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SUSTAINABLE DESIGN RESPONSE TO WESTERN GATEWAY REZONING PROPOSAL

CENTRAL STATE SIGNIFICANT PRECINCT

To Whom it may concern,

1 Introduction

This response has been prepared by LCI Consultants ('LCI'). LCI is representing Atlassian in relation to 'Block A' of the Western Gateway Sub-Precinct with regard to providing technical expertise in relation to sustainability for the project.

We are in receipt of the Central State Significant Precinct 'Submissions Summary' (dated February 2020) and the Western Gateway Rezoning Proposal - Project Review Panel (PRP) report following their meeting dated 9th December. The PRP report summarises the key issues raised from the public submissions on the rezoning, and makes a series of recommendations to assist Transport for NSW (TNSW) in preparing its response to these submissions.

The purpose of this statement is to address the issue of Sustainability, and specifically provide our professional views on the comments identified in the PRPs response. The response from the PRP stated:

> *In response to the issues raised by the community and City of Sydney submissions, the panel reiterated its previous advice that the ESD performance targets should achieve a high benchmark, and confirmed that TfNSW in its response to submissions should improve the focus and commitment to sustainability in the Western Gateway and the Central SSP as a precinct wide approach with individual projects connecting into the precinct strategy.*
>
> *The panel additionally recommended that TfNSW further develop the framework for ESD in the draft Strategic Vision (and future Strategic Framework) to outline what the ambition for sustainability is for the precinct, to identify how each sub precinct can play a role in achieving sustainability outcomes and to assess what the precinct can achieve on-site and what is viable off-site to achieve ESD outcomes. The framework should be consistent with actions 68 and 69 of the Eastern District Plan which encourage initiatives to achieve net-zero emissions by 2050 and increase renewable energy generation and water efficiency in State Significant Precincts.*

More specifically, and as referenced above, the City of Sydney's submission noted the following comments in relation to the draft Western Gateway Design Guide with respect to sustainability targets and aspirations:

The Design Guide should:

- *ensure new development in the sub-precinct is to include an ESD Strategy that demonstrates how the following targets will be met:*
  o 6-star NABERS Energy Rating for commercial uses with a commitment agreement
  o 4.5-star NABERS Energy Rating for hotel uses with a commitment agreement
  o 4.5-star NABERS Water Rating for commercial uses
  o 4-star NABERS Water Rating for hotel uses
  o Platinum core and shell WELL Rating (version 2) for commercial uses
  o 6-star Green Star Design and As-Built rating (version 1.2)
- *ensure that new development achieves net zero emissions by being highly efficient and using a minimum of 100% renewable electricity and employing other strategies such as maximising on-site generation, purchasing renewable electricity generated off-site and purchasing gold class offsets for remaining energy; and*
- *ensure new development in the precinct includes an Integrated Water management Strategy.*

In response to the above. this letter seeks to:

- Provide some context to Atlassian's sustainability aspirations for the Central Precinct including energy and carbon emissions reductions, integrated water management and waste reduction and recycling.
- Confirm that the draft Western Gateway Design Guidelines provide the appropriate guidance and benchmarks from a sustainability perspective.
- Provide recommendations based on the above.

2 Atlassian's Sustainability Commitment

Sustainability is embedded in the ethos of Atlassian which has been evident in the leadership displayed by the founders of the organisation. Consequently, sustainability has been a key foundation of the project since the inception in 2017 and is seen as providing the opportunity to pave the way for the Western Gateway Sub-Precinct. Indeed, Atlassian is committed to achieving carbon neutrality by 2025 through the RE100 program which will ensure that the new development has net-zero emissions. And to complement this, their proposed development is being designed with an aspiration to reduce embodied carbon emissions by 50%.

In recognition of the importance of these values, Atlassian engaged specialists from Australia (LCI) and Europe (Transsolar) during the pre-competition stages of the project to work with the competition architects EC3 and embed these values as part of the reference design's DNA. Located in Germany, Transsolar is an internationally acclaimed climate consulting practice specialising in very low energy and carbon neutral buildings.

