
		1		1	**Occupant Lighting Control**	L09.1	Enhance Occupant Controllability	Implement innovative lighting strategies that take into account personal preferences of users, as well as their interaction with the physical space.	LCI	A - 11.3 Localised lighting control GS CW: GS does not consider colour temperature and colour of electric light	Meet these requirements in non-leased spaces
		0.5		0.5		L09.2	Provide Supplemental Lighting		LCI		

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13	4.5	8	0	25.5	Movement	Link		Explanation	Responsible Party	Alignments	Comments
Y	-	-	-	-	**Active Buildings and Communities**	V01.1	Design Active Buildings and Communities	Select from a series of design-based optimisations.	Bates Smart		Project will meet V03, V04, and V05 credits (more than required by V01)
Y	-	-	-	-	**Ergonomic Workstation Design**	V02.1	Support Visual Ergonomics	Provide ergonomic workstation furnishings to accommodate all users, that allow for customized workstation fit and provide user orientation to workstations covering ergonomic workstation design and adjustability features.	Toga		Meet these requirements in non-leased spaces Applies to all BOH, security base building spaces. Project strategy requires that Toga Hotels is a tenant of the base building to avoid this applying to hotel rooms
Y	-	-	-	-		V02.2	Provide Height-Adjustable Work Surfaces		Toga		
Y	-	-	-	-		V02.3	Provide Chair Adjustability		Toga		
Y	-	-	-	-		V02.4	Provide Support at Standing Workstations		Toga		
Y	-	-	-	-		V02.5	Provide Workstation Orientation		Toga		
	2			2	**Circulation Network**	V03.1	Design Aesthetic Staircases	Design staircases for everyday use and leverage aesthetics, visibility/positioning, and prompts to encourage stair use.	Bates Smart		Heritage building qualifies with amenity stair and light well. Tower should stair qualify with windows, good lighting, art, and great "experience" Fire stair access control at ground level and tenancy may disqualify this credit Meet these requirements in the whole building
	2			2		V03.2	Integrate Point-of-Decision Signage		Bates Smart		Meet these requirements in the whole building.
		2		2		V03.3	Promote Visible Stairs		Bates Smart		Tower stair probably doesn't qualify Meet these requirements in the whole building
3				3	**Facilities for Active Occupants**	V04.1	Provide Cycling Infrastructure	Provide bike storage along with showers, changing facilities and lockers, which support both active commuters and active occupants.	Bates Smart		Provide additional bike maintenance equipment Meet these requirements in the whole building
2				2		V04.2	Provide Showers, Lockers and Changing Facilities		Bates Smart	E - 17B.4 Active transport facilities	Meet these requirements in the whole building
3				3	**Site Planning and Selection**	V05.1	Select Sites with Pedestrian-friendly Streets	Demonstrate that the area around the building is fostering walkability and that the building is located near public transportation.	Toga (Design and Construct)	E - 17B.5 Walkable neighbourhoods GS CW: Pathway A is required to achieve 2 pt. in WELL	Meet these requirements in the whole building.
3				3		V05.2	Select Sites with Access to Mass Transit		Toga (Design and Construct)	E - 17B.1 Access by public transport GS CW: 3pt required from 17B.1 to achieve WELL pt.	

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		1		1	Physical Activity Opportunities	V06.1	Offer Physical Activity Opportunities	Provide no-cost physical activity opportunities led by a qualified physical activity professional.	Toga	E - 17B.5 Walkable neighbourhoods GS CW: Pathway B is required to achieve 1 pt. in WELL	Meet these requirements for building management staff
		1		1	Active Furnishings	V07.1	Provide Active Workstations	Provide ample active workstations, such as a sit-stand or treadmill desk.	Toga		Meet these requirements in non-leased spaces
	0.5			0.5	Physical Activity Spaces and Equipment	V08.1	Provide Indoor Activity Spaces	Provide access to a physical activity space at no cost through an on-site fitness facility, nearby facility or nearby outdoor spaces, such as a park.	Bates Smart		Credit met if hotel fitness facilities are available to all office workers at no charge Meet these requirements in non-leased spaces
2				2		V08.2	Provide Outdoor Physical Activity Space		Bates Smart		Proximity to Belmore Park earns the credit Meet these requirements in the whole building
		0.5		0.5	Physical Activity Promotion	V09.1	Offer Physical Activity Incentives	Provide physical activity incentives or promotion programs and monitor uptake of offerings.	Toga		Meet these requirements for direct staff
		0.5		0.5	Self-Monitoring	V10.1	Provide Self-Monitoring Tools	Provide or subsidize wearables that can monitor physical activity and health behaviours over time.	Toga		Meet these requirements for building management staff
		1		1	Ergonomics Programming	V11ß.1	Implement an Ergonomics Program	Work with a certified ergonomist to implement comprehensive ergonomics programming, commit to on-going improvements to ergonomic design and provide ergonomic support for remote workers.	Toga		Meet these requirements for direct staff
		1		1		V11ß.2	Commit to Ergonomic Improvements		Toga		
		1		1		V11ß.3	Support Remote Work Ergonomics		Toga		

