Government of **Western Australia**
Department of **Housing and Works**

DHW Technical Guideline (TG 040)

Environmentally Sustainable Design Guideline for Non-Residential Government Buildings

Version 3.0

April 2026

Document Control

Revision History

Version	Date	Author/Editor	Summary of changes
1.0	Jul 2023	Graham McDonald	First Published
2.0	Sep 2024	Graham McDonald	a) The small project threshold for use of the ESD Worksheet (Appendix 1) has increased from $2m to $5m. b) A Climate Change Resilience Assessment has been added to the ESD Worksheet. c) Minimum Energy Performance Standards (MEPS) for equipment has been referenced. d) Change to Water Usage estimating and reporting requirements. e) Noted that a Green Building Council of Australia (GBCA) certified project is preferred to an uncertified project.
2.1	April 2025	Graham McDonald	Updated links
2.2	October 2025	BTS	Update to DHW
3.0	April 2026	Graham McDonald	Incorporating changes relevant to GBCA's Green Star Buildings v1.1. that should be applied from the 1 May 2026.

Approvals

Version	Date	Name	Title
3.0	April 2026	Dean Wood	Principal Architect

Contents

1. Purpose

This technical guideline (Guideline) provides instruction and advice to the project design team, on the application of environmentally sustainable design (ESD) for non-residential government buildings.

The intent of this Guideline is to:

- provide practical and achievable standards, using empirical evidence and market-based rating tools to reduce environmental impact during the construction and operation of the facility,
- demonstrate leadership in the non-residential building sector to reduce greenhouse gas (GHG) emissions, and build resilience to climate change through appropriate design and construction methodologies,
- assist in moving towards a fully electric building model in support of the Government's commitment to an 80% reduction in greenhouse gas emissions from government operations by 2030 (from a 2020 baseline), and achieving net zero GHG emissions by no later than 2050,
- ensure the State Government's Electric Vehicle Strategy is considered in the facility's design; and
- deliver on the State Government's commitments for effective waste management (Waste Avoidance and Resource Recovery Strategy) and water management practices (Waterwise Action Plan).

The project design must comply with all relevant legislation, the National Construction Code, Australian Standards, and project specific Customer Agency briefs provided by the Department of Housing and Works (DHW). Note, Customer Agency briefs may be tailored on a project-by-project basis by the Customer Agency to meet their service delivery requirements.

Fundamental to each project, to ensure emission reduction is targeted and climate resilience is addressed, is the need to:

- concentrate our efforts to reduce emissions from Scope 1 (direct) and Scope 2 (electricity use) up to 2030, while building knowledge and industries that will assist in targeting reductions in Scope 3 (all other indirect emissions) thereafter,
- wherever possible avoid creating emissions; build less, dematerialise projects, provide passive solutions, and design to allow for adaptive reuse, and
- assess the impact from climate change and minimise the risk to the project – in the short, medium and long-term.

2. Responsibilities

Customer Agencies are responsible for launching and obtaining Government approval of each project, including establishing an appropriate scope to meet their service delivery requirements, securing sufficient budget, and setting achievable timelines for delivery, in accordance with the Western Australian Public Sector's Strategic Asset Management Framework (SAMF).

When undertaking the Business Case and Project Definition Plan[1] for the project it is incumbent on each Customer Agency to ensure high-quality cost estimates are prepared, including commitments to ESD principles, and to champion the highest ESD standards that will be supported during the Expenditure Review process.

It is also incumbent on Customer Agencies to ensure best value for money ESD outcomes are set during Business Case development. A key action in this regard is to brief decarbonised and climate resilient projects. For example, to ensure a value-for-money approach, site selection that minimises exposure to climate hazards is vitally important and, no new fossil fuel fired appliances should be added to a Customer Agency's building portfolio to avoid replacing the new asset before it reaches the end of its service life. Simple actions like these may avoid costly remedial work associated with climate impact and avoid locking in a long-term requirement for a fossil fuel supply to the facility.

