
City of Melbourne Proposed Planning Amendment C376

INDEPENDENT EXPERT STATEMENT

Prepared by:

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2. Introduction:

2.1 QUALIFICATIONS AND EXPERIENCE:

I have over 25 years of sustainable engineering and ESD consulting experience including project work in the UK, Europe, MENA region, Russia, China, US and Australia. I have spent the last 9 years as a Director of ESD consulting practice, Atelier Ten, in Melbourne and have extensive experience of project work including planning applications in the City of Melbourne. Most recently I have moved into a new role as Sustainability Lead across the Australia and New Zealand region for Grimshaw Architects.

My key qualifications are:

MA (Cantab), Dip Arch, PGDip Eng, MCIBSE, MAIRAH, Green Star Accredited Professional

Please refer to my CV included in Appendix A

2.2 ESD EXPERTISE STATEMENT:

My career path has been within the field of sustainable building design consulting, with a particular field of expertise covering Environmentally Sustainable Design (ESD) consulting. I have a broad, holistic understanding of sustainability best practice in the built environment within the following areas:

- Carbon emissions reduction
- Passive design
- Energy efficiency
- Water efficiency
- Water sensitive urban design
- Sustainable materials
- Waste management.
- Climate adaptation and resilience
- Health and well-being principles
- Sustainability benchmarking systems, e.g. Green Star, NABERS

I note the following specialist subject matters outside of my area of expertise:

- Transport planning.
- Fire safety and fire engineering.
- Structural engineering
- Ecological consulting
- Civil engineering and Flood Risk modelling

2.3 SCOPE OF THE REPORT:

It should be noted that my role as an independent expert advisor to the City of Melbourne commenced after the proposed amendment C376 had already been publicly exhibited between 2nd March and 17th April 2023. The general scope and structure of this report reflects the instructions set out in the 'Letter of instructions to prepare independent expert evidence Amendment C376 to The Melbourne Planning Scheme – Environmentally Sustainable Development', that was provided by the City of Melbourne, 7th May 2024. This document is included in Appendix B

A key part of the instructions provided is to provide a statement of independent expert evidence with the following requirements:

- 'a. consider, formulate and express opinions on matters relating to your area/s of expertise, including by having regard to; the Scheme; the exhibited Amendment; relevant background material as provided in your electronic brief; a version of the Amendment that Council prepares as its preferred version of the Amendment.*
- b. consider and respond to the issues raised in all submissions to the Amendment as referred to the Panel in areas relating to your area/s of expertise (noting that some submissions may not disclose any substantive matters to respond to).*
- c. be prepared in accordance with the Practice Note 1: Expert Evidence, published by Planning Panels Victoria (a copy is enclosed in your brief).'*

Further to the letter of instructions, an email was received from the City of Melbourne on 13th May 2024, attached as Appendix C. This instruction was to have regard to the version to be prepared by the City of Melbourne for presentation to the Future Melbourne Committee on 21st May 2024. This version is referred to as the "FMC Version".

Additionally, another email was received from the City of Melbourne on 29th July 2024 with instruction to respond to a recent submission from Ark Resources and to have regard to each of the issues in the initial submission #50 from Ark Resources.

It should also be noted that prior to the above instructions to provide an independent expert statement, I was initially instructed by the City of Melbourne to provide a preliminary opinion on the proposed Amendment C376 on 28th July 2023 according to the City of Melbourne document 'Brief to Expert – Environmentally Sustainable Design'. A copy of this brief has been included as Appendix D and the preliminary opinion has been included as a report as Appendix E.

My expert review has been carried out within the context that in 2019, the City of Melbourne declared a climate and biodiversity emergency, recognising that a temperature rise above 1.5°C would cause major and irreversible damage to the city and its ecosystem. Further to this, in 2020, the City of Melbourne endorsed the acceleration of the ten priority actions to respond to the climate and biodiversity emergency including mandating greening and zero emission buildings through the Planning Scheme. The stated aim of the measures introduced through Section 1.0 Design Objectives of the proposed DDO73 are noted as:

- 'To ensure buildings are energy efficient and align with the City of Melbourne's target of zero emissions by 2040.
- To increase the quantity, quality and distribution of green cover to improve urban cooling and biodiversity outcomes.
- To support opportunities for precinct scale environmentally sustainable design outcomes, including the transition to a circular economy.
- To ensure the design, construction and operation of buildings addresses climate change impacts, including water shortages and the urban heat island effect, and minimises impacts on the local environment, including through waste management and resource recovery. '

2.4 KEY DOCUMENTS:

The key documents that have defined the scope of this independent expert statement, as listed above are:

- Initial instruction document, 'Brief to Expert – Environmentally Sustainable Design', 28th July 2023
- 'Letter of instructions to prepare independent expert evidence Amendment C376 to The Melbourne Planning Scheme – Environmentally Sustainable Development, 7th May 2024
- Email instruction update, 'Amendment C376melb - Update regarding Future Melbourne Committee meeting', 13th May 2024

The key exhibited documents and materials that have been reviewed for formulating the independent expert statement are summarised as follows:

- Proposed Amendment C376 exhibition documents, including policy ordinance mapping and Incorporated Document. In particular I have reviewed:
 - Proposed amendments to Melbourne Planning Scheme Clause 02.03 Strategic Directions, 15.01 Built Environment, 19.03 Development Infrastructure, Zone Schedules, DDO73 and Schedules to Clauses 72.03, 72.04 and 72.08.
 - The focus of my review has been the proposed DDO73 section, since this contains the detail and targets that are the most specific, impactful and relevant to my field.
- Background documents, particularly:
 - Green Our City Strategic Action Plan, Strategic justification for regulatory requirements for sustainability, Arup, 18th October 2019
 - Sustainable Building Design, Planning Scheme Amendment C376, Background Report, September 2020 Climate Change Mitigation Strategy to 2050, City of Melbourne, December 2018
 - Report to the Future Melbourne (Environment) Committee, City of Melbourne's response to the Climate and Biodiversity Emergency Declaration, 18 February 2020
- Supporting documents, particularly:
 - Green Our City Strategic Action Plan, Economic Feasibility Testing, HillPDA, 18th November 2020
 - Green Our City Action Plan – Draft Planning Requirements 5 Additional Sites, HillDPA, February 2022
- Other documents, particularly:
 - Scenario Testing Report, Green Infrastructure Assessment Tool, Hip v Hype, May 2020
 - 230802 - DRAFT Amendment C376 Planning Application Case Studies, City of Melbourne, 02/08/23 REV A
 - Received public responses to the proposed Amendment comprising a total of 73# submissions.
 - The current City of Melbourne preferred amendment proposal, 21 MAY 2024 FMC VERSION OF ORDINANCE, presented to the Future Melbourne Committee (FMC) 21st May 2024. This document is referred to in this report as the 'FMC version.'

2.5 RECOMMENDATIONS SUMMARY

I commend the work that has been undertaken by the City of Melbourne and their wider team, and am supportive of the proposed planning amendment C376. It represents a significant improvement to the current planning scheme, bringing it in line with their stated objectives to address the declared climate and biodiversity emergency with a focus on net zero carbon emissions, increasing green cover and supporting general building and precinct scale ESD improvements to mitigate and adapt to future climate change impacts.

2.5.1 Key Recommendation:

My full support for the FMC version of the proposed amendment is subject to a recommended addition to the wording of DDO73, Table 2. I recommend that for developments that are greater than 5,000m², the Credit Achievement Performance for the Green Star Buildings NABERS Commitment Agreement Pathway of Credit 22: Energy Use, is specifically referenced for the Minimum (mandatory) performance.

A suggested wording around this for use in the Minimum (mandatory) field, using similar language the City of Melbourne has already adopted in FMC version would be:

'For all uses other than dwelling, a NABERS Energy Commitment Agreement must be entered into unless it is demonstrated to the Responsible Authority to be unavailable for the relevant use.'

A Green Star Buildings rating with Credit Achievement Performance via the NABERS Commitment Agreement Pathway of Credit 22 Energy Use, unless it is demonstrated to the Responsible Authority to be unavailable for the relevant use type.'

An approach consistent with the above should be also used for the Preferred performance requirements of Table 2, which would need to achieve the 'Exceptional Performance' requirements of the credit.

2.5.2 Other Recommendations

The following recommendations are provided to bring further non-critical improvement to the scheme. Further detail on the rationale supporting these recommendations can be found within the body of the report. My full support is not conditional on the following recommendations being incorporated into the final version of DDO73.

2.5.2 (a) With reference to the FMC version of DDO73, Table 1, for new buildings of equal to or less than 5,000m² or buildings and works between 1,000 – 5,000m² additional floor area, the minimum (mandatory) BESS target is too low to be in line with best practice. I recommend that a minimum 60% BESS score be considered.

2.5.2 (b) With regards delivering a better presentation of intentionality around minimum energy standards for developments that are greater than 5,000m² I recommend that the City of Melbourne considers inserting the explicit NABERS targets it requires into DDO73, Table 2.

'Minimum targets are set for the following class types:

- *Class 3 Hotels – 4.5 Star*
- *Class 5 Offices – 5.5 Star*
- *Class 6 Shopping Centres – 5 Star'*

As an alternative to this, the addition of the following text could be considered, which more clearly states that the minimum requirements are aligned to those set out in Green Star:

'NABERS targets to align with the nominated minimum threshold requirement of Green Star Buildings Credit 22 Energy Use, NABERS Commitment Pathway.'

2.5.2 (c) For the avoidance of any doubt on how the urban heat island response calculation method outlined in the FMC version of DDO73, Table 5 is carried out, I recommend that some example calculations be provided in supporting guidance notes. In particular, it would be helpful to have example diagrams to clarify how PV panel and façade areas should be included in the calculation.

2.5.2 (d) With reference to the FMC version of DDO73, Table 7, I recommend inserting an explicit reference to targeting WC flush water demand as part of the preferred requirement for 'All development' types. The recommended wording of this explicit reference can be made as an amendment to the second bullet point in Table 7, covering 'All development' types, as follows:

'Should use alternative sources such as recycled water or rainwater for all non-potable uses on site, including consideration of WC flush.'

2.5.2 (e) With reference to the FMC version of DDO73 Table 7, for large developments of more than 5,000m² and buildings and works which result in between 1,000m² – 5,000m² I recommend the wording 'Must achieve the best practice water quality performance objectives....' Rather than the FMC version proposed 'Should achieve...' so that these best practice standards are mandated rather than optional. Additionally, MUSIC should be referenced as the mandatory modelling for those larger developments.

2.5.2 (f) With reference to the FMC version of DDO73 Table 7 and the Reducing Water Use criteria of Green Star Buildings Credit 25 that is applicable to developments greater than 5,000m², I recommend an increase to the potable water saving target. The FMC version currently proposes meeting the Green Star Buildings Minimum expectation of 15% potable water saving compared to a reference building. I recommend that a higher target, such as 30%, be considered.

2.5.2 (g) I recommend that a preferred requirement to address embodied carbon reduction should be made explicit. This could be achieved by introducing a new section titled, 'Embodied Carbon' with the wording 'All new developments should demonstrate a 20% upfront embodied carbon reduction target relative to a reference case', or similar.

2.6 PROVISIONAL OPINIONS NOT FULLY RESEARCHED.

With reference to the recommended minimum 60% BESS score in Table 1, for new buildings of equal to or less than 5,000m² or buildings and works between 1,000 – 5,000m² additional floor area, this is based on experience of what would be a more appropriate minimum benchmark. Further testing of BESS scores and their alignment to the equivalent best practice established for larger developments should be undertaken.

The recommendation above to set a more ambitious potable water saving standard for 30% with reference to the use of the Green Star Water Use Calculator is a provisional recommendation based on experience as to what would be the right level of ambition as a minimum standard – further scenario testing on different building typologies should be carried out to fine-tune this target.

With reference to Table 7, my recommendation to retain the wording from the exhibited version 'Must achieve the best practice water quality performance objectives....' Rather than the FMC version proposed 'Should achieve...' so that these best practice standards are mandated, is not supported by experience or analysis to demonstrate that this is possible or reasonable for all projects and typologies. Further scenario testing by a water treatment engineering specialist is advisable to confirm this.

Further to this, my recommendation to set a preferred requirement for all new developments to achieve a 20% upfront embodied carbon reduction relative to a reference case is also a provisional recommendation based on a minimum that would seem to be about the right level and in accordance with the Green Star Buildings Climate Positive Pathway requirements. Further scenario testing would be required to test this on different building typologies to test appropriateness and fine-tune.

3. Review Methodology

3.1 ANALYSIS OF SUBMISSION RESPONSES AND KEY THEMES

The structure of this independent expert evidence statement has been formulated around the key commonly raised issues within the public consultation submission responses. Having had due regard to all the submissions, the following common issues are identified as most having significance and relevance to this statement. These comments are therefore addressed as the collective themes as follows:

Key Submission Feedback Themes:

Submission references

Reference DD073 Table 1 & 2 supplementary notes:

#50, #53, #72

There is concern over the practicality of requiring applications to achieve preferred standard unless it is demonstrated that they are not 'technically achievable' or 'economically feasible'.

Reference DD073 Table 1 supplementary notes:

#66

The submission of certified Green Star rating within 12 months of occupancy presents concern that it is too short a time period and does not align with Green Building Council of Australia (GBCA) requirements

Reference DDO73 Table 2:

#6, #50, #65, #66

There is concern over applicability of NABERS rating target to different building typologies other than offices

Reference DDO73 Table 2:

#65

There is uncertainty over how to adequately demonstrate NABERS target commitment of applicant at planning application stage

Reference DDO73 Table 2:

#68

Clarification on whether Green Power is permitted as part of the NABERS rating is suggested.

Reference DD073 Table 2:

#68

There is concern that the requirement for submission of a NABERS rating within 24 months of occupancy may be too short a time bearing in mind that NABERS data collection cannot be commenced until a building is 75% occupied for a continuous period of 12 months

Reference DD073 Table 5:

#5, #57

Clarification of the mandatory urban heat island response requirements is suggested, specifically further information on what is included and excluded from area calculations.

Reference DDO73 Tables 5:

#33

Limitations on site space availability:

DDO73 Table 5 – Must provide the equivalent of at least 75% of the development's total site area as building and landscape elements that reduce the impact of the urban heat island effect.

Reference DDO73 Table 7:

#5, #32

The proposed wording allows potential for selection of rainwater re-use for irrigation OR 10% internal usage which may mean that landscape irrigation is favoured over installing internal pipework for flushing or other demands

General matter:

#6, #54, #57

There is a lack of direct wording to directly address the reduction of embodied carbon in proposed developments.

4. Expert Commentary

4.1 EXPERT OPINIONS

4.1.1 Generally:

I am satisfied that on the basis of the City of Melbourne's stated aims to respond to the declared climate and biodiversity emergency with a focus on net zero carbon emissions, increasing green cover and supporting general building and precinct scale ESD improvements to mitigate and adapt to future climate change impacts, that there is a sound basis for the measures that are proposed. They are commensurate with lifting the environmentally sustainable design and construction outcomes of the city in line with an appropriate level of ambition and step-change. I am supportive of the proposed amendment C376 with one key conditional recommendation and a number of other non-critical recommendations to improve the scheme as outlined in section 2.5.

The considerations that have gone into making the recommendations in section 2.5 are laid out in the section below which addresses the key themes raised by the public submissions to the amendment.

4.1.2 Specific Issues raised from public consultation period submissions:

The following section of the independent expert opinion statement addresses each of the key matters identified in the summary table in Section 3 above. These matters have been reviewed in terms of how adequately the exhibited proposed scheme amendment C376 addresses the matter. In addition, I have also reviewed how the currently proposed FMC version of the proposed Amendment, and any relevant changes that have been made, address the matter. Lastly, I have stated my opinion of whether the matter is adequately addressed or whether there is any further recommended action to be taken.

4.1.2a Reference DD073 Table 1 & 2 supporting notes:

There is concern over the practicality of requiring applications to achieve preferred standard unless it is demonstrated that they are not 'technically achievable' or 'economically feasible'

Commentary on the exhibited DDO73:

I am supportive of City of Melbourne's ambition to have preferred ambitious standards that are higher than the mandatory standards that are set out. There is, however, a notable challenge to achieving these preferred standards, particularly Green Star 6 Star and NABERS 6 Star in that they are generally accepted as commensurate with world leadership in sustainability and would represent a big step change for most developments. It is therefore likely that there would be a high volume of applicants submitting information to demonstrate that the preferred standards are not 'technically achievable' or 'economically feasible'. This would likely require a considerable step change in City of Melbourne workload to review the additional submitted material. Furthermore, there would also be ambiguity in interpreting what constitutes what is 'technically achievable' or 'economically feasible'. In practical terms this raises risk of delays and inconsistencies in processing planning applications.

Proposed changes within the City of Melbourne preferred FMC version of DDO73:

Within the FMC version dated 21st May 2024, the proposed wording applicable to Table 1 or Table 2 preferred standards, 'unless it is demonstrated to the satisfaction of the responsible authority that the delivery of the preferred standard is not technically achievable' and the wording, 'unless it is demonstrated to the satisfaction of the responsible authority that the

delivery of the preferred standard is not technically achievable or economically feasible' is proposed to be removed.

Instead, a clause in section, 6.0 Decision Guidelines, has been amended so that the onus is on the City of Melbourne to consider in the case of projects that are 'large in a scale or a landmark, or if the land is in public ownership or proposed for a public use, whether the following matters impede achieving a preferred standard in Table 1 or Table 2:

- Site context
- Technical impediments
- Economic impacts

Commentary on proposed change:

Whilst the preferred standards remain in place, this change is likely to significantly reduce the paperwork burden on applicants and City of Melbourne review requirements generally. However, it will also allow City of Melbourne officers to focus on interrogating key projects that are in the public interest and arguably have a greater role in demonstrating world leadership in sustainability. The clause in section 6.0 Decision Guidelines serves to communicate to applicants that City of Melbourne officers are obliged to apply greater scrutiny in checking that major projects in the public interest are on track to meet the preferred standards.

Further recommendations:

The above change proposed within the FMC version May 2024 adequately addresses my concerns. No further recommendations

4.1.2b Reference DD073 Table 1 supporting notes:

The submission of certified Green Star rating within 12 months of occupancy presents concern that it is too short a time period and does not align with GBCA requirements

Commentary on the exhibited DDO73:

The City of Melbourne timescale requirement for submission of a certified Green Star rating should be aligned to that of the Green Building Council of Australia (GBCA), the governing body for Green Star certification, which is 24 months so that there is adequate time for preparation of documentation and that the process is streamlined to industry requirements.

Proposed changes within the FMC version of DDO73:

In this version the wording has been changed to 'Within 24 months of occupation of the building, or as otherwise agreed with the Responsible Authority, the development must be certified as achieving the applicable Green Star Buildings rating with the Green Building Council of Australia'.

Commentary on proposed change:

The above change addresses the noted concern.

Further recommendations:

No further recommendations.

4.1.2c Reference DDO73 Table 2:

There is concern over applicability of NABERS rating target to different building typologies other than offices

Commentary on the exhibited DDO73:

For developments greater than 5,000m² floor area, the exhibited version of DDO73 references NABERS Energy targets for all uses other than a dwelling; the Minimum (mandatory) standard being 5.5 Star, the Preferred standard being 6 Star. This grouping of 'all uses other than a dwelling' is not granular enough to be able to set NABERS targets appropriately. Whilst the prescribed minimum, NABERS 5.5 Star rating, represents local industry-accepted best practice sustainability ambition in the commercial offices market, it is harder to achieve a similar standard for buildings such as hotels or shopping centres and it would be appropriate to set a lower target here so that the step change is not as demanding. In addition, NABERS Energy is not available for all building types e.g. a laboratory, arts or culture building and it would not be possible to establish a NABERS Energy target for these typologies.

Proposed changes within the FMC version of DDO73:

The proposed changes remove a specific target for NABERS Energy but rather state that 'a NABERS Commitment Agreement must be entered into unless it is demonstrated to the Responsible Authority to be unavailable for relevant use.' I understand that the intention here is for the applicant to refer to the NABERS Energy standards that are required within the Green Star Buildings assessment, that all developments greater than 5,000 sqm are required to go through as part of the Green Star 5 Star Climate Positive Pathway. The NABERS Energy standards in the Green Star Buildings Credit Achievement and Exceptional Performance for the NABERS Commitment Agreement Pathway of Credit 22: Energy Use align with the City of Melbourne's minimum and preferred standards respectively for commercial buildings. In addition, appropriate standards for hotel and shopping centre developments are articulated. Within Green Star Buildings Climate Positive Pathway, any building typology that is not listed with an available NABERS Energy rating would still need to achieve a best practice performance of 20% improvement on minimum NCC energy performance, setting a default baseline that is generally in line with local industry-accepted sustainability ambition.

Commentary on proposed change:

The proposed change has merit in that it requires the applicant to enter into a NABERS Commitment agreement for all relevant building types. This will ensure that a robust targeting and modelling process is carried out around NABERS energy targets and will generally encourage improved energy performance in built project outcomes. Also, since DDO73 is already requiring large developments greater than 5,000m² to achieve a 5 Star Green Star rating, and within the Green Star Climate Positive Pathway there is a requirement to achieve the minimum NABERS 5.5 Energy rating for commercial office buildings required by the City of Melbourne, it also seems reasonable that specific targets are not stated. This would only work, though, if applicants are specifically required to demonstrate achievement of the NABERS Commitment Agreement Pathway of Credit 22: Energy Use within Green Star Buildings.

The advantage of deferring to Green Star in this way is that it streamlines the communication of energy targets by not having to duplicate the information within DDO73 and allows the more specific NABERS Energy targets for other building typologies that are set out within Green Star to be relevant. It also means that NABERS targets are updated by Green Star going forwards to remain current to best practice without council documents becoming superseded.

The disadvantage of this approach is that it does not explicitly set clear intentionality around the City of Melbourne's minimum energy standards for large developments.

Further Recommendations:

I understand that the intention is to remove uncertainty over how NABERS Energy targets are defined, remove potential conflict of information and confusion by deferring to Green Star as the means for setting appropriate energy performance targets. There is a risk, however, that the current wording set out in the FMC version, by not explicitly stating energy targets, allows a loophole where developers may not target the minimum NABERS Star rating, but might select the use of the alternative Reference Building Pathway for energy modelling compliance within the Green Star Buildings assessment. Although still meeting the best practice standard of a 20% energy performance improvement on the reference building - this may result in a lesser outcome than the City of Melbourne desires.

It is therefore strongly recommended that for developments that are greater than 5,000m², the Credit Achievement Performance for the NABERS Commitment Agreement Pathway of Credit 22: Energy Use, is specifically required for the Minimum (mandatory) performance within Table 2. This specific reference would go some way to remove uncertainty about how the NABERS targets are defined and address this potential loophole.

I also recommend for clarity that the wording of the DDO includes a requirement for minimum NABERS targets to align with the standards set out in the Credit Achievement Performance for the NABERS Commitment Agreement Pathway of Credit 22: Energy Use. This would better articulate a clear reference point should there be any doubt. There are two ways to do this, either explicitly stating the standards, or more clearly stating that the minimum NABERS targets must be aligned to those in the NABERS Commitment Agreement Pathway.

4.1.2d Reference DDO73 Table 2:

There is uncertainty over how to adequately demonstrate NABERS target commitment of applicant at planning application stage

Commentary on the exhibited DDO73:

Since NABERS is an energy performance benchmark that is achieved once a building is occupied and has achieved 75% occupancy and at least 12 months of continuous operation there is uncertainty in what level of performance can be demonstrated at planning application stage that will adequately demonstrate commitment to this performance on the side of the applicant. This is typically because the detailed calculations that will be required to demonstrate a predicted NABERS Energy performance will usually be generated during the Design Development and Tender stages of projects, not at the schematic design stage which is typically when planning applications are submitted. This ambiguity should be addressed to avoid uncertainty for the applicant on the nature and detail of any calculations that are required and the potential volume of work and level of technical skill for the Council review team to assess such calculations.

Proposed changes within the FMC version of DDO73:

The City of Melbourne have introduced text that states a '.... NABERS Energy Commitment Agreement must be entered into....' for developments over 5,000m². This would become the basis on which Council officers could be confident that the applicants' proposal has made an adequate commitment to meeting the minimum or preferred standard.

Commentary on proposed change:

The introduction of a NABERS Commitment Agreement requirement is an appropriate way of seeking evidence that the application is targeting the required NABERS Energy performance as it is the industry aligned pathway for stating and refining NABERS Energy targets and calculations throughout the design, construction and operation process. In addition, a NABERS Commitment Agreement would require a third-party NABERS Accredited Assessor review of the applicants' building energy performance calculations at later stages of design development or beyond to ensure that the project is tracking towards targets based on detailed and as-built documentation with the appropriate level of contingency.

This would allow the City of Melbourne to have confidence in the quality assurance process that will be followed by the applicant.

Further recommendations:

The above change proposed within the FMC version May 2024 adequately addresses my concerns. No further recommendations

4.1.2e Reference DDO73 Table 2:

Clarification on whether Green Power is permitted as part of the NABERS rating is suggested.

Commentary on the exhibited DDO73:

The exhibited version of DDO73 does not state whether Green Power is permitted as the achievement of NABERS Energy ratings which would lead to ambiguity and differing interpretation from applicants.

However, it should be noted that the NABERS rating scheme was updated in June 2023. This concern will no longer be relevant since NABERS are expiring the possibility to declare NABERS Energy ratings with Green Power, by 2025.

No further changes recommended.

4.1.2f Reference DD073 Table 2:

There is concern that the requirement for submission of a NABERS rating within 24 months of occupancy may be too short a time bearing in that NABERS data collection cannot be commenced until a building is 75% occupied for a continuous period of 12 months

Commentary on the exhibited DDO73:

It is quite possible that there may be scenarios beyond the applicant's control where a NABERS certificate cannot be achieved until after 24 months beyond initial building occupancy. In the case of a speculative development this could be due to a slow initial uptake in floor space for example.

Proposed changes within the FMC version of DDO73:

The clause beneath Table 2 has been amended to state, 'Within 24 months of occupation of the building, or as otherwise agreed with the Responsible Authority, the development must be certified as achieving the applicable NABERS star rating'.

Commentary on proposed change:

The above clause will allow flexibility for unforeseen circumstances that may restrict the NABERS certificate from being achieved and submitted to the City of Melbourne within the 24-month time frame.

Further recommendations:

No further recommendation.

4.1.2g Reference DD073 Table 5:

Clarification on the mandatory urban heat island response requirements is suggested, specifically further information on what is included and excluded from area calculations.

Commentary on the exhibited DDO73:

Table 5 outlines that all developments, 'Must provide the equivalent of at least 75% of the development's total site area as building or landscape elements that reduce the impact of the urban heat island effect.'

The way in which applicable building elements are listed is relatively non-prescriptive which would allow for the flexibility of applicants to manage the urban heat island response in a way that is appropriate to each project. However, some noted areas of ambiguity in interpreting how to respond are:

- The types of green infrastructure that are appropriate are not suggested.
- Understanding whether solar panels are intended to be included within the 75% site area calculations since high performance solar panels tend to be a dark finish and are not necessarily elements that are designed to mitigate urban heat island effect in the way that high solar reflective index material finishes are. It should also be noted that for the similar Green Star Buildings Credit 19: Heat Resilience, the guidance notes state that photovoltaic panels are to be excluded from calculation of surfaces that meet the urban heat island response requirements, whereas the City of Melbourne approach suggests they can be included.
- Inclusion of façade area within a calculation that is based on horizontal area (as viewed from above) could be a little confusing how to interpret.
- The requirements of Table 5 are similar but slightly different to the Green Star Buildings Credit 19: Heat Resilience. This would cause uncertainty to applicants of larger developments (>5,000m²) targeting the Green Star Credit 19 within their chosen pathway as to which requirements take precedent. The key difference is that the SRI value required in Table 5 is noted as 0.65 for roof, facade and hardscaping surfaces, whereas Green Star Building Credit 19: Heat Resilience requires SRI Values of 64 for a shallow roof, 34 for a steeper pitch roof, and 34 for unshaded hardscaping areas. It is also noted that the Green Star Building guidance refers to SRI as a whole number, whereas Table 5 refers to SRI as a decimal fraction.

It is appropriate to be non-prescriptive and allow applicants flexibility in demonstrating the required outcome. However, it is important to clarify whether solar panels sit within the calculation of 75% of site area equivalent compliant surfaces since they are not necessarily specified for their high SRI finish, but rather their energy generation potential. They can

however play a useful role in shading roof surfaces from the summer sun which can help with reducing building cooling loads.

The inclusion of allowing façade area within the calculation appears to acknowledge that it may not be possible to achieve the 75% equivalent site area requirement with horizontal roof surfaces and landscaped areas alone. This might be particularly the case on projects with a small footprint and high floor area which have a high servicing requirement and associated need for rooftop plant, e.g. tall towers. However, the SRI that is required for facades in the wording of the exhibited document would require an SRI of 65 or greater which would effectively limit the choice of façade finishes to only those which are white or silvery in finish. This requirement would be too onerous and restrictive on façade expression.

The rationale for why the City of Melbourne urban heat island response requirements are different to the Green Star Buildings Credit 19: Heat Resilience is not clear, particularly why a blanket SRI of 65 is required for all elements; roof, hardscaping and façade, which would be significantly more restrictive of materials selection relative to the Green Star requirements.

Proposed changes within the FMC version of DDO73:

Within the FMC version, changes have been made to align the SRI values of Table 5 with those set out in the Green Star documentation, whilst noting that the '...requirement does not apply if the development achieves a Green Star Buildings rating with at least the Credit Achievement for Credit 19: Heat Resilience of Green Star Buildings.' This is a beneficial move which means that an applicant can demonstrate that they are meeting the City of Melbourne's minimum requirements for urban heat island response by achieving the Green Star credit and avoiding any double up.

In addition, the rewording of the notes in Table 5 make it clear that solar panels are included within the City of Melbourne's equivalent site area allowance of 75% even if they are not specifically a high SRI surface finish.

Further to this the allowance of façade materials to be specified as part of the proposal to meet the 75% equivalent site area requirement is made more reasonable by allowing a minimum SRI of 34 rather than 65 as was previously stated. This will allow greater flexibility in the choice of materials to meet this requirement whilst aligning with Green Star more consistently.

Further recommendations:

I am satisfied that the changes proposed ensure better consistency and streamlining with Green Star, whilst allowing flexibility for how the urban heat island response can be demonstrated to the City of Melbourne. However, for the avoidance of any doubt on how the area calculation method outlined in Table 5 is required to be carried out, particularly for inclusion of photovoltaic panels that sit over roof surfaces and for compliant façade areas which do not sit in the same geometric plane as the site area or roof area, I recommend that some example calculations and / or diagrams be provided in supporting guidance notes.

4.1.2h Reference DDO73 Table 7

The proposed wording allows potential for selection of rainwater re-use for irrigation OR 10% internal usage which may mean that landscape irrigation is favoured over installing internal pipework for flushing or other demands

Commentary on the exhibited DDO73:

For both categories of developments, those that are greater than 5,000m² and buildings and works that are between 1,000 – 5,000m², Table 7 of the exhibited version of DDO73 states the preferred standard, 'Unless connected to a recycled water source, (developments) should install a rainwater tank to support on-site green cover or supply a minimum of 10% internal water demand.

By offering an option of either using rainwater for irrigation supply or internal demand, there is a potential that rainwater may become under-utilised, since many developers may potentially prefer to opt for irrigation systems rather than reticulate harvested rainwater to WC's internally for technical integration and/or cost saving reasons. If this were to occur, then rainwater would unlikely be utilised as effectively as it might otherwise be, to offset potable water usage. This is because the internal water demand from WC flush is generally an all-year-round constant demand whereas irrigation is seasonal and tends to be needed during periods where there is low rainfall. In the case of irrigation, this means that the profile of rainwater capture will not match the demand as effectively as it might otherwise would if connected to WC flush or other internal use.

Proposed changes within the FMC version of DDO73:

Within the FMC version, the wording '.... or supply a minimum of 10% internal water demand.' has been taken out. This would potentially further lessen the chances of rainwater being harvested for use in WC flush or other internal water demand as the explicit reference is taken out.

It is also noted for buildings and works more than 5,000m² that the clause 'Must achieve a Green Star Buildings rating with at least the Minimum Expectation for the Reducing Water Use criteria of Credit 25: Water Use of Green Star Buildings ', has been added. This effectively requires large projects to achieve a 15% water saving compared to a reference building using the Green Star Water Use Calculator. It supports the use of water saving measures including efficient fittings and the use of onsite alternative sources in meeting the target. This is not a particularly onerous target and I believe it should be readily achievable by most projects.

Further recommendations:

I recommend retaining an explicit reference to targeting WC flush water demand as part of a preferred requirement, otherwise this opportunity for potable water saving may be overlooked by applicants. The wording of this explicit reference could be made as an amendment to the second bullet point in Table 7, which covers all development types, as follows:

- 'Should use alternative sources such as recycled water or rainwater for all non-potable uses on site including WC flush.

With regard to the Reducing Water Use criteria of Green Star Buildings Credit 25, I recommend that an increase to the potable water saving target of 15% could be considered, for example to 30% to drive greater water efficiency and uptake of alternative water sources and application to WC flush supply. However, further modelling or scenario-testing would need to be carried out to determine the most appropriate minimum threshold above and beyond what Green Star already requires.

4.1.2i Reference DDO73 Tables 5 &6:

There are concerns that limited site area and rooftop space availability for some development projects may make achievement of the following requirements challenging or not possible:

- DDO73 Table 5 – Must provide the equivalent of at least 75% of the development's total site area as building and landscape elements that reduce the impact of the urban heat island effect.

Commentary on the exhibited DDO73:

For DDO73 Table 5 urban heat island requirements, there is some flexibility built in to meeting the requirement such that if it could not be achieved across all the horizontal surfaces (landscape and roof) that urban heat island mitigating finishes that are applied to the façade can also be considered as part of the calculation of compliant surface area. In addition, photovoltaic panels can also be included. This should mean that the requirements are achievable in the large majority (if not all) cases. The standard has been tested by the City of Melbourne on six case studies in their supporting information report, 'Amendment C376 Planning Application Case Studies – Audit of existing planning permit applications against proposed Amendment C376 controls. I am generally satisfied that this standard could be achieved in the vast majority, if not all cases.

Commentary on the exhibited DDO73:

With regard to DDO73 Table 5, as noted earlier in 4.1.2g, further clarification has been provided on what is included within the calculations for the urban heat island response requirements. In addition, better alignment to the Green Star Buildings Credit 19 has been also achieved through the use of SRI values that are consistent with Green Star.

Further Recommendations:

Generally, the urban heat island response target sets a level of ambition that is in line with the City of Melbourne's ambition for mitigating raised summertime temperatures to mitigate climate change effects. The targets that are set for the urban heat island response seem achievable for most, if not all, developments, and generally aligned to best practice. No further recommendations.

4.1.2j General matter

There is a lack of direct wording to directly address the reduction of embodied carbon in proposed developments.

Commentary on the exhibited DDO73:

Although the proposed planning scheme amendment does not explicitly target embodied carbon reduction, it should be noted that for new buildings of more than 5,000m² the Environmentally Sustainable Design requirement set out in Table 1 require a minimum performance of Green Star 5 Star Buildings. Within this the applicant will be required to demonstrate achievement of the Climate Positive Pathway of the Upfront Carbon Emissions Credit 21. This requires that the building's upfront carbon emissions are at least 20% less than those of a reference building and would be demonstrated using detailed modelling.

Further Recommendations:

I recommend that the requirement to address embodied carbon should be extended to all projects by adding a preferred requirement relevant to all developments such that they are required to demonstrate a 20% upfront embodied carbon reduction relative to a reference case. In this instance, larger projects would utilise the Green Star framework as part of the mandated Climate Positive pathway, while smaller projects would be required to submit a target and an action plan for achieving this goal. They would also need to perform calculations to demonstrate that this has been achieved. This would be beneficial in sending a signal to

stimulate demand consistently across the market for low embodied carbon solutions, products and circular economy outcomes in line with the City of Melbourne's stated aims and objectives.

4.2 DETAILED REVIEW OF SUBMISSION #50 AND SUBSEQUENT ARK RESOURCES SUBMISSION

In accordance with the instruction received from City of Melbourne on 29th July 2024 I have carried out a further review of the initial submission #50 from Ark Resources dated 17th April 2023.

Submission #50

Exhibited Version Reference	Submission #50 content:	My Response:
<i>General comment</i>	<i>Inappropriate standards will fail to deliver on the strategic targets that are rationale for Amendment</i> <i>Background reports do not sufficiently explain how specific standards have been derived</i> <i>Evidentiary basis for nomination as:</i> <i>Absent (BESS)</i> <i>Superseded tools (Green Star, NatHERS)</i> <i>Superficial (e.g. NABERS)</i>	The proposed tools, BESS, Green Star Buildings and NABERS are commonly accepted within the local industry and have operated for a number of years as tried and tested tools. I am satisfied that they are appropriate for use in setting targets. The benefit of this approach is that it aligns with processes that developers and design teams are already familiar with.
<i>General comment</i>	<i>Detailed quantitative analysis required of current tools and extrapolation of quantitative impact of proposed</i>	For the tools that sit behind the most significant step changes in proposed standards e.g. Green Star and NABERS for example, there has generally been a considerable body of work carried out across industry to test and quantify the level of enhanced environmental performance. For example, the difference between 5 Star NABERS Energy for offices (current standard) and the 5.5 star that is required within the exhibited version of DDO73. The City of Melbourne has also commissioned various quantitative economic scenario testing: -HillDPA reports September 2019, November 2020 and February 2022 Further to this the City of Melbourne has also commissioned various

scenario testing of the proposed step changes:

-Hip v Hype Report May 2020

- City of Melbourne Planning
Application Case Studies August 2023

- I am aware that SGS will also provide economic evidence to the panel.

The analysis work carried out by City of Melbourne seems reasonable if not exhaustive.

General comment *Omission of a Net Zero Emissions standard is peculiar given City of Melbourne aspiration to achieve in less than 20 years.*

e.g. mandatory requirements:

- *NatHERS whole-of-home*
- *NABERS Energy*
- *Climate Active standards*

The requirement for new buildings greater than 5,000m² and buildings and works that result in greater than 5,000m² additional floor area to achieve Green Star Buildings 5 Star means that they must achieve what the GBCA refer to as the 'Climate Positive Pathway'. This pathway aims to deliver buildings that are fossil fuel free, powered by renewables, highly efficient, built with lower carbon materials and offset with nature. This is well aligned to the City of Melbourne's Net Zero Emissions target, and I am satisfied with the approach that has been taken here.

With regards to smaller development typologies, I recommend that the suggested NatHERS Whole-of-Home and Climate Active standards are considered for future upgrades to the planning scheme to stay on track with the City of Melbourne's stated net zero emissions goals.

General comment *Urge nomination of a quantitative target for renewable energy which encourages and rewards optimising renewable energy*

Whilst the City of Melbourne has set out a preferred requirement for incorporating renewable energy in Table 3 it has also prioritised green space on developments. This includes consideration of green roof tops as part of the Green Our City Action Plan. With roof space being constrained, these considerations need to be balanced.

Renewable energy targets in the city may also be challenging to implement due to the number of sites in the CBD

that have overshadowing from neighbours, impacting the viability.

Generally, though, the Green Star and NABERS Energy targets that have been set for larger developments and the BESS targets that have been set for smaller developments, all encourage the uptake of renewable energy.

Also, in my experience, with an attractive return on investment most developments that I have worked on recently in Melbourne are installing and optimising photovoltaic arrays across their rooftops and in some cases facades without a nominated target.

I am comfortable that a specific target is not needed to further encourage renewable energy implementation and optimisation.

<i>General comment</i>	<i>'mandatory' and 'preferred' standards is flawed – in particular the requirement for applicants to provide a technical and financial justification in every application.</i>	Requirements for applicants to provide a technical and financial justification in every application has been removed in FMC version
<i>Environmentally Sustainable Design Table 1 - - New buildings of equal to or less than 5,000m²</i>	<i>Minimum 50% BESS Score: Preferred 70% BESS Score: No analysis has been provided to justify these BESS scores.</i>	I agree that 50% seems to be a low minimum BESS Score. I would suggest that 60% is likely a better minimum target although this is unverified and would require further testing. See recommendations in section 2.5.
<i>- Buildings and works between 1,000 – 5,000m² additional floor area</i>	<i>50% BESS is readily achieved now so the minimum should be higher and/or the BESS algorithms should be re-worked. Green Star should also be provided as an alternative to smaller scale buildings.</i>	
<i>Energy efficiency and renewable Table 2- - New buildings greater than 5,000m²</i>	<i>Minimum For non-residential: A minimum 5.5 star NABERS Energy rating The 5.5. star rating appears to be based on NABERS Office ratings</i>	Requirements are now updated, intended to reflect specific requirements as set out in Green Star for consistency. Green Star contains specific NABERS targets for specific typologies and it is assumed that further typologies will be added in the
<i>- Buildings and works greater than</i>		

5,000m ² additional floor area	and is likely to be unachievable for other building types. The spread of NABERS ratings vary significantly according to the building/rating type and should be nominated for (e.g. Hotels, Shopping Centres, Warehouses)	future as they become available through the NABERS scheme.
Energy efficiency and renewable Table 2 – Residential buildings	NatHERS 7.5/6.5: The star rating should be stipulated at 0.5 Stars above the prevailing NCC standards to stay in phase with building code standards. Whole-of-Home tool should be referenced as Net Zero target	The prescribed standards are reasonable as they represent an equivalence with some of the leading apartment developments in Melbourne. Recommend that NatHERS whole of home standard is considered for future update to set a net zero standard for residential. Additionally, the Passive House standard should also be considered for future updates.
Table 3 All developments	Should incorporate on-site renewable energy generation Should not incorporate connections to gas services or other non-renewable energy. Adopt a PV Generation intensity metric e.g. xx W/m² available roof area How is it proposed to deal with commercial gas cooking equipment?	As above for larger developments greater than 5,000m² Green Star Buildings Climate Positive Pathway requires developments to be fossil-fuel free. PV intensity metric is something that would need to be balanced against on-site greening requirements, that the City of Melbourne is prioritising, comments as above DDO73 Table 3 states that all developments should not incorporate connections to gas services. There are viable commercial alternatives for cooking equipment including electric induction.
Urban Ecology Table 6 New buildings	Must be designed and constructed to achieve a minimum Green Factor score of 0.55 using City of Melbourne's Green Factor Tool. It is unlikely that this target is feasible for single dwellings.	In FMC version DDO73 there is clause in 2.3 that allows special consideration where Green Factor is not achievable, 'having regard to the context and constraints of the site, in which case the equivalent of 40% of the total site area must be provided as green cover....' As part of the Greening our City Action Plan the City of Melbourne is aiming to encourage the update of green cover on roof surfaces, balconies, vertical surfaces in addition

to ground cover. It is a challenging target that has been tested at concept level for a single dwelling by Hip v Hype for different typologies in their report, Scenario Testing Report, Green Infrastructure Assessment Tool, May 2020

Integrated water management Table 7

- New buildings greater than 5,000m²

- Buildings and works between 1,000 – 5,000m²

Must achieve the best practice water quality performance objectives set out in the Urban Stormwater Best Practice Environmental Management Guidelines, CSIRO, 1999 (or as amended).

Make MUSIC mandatory to ensure TSS, GP and PH measured

In the FMC version I note this requirement as applied to all developments has been reduced from 'Must...' to 'Should...'. I do not recommend this change as it will make achieving the best practice standard an optional requirement rather than mandatory requirement.

MUSIC and STORM are referenced as optional modelling tools in the amended clause 19.03-3L.

For the development sizes greater than 5,000m² and between 1,000-5,000m² I agree that MUSIC is the appropriate water quality performance calculation tool that should be adopted. I agree with the recommendation that it would be better to make MUSIC a mandatory tool in this case, so that the alternative STORM tool (intended for relatively small-scale domestic development) is not mis-applied to these larger development cases. See recommendations in section 2.5.

Table 8

- New buildings greater than 5,000m²

- Buildings and works greater than 5,000m² additional floor area

Credit 25 – aim for Credit Achievement result as minimum target, Exceptional Performance preferred

NABERS water rating should be applicable to specific building type.

The Credit Achievement level for Water Use credit 25 would require a 40% reduction in potable water use relative to a reference building as modelled in the Green Star Water Calculator.

This would be a considerable step-change relative to current standards and require further testing.

The FMC version requires the Minimum Expectation level for credit 25 which is a 15% potable water use saving relative to a reference case. This seems like a relatively low bar, and I recommend that the City of Melbourne consider setting a more ambitious percentage water saving target over and above this, say 30%.

This would require further testing and fine-tuning.

Reference to NABERS Water rating is removed from the latest FMC version, which is reasonable, since the targeted potable water reduction will be covered during the design and construction process by the application of a Green Star Water Use Credit 25 target and supporting calculation process, as above.

Additionally, in accordance with City of Melbourne instructions dated 29th July 2024 I have carried out a review of the recent submission from Ark Resources, dated 23rd July 2024, as follows:

Submission 20240724 C376 Ark Resources Response to FMC Version

Submission #50 content:

'table 2 should nominate explicit 'Mandatory' NABERS star ratings for each building type AND require the NABERS pathway to be adopted within the Green Star rating;'

(related to new buildings greater than 5,000m² and Buildings and works greater than 5,000m² additional floor area)

My Response:

I concur that there should be an explicit requirement to require the NABERS pathway to be adopted within the Green Star rating and this would close the loophole of an applicant being able to potentially select an alternative path and not demonstrate the required NABERS standards.

In addition, although it is not critical to do so, I agree that it would be better to have more explicit wording around NABERS Star rating minimum requirements. (noting that these targets are otherwise covered within the relevant Green Star 5 Star or 6 Star NABERS pathways). The City of Melbourne should consider communicating more explicit NABERS targets for each building typology. This would be beneficial in demonstrating intentionality and ensure absolute clarity that the City of Melbourne have minimum energy standards expectations. I have recommended two alternative approaches for how this could be achieved. See recommendations in section 2.5.

'the NABERS ratings stipulated should align with the ratings nominated for the Credit Achievement threshold of Green Star Credit 22, given that projects registered with the GBCA for 5 star ratings from 2023 onwards are required to achieve this standard;'

Addressed by the previous comment above.

'buildings with multiple uses should be permitted to use the Reference Building pathway within Green Star Buildings as an alternative to the NABERS

I agree that some flexibility would be helpful here for exceptional projects that are a mix of uses where not all use types may be covered

pathway to avoid duplication of registration fees and modelling tasks.'

by a NABERS rating scheme, making the pathway unavailable for the building in its entirety and complicating modelling requirements. I note that wording to the effect that allows demonstration to the satisfaction of the relevant authority that the NABERS pathway may be unavailable to the relevant use types has been added in the FMC version. This seems to be a reasonable statement that would allow negotiation with the City of Melbourne around the energy modelling pathways available. In the instance where a deviation is permitted, the project would then defer to the Reference Building Pathway with a targeted 20% energy reduction in accordance with Green Star 5 Star Climate Positive Pathway requirements. See recommendations in section 2.5.

Summary of Review of Submission #50 and Subsequent Ark Resources Correspondence

I am generally satisfied that the concerns raised in Submission #50 have been addressed in the FMC version, except for those points around the BESS minimum target, NABERS requirements, MUSIC modelling which have been incorporated into recommendations in section 2.5.

With regard to the additional submission points raised by Ark Resources on 24th July, these are related to NABERS requirements and have been incorporated into recommendations in section 2.5.

4.3 FURTHER CONSIDERATIONS

A number of changes to existing planning scheme around the facilitation and delivery of more sustainable transport have been made as part of the proposed amendment C376. Transport consultancy is not my area of expertise to advise on the appropriateness of the allowances that have been made for future trends, travel patterns and greener forms of transport such as electric vehicles or E-mobility. I am aware that the City of Melbourne has engaged the services of Transport Expert, Charmaine Dunstan, for this purpose.

From a landscape design and ecology perspective and in matters relating to the application of the Green Factor Tool, I also understand that the City of Melbourne have engaged Landscape Design Expert, Mark Jacques to give advice in these areas.

For Table 1, Further testing of BESS scores against case study projects to determine a more ambitious minimum benchmark is recommended.

Should an enhancement to the Green Star Buildings Water Use credit 25 water saving target in DDO73 Table 7 be considered, further modelling or scenario-testing of typical building typologies should be carried out. The Green Star Buildings Water Use calculator should be used to determine an appropriate minimum threshold for water saving beyond the minimum 15% saving that Green Star already requires.

With reference to Table 7, my recommendation to retain the wording from the exhibited version 'Must achieve the best practice water quality performance objectives....' Rather than the FMC version proposed 'Should achieve...' so that these best practice standards are mandated, is not supported by in-depth experience or analysis to demonstrate that this is possible for all projects and typologies. Further scenario testing by a water treatment engineering specialist is advisable to confirm this.

Should a preferred requirement for all new developments to achieve an upfront embodied carbon reduction target be considered I recommend further scenario testing to be carried out to test this on different building

typologies to test appropriateness and fine-tune what would be an appropriate introductory target to the market.

There are a number of DDO73 requirements set out in Tables 1,2,5 and 7 that reference Green Star, NCC, NABERS, BESS or other standards. This approach has many benefits including avoiding conflict or duplicity with industry accepted sustainability standards, selecting standards that designers and contractors are familiar with, and being more efficient in communication. There is however a risk that the referenced external standards could develop in a way which supersedes the City of Melbourne's DDO73 or develop in a direction that the City of Melbourne may not agree with. I understand that the City of Melbourne have had discussion with external organisations as necessary to discuss the likely future trajectory of external standards, their alignment with City of Melbourne objectives, the cadence of future external standards updates and likely City of Melbourne planning scheme updates to determine the appropriate approach on deference to these standards and, thus, being able to economise on explicit detail in DDO73. My recommendation to the City of Melbourne is to continue regular dialogue with these institutions into the future to ensure that DDO73 remains aligned to City of Melbourne values and objectives.

With regards to smaller development typologies, I recommend that the suggested Passive House, NatHERS Whole-of-Home and Climate Active standards are evaluated for future upgrades to the planning scheme to stay on track with the City of Melbourne's stated net zero emissions goals.

5. Conclusion

I commend the City of Melbourne and supporting team on the work that has been carried out over the last few years to bring to fruition this updated planning scheme proposal. It is in line with their stated objectives to address the declared climate and biodiversity emergency with a focus on net zero carbon emissions, increasing green cover and supporting general building and precinct scale ESD improvements to mitigate and adapt to future climate change impacts.

Having been through a process of feedback and iteration with the City of Melbourne since my initial engagement for initial review of the exhibited document on 28th July 2023, and the improvements that have been made, I am fully supportive of the FMC version of DDO73 conditional on the key recommendation proposed in section 2.5.

6. Expert Declaration

I have made all the inquiries that I believe are desirable and appropriate and no matters of significance which I regard as relevant have to my knowledge been withheld from the Panel.

A handwritten signature in black ink, appearing to read "DERITTER", with a long horizontal stroke extending from the end.

Signed: D E Ritter

Appendix A – David Ritter Curriculum Vitae



David Ritter

MArch DipArch PGDipEng MCIBSE MAIRAH
Sustainability Lead ANZ

David joined the practice in 2024 to lead sustainability across the ANZ region. He is an interdisciplinary thinker having spent over 25 years as a sustainability specialist and leader, weaving a path between architectural and engineering practice. An innovator and natural collaborator he has a firm appreciation that the existential challenge of climate change and biodiversity emergency can only be met through industry pulling together.

Before joining Grimshaw, David founded the Melbourne office of global engineering and sustainability consultancy, Atelier Ten, giving him a deep understanding of the local planning, regulatory, commercial, technical and supply-chain opportunities and challenges for step change toward net zero carbon and regenerative design outcomes. Prior to this, he was Sustainability Director at international multi-disciplinary practice, BDP, working in the UK, MENA, Europe and China on major infrastructure, education and retail projects.

David has strong commercial and mixed-use experience and has worked on projects with leading edge sustainability ambition such as 435 Bourke St which will be one of the first towers in the world to incorporate a 'solar skin', targeting 6 Star Green Star and Net Zero certification. Furthermore David collaborated on the international competition winning entry and concept design for STH BNK By Beulah, with targets including WELL, Green Star and Passive House.

He also has extensive sustainability masterplanning experience setting out pathways toward net zero carbon, climate resilience, health and well-being outcomes for property portfolios including Ambulance Victoria, Monash University and the Victorian School Building Authority. In addition, David has been a sustainability masterplanner for large government and commercial organisations including Development Victoria and Frasers Property.

Further to this, David has specialist skills in in ultra-low energy, high-comfort building practice, having worked on a number of Passive House projects including the Bruck Building in China, Gillies Hall at Monash University, and his own home extension. He has also trained as a PH Certified Designer.

David is passionate about educating architects and engineers in integrated design practice and has led a number of successful design studios and education collaborations including the Melbourne University, ARENA and AIRAH sponsored Integrated Design Studios.

Qualifications

2010	Post-Graduate Diploma in Building Services Engineering, Brunel University
1998	Diploma in Architecture, University of North London
1994	Master of Architecture(Hons), University of Cambridge

Professional career

2024–Present	Grimshaw, Melbourne
2015–2024	Atelier Ten, Melbourne

Selected career projects

435 Bourke Street, (Cbus Property), Melbourne
STH BNK By Beulah, Southbank, Melbourne
Net-Zero Carbon Strategy (Ambulance Victoria), Victoria
Climate Resilience Strategy (VSBA), Victoria
Royal Botanic Gardens Victoria Herbarium, Melbourne
12 Riverside Quay, Southbank, Melbourne
Whitehorse Performing Arts Centre, Melbourne
Officer South (Development Victoria), Officer
Cairnlea (Development Victoria), Melbourne
WA Museum Boola Bardip, Perth
Monash University Sustainability Masterplan, Melbourne
Victoria University Health Innovation Hub, Melbourne
Gillies Hall Passive House (Monash University), Melbourne
38 Albermarle Street Multi-Residential (Assemble), Melbourne
Local Kensington Multi-Residential, Melbourne
Boronggook Drysdale Library, Geelong
234 Russell St Hotel (V-Leader), Melbourne
Rupert Street Walk-Up Village (Molonglo), Melbourne
Nunduk Retreat and Spa Masterplan, Gippsland Lakes
St Kevins College Masterplan, Melbourne
Maidstone Precinct, Frasers Property, Melbourne
Mernda Rail Station, Melbourne
Beveridge Intermodal Freight Terminal, Melbourne

Competitions and PPPs

Melbourne Metro (Plenary / Cbus PPP bid), Melbourne
La Trobe City of the Future (Plenary Group), Melbourne
Ian Potter National Conservatory (ANBG), Canberra



Monash Uni. Sustainability Masterplanning
Melbourne, Australia



Mernda Rail Station
Melbourne, Australia



Ian Potter National Conservatory (ANBG)
Canberra, Australia

Appendix B – Letter of Instructions, 7th May 2024

7 May 2024

David Ritter
Sustainability Lead
21 Bouverie Street
MELBOURNE Victoria 3000



CITY OF MELBOURNE

GPO Box 1603
Melbourne VIC 3001
Telephone (03) 9658 9658
Facsimile (03) 9654 4854
DX210487

ABN 55 370 219 287

By email to David.Ritter@grimshaw.global

Dear Mr Ritter

LETTER OF INSTRUCTIONS TO PREPARE INDEPENDENT EXPERT EVIDENCE AMENDMENT C376 TO THE MELBOURNE PLANNING SCHEME – ENVIRONMENTALLY SUSTAINABLE DEVELOPMENT

Purpose

1. The purpose of this letter is to retain you as an independent expert witness in the proceeding concerning Amendment C376 to the Melbourne Planning Scheme (**Amendment**) which is anticipated, in due course, to be considered by an independent planning panel (**Panel**).

Key Dates

2. The Panel hearing to consider the Amendment is scheduled to commence in the week beginning Monday 19 August 2024 (**Panel Hearing**) and is expected to be held at Planning Panels Victoria, 1 Spring Street, Melbourne.
3. You will be expected to be available to appear before the Panel and present your expert evidence. Your expert evidence will be filed and served prior to the commencement of the Panel Hearing. We will be in a position to advise when you can expect to attend the Panel once we've had the Directions Hearing, and a Panel Hearing timetable is issued.
4. While we don't yet know when final expert evidence statements will be due, we kindly request a draft copy of your expert evidence statement be provided by no later than midday on **Monday 27 May 2024**. We will then ask you to update that draft, as necessary, after the consideration of the Amendment by the Future Melbourne Committee (**FMC**).
5. In addition to the preparation of your expert evidence statement, it would be helpful for you to prepare a "Powerpoint style" summary document for the presentation of your evidence. The presentation must not contain any new material to that within your expert evidence statement. We will advise you of the date the presentation is due for circulation following the Directions Hearing.

Documents

6. Below is the link to your electronic brief containing material you are to consider to prepare and inform your evidence.

[Amendment C376 - David Ritter briefing material \(ESD\)](#)

7. Please advise if you require anything further to inform your views.

Overview

8. The Amendment, among other things, seeks to use the schedule 73 to the Design and Development Overlay (DDO73) as the key planning control to achieve sustainable building design outcomes, while the sustainable transport outcomes of the Amendment are to be achieved by the proposed changes to Schedules 1, 2, 3, 4, 5 and 7 to Clause 37.04 (Capital City Zone) and Schedules 1, 2, 3, 4, 5 and 6 to Clause 37.05 (Docklands Zone).
9. The Amendment was on public exhibition from 2 March 2023 – 17 April 2023.
10. Exhibition attracted 73 submissions.
11. At an upcoming meeting, the FMC will consider management's response to the submissions received where it is anticipated the FMC will resolve to refer all submissions received to the Amendment to the Panel for its consideration.

Instructions

12. You are kindly instructed to:
 - a. review and consider the documents provided in your electronic brief;
 - b. prepare an expert evidence statement and "*Powerpoint style*" presentation; and
 - c. appear as an independent expert witness in relation to this proceeding.
13. Your statement of independent expert evidence is to:
 - a. consider, formulate and express opinions on matters relating to your area/s of expertise, including by having regard to;
 - a. the Scheme;
 - b. the exhibited Amendment;
 - c. relevant background material as provided in your electronic brief;
 - d. a version of the Amendment that Council prepares as its preferred version of the Amendment.
 - b. consider and respond to the issues raised in all submissions to the Amendment as referred to the Panel in areas relating to your area/s of expertise (noting that some submissions may not disclose any substantive matters to respond to).
 - c. be prepared in accordance with the Practice Note 1: Expert Evidence, published by Planning Panels Victoria (a copy is enclosed in your brief).
14. In the preparation of your expert evidence statement we will expect that you've had regard to the materials in your brief (as you see relevant) and any additional documentation we upload to your brief upon it becoming available.

Conflict of Interest

15. Thank you for confirming you have no conflicts and that you are able to accept these instructions.
16. If any conflict or potential conflict becomes apparent to you during your work on this matter, please advise us without delay.

Please do not hesitate to contact me on the details below if you have any queries or require anything further.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Ann Maree Drakos', with a small dot at the end.

Ann Maree Drakos

Legal Counsel, Planning (Finance and Corporate)
City of Melbourne

E-mail: ann-maree.drakos@melbourne.vic.gov.au

Phone: 0481 097 494

Appendix C – Further email instructions, 13th May 2024

From: [Ann-Maree Drakos](#)
To: [David Ritter](#)
Subject: Amendment C376melb - Update regarding Future Melbourne Committee meeting
Date: Monday, 13 May 2024 12:03:03 PM
Importance: High

Dear David

I want to provide you an update regarding Amendment C376melb (**Amendment**).

The Amendment will be considered at the Future Melbourne Committee (**FMC**) meeting on Tuesday 21 May 2024.

This morning the Council officer report summarising and responding to submissions received to the Amendment has been uploaded to your brief at [3d FMC 21 May 2024 - Consideration of submissions](#).

Also forming an attachment to the FMC report is:

- a summary of recommended changes to the exhibited version of the Amendment; and
- a preferred version of the Amendment to be considered by the FMC.

Please have regard to this FMC report in the preparation of your draft expert evidence report.

I will update you once FMC has considered the FMC report.

Please don't hesitate to contact me should you have any questions.

Kind regards

Ann-Maree

Ann-Maree Drakos | Legal Counsel – Planning | Finance and Corporate

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[Our values](#) | Think before you print

The City of Melbourne respectfully acknowledges the Traditional Owners of the land we govern, the Wurundjeri Woi Wurrung and Bunurong Boon Wurrung peoples of the Eastern Kulin and pays respect to their Elders past, present and emerging. We acknowledge and honour the unbroken spiritual, cultural and political connection the Wurundjeri, Bunurong, Dja Dja Wurrung, Taungurung and Wadawurrung peoples of the Eastern Kulin have to this unique place for more than 2000 generations. We are committed to our reconciliation journey, because at its heart, reconciliation is about strengthening relationships between Aboriginal and non-Aboriginal peoples, for the benefit of all Victorians.

This email is intended solely for the named addressee.

If you are not the addressee indicated please delete it immediately.

Appendix D – Brief to Expert – Environmentally Sustainable Design

AMENDMENT C376MELB TO THE MELBOURNE PLANNING SCHEME

MELBOURNE CITY COUNCIL

BRIEF TO EXPERT – ENVIRONMENTALLY SUSTAINABLE DESIGN

INTRODUCTION

1. Amendment C376melb to the Melbourne Planning Scheme (**Amendment**) has been prepared by Melbourne City Council (**Council**).
2. Council is the Planning Authority for the Amendment.
3. The Amendment was on public exhibition from 2 March 2023 – 17 April 2023. Seventy three (73) submissions have been received.
4. Subject to your preliminary opinion, we may engage you to prepare an expert evidence statement and appear at a future Panel Hearing.

AMENDMENT C376

Amendment Land

5. All land in the municipality is proposed to be affected by the Amendment¹.

Contents of Amendment C376

6. In terms of what the Amendment does:²

This amendment implements sustainability and green infrastructure policy into the Melbourne Planning Scheme, and new mandatory and discretionary sustainable building design standards and requirements.

7. The Amendment uses the schedule 73 to the Design and Development Overlay (**DDO73**) as the key planning control to achieve sustainable outcomes and the schedules to the Capital City Zone and Docklands Zone to achieve sustainable transport outcomes.

8. The strategic assessment of the Amendment is set out in the Explanatory Report, stating:³

Climate change is happening now.

Melbourne is already dealing with a hotter climate, and our climate in Victoria has already warmed by 1°C. Our city currently averages 11 days greater than 35 degrees. By 2050 we will experience an average 16 days greater than 35 degrees (Department of Environment, Land, Water and Planning, 2019).

Victoria has had longer fire seasons since the mid-1990s and fire days are projected to increase by 42 per cent per year in Melbourne by 2050. The deadly bushfires of 2019-2020

¹ Amendment C376melb, *Explanatory Report*, at page 1 (see Folder #4).

² Ibid.

³ Amendment C376melb, *Explanatory Report*, at page 2, in Folder #4.

across Australia destroyed more than 10 million hectares (Rumpf, Legge, van Leeuwen, Wintle & Woinarski, 2023), damaging thousands of homes and properties and killing at least 34 people. Professor Dickman estimated one billion animals were killed (University of Sydney, 2020), and many more bats and insects are likely to die as a result of lost habitat and food sources.

By 2050, there will be 20 per cent less spring rainfall. We are also facing far more severe rainfall events, flooding and storm surges. The 2016 thunderstorm asthma events in Melbourne resulted in serious health impacts for thousands and some fatalities. The Victorian Government estimates that by 2050 sea levels will rise by 24 cm on 1990s levels (DELWP, 2019).

Temperature increases mean we could lose 35 per cent of the city's trees in the next 20 years (Kendal & Baumann, 2016). Elms and some species of indigenous eucalypts won't survive. Melbourne is home to many threatened species including the powerful owl, grey-headed flying fox and the swift parrot.

Climate change could cost our local economy \$12.6 billion by 2050 (City of Melbourne, 2018), impacting agriculture, tourism, insurance and finance.

The Intergovernmental Panel on Climate Change (IPCC) 2022 report found that even more urgent action to adapt to climate change and to cut greenhouse gas emissions is required - including by amending planning regulations to stop dangerous development. The IPCC also found that if emissions remain high, deaths caused by climate change related heat are estimated at 600 people each year in Melbourne, Sydney and Brisbane between 2031 and 2080, totalling 30,000 people over 50 years.

On 16 July 2019, the City of Melbourne declared a climate and biodiversity emergency, recognising that a temperature rise above 1.5°C would cause major and irreversible damage to the City and its ecosystem. On 18 February 2020, the City of Melbourne endorsed the acceleration of the ten priority actions to respond to the climate and biodiversity emergency including mandating greening and zero emission buildings through the Planning Scheme.

Currently the Melbourne Planning Scheme encourages sustainable development at clause 2.03-4 of the Scheme. While sustainability outcomes are being negotiated through the development application process, the current planning framework requires updating to achieve the baseline needed for Council to reach its target of zero net emissions by 2040, to improve biodiversity, to reduce the urban heat island effect, to manage water effectively, and to reduce the amount of waste going to landfill.

9. In explaining why the Amendment is required, the Explanatory report outlines:⁴

The amendment is required to introduce new sustainable building design standards into the Planning Scheme and will apply to new buildings as well as substantial alterations and additions that meet a specified size threshold. The standards address environmentally sustainable design, energy efficiency and renewables, waste and resource recovery, urban heat island response, urban ecology, integrated water management and for the Central City and Docklands, sustainable transport. The standards draw on established and industry accepted rating tools (Green Star, NatHERS, NABERS and BESS) as well as the Green Factor Tool which has been developed by the City of Melbourne.

The amendment will introduce minimum mandatory requirements for certain standards and preferred requirements. The preferred requirements provide a greater contribution towards Council's sustainability, greening and emissions goals.

Sustainable building design requires current generations to choose how they meet their needs without compromising the ability of future generations to be able to do the same. The City of Melbourne owns and controls less than one third of the municipality's land area, with the majority of the land in private ownership or other government ownership.

In terms of built form, City of Melbourne owns less than 2 per cent of the buildings in the municipality. Private development is therefore a critical contributor to any overarching municipal goals or targets. While the City, in partnership with other public entities, can drive change on

⁴ Amendment C376melb, *Explanatory Report*, at page 2.

public land, the planning system remains a key tool in facilitating changed practices on private land for public benefit.

10. At an ordinance level, the Amendment proposes to:⁵

- 10.1 Amend the Municipal Planning Strategy (MPS) to ensure alignment between the MPS and the purpose of the amendment, by making changes to Clauses: 02.03-2 Environment and landscape values; 02.03-4 Built environment and heritage; and 02.03-7 Transport.
- 10.2 Amend the Planning Policy Framework (PPF) to ensure alignment between the PPF and the purpose of the amendment, by making changes to Clauses: 15.01-2L Sustainable development and 19.03-3L Stormwater management (Water Sensitive Urban Design).
- 10.3 Insert Schedule 73 to Clause 43.02 (Design and Development Overlay – Sustainable Building Design) to include provisions for:
 - environmentally sustainable design;
 - energy efficiency and renewables;
 - waste and resource recovery;
 - urban heat island response;
 - urban ecology; and
 - integrated water management.
- 10.4 Amend Schedules 1, 2, 3, 4, 5 and 7 to Clause 37.04 (Capital City Zone) and Schedules 1, 2, 3, 4, 5 and 6 to Clause 37.05 (Docklands Zone) to include provisions for:
 - bicycle, motorcycle and car share parking;
 - electric vehicle infrastructure;
 - the design of car parking facilities; and
 - the retention of car parking spaces as common property.
- 10.5 Amend the Schedule to Clause 72.03 (What does this Planning Scheme consist of?) to include reference to the new map sheets for Schedule 73 to Clause 43.02 (Design and Development Overlay – Sustainable Building Design).
- 10.6 Amend the Schedule to Clause 72.04 (Incorporated Documents) to include:
 - 10.6.1 the Guidelines for Waste Management Plans, (City of Melbourne, June 2021).
- 10.7 Amend the Schedule to Clause 72.08 (Background Documents) to include relevant background documents as listed below:
 - 10.7.1 Climate Change Adaptation Strategy Refresh (City of Melbourne, 2017)
 - 10.7.2 Climate Change Mitigation Strategy to 2050 (City of Melbourne, 2018)

⁵ Amendment C376melb, *Explanatory Report*, at page 1.

- 10.7.3 Climate Emergency Response (City of Melbourne, 2020)
- 10.7.4 Fishermans Bend Water Sensitive City Strategy (DJPR, 2022)
- 10.7.5 Green Our City Strategic Action Plan 2017-2021 (City of Melbourne, 2017)
- 10.7.6 Green Our City Strategic Action Plan: Strategic justification for C376melb regulatory requirements for sustainability (Arup, 2019)
- 10.7.7 Growing Green Guide (City of Melbourne, 2014)
- 10.7.8 Municipal Integrated Water Management Plan (City of Melbourne, 2017)
- 10.7.9 Sustainable Building Design: Planning Scheme Amendment C376 (Hansen Partnership, September 2020)
- 10.7.10 Transport Strategy 2030 (City of Melbourne, 2019)
- 10.7.11 Waste and Resource Recovery Strategy 2030 (City of Melbourne, 2019)

11. The following documents are 'supporting documents' to the Amendment:

Supporting

- 11.1 Green Our City Action Plan – Draft Planning Requirements, Economic Feasibility Testing, HillPDA, November 2020;
 - 11.1.1 Attachment 1 – GOCAP Standards Testing, Breathe Architecture, Rev 0, 4 November 2020
 - 11.1.2 Attachment 2 – GOCAP – Cost Summary, Rider Levett Bucknall, May 2020
 - 11.2 Green Our City Action Plan – Draft Planning Requirements, Economic Feasibility Testing, Addendum (5 Additional Sites), HillPDA, January 2022
 - 11.2.1 Attachment 1 – GOCAP Standards Testing, Breathe Architecture, 24 January 2022;
 - 11.2.2 Attachment 2 – GOCAP – Cost Summary, Rider Levett Bucknall, 19 January 2022.
 - 11.3 Off-street Bicycle & Motorcycle Parking Review, Final Report, Phillip Boyle & Associates, 16 March 2016
 - 11.4 Transport Strategy refresh, Background paper, Increasing the Use of Bicycles for Transport, Phillip Boyle & Associates, May 2018
12. The Exhibition documentation, including the Explanatory Report, all background and supporting documents are provided in the OneDrive Brief at Folder #4.
13. A number of Planning Panels have considered, in part, aspects sought to be advanced by the Amendment. We enclose a sample of Planning Panels reports at Folder #6 of the OneDrive Brief.

Exhibition & Submissions

14. The Amendment was on public exhibition from 2 March 2023 – 17 April 2023.

15. Exhibition attracted 73 submissions⁶.
16. A number of submissions are supportive of the Amendment, or parts of the Amendment.
17. Other submissions raise concerns with the Amendment, or aspects of the Amendment, including those that are relevant to the field of environmentally sustainable design, such as the use of the external tools Green Star, BESS, NABERS and NatHERS, the relationship with the National Construction Code standards, the use of the Council's Green Factor Tool, EV charging (including fire safety concerns), and the provision of gas connections.

Future Melbourne Committee (FMC) consideration

Future Melbourne Committee – 21 November 2017 (Green Our City Action Plan)

18. At its meeting on 21 November 2017, the Future Melbourne Committee (**FMC**) resolved as follows⁷:

That the Future Melbourne Committee:

Endorses the Green Our City Strategic Action Plan to enhance the City of Melbourne's existing education and incentive-based approach whilst developing a business case for a future regulatory mechanism, for Council consideration.

Authorises the Director City Strategy and Place to make any further minor editorial changes to the Green Our City Strategic Action plan prior to publication.

19. The *Green Our City Action Plan (GOCAP)* is proposed as a Background Document in the schedule to Clause 72.08.⁸
20. One of the actions in the (GOCAP) is to:

Pursue changes to the planning scheme to require all types of development in the City to play a part in achieving environmentally sustainable design targets, including green walls and vertical greening. Review the planning scheme to determine the most effective planning scheme tools to deliver improved green infrastructure outcomes. Include an economic feasibility study to ensure that green infrastructure can be delivered by developers without compromising feasibility. Economic analysis should include consideration of other planning requirements such as affordable housing provision and design requirements to understand the cumulative impact of all controls. Considerations will include: - how best to work with other Councils, including the work of CASBE, and the State and build on existing reforms - how to ensure that real change is delivered, while engaging productively with the development community and ensuring the commercial context is understood - how best to adapt world leading initiatives such as Seattle's Green Factor in a City of Melbourne context.

Future Melbourne Committee – 18 February 2020 (City of Melbourne's response to the Climate and Biodiversity Emergency Declaration)

21. At its meeting on 18 February 2020, the FMC resolved as follows⁹:

That the Future Melbourne Committee endorses management's review and response to the Climate and Biodiversity Emergency, and the acceleration of the ten priority actions, subject to future annual plan and budget processes.

⁶ A copy of all submissions received to the Amendment can be found in Folder #5.

⁷ The FMC report and minutes are provided in Folder #3a.

⁸ A copy is provided at Folder #4aa of the OneDrive Brief.

⁹ The FMC report and minutes are provided in Folder #3b.

22. The document, *Responding to the Climate and Biodiversity Emergency*, 18 February 2020, is proposed to be listed as a Background Document in the schedule to Clause 72.08.¹⁰
23. One of the actions from *Responding to the Climate and Biodiversity Emergency*, 18 February 2020, is:

Mandate greening and zero emissions buildings through the Planning Scheme.

Future Melbourne Committee – 15 September 2020 (Green Factor Tool)

24. At its meeting on 15 September 2020, the Future Melbourne Committee resolved as follows¹¹:

That the Future Melbourne Committee:

Endorses the Melbourne Green Factor Tool for use through the Melbourne Planning Scheme as the preferred approach for demonstrating urban ecology outcomes on new developments.

Authorises the establishment of a governance structure to oversee technical updates to the tool and to ensure the tool continues to meet its objectives.

25. Use of the Green Factor Tool is embedded in the DDO73 as a mandatory and discretionary requirement.

Future Melbourne Committee – 15 September 2020 (Amendment C376 Sustainable Building Design)

26. At its meeting on 15 September 2020, the Future Melbourne Committee resolved as follows¹²:

That the Future Melbourne Committee:

Seeks authorisation from the Minister for Planning to prepare and exhibit Melbourne Planning Scheme Amendment C376 Sustainable Building Design (refer to Attachment 2 of the report from management).

Requests that the Chief Executive Officer write to the Minister for Planning to request that he:

- introduce a state-wide planning provision to champion environmentally sustainable design, city greening and green infrastructure with a local schedule to enable mandatory requirements and allow tailoring by councils, attaching draft provision to assist (refer to Attachment 3 of the report from management);
- work with the City of Melbourne and Council Alliance for Sustainable Built Environments councils to finalise and implement the state-wide provision, enabling local governments to localise their requirements in line with their Council's endorsed positions.

Commends the development of the Green Factor tool, as a method to achieve and assess an urban ecology standard, and endorses its use through the Melbourne Planning Scheme.

Authorises the General Manager Strategy, Planning and Climate Change to make any minor and editorial and referencing changes and as required to accord with the Victorian Government's planning policy framework translation to Melbourne Planning Scheme Amendment C376 (refer to Attachment 2 of the report from management).

¹⁰ A copy is provided at Folder #4aa of the OneDrive Brief.

¹¹ The FMC report and minutes are provided in Folder #3c.

¹² Ibid.

INSTRUCTIONS

27. You are kindly instructed to:

27.1 Review the documents in the OneDrive brief including:

27.1.1 All exhibited documents in Folder #4;

27.1.2 Submissions received to the Amendment in Folder #5, particularly the following submissions:

- (a) #5 – Sarah Magner
- (b) #6 - Andrew Thompson
- (c) #20 – Charlie Summons;
- (d) #32 - Ewan Ogilvy;
- (e) #38 – Master Builders;
- (f) #42 – John Blake;
- (g) #43 – Housing Institute of Australia (HIA);
- (h) #45 – Urban Development Institute of Australia (UDIA);
- (i) #50 – Jan Talacko
- (j) #53 – MAB Corporation Pty Ltd;
- (k) #56 – Australian Pipelines and Gas Association Ltd (APGA)
- (l) #57 – Southbank Residents Association;
- (m) #59 – Melbourne Climate Futures of the Faculty of Architecture, Building and Planning, University of Melbourne;
- (n) #62 – Australian Institute of Landscape Architects (AILA);
- (o) #65 – NABERS;
- (p) #66 – Property Council of Australia (PCA);
- (q) #67 - Planners Declare;
- (r) #68 – University of Melbourne;
- (s) #69 – ADP Consulting
- (t) #72 – Ausvest Holdings Pty Ltd.

27.2 Provide us with a preliminary opinion on Amendment C376 on matters within your area of expertise, including the use of and reference to external tools Green Star, BESS, NABERS and NatHERS, the relationship with the National Construction Code standards, the use of Council's Green Factor Tool, EV charging (including fire safety concerns), the provision of gas connections, and any other ESD related matters raised by Amendment 376 and any issues (arising from submissions, or otherwise) which warrant further consideration.

28. Please advise us if you require anything further to inform your views.
29. Please be clear if a particular issue or matter falls outside your area of expertise.
30. We would be grateful if we could meet to discuss your preliminary views on the Amendment once you've had the opportunity to review the brief.
31. Subject to your preliminary opinion, we may engage you to prepare an expert evidence statement and appear at a future Panel Hearing regarding this matter.
32. Before starting any work, we kindly request you provide us with an electronic copy of your fee proposal for work to inform your preliminary opinion, as well for preparing an expert evidence report and appearing as an expert witness at the Hearing. Please also provide a schedule of fees and rates in the event that you are required to perform additional tasks in the future relating to this matter.
33. As an independent expert, it is important that you are free from any possible conflict of interest in providing your opinion. We understand you have no such conflict. If any conflict or potential conflict becomes apparent to you during your work on this matter, please advise without delay. Please also ensure that you are familiar with *Practice Note 1: Expert Evidence*, published by Planning Panels Victoria, a copy of which has been provided in your brief.
34. This instruction and any communications arising from this instruction are subject to legal professional privilege. Please treat all communications relating to the scope of works as confidential.
35. Link to OneDrive Brief – [Amendment C376 - Brief to Expert \(ESD\)](#)

Date delivered: **28 July 2023**

Index – Brief to Expert

No.	Document
Folder #1 – Brief to Expert	
	▪ Brief to expert
Folder #2 – Panel related	
a	▪ Planning Panels Victoria – Practice Note PN01 – Expert Evidence
Folder #3 - Future Melbourne Committee (FMC) meetings	
a	Future Melbourne Committee, 21 November 2017 ▪ Report – Green Our City Strategic Action Plan ▪ Minutes
b	Future Melbourne Committee, 18 February 2020 ▪ Report –Climate and Biodiversity Emergency 2020 ▪ Minutes
c	Future Melbourne Committee, 15 September 2020 ▪ Report – Amendment C376: Sustainable Building Design ▪ Report – Melbourne Green Factor Tool ▪ Minutes
Folder #4 – Exhibited documents	
	▪ Amendment C376 Explanatory report ▪ Amendment C376 Instruction Sheet
a	Exhibited Policy, Ordinance, Mapping and Incorporated Document ▪ Clause 2.03 Strategic Directions ▪ Clause 15.01-2L-01 Sustainable development ▪ Clause 19.03-3L Stormwater management (Water Sensitive Urban Design) ▪ Schedule 73 to the Design and Development Overlay (DD073); ▪ Schedule 1 to the Capital City Zone (CCZ1) ▪ Schedule 2 to the Capital City Zone (CCZ2) ▪ Schedule 3 to the Capital City Zone (CCZ3) ▪ Schedule 4 to the Capital City Zone (CCZ4) ▪ Schedule 5 to the Capital City Zone (CCZ5) ▪ Schedule 7 to the Capital City Zone (CCZ7) ▪ Schedule 1 to the Docklands Zone (DZ1) ▪ Schedule 2 to the Docklands Zone (DZ2) ▪ Schedule 3 to the Docklands Zone (DZ3) ▪ Schedule 4 to the Docklands Zone (DZ4) ▪ Schedule 5 to the Docklands Zone (DZ5) ▪ Schedule 6 to the Docklands Zone (DZ6) ▪ Schedule to Clause 72.03 What Does this Planning Scheme consist of? ▪ Schedule to Clause 72.04 Incorporated Documents ▪ Schedule to Clause 72.08 Background Documents ▪ Guidelines for Waste Management Plans, 2021, City of Melbourne (Proposed Incorporated document);
aa	Background documents

No.	Document
	- Green Our City Strategic Action Plan: Strategic Justification for regulatory requirement for sustainability, Arup, 18 October 2019 - Sustainable Building Design, Planning Scheme Amendment C376, Background Report, Hansen, September 2020 - Climate Change Adaptation Strategy Refresh, City of Melbourne, 2017 - Climate Change Mitigation Strategy to 2050, City of Melbourne, 2018 - Climate Emergency Response, City of Melbourne, 2020 - Fishermans Bend Water Sensitive City Strategy, DJPR, 2022 (Part 1) - Fishermans Bend Water Sensitive City Strategy, DJPR, 2022 (Part 2) - Green Our City Strategic Action Plan 2017-2021, City of Melbourne, 2017 - Growing Green Guide, City of Melbourne 2014 - Municipal Integrated Water Management Plan, City of Melbourne, 2017 - Transport Strategy 2030, City of Melbourne, 2019 - Waste and Resource Recovery Strategy 2030, City of Melbourne, 2019
ab	Supporting Documents - Green Our City Action Plan – Draft Planning Requirements, Economic Feasibility Testing, HillPDA, November 2020; - Green Our City Action Plan – Draft Planning Requirements, Economic Feasibility Testing, Addendum (5 Additional Sites), HillPDA, February 2022; - Off-street Bicycle & Motorcycle Parking Review, Final Report, Phillip Boyle & Associates, 16 March 2016; - Transport Strategy refresh, Background paper, Increasing the Use of Bicycles for Transport, Phillip Boyle & Associates, May 2018.
Folder #5 – Submissions	
Various (Submissions #1 - #73)	
Folder #6 – Panel Reports	
a	Victorian Planning Authority Projects Standing Advisory Committee - Referral 6 (AC) [2022] PPV 24 (2 May 2022)
b	Melbourne C309 (PSA) [2019] PPV 55 (11 October 2019)
c	Fishermans Bend Planning Review Panel (AC) [2018] PPV 71
d	Environmentally Efficient Design Local Policies (AC) [2014] PPV 40 (7 April 2014)
e	Melbourne C187 (PSA) [2012] PPV 132 (7 November 2012)
Folder #7 – Other Documents	
a	Scenario Testing Report, Green Infrastructure Assessment Tool, Hip vs Hype, May 2020
b	Integrating Green Infrastructure into Urban Planning: Developing Melbourne's Green Factor Tool, Urban Planning, journal article, 2021

Appendix E – Preliminary Opinion

City of Melbourne - C376 Peer Review

2062 Planning Amendment C376 Peer Review FINAL rev01

Prepared by: David Ritter

12/10/2023

Revision 1, 13.11.2023

Checked by: PG (Atelier Ten)

19/10/2023

Approved by: DR

13/11/2023

Introduction

This memo outlines the key findings from a peer review of the proposed amendment to the Melbourne Planning Scheme, C376, publicly exhibited from 2nd March 2023 - 17th April 2023.

The frame of reference for this piece of work is shaped by the City of Melbourne's declaration of a climate and biodiversity emergency, recognising that a temperature rise above 1.5 °C would cause major and irreversible damage to the City and its ecosystem. On 18 February 2020, the City of Melbourne endorsed the acceleration of ten priority actions to respond to the climate and biodiversity emergency including mandating greening and zero emission buildings through the Planning Scheme.

Currently the Melbourne Planning Scheme encourages sustainable development at clause 2.03-4 of the Scheme. The current planning framework requires updating to achieve the baseline needed for Council to reach its target of zero net emissions by 2040.

As an experienced ESD practitioner responsible for consulting on numerous projects currently going through the planning system in the City of Melbourne, wider Victorian councils and beyond, I also bring a lens of what is practical and deliverable as part of the design, construction, and project handover process.

This memo provides the key recommendations, including proposed text changes, at the head of the document with supporting rationale for the recommendations in section 2. In addition, a copy of the initial review of the amendment that was carried out is included in Appendix A. Further considerations that are outside the scope of the amendment have also been added in Appendix B.

1. Recommendations

In summary, the standards that the City of Melbourne have set out are generally a level of ambition that is in line the stated CoM declaration of a climate and biodiversity emergency.

In some areas the standards may be slightly under ambitious, while in others they present a significant step change to the market which will be challenging to implement. The review has focused on how to make the process as practically implementable as possible, and the following key recommendations are offered under three headings:

1.1 Recommended text changes to the Amendment

1.2 Recommended areas for further review or consultation

1.3 Recommended inclusions for supporting guidance to the amendment

1.1 Recommended Text Changes to the Amendment

The below summarises the key recommendations for text changes to the proposed amendment wording that will help to deliver clarity, consistency and improved practicality. The proposed text changes are indicated in underlined, italic font within the referenced context taken from Proposed C376melb Schedule 73 to Clause 43.02 Design and Development Overlay:

- Recommended text change: reference p2 Section 2.3 Environmentally Sustainable Design, 'Development should meet the preferred standard in Table 1, unless it is demonstrated to the satisfaction of the responsible authority that the delivery of the preferred standard is not technically achievable or economically feasible.'
- Recommended text change: reference p2 Section 2.3 Environmentally Sustainable Design, 'Within 24 months of occupation of the building, the development must be certified as achieving the applicable Green Star Buildings rating with the Green Building Council of Australia.'
- Recommended text change: reference p3, Section 2.3 Energy Efficiency and Renewables,
- 'The development must be constructed so as to be able to become certified to the applicable NABERS star rating as demonstrated by a NABERS Energy Commitment Agreement'
- Recommended text change: reference p3 Table 2, row 1, For non-residential
Minimum - 'A minimum 5.5 star NABERS Energy rating for Offices (base-building), or 4.5 Star NABERS Energy Rating for other use types where an applicable NABERS rating scheme exists'
Preferred - 'A minimum 6 Star NABERS Energy rating for Offices (base-building), or 5 Star NABERS Energy Rating for other use types where an applicable NABERS rating scheme exists'
- Recommended text change: Reference p4, Table 4, 'Should manage construction and demolition waste to achieve 90% diversion from landfill and maximise resource recovery in line with Green Star Buildings Credit 2, Responsible Construction Credit Achievement'
- Recommended text change: reference p4, Table 5, row 1, change text to be aligned to Green Star Buildings Credit 19, Heat Resilience Credit Achievement and suggest making this a preferred target, as follows:

'All development should demonstrate that at least 75% of the whole site area comprises of one or a combination of strategies that reduce the heat island effect. The strategies that can be used to reduce the heat island are:

- Vegetation
- Green roofs
- Roofing materials, including shading structures, having the following:
 - For roof pitched <15° – a three-year SRI of minimum 64
 - For roof pitched >15° – a three-year SRI of minimum 34
- Unshaded hard-scaping elements with a three-year SRI of minimum 34 or an initial SRI of minimum 39
- Hardscaping elements shaded by overhanging vegetation
- Water bodies and/or water courses

The area of the site that is shaded by permanent structures (e.g., part of a car park to the south of a tall building) at noon local time at the summer solstice are also deemed compliant.'

- Recommended text change: reference p5 Table 7, row 3, 'Unless connected to a recycled water source, should install a rainwater tank to supply a minimum of 10% of internal water demand or support on-site green cover to an equivalent level of annual demand.'
- Recommended text change: reference p6 Table 8, row 1,
'For residential - the relevant Water Use Credit Achievement under Green Star Buildings.
For non-residential - a minimum 4 Star NABERS Water rating or the relevant Water Use Credit Achievement under Green Star Buildings, where no NABERS Water rating exists for the proposed use type'

1.2 Recommended Areas for Further Review or Consultation

- Reference Page 3, Table 1, row 2. Carry out a BESS sensitivity review to check that the Environmentally Sustainable Design 50% BESS score aligns to an appropriate level of performance for projects less than 5,000m². From an initial review it seems that 60% might be a standard that is better aligned with the Green Star 5 Star expectation for larger buildings
- Reference Page 5, Table 7, row 1. Consider replacing the best practice water quality performance objective of Urban Stormwater Best Practice Environmental Management Guidelines, CSIRO,1999 with Green Star Buildings Credit 39 Waterway Protection Credit Achievement which requires a higher performance and is generally achievable as a best practice performance. This may require further consultation with Melbourne Water or other stormwater management body.
- Further consultation with NABERS, GBCA, BES / MAV, to ensure that the CoM are achieving the maximum synergy with the third-party processes for quality-assuring the sustainable construction and operation outcomes. This should include direct reference to reports or documents within their processes that will act as evidence of compliance with CoM performance targets and the timings for the production of these documents aligned to the planning approval process. This detail can potentially be added into planning permit requirements, rather than embedded within the policy itself.
- More detailed discussion and collaboration with NABERS around fine tuning the standards required for commercial office and other sectors for NABERS Energy and Water requirements. For simplicity it is suggested to adopt one standard for commercial offices and another standard for all other building types where such ratings are available. In the absence of any NABERS rating target, the CoM should stipulate a performance improvement via NCC Section J JV3 modelling for energy or include a % reduction water target that is backed up by spreadsheet calculations. We have included a suggested a default 10% energy reduction target for anomalous building use types (aligned to Green Star minimum requirements) in the recommendations above. This is a relatively low-base catch-all that should be able to accommodate the range of unusual building typologies that might fit this category.

1.3 Recommended Inclusions for Supporting Guidance to the Amendment

- It is strongly recommended to reduce ambiguity around what is required in the case of demonstration of non-compliance with the preferred standards for Green Star, NABERS or BESS as well as cases of non-compliance with the mandatory Green Factor 0.55 score through production of supporting guidance notes that could sit outside the policy document as additional detail. These should clearly articulate what will be required for demonstration of any technical or economic feasibility of non-compliance to preferred standards and at what stage of the process. There will also need to be internal planning around the volume of work this will create for CoM team to consider

the resourcing required for application reviews. A suggested level of guidance outside of the policy document could be developed as follows:

Preferred Target	Evidence requirement for presentation of non-compliance:	Design Stage
6 Star Green Star	- Green Star 6 Star pathway with credit technical feasibility assessment - Cost plan provided by qualified Quantity Surveyor - Summary Feasibility Report for targeted rating	Town Planning Application
NABERS Energy 6 Star	- NABERS Energy 6 Star pathway with technical feasibility assessment - Cost plan provided by qualified Quantity Surveyor - Summary Feasibility Report for targeted rating	Town Planning Application
Green Factor Tool 0.55	- Marked up landscape plans - Green Factor Tool Results - Technical Feasibility Report - Cost plan provided by qualified Quantity Surveyor - Summary Feasibility Report for targeted rating	Town Planning Application

- Further to the above, it is recommended that supporting guidance be provided that references the third-party quality-assured processes and documents that reduce City of Melbourne application review requirements and help to streamline the planning application and approval process. Alternatively, these processes and documents could also be referenced within the planning permit conditions that are issued to applicants. A suggested structure to these additional process and document references could be as follows:

Documents to be provided for Town Planning application:

We suggest the following guidance to applicants to assist them in understanding the required documentation:

Benchmarking Tool	Submission requirements
BESS	BESS Report submitted via on-line BESS portal
Green Factor	- Marked up landscape plans by suitably qualified landscape architect or ecologist - Green Factor Tool Results to demonstrate target rating
Green Star	Green Star pathway to demonstrate target rating with proof-of-concept modelling work and analysis to demonstrate inclusion of key credits that affect built-form
NatHERS	Sample NatHERS modelling in line with BESS requirements verified by certified NatHERS Assessor
NABERS	- NABERS pathway to demonstrate target rating with proof-of-concept modelling work and analysis to demonstrate inclusion of key initiatives that affect built-form - Alternative: NABERS Agreement to Rate contract, demonstrating commitment to the required ratings

Documents to be provided prior to the commencement of the development:

We suggest the following guidance to applicants which would enable a clear and consistent expectation of information required from applicants prior to commencement on site, that leverages third-party QA processes where possible:

Benchmarking Tool	Submission requirements
BESS	Updated BESS Report submitted via on-line BESS portal
Green Factor	- Marked up landscape plans by suitably qualified landscape architect or ecologist - Updated Green Factor Tool Results to demonstrate target rating
Green Star	Green Star Design Assessment reviewed by the GBCA to demonstrate the project is on track to achieving the target rating
NatHERS	Full NatHERS modelling verified by certified NatHERS Assessor
NABERS	NABERS Commitment Agreement to demonstrate target rating. For minimum 5.5 Star rating, a 25% modelling margin must be included, in line with Green Star requirements.

Documents to be provided within 24 months of occupation of the development:

Generally, an updated ESD report to verify that all measures have been delivered can be provided by a suitably qualified ESD consultant within 6 months of occupation. However, Green Star and NABERS are the exception with evidence requirements that should be expected within 24 months of completion:

Benchmarking Tool	Submission requirements
Green Star	Final Green Star Certificate to demonstrate achievement of the targeted rating
NABERS	Final NABERS Energy and Water Certificates to achievement of the targeted rating

2. Key Considerations

The following section provides consideration of the key issues identified in the initial overview of the proposed measures included in Appendix A. The text expands on some of the background thinking behind the recommended tuning and clarification of the proposed standards and processes that has been set out in section 1, above.

2.1 Ambiguity around the process for demonstrating non-compliance with the 'Preferred' standards.

The proposed amendment has both minimum and preferred standards may create uncertainty unless handled carefully.

Generally, those standards that have been clearly set as 'must' achieve or 'minimum' seem to be in line with world leadership 'Australian excellence' or in line with local market best practice. This is clearly a positive outcome as a minimum standard that will raise the game across all projects.

Further to this, targeting 'preferred' high-ambition standards (Green Star 6 Star and NABERS 6 Star for large commercial and residential, 70% BESS for smaller developments, preferred water targets) firmly meets with the Council's declaration of a climate and biodiversity emergency and the recognised need to drive urgent step change. By requesting that developments target the preferred standard also means that the City of Melbourne will be raising the bar further and facilitating an even greater step change to more sustainable development. It should be noted that these preferred standards are generally pitched at a standard commensurate with 'world leadership'.

To avoid any ambiguity around how project teams should interpret this, there needs to be very clear guidance notes to support the future application process that explains clearly how the City of Melbourne wish to see projects first and foremost demonstrating that they are targeting the preferred standards and what level of information design teams should produce to demonstrate that this is being targeted.

Due to the preferred targets being a significant step-change for the market to adapt to, it is almost certain that there will be a large number of projects where the applicant will be reluctant to commit to them for cost reasons or technical feasibility concerns. The most obvious one being that for tall buildings (which are common in the CBD) it is extremely challenging or impossible to achieve a 6 Star NABERS rating (vertical transport and HVAC energy for example can be very difficult to reduce down when space is at a premium and there is limited roof space per GFA for photovoltaic panels).

While the wording of the document states that the preferred standards should be met it also suggests that the onus is on the developer to demonstrate 'to the satisfaction of the responsible authority that the delivery of the preferred standard is not technically achievable' (in the case of Green Star, say) or 'not technically or economically achievable' (in the case of NABERS standards) where the developer seeks to meet the justify minimum standard rather than the preferred. It is further noted that there is an inconsistency here and is recommended applicants should also be able demonstrate that Green Star 6 Star is both 'not technically or economically achievable' as is the case for NABERS.

There will need to be some clear supporting guidance on what information the design team would typically need to provide, and when and to what adequate level of detail, in order to justify the developers' approach in this instance. This further raises the question of whether CoM will have the in-house (or out-sourced) resources in place to review these technical and economic justifications and ensure an adequate and fair review process. The risk here is that this may create unwanted bottlenecks and delays in the planning process if not adequately addressed.

2.2 NABERS requirements are insufficiently described

Following on from the previous point, an area where the proposed standards need the most firming up are around NABERS requirements. This can be summarised as follows:

- At present, for all large non-residential projects a preferred energy standard of NABERS Energy 6 Star and mandatory standard of NABERS Energy 5.5 Star is stipulated. Whilst this might represent a world leading and Australian excellence level of performance respectively in the commercial office sector, it is not clear how this relates to other typologies. In the city of Melbourne there are a wide variety of building types that are not commercial offices. Some of these typologies have NABERS rating schemes available, such as office, hotel, shopping centre, hospital, warehouse and cold store, while others such as higher education, laboratories etc do not currently have a scheme available, and there would need to be some consideration of how energy efficiency targets for these typologies are stipulated. For projects outside of applicable NABERS Energy rating schemes it is suggested that a minimum target of 10% improvement upon Section J requirements of the National Construction Code are required.
- NABERS Energy can be assessed against the 'base building' (landlord / common areas) or the 'whole building' (including tenanted areas) - the requirement should stipulate which of these ratings is required. We suggest that it

would be challenging to require the whole building rating when many speculative developments do not yet have agreed tenants in place. A base building rating is likely the most practical from a planning approval perspective.

- It should also be clarified whether the use of Green Power can be applied to NABERS ratings or not.
- Similarly, there are a limited number of NABERS typologies that the NABERS Water performance requirement can be applied to. It should also be noted that there is less reliable data available in the NABERS database for Water ratings compared to Energy ratings so it may not be as simple to determine what is the appropriate level of performance requirement for different typologies. However, since the proposed NABERS 4 Star Water target for large non-residential developments is a preferred not mandatory target, it seems reasonable for the sake of simplicity to adopt the 4 Star Water target as a catch all for all typologies. There would also need to be guidance on an alternative NABERS Water target where a scheme does not currently exist for the particular typology.

2.3 Requesting third-party verified evidence where possible

The City of Melbourne's intention to reference performance targets from third-party benchmarking schemes such as BESS, Green Star and NABERS is a smart move as these standards have already undergone extensive industry engagement, peer review and road-testing in the market. Generally, these tools also have their own reporting and assessment processes that involve third-party review and have standard reporting steps that can also be referenced as evidence that is required to be submitted to CoM. In theory, where it is possible to receive evidence that has already been reviewed and approved by a third-party means that there should be less of a need for CoM to undertake a detailed review and less double-handling of the review process. Examples of these are as follows:

- A NABERS Commitment Agreement involves a rigorous energy modelling process and third-party QA by a NABERS Independent Reviewer. If possible, it would be beneficial for CoM to specify that a NABERS Commitment Agreement certificate for the target rating be submitted to council prior to building permit or construction commencement. This would be the most robust way to ensure that projects are on track to meet their stated goals and would reduce the compliance assessment burden on the CoM team. It should also be noted that this is the wording that has been adopted by the Department of Planning for the New South Wales Government in their State Planning Policy, Sustainable Buildings SEPP, September 2023
<https://www.planning.nsw.gov.au/sites/default/files/2023-03/sustainable-buildings-sepp-overview.pdf>

It is possible that a requirement for a NABERS Commitment Agreement could be requested as part of planning permit conditions as an alternative to having the detail nested in the policy document.

- Similarly, it is understood that NABERS have recently developed a lighter version of the Commitment Agreement, known as NABERS Agreement to Rate that are applicable for both energy and water targets. Similarly, evidence of this third-party reviewed, documented process could also be specifically requested as an alternative.
- For Green Star Buildings commitments, it is also possible to specifically request a copy of a Design Assessment that has been submitted to and assessed by the GBCA prior to building permit or construction. This is an optional part of the Green Star certification process, but would be valuable to the City of Melbourne in having a third-party review of progress against Green Star targets at the design stage, prior to construction. Again, this potentially could be helpful to reduce the workload of CoM staff in reviewing applications. It is suggested that this could also potentially be requested as part of planning permit conditions as an alternative to having the detail nested in the policy document.
- In the case of larger residential buildings, it is customary in most inner urban Greater Melbourne councils to request a NatHERS modelling report at town planning stage. Ideally the CoM should specifically request a modelling report authored by a registered NatHERS Assessor (suitably qualified) that covers a minimum number (%) and type of apartment units that presents the average and minimum and average star ratings as evidence to

Council. Providing some guidance on the expectations for the modelling report and who is suitably qualified to carry out this work would help to ensure a consistency across all projects and may alleviate the need for CoM to carry out unnecessary work in reviewing such reports.

- Where a BESS Report is required for smaller projects less than 5,000m², although this will not necessarily be reviewed by an external third-party, the BESS tool itself is a useful third-party tool (which CoM is a stakeholder in) that allows application proposals to be reviewed against a consistent set of criteria. City of Melbourne should consider setting guidance to inform the process of BESS submittals, e.g. initial BESS report submittal prior to planning application and final BESS report update and submittal prior to construction.

It is anticipated that by providing supplementary guidance on the above process of what level of information is required and when, where possible referencing third-party QA processes that already exist in the market, it will enable the planning approval process run as smoothly as possible.

2.4 Further clarity on post-occupancy reporting mechanism

The intention to require verification of performance targets for both NABERS and Green Star based on post-occupancy evidence meets the City's stated design objectives to ensure that building operation (not just design and construction) meets climate change objectives and the City's target to achieve net zero emissions by 2040.

With regards to NABERS certificates, a couple of examples of unforeseen challenges to achieving targeted ratings could be:

- Dependence upon final occupancy patterns and tuning of building management practice - in reality this can sometimes take more than 24-months to bed systems down or for the buildings to be fully occupied as anticipated.
- Building usage, occupancy patterns and occupant behaviours within the building may be very different from those anticipated in the modelling process, which may aid or hinder the in-use performance ratings.
- Ownership of the building might change in a 24-month period which would necessitate a challenging handover of building management and operation procedures.

Needless to say, there could be other kinds of complications and it is worthwhile considering how the City of Melbourne will approach projects where there are unforeseen or exceptional circumstances.

Streamlining of the CoM requirements within the existing third-party administered NABERS Commitment Agreement framework, as mentioned in the previous section, may help here. For the recently published NSW Sustainable Building SEPP for example, it is understood that they have similarly requested that the targeted NABERS rating is achieved within 24-months of occupancy certificate. In this case the post-occupancy commitments are intrinsically tied into the NABERS Commitment Agreement that has been requested as part of the planning approval process. This means that the developer must voluntarily publish their targeted rating through NABERS to the market and then report back on this through NABERS 24 months after occupancy certificate is achieved. Within the modelling process for the NABERS, a number of 'off-axis' modelling scenarios are explored which test some of the potential risks such as variance in occupancy patterns, user behaviours and building management efficiencies. A significant 25% energy saving buffer beyond the target rating is also typically required as part of this process. This allows the building owner and operator to have a toolkit in place to steer the project towards the target rating during the post occupancy bedding in period. Through this mechanism, the planning authority do not need to become involved in the details of the post occupancy follow up and can trust that the technical robustness, natural competitiveness and market credibility of the third-party quality assured NABERS reporting system will drive developers and building owners to better results. In this way the natural competitiveness of the market and the desire to achieve top NABERS ratings drives the applicant / developer to

success in achieving high-performance objectives. This is how the NABERS scheme has successfully operated thus far to drive the industry forwards.

With regards to seeking Green Star certification within 12 months of occupation of the building, it is highly likely that many projects may not be able to meet this timeframe and we recommend that this be amended to align with the time frame allowed by the GBCA, which is 24 months within practical completion. It makes sense that the CoM should align its requirements to the external third-party governing the scheme otherwise it is creating a different set of demands and brings inefficiency and confusion. It would be advisable for CoM to allow the applicant and the GBCA to go through their third-party review of the final certificate in the timeframe that they have set.

Appendix A - Overview of Proposed Measures

The following tables summarise the sustainability performance requirements that are set out in the draft Schedule 73 to Clause 43.02 Design and Development Overlay. Against each of these a review comment has been entered to outline the most critical considerations.

- New building equal to or less than 5,000sqm
- Addition between 1,000-5,000sqm

<i>Performance Measure:</i>	<i>Comment:</i>
Environmentally Sustainable Design Should achieve a 70% BESS score (preferred) Must achieve a 50% BESS score (mandatory)	'Should' and 'Must' introduce ambiguity around what is required to be demonstrated to the City of Melbourne. Will need clear guidelines on what is required from the applicant in cases where the preferred standard cannot be met from a technical or economic perspective, and a CoM process and resource in place to review applications where the aspirational 'should' target is presented as not technically achievable or economically feasible by the applicant. 70% BESS score is an appropriate threshold for the preferred target and is supported. 50% BESS score is a relatively low threshold for the mandatory target. Some further calibration / testing is recommended to confirm where an 'equivalence' to the Green Star 5 Star standard would lie, but my view is that 60% should be considered for a performance that is more in line with the Green Star 5 Star standard that is set for larger buildings.
Energy Efficiency and Renewables Should achieve a minimum 70% score in the BESS Energy category (preferred) must achieve a minimum 60% score in the BESS Energy category (mandatory) Residential must also achieve an average of at least 7.5 Star NatHERS rating across multiple dwellings, and a minimum of 6.5 Star NatHERS rating for each dwelling.	See note on use of 'Should' and 'Must' above 70% BESS score is an appropriate threshold for the preferred target and is supported. 60% BESS score is an appropriate threshold for the mandatory target and is supported. an average of at least 7.5 Star NatHERS rating is an appropriate threshold for the preferred target and is supported. a minimum of 6.5 Star NatHERS rating for each dwelling is also supported
Waste and Resource Recovery	

Must provide waste and resource recovery facilities that meet the requirements of the City of Melbourne's Guidelines for Waste Management Plans.

Must meet the requirements of a precinct waste management plan if there is one in place.

Should manage construction waste to minimise landfill and maximise resource recovery.

Currently proposed performance requirements are a minimum practice for operational waste facility provision.

Demolition waste should be mentioned in addition to construction waste

See note B1 in Appendix B on further considerations for reducing demolition waste and reducing embodied carbon.

Urban Heat Island Response

Must provide the equivalent of at least 75% of the development's total site area as building or landscape elements that reduce the impact of the urban heat island effect

Generally supportive - from experience this target is achievable for most projects but noting there may be exceptional sites where this is very challenging to achieve (e.g. skinny buildings on tight sites may be challenging, where mechanical plant space takes up a disproportionate amount of roof area for example)

Suggest to make this a preferred target since Green Factor target, below will cover a baseline performance.

A minimum target might be set at 65% if desired to give a little more flexibility.

This requirement is very similar to the Green Star Buildings Credit 19 Heat Resilience Credit Achievement and the methodology for defining site area that meets this requirement could be referenced to Green Star so that there are not any conflicting requirements for Green Star vs Council methods

Urban Ecology

Must be designed and constructed to achieve a minimum Green Factor score of 0.55 using City of Melbourne's Green Factor Tool.

Generally supportive of this step change measure that aligns with urban greening and heat island mitigation design objectives. It is a big step change for the market and will need clear guidelines on how applications should be articulated, and a clear and consistent CoM process and resource in place to review applications where 0.55 Green Factor is presented as not practical by the applicant.

Integrated water management

Must achieve the best practice water quality performance objectives set out in the Urban Stormwater Best Practice Environmental Management Guidelines, CSIRO 1999.

Must connect to a precinct scale recycled water source if available.

Unless connected to a recycled water source, must install a rainwater tank to support on-site green cover or supply a minimum of 10% of internal water demand.

Should meet a minimum 50% score in BESS Water category (preferred)

The CSIRO 1999 standard is an old one - this could be updated with reference to Green Star Buildings Credit 39 Waterway Protection Credit Achievement which is requiring a higher performance and is generally achievable as a best practice performance

There is a potential loophole here in that where projects are not connected to recycled water source, the irrigation to on-site green cover option will be selected with no specific performance target and no toilet flushing supply installed.

WC flush is a steady all-year-round water requirement and the use of rainwater in this context is a much more effective replacement of potable water use.

If only connected to irrigation supply then in times of drought, little water can be supplied to plants and during periods of heavy rainfall irrigation demand is reduced, therefore more rainwater ends up flowing to stormwater drainage.

It is recommended to ensure that meeting 10% internal water demand on an annual basis is the minimum requirement, and any alternative strategy should at least match this annual demand.

50% BESS Water score seems to be a reasonable preferred performance target and seems to equivalent to around 35% water saving if using performance pathway (own calculations).

- New building of more than 5,000sqm - residential
- Addition of more than 5,000sqm - residential
- New building of more than 5,000sqm - non-residential
- Addition of more than 5,000sqm - non-residential

Performance Measure:

Comment:

Environmentally Sustainable Design

All:

Should achieve 6 Star Green Star Buildings (preferred)

Must achieve 5 Star Green Star Buildings (mandatory)

All:

'Should' and 'Must' introduce ambiguity around what is required to be demonstrated to the City of Melbourne. Will need clear guidelines on what is required from the applicant in cases where the preferred standard cannot be met from a technical or economic perspective. There will also need to be an adequate CoM process and resource in place to review applications where the aspirational 'should' target is presented as not technically achievable or economically feasible by the applicant.

6 Star Green Star score is an appropriate threshold for the preferred target and is supported. It is generally considered as 'world leadership' level of performance and in line with the Council's declaration of a climate and environment emergency.

5 Star Green Star score is an appropriate threshold for the mandatory target and is supported. It is generally considered to be in line with 'Australian Excellence'

Energy Efficiency and Renewables

Residential:

Must achieve an average of at least 7.5 Star NatHERS rating across multiple dwellings and a minimum of 6.5 star NatHERS rating for each dwelling.

Residential:

An average of at least 7.5 Star NatHERS rating is an appropriate threshold for the preferred target and is supported.

A minimum of 6.5 Star NatHERS rating for each dwelling is also supported

Non-Residential:

Should achieve a minimum 6 Star NABERS Energy rating (preferred)

Must achieve a minimum 5.5 Star NABERS Energy rating (mandatory)

Non-Residential:

'Should' and 'Must' introduce ambiguity - see above.

6 Star is highly ambitious - generally considered as world leadership level of performance. It is generally supported in line with the Council's declaration of a climate and environment emergency, although it should be noted that the majority of applications will be unlikely to meet the 6 Star standard from a technical feasibility perspective. Low-rise buildings with good, unshaded rooftop photovoltaic array potential will have a much higher chance of achieving the rating compared to tall buildings in overshadowed CBD locations.

5.5 Star is generally considered as local best practice for commercial office buildings and is supported as a mandatory threshold. However there is less uptake and proven delivery for such an ambitious standard in other sectors.

Needs clarification on how this standard is applied to other sectors e.g. hotel, retail, laboratory, education, healthcare sectors etc.

Target needs to specify whether it is a 'base-building' or 'whole-building' rating. Setting a 'base-building' target is recommended.

Waste and Resource Recovery

All:

Must provide waste and resource recovery facilities that meet the requirements of the City of Melbourne's Guidelines for Waste Management Plans.

Must meet the requirements of a precinct waste management plan if there is one in place.

Should manage construction waste to minimise landfill and maximise resource recovery.

All:

Currently proposed performance requirements are a minimum practice for operational waste facility provision.

Demolition waste should be mentioned in addition to construction waste. It is recommended that Green Star Buildings Responsible Construction Credit Achievement is targeted.

See note B1 in Appendix B on further considerations for reducing demolition waste and reducing embodied carbon.

Urban Heat Island Response

All:

Must provide the equivalent of at least 75% of the development's total site area as building or landscape elements that reduce the impact of the urban heat island effect

All:

Generally supportive - from experience this target is achievable for most projects but noting there may be exceptional sites where this is very challenging to achieve (e.g. tall buildings on tight sites may be challenging, where mechanical plant space takes up a disproportionate amount of roof area, for example)

Suggest to make this a preferred target since Green Factor target, below, will cover a baseline performance.

A minimum target might be set at 65% if desired to give a little more flexibility.

This requirement is very similar to the Green Star Buildings Credit 19 Heat Resilience Credit Achievement and the methodology for defining site area that meets this requirement could be referenced to Green Star so that there are not any conflicting requirements for Green Star vs Council methods

Urban Ecology

All:

Must be designed and constructed to achieve a minimum Green Factor score of 0.55 using City of Melbourne's Green Factor Tool.

All:

Generally supportive of this step change that aligns with urban greening and heat island mitigation design objectives. It is a big step change for the market and will need clear guidelines on how applications should be articulated, and a clear and consistent CoM process and resource in place to review applications where 0.55 Green Factor is presented as not practical by the applicant.

Integrated water management

All:

Must achieve the best practice water quality performance objectives set out in the Urban Stormwater Best Practice Environmental Management Guidelines, CSIRO 1999.

Must connect to a precinct scale recycled water source if available.

Unless connected to a recycled water source, must install a rainwater tank to support on-site green cover or supply a minimum of 10% of internal water demand.

All:

The CSIRO 1999 standard is an old one - this could be updated with reference to Green Star Buildings Credit 39 Waterway Protection Credit Achievement which is requiring a higher performance and is generally achievable as a best practice performance

There is a potential loophole here in that where projects are not connected to recycled water source, the irrigation to on-site green cover option will be selected with no specific performance target and no toilet flushing supply installed.

WC flush is a steady all year-round water requirement and the use of rainwater in this context is a much more effective replacement of potable water use.

If only connected to irrigation supply then in times of drought little water can be supplied to plants and during periods of heavy rainfall irrigation demand is reduced, therefore more rainwater ends up flowing to stormwater drainage.

It is recommended to ensure that meeting 10% internal water demand on an annual basis is the minimum requirement, and any alternative strategy should at least match this annual demand.

Residential:

Should meet the relevant Water credit under 5 Star Green Star Buildings (preferred)

Residential:

The preferred target is supported and should state specifically 'Water Use Credit Achievement' under Green Star Buildings.

Non-Residential:

Should meet a minimum 4 Star NABERS Water Rating (preferred)

Non-Residential:

4 Star is generally considered as local good practice for commercial office buildings and is a supported preferred target. There are also a number of current NABERS rated commercial buildings in Melbourne CBD that achieve 4.5 and 5 Star ratings in operation, but it is unclear whether current low occupancy rates may be artificially enhancing performance. There is potential to push this standard higher to achieve 4.5 Star NABERS water, but this is likely to conflict against 6 Star NABERS energy to meet water-based cooling needs for higher energy efficiency.

There is less uptake and proven delivery for other sectors; 3.5 - 4.5 Star for hotels and 3.5 Star for Shopping centres seems typical from the limited ratings results on NABERS website

Needs clarification on how this standard is applied to other sectors e.g. hotel, retail, laboratory, education, healthcare sectors etc.

Not all building types are covered by NABERS water ratings. As an alternative the 'Water Credit Achievement' under 5 Star Green Star Buildings could be stated. This represents an ambitious 45% water saving on the Green Star Water calculator. If Green Star is not being pursued then a general % improvement target backed up by calculations could be set out

Appendix B - Other Considerations outside the scope of the currently proposed Amendment

B1- Opportunity to drive change in the embodied carbon, adaptive re-use, circular economy space

One area of step change and innovation that appears absent from current proposals is the opportunity to reduce the amount of demolition material that is sent to landfill, encourage adaptive re-use and help kick-start an improved circular economy in the local construction industry.

There are very few sites in the City of Melbourne that do not have existing buildings on them. This represents a significant embodied carbon sink and the potential of these structures and components should be investigated and incorporated where possible into development proposals.

Further to this any demolition contract it is recommended to include performance targets for diversion of waste to landfill to be verified by a robust reporting structure.

With regards to the new-build components of developments it is recommended to include upfront or embodied carbon performance targets that are reported on against a robust methodology.

Some options here for inclusion into the amendment include:

- Reference to specific targets within Green Star such as:
 - Credit 2 Responsible Construction, Credit Achievement level. (90% of construction and demolition waste is diverted from landfill, and waste contractors and facilities comply with the Green Star Construction and Demolition Waste Reporting Criteria)
 - Credit 21 Upfront Carbon Emissions, Credit Achievement level (although this will be required for Green Star 5 Star as a minimum), or Exceptional Performance level.
- Reference to the embodied carbon emissions reporting. The CoM could require applicants to disclose the quantities of materials and associated emissions at application stage and building permit approval stages. Since major projects are undertaking Green Star assessment, this should be work that these team are already progressing. Requiring greater prominence around the reporting of this aspect will enable a better transparency and dialogue with the City around this performance aspect.
- Alternatively, it would be possibly to explore the potential for embodied carbon reporting via the NABERS embodied emissions materials form which is a relatively new initiative. This may give possibility for smaller projects or those that do not fit into Green Star categories for certification.

B2 - Consider incentivising 'preferred' targets

- A different approach to the minimum and preferred standards could also be considered which is more incentivised, from a perspective of encouraging innovation. Whilst the mandatory standards could be seen as an excellent starting point for meeting the City's stated objectives, for the desired improvement beyond this, the City could encourage developers to reach to the preferred standard through some clear incentives. For example, would the City of Melbourne consider offering incentives for the achievement of a Green Star 6 Star rating through concessions in say, building height or increased floor area, as this is likely to be a mechanism to entice more clients to pursue the more advanced standard? There are examples of where this approach has been undertaken in other parts of the world e.g. City of Vancouver has incentivised the Passive House standard through allowance

of additional floor space, building height and setback relaxations. When encouraging innovation beyond what is an already ambitious baseline it is often be more effective to take the 'carrot' rather than 'stick' approach.