0.5	7	8.5	6	22	Thermal Comfort	Link		Explanation	Responsible Party	Alignments	Comments
Y	-	-	-	-	Thermal Performance	T01.1	Provide Acceptable Thermal Environment	Create indoor thermal environments that provide comfortable thermal conditions to the majority of people in support of their health, well-being and productivity.	LCI	A - 14.1 Thermal comfort GS CW: WELL requires on-site performance verification.	Meet these requirements in the whole building. Mechanically conditioned or mixed-mode ventilated spaces must provide heating and cooling capacity in leased spaces but are not required to install ducts in leased spaces. Performance testing will be conducted in regularly occupied non-leased spaces, if present
Y	-	-	-	-		T01.2	Measure Thermal Parameters		LCI		Meet these requirements in non-leased spaces

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Hi	Med	Low	No	Possible									
	3			3	**Verified Thermal Comfort**	T02.1	Survey for Thermal Comfort	Provide high levels of thermal comfort, by determining occupant satisfaction through a survey.	Toga	Requires comfort survey of tenant and commitment to follow up if there's discomfort Potential partnership with University for verification and research Meet these requirements in the whole building. All regular occupants must be invited to participate in the survey. The scope of the survey may be limited to thermal conditions in non-leased spaces
		3		3	**Thermal Zoning**	T03.1	Provide Thermostat Control	Increase thermal control of the space, by allowing control of either the conditions of a thermal zone or movement between thermal zones.	Toga	Project approach is to provide thermally diverse zone and not individual control Meet these requirements in the whole building
		0.5		0.5	**Individual Thermal Comfort**	T04.1	Provide Personal Cooling Options	Improve thermal comfort of people in the space through the provision of personal thermal comfort devices and flexible dress codes that support individual thermal preferences.	Toga	Project approach is to provide thermally diverse zone and not individual control Meet these requirements in non-leased spaces
		0.5		0.5		T04.2	Provide Personal Heating Options		Toga	
		0.5		0.5		T04.3	Allow Flexible Dress Code		Toga	Meet these requirements for direct staff
			2	2	**Radiant Thermal Comfort**	T05.1	Implement Radiant Heating	Use radiant systems and independently controlled ventilation systems.	LCI	No need for radiant heating Meet these requirements in the whole building. Up to 10% of the total area occupied by tenants can be excluded from the feature scope
		2		2		T05.2	Implement Radiant Cooling		LCI	Would chilled beams qualify? Meet these requirements in the whole building. Up to 10% of the total area occupied by tenants can be excluded from the feature scope
0.5				0.5	**Thermal Comfort Monitoring**	T06.1	Monitor Thermal Environment	Monitor thermal comfort parameters using sensors in their buildings that can be used as feedback for building managers and users to take appropriate actions.	LCI	Good practice Meet these requirements in non-leased spaces.

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Gold Achievability					Certified 40 to 49 Silver 50 to 59 Gold 60 to 79 Platinum 80 +						
Hi	Med	Low	No	Total	Achievability rating: Hi = 90%, Med = 60%, Low = 10%, NP = not possible.						
76	**24**	**8**	**0**	**108**	**Projected Points**						
90%	50%	10%	0%		% prob						
85	**48**	**84**	**19**	**235**	Subtotals						
Hi	Med	Low	No	Possible							
	2			2	**Humidity Control**	T07.1	Manage Relative Humidity	Maintain optimum relative humidity levels that are conducive to human health and well-being.	LCI	E - 14.1.2.A Prescriptive thermal comfort	A10 to assess 98% annual business hours meet 30% RH requirement Meet these requirements in the whole building. Projects pursuing Option 1 are required to have access to at least 10% of leased space for testing (as identified by the project)

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Projected Points — Subtotals

			2	2	Enhanced Operable Windows	T08ß.1	Provide Windows with Multiple Opening Modes	Windows that can be opened at different elevations to provide desired air flow at different outdoor temperatures.	Apex	Not applicable Meet the requirements in the whole building
	2			2	Outdoor Thermal Comfort	T09ß.1	Manage Outdoor Heat	Design outdoor spaces to avoid excessive wind and manage elevated temperatures through shading or other strategies.	Bates Smart	Discuss with landscape designers Meet the requirements in the whole building
		2		2		T09ß.2	Avoid Excessive Wind		Bates Smart	To be verified by wind consultant Meet the requirements in the whole building
			2	2		T09ß.3	Support Outdoor Nature Access		Bates Smart	Meet the requirements in the whole building.

6.5	5	5.5	0	17	Sound	Link		Explanation	Responsible Party	Alignments	Comments
Y	-	-	-	-	Sound Mapping	S01.1	Label Acoustic Zones	Provide an acoustical plan that identifies sources of noise that can negatively impact interior spaces.	Renzo Tonin	E - 10.1 Internal noise levels	Meet these requirements in the whole building, based on any knowledge of anticipated uses
Y	-	-	-	-		S01.2	Provide Acoustic Design Plan		Renzo Tonin		
1.5				1.5	Maximum Noise Levels	S02.1	Limit Background Noise Levels	Prescribes maximum thresholds for ambient background noise that correspond to optimal levels of interior and exterior noise exposure.	Renzo Tonin	E - 10.1 Internal noise levels One point required from GS 10.1 to achieve WELL 3pt	Meet these requirements in non-leased spaces. Consider lobbies, hallways and corridors within non-leased spaces as Category 3
	1			1	Sound Barriers	S03.1	Design for Sound Isolation at Walls and Doors	Walls and doors meet a minimum degree of acoustical separation to provide adequate sound isolation and improve speech privacy.	Renzo Tonin	A - 10.3 Acoustic separation GS CW: WELL requires performance verification	Meet these requirements for the extent of developer buildout. Demising walls that separate tenant spaces from common areas or other tenant spaces should use the "Loud zones and other occupiable spaces" category
	2			2		S03.2	Achieve Sound Isolation at Walls		Renzo Tonin	E - 10.3 Acoustic separation Mis-numbered - WELL Manage acoustical privacy?	Meet these requirements for the extent of developer buildout. Demising walls that separate tenant spaces from common areas or other tenant spaces should use the "Enclosed Loud zones" and "All other occupiable spaces" threshold
	1			1	Reverberation Time	S04.1	Achieve Reverberation Time Thresholds	Steps be taken to address acoustical comfort, by controlling reverberation time based on room functionality.	Renzo Tonin		Meet these requirements in non-leased spaces
	1			1	Sound Reducing Surfaces	S05.1	Implement Sound Reducing Surfaces	Use of acoustic materials that absorb and/or block sound to support concentration and reduce reverberation.	Renzo Tonin	A - 10.2 Reverberation GS CW: GS applies to smaller area and lower NRC	Meet these requirements in non-leased spaces

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Projected Points

Subtotals

		2		2	Minimum Background Sound	S06.1	Provide Minimum Background Sound	Use of dedicated artificial sound to uniformly increase speech privacy between occupied spaces.	Renzo Tonin		To earn this optimisation, the requirements should be met in the whole building.
		2		2		S06.2	Provide Enhanced Speech Reduction		Renzo Tonin		Meet these requirements in non-leased spaces.
2				2	Impact Noise Management	S07ß.1	Specify Impact Noise Reducing Flooring	Manage background noise levels by demonstrating compliance with impact noise mitigation techniques.	Renzo Tonin		Tower likely to meet credit requirements Heritage building to be confirmed
3				3		S07ß.2	Meet Thresholds for Impact Noise Rating		Renzo Tonin		Meet these requirements for the extent of developer buildout
		0.5		0.5	Enhanced Audio Devices	S08ß.1	Provide Enhanced Speech Intelligibility	Implement organizational policies and provide occupants with devices that support enhanced speech intelligibility and bolster hearing accessibility in spaces intended for telecommunicating, instruction and public address.	Renzo Tonin		Meet these requirements in non-leased spaces
		0.5		0.5		S08ß.2	Prioritize Audio Devices and Policies		Renzo Tonin		
		0.5		0.5	Hearing Health Conservation	S09ß.1	Implement a Hearing Health Conservation Program	Implement organizational policies and programs that support hearing health conservation.	Renzo Tonin		Meet these requirements for building management staff

9	7	4	0	20	Materials	Link		Explanation	Responsible Party	Alignments	Comments
Y	-	-	-	-	Material Restrictions	X01.1	Restrict Asbestos	Restricts widely known hazardous ingredients in newly installed building materials, specifically asbestos, mercury and lead.	Bates Smart		Meet these requirements for the extent of developer buildout
Y	-	-	-	-		X01.2	Restrict Mercury		Bates Smart		
Y	-	-	-	-		X01.3	Restrict Lead		Bates Smart		
Y	-	-	-	-	Interior Hazardous Materials Management	X02.1	Manage Asbestos Hazards	Requires the application of practices to manage exposure risks of the hazardous building materials asbestos, lead and polychlorinated biphenyls (PCBs).	Bates Smart	E - 24.2 Hazardous materials	Meet these requirements for the extent of developer buildout
Y	-	-	-	-		X02.2	Manage Lead Paint Hazards		Bates Smart	E - 24.2 Hazardous materials	
Y	-	-	-	-		X02.3	Manage Polychlorinated Biphenyl (PCB) Hazards		Bates Smart	E - 24.2 Hazardous materials	
Y	-	-	-	-	CCA and Lead Management	X03.1	Manage Exterior CCA Hazards	Requires addressing risks associated with human exposure to chromate copper arsenate (CCA) in existing wood structures and lead in soil, playground equipment and artificial turf.	Toga (Design and Construct)	E - 24.2B Hazardous materials	Meet these requirements for the extent of developer buildout
Y	-	-	-	-		X03.2	Manage Lead Hazards		Toga (Design and Construct)	E - 24.2B Hazardous materials	
	2			2	Site Remediation	X04.1	Assess and Mitigate Site Hazards	Requires site assessment, testing and remediation for the development of contaminated sites.	Toga (Design and Construct)	E - 24.2A Site contamination	Is there any contamination to remediate? Meet these requirements in the whole building
		1		1		X05.1	Select Compliant Interior Furnishings		Bates Smart		Meet these requirements for the extent of developer buildout

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	1			1	**Enhanced Material Restrictions**	X05.2	Select Compliant Architectural and Interior Products	Requires restricting chemicals found in products commonly installed in buildings.	Bates Smart	A - 13.1 Indoor pollutants	Extensive product specification and documentation required Meet these requirements for the extent of developer buildout.
2				2	**VOC Restrictions**	X06.1	Limit VOCs from Wet-Applied Products	Requires adherence to emission thresholds for materials placed inside the building envelope.	Bates Smart	A - 13.1 Indoor pollutants	Best practice, expected of A grade and premium buildings Meet these requirements for the extent of developer buildout
2				2		X06.2	Restrict VOC Emissions from Furniture, Architectural and Interior Products		Bates Smart	A - 13.2 Engineered wood products GS CW: WELL requires compliance beyond engineered wood	
1				1	**Material Transparency**	X07.1	Select Products with Disclosed Ingredients	Requires the compilation and availability of product descriptions, with ingredients evaluated and disclosed through transparency programs.	Bates Smart		EPD should be available when we go to market Meet these requirements for the extent of developer buildout
	1			1		X07.2	Select Products with Enhanced Ingredient Disclosure		Bates Smart		Enhanced reporting should be available when we go to market Meet these requirements for the extent of developer buildout
	1			1		X07.3	Select Products with Third-Party Verified Ingredients		Bates Smart	A - 21 Sustainable products, product transparency and sustainability GS CW: requirements differ including product library	
	1			1	**Materials Optimisation**	X08.1	Select Materials with Enhanced Chemical Restrictions	Requires screening and labelling of products in accordance with programs that audit and restrict the use of hazardous ingredient contents in materials and products.	Bates Smart		Documentation intensity Product availability uncertain Meet these requirements for the extent of developer buildout
		1		1		X08.2	Select Optimized Products		Bates Smart	A - 21 Sustainable products, product transparency and sustainabilityGS CW: requirements differ including product library	
2				2	**Waste Management**	X09.1	Implement a Waste Management Plan	Requires the safe management and minimization of wastes associated with hazardous chemicals present in commonly used products.	Toga (Design and Construct)		Good practice Meet these requirements in the whole building
		2		2	**Pest Management and Pesticide**	X10.1	Manage Pests	Requires using IPM for pest control to reduce the application of pesticides and, when necessary, select low-hazard pesticides accompanied by signage detailing pesticide information at the site of application.	Toga (Design and Construct)		Good practice Meet these requirements in the whole building
	0.5			0.5	**Cleaning Products and Protocols**	X11.1	Improve Cleaning Practices	Requires the restriction of hazardous or harmful ingredients in cleaning, disinfection and sanitization products, as well as the establishment of a cleaning plan, the maintenance of a cleaning schedule and a program training for staff.	Toga		Good practice Meet these requirements in non-leased spaces
	0.5			0.5		X11.2	Select Preferred Cleaning Products		Toga		

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Hi	Med	Low	No	Possible	
1				1	**Contact Reduction**
1				1	

X12ß.1	Reduce Respiratory Particle Exposure	Requires projects to implement design and policy strategies to minimize some instances of contact with contaminated respiratory particles, as well as reduce the number of surfaces that are necessary to touch.	Toga	Post COVID expectation Meet these requirements in non-leased spaces
X12ß.2	Address Surface Hand Touch		Toga	