DHW is responsible for delivering capital works projects for its Customer Agencies within appropriate time-cost-quality parameters, in accordance with Government priorities and procurement requirements, including the imperative to achieve value for money outcomes. Government also expects DHW, as a Works delivery agency, to review and at times challenge the appropriateness of design and its alignment to Government's policies and priorities.

DHW, and by extension the design team engaged by DHW, is committed to collaborating with its Customer Agencies and being responsive to Customer Agency requirements, in the context of its primary responsibilities to, and the priorities of Government.

Design teams shall be fully engaged and responsible for the building achieving the required ESD performance, within the project budget and throughout the duration of the project. Refer to the State Government's Architectural Services Brief for Non-Residential Government Buildings that outlines consultants' responsibilities within the project context.

[1] Strategic Asset Management Framework, Project Definition Plan, Appendix A Purpose Rigour and Detail SAMF – Project Definition Plan Guidelines

Following approval of the Business Case (BC), typical project stages referred to throughout this Guideline, are defined in Figure 1 below.

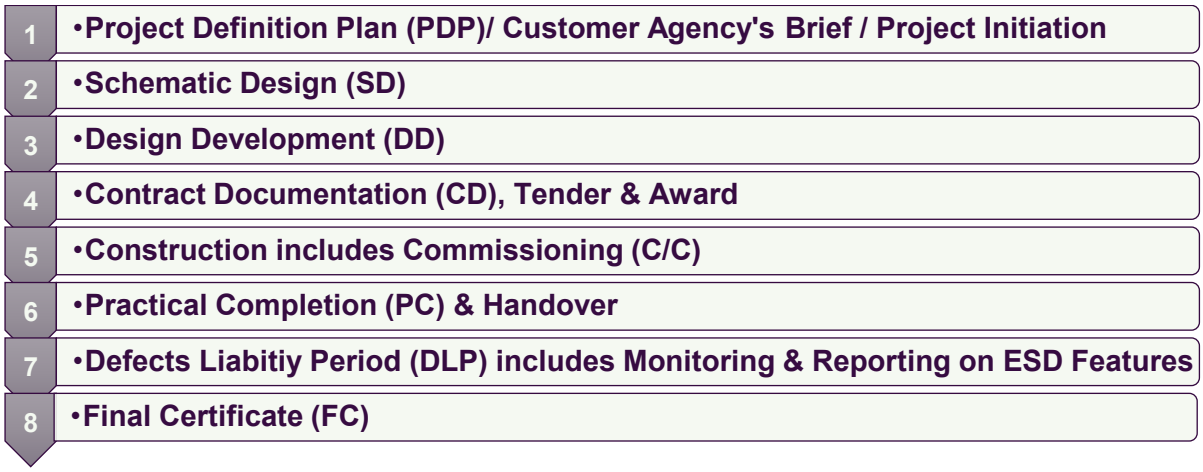

Figure 1: Typical Stages in Project Delivery

A suggested sequence for DHW Project Managers using this Guideline includes:

- Consult with the Customer Agency to establish the ESD component of the project brief and available funding.
- Check that this Guideline is applicable to the project by reviewing the building classes that are relevant in Section 3.
- If the Guideline is applicable, assess the path to been taken by aligning with the Customer Agency's project brief and ideally Section 4.3.
- Where the ESD outcome is not prescribed in the project brief, consider basing the decision on Section 4.3 and the project construction value as listed in Table 3, and agree this decision with the Customer Agency. Ideally projects should:
    - target greenhouse gas emission reduction as noted in Section 4.4 and Appendix 1 & 2, and
    - be fully electrified as detailed in Section 5.

ESD related deliverables associated with each stage of the project are defined in Section 6 - Table 4 and should be discussed and agreed with the project stakeholders, and forming a key part of the consultants' commissions.

3. Guideline Application

This Guideline is only applicable to non-residential facilities, with the following exceptions.

- Class 3 buildings, as defined in the National Construction Code, covers residential buildings that provide a social, educational or health related function and are included in DHW's non-residential government building category.
- For this Guideline only, designs for new external swimming pools and separate central energy plant facilities, are required to comply with the requirements of this Guideline.

Specifically excluded from this Guideline are:

- Classes 1, 2, & 4 dwellings,
- Projects that are largely Class 5 office accommodation, i.e. interior fitout where DHW's Government Office Accommodation Standard would apply, see Section 4.2,
- Class 6 retail outlets, and
- Class 10 non-habitable shed type structures, where energy consumption is insignificant.

Excluded, unless specifically requested by the Customer Agency, is the application of this Guideline for projects valued at $100m or greater.

Legislation at the state and federal level, and government emissions reduction requirements will continue to evolve in response to the latest scientific advice, and the need for urgent action on climate change. Consequently, there is a need to ensure that any guideline is sufficiently adaptable to enable realignment with new, or interim government targets or requirements. Therefore, the targets provided in this Guideline may be more frequently updated.

The design for all non-residential government building projects, whether new works or significant upgrades to existing, will need to comply with the version of this Guideline current at the commencement of the project design phase, unless otherwise instructed by DHW's Project Manager.

4. ESD Principles

4.1 Foundations

The guiding principle behind sustainability is balancing the needs of the present without compromising the ability of future generations to meet their own needs[2]. This is achieved through an integration of environmental protection, social advancement, and economic prosperity.

Hence, due to the complexity of the task, interconnected activities, and requirement for auditable outcomes, a robust multifaceted approach is needed to address ESD.

The Green Building Council of Australia (GBCA) provides project specific rating tools which offer a robust framework for applying ESD principles. The Department of Housing & Works acknowledges GBCA's work in developing and maintaining these tools, their encouragement to apply the tools to appropriate building projects and their offer to formally certify compliance with the criteria specified in their Green Star Buildings Submission Guidelines.

DHW, through the application of this Guideline, will continue to apply the GBCA's rating tools to projects with a construction value of $5m or greater and less than $100m.

For projects with a construction value less than $5m, or where no relevant rating tool exists, it is a requirement that the design team must consider incorporating ESD features into the project design and demonstrate the project's ESD credentials by completing DHW's **ESD Worksheet** in Appendix 1.

4.2 Rating Tools

There are currently two building rating tools provided by GBCA for new building projects:

- Green Star Buildings - applies to new buildings and major refurbishments to existing.
- Green Star Fitouts - applies to new fitout projects and is generally relevant to office type interior fitout projects.

DHW's Government Office Accommodation Standards should be referenced for ESD targets on new fitout projects and buildings with a significant office component.

[2] Our Common Future, UN 1987, (The Brundtland Report)

Only the Green Star Buildings Submission Guideline rating tool is applicable to the application of this Guideline, whichever version of the rating tool that is current at project commencement, i.e., at Stage 1 - Project Initiation and Definition/Customer Agency's Brief.

To obtain a Green Star Buildings rating, the sustainability attributes of a project are evaluated across eight categories, titled: **Responsible**, **Healthy**, **Resilient**, **Positive**, **Places**, **People**, **Nature**, and **Leadership**. For a full description of each category refer to GBCA's Green Star Buildings Submission Guidelines[3].

Star rating values particular to the rating tool, are provided in Table 1 and are representative of the completed building at Practical Completion/Handover stage. Hence, where a Star rating is required on a project, as well as embedded in the design, it shall be incorporated throughout all aspects of the construction.

Table 1: Green Star Buildings Rating Values

Assessed Point Score	Related Rating Value	ESD Classification
15-34	4 Star	Australian Best Practice
35-69	5 Star	Australian Excellence
70-100	6 Star	World Leader

It is important to note that GBCA's approach to delivering net zero greenhouse gas emissions is known as the Climate Positive Pathway. For organisations applying the Green Star Buildings Submission Guideline rating tool, this approach has the effect of increasing the ESD performance of each Green Star rating over time. For example, registering a new building project for 4 Star certification in 2026, will require a commitment to achieve a 10% reduction in energy use in comparison with a reference building built to the minimum National Construction Code (NCC) standards. However, registering the building project from 2028 onwards, will require a 20% reduction in energy use if certification is to be achieved.

[3] Green Building Council of Australia's