As part of the competitive design process for the site, the sustainability brief was used as a critical guide for competitors, and LCI/Transsolar were part of the technical team appraising the competition entries. These sustainability aspirations were also a key component of the weighting for the assessment and appraisal of the competition entries.

The response of Atlassian and the design team has been to design a unique building which is true to the holistic sustainability aspirations of the design rather than designing to achieve the specific

outcomes of a formal green building rating. Indeed, the process has been to develop the design with the highest sustainability intent and then see how it rates. The result is a building that is not chasing points but aspiring to deliver sustainable concepts which match the development's vision.

The following are some of the sustainability design strategies that are proposed or are inherent in the building design:

- The building is close to public transport
- The building supports minimal private parking
- The roof space incorporates a roof garden which improves site ecology and heat island effect
- The habitats incorporate Bio-climatic spaces with green planting to offer occupants the ability to work in a naturally ventilated and daylit environment
- The building form provides maximum summer afternoon shading to the air-conditioned spaces and promotes morning solar gain.
- Construction of Cross Laminated Timber floors within each habitat to significantly reduce the use of Portland cement and steel
- Maximisation of naturally ventilated zones with elevated air speed open to the Park zones provides occupants the ability to work outside of air-conditioned spaces within acceptable comfort bands
- Provision of 100% outdoor air to occupants at a rate greater than the minimum Australian Standard requirement
- Innovative mechanical air conditioning system using a combination of conditioned air and radiant panels providing adaptive comfort for occupants rather than homogenous temperature setpoints.
- Minimising chiller operation by using condenser water to cool radiant panels
- Natural ventilation to Youth Hostel spaces
- Avoiding on-site fossil fuel consumption by consideration of heat pumps in lieu of gas fired heat generators
- On-site power generation through application of Building-Integrated Photovoltaic arrays
- Supporting off-site renewable power generation with the ambition to meet RE100 target and achieve net zero emissions for the development.
- An integrated approach to water management and potable water reduction, including;
    - Low water consuming tapware and fixtures
    - Rainwater collection for roof planting
    - Domestic hot water generation by heat pump technology to avoid fossil fuel gas consumption.
    - Provision for the connection of the building to a future recycled water network, incl. dual plumbing, and safeguarding incoming service routes/connections and plant space (storage and circulation plant) for ready deployment.
- Minimising vertical transportation infrastructure by incorporating innovative twin lifting technology
- Recycling at least 90% of waste generated during demolition and construction.

- Operational waste reduction and recycling including food rescue and donation, container deposit scheme collection and the separation of organics and comingled recyclables like cardboard, glass, metals and paper.

The above list demonstrates some of the proposed sustainability attributes of the design. These attributes contribute to the sustainability story of the building; however, they may not necessarily translate into a high rating score for any or all the various Sustainability Rating tools.

Indeed, this approach has demonstrated that despite all design decisions being based on what is best for building, the overarching sustainability intent supports the Western Gateway Guidelines.

3 Sustainability Targets for the Western Gateway Sub-Precinct

Western Gateway Design Guidelines have been released in Draft form by TNSW to provide a statutory framework/guidance that support sustainability aspirations for the precinct in alignment with industry 'best practice'.

In our view, and in response to the feedback from the PRP, we are generally in **agreement that the proposed ESD performance targets in the draft Design Guidelines will "achieve a high benchmark", and provide a strong "focus and commitment to sustainability" in the precinct as required by the PRP**.

However, some of the minimum targets proposed pose an unreasonable challenge in the context of this development.

3.1 NABERS Energy

The City of Sydney sets bold targets for energy efficiency in its 2012 DCP (updated in August 2018) which include a peer-reviewed NABERS Energy Commitment Agreement of at least 5.5 Stars prior to CC approval. This target is one of the highest of all planning jurisdictions in Australia and to exceed this requirement and achieve a 6 Star NABERS Energy rating is rare because the scale beyond 5 Stars becomes non-linear and equipment efficiency improvements become less effective in increasing the rating.

As of April 2020 there are only 3 projects in the Sydney CBD that have achieved a 6 Star rating without the use of Green Power (only 12 across the whole country). One is a small A-Grade building with little external fabric and the other two are low rise waterfront buildings with access to harbour cooling. These buildings are not directly comparable to the Atlassian Central Development and therefore idealised assumptions about occupant behaviour and operation must be made. This is even more challenging in a building that incorporates innovative mixed mode and natural ventilation features that rely on all tenants committing to fully utilising adaptive comfort behaviours.

3.2 NABERS Water

The proposed target of 4.5 Star for NABERS Water is also aspirational and not yet widely achieved. Only a small number of commercial buildings in Sydney have achieved a 4.5 Star rating or better (just one 5 Star rating) and of that number;

- Approximately a quarter have no co-incident NABERS Energy rating, suggesting high water efficiency but no energy efficiency.

- Nearly a third have harbour heat rejection systems, rather than conventional cooling towers, significantly reducing water usage.
- At least one building has a recycled water treatment plant that minimises potable water use.
- More than half are low-rise buildings with less than 20,000sqm of NLA with large roofs for rainwater capture and, in some instances, air cooled plant that does not consume water for heat rejection.

Site constraints and the tall form of the building preclude many of these opportunities, making a 4 Star NABERS Water rating a more realistic target for larger commercial towers. The areas of naturally ventilated and mixed mode air conditioning should minimise heat rejection water demand and the vegetated and landscaped areas of the building will be drained to a rainwater tank for irrigation and WC flushing. Additionally, the building will include dual reticulation of potable and non-potable water to allow the development to access any recycled water network in the future which will deliver an immediate and measurable improvement in NABERS Water rating.

3.3 WELL Rating

The US developed Health and Wellbeing rating, WELL, is relatively new to Australia and as of April 2020 there are only 18 certified projects in the whole country, making it a relatively boutique offering. Nearly half have been delivered by Lendlease and the remainder by a select number of developers. Half of the projects are “Core and Shell” meaning not all WELL ‘’concepts’’ are applicable and the other half of the certified projects are interior fitouts with a strong tenant commitment. In many instances the Core and Shell and Interior Ratings are within the same building, effectively “double-dipping” which further reduces the number of unique Australian projects.

The Atlassian Central Development is not targeting a WELL Platinum Core and Shell rating for the commercial component, as an assessment of the WELL rating scheme demonstrated that many concepts were not compatible at this stage with the development’s current design. Many WELL concepts reward tenant HR policies and operational provisions that do not influence the base building design. Some WELL concepts relate to external influences that are hard to design for, such as municipal water quality criteria (i.e. no fluoride) and outdoor pollution from the absence of catalytic converters on passing buses and trucks.

By contrast, the Green Star Design and As-Built rating scheme includes criteria that reward design features that support the wellbeing of occupants and is well understood by industry. Atlassian Central Development’s 6 Star Green Star pathway includes 15 of the 17 points available for the Indoor Environment Quality category and include Transport category credits that promote health and wellbeing such as End of Trip facilities and a high Walkability score.

4 Conclusions and Recommendations

The framework for the competition has produced an exceptional architectural design response which reflects the sustainability aspirations and draft design guidelines framework.

The successful scheme represents a significant step up in design quality which puts sustainability at the fore front of the design. There is ongoing refinement and technical work as part of the design development to ensure that the ESD principles are embedded in the future DA.

The high performance level of the building will be realised through the application of a high performance double operable façade, innovative low energy air conditioning system, significant areas of natural ventilation to the tower, integrated on-site renewable power generation, a low carbon timber structure, and a commitment to off-site renewable power.

We note that Atlassian are seeking to lodge a DA in mid-2020 which ensures that Atlassian can provide a technology anchor for the Central Station Precinct by 2024.

In summary, our recommendations are as follows:

- **That the draft design guidelines in respect of ESD (with the exception of the proposed WELL rating) be adopted as drafted.**
- **That the WELL rating not be adopted for the reasons stated above.**
- **That the recommendations for a 5.5-star NABERS Energy and 4 star NABERS Water Ratings for commercial use be adopted, given the ability for these to be practically achieved on the site.**
- **Endorse that the draft design guidelines should in any event encourage that these targets are simply minimums that applicants should strive to exceed wherever practically possible.**

Yours faithfully,

Lester Partridge
Director
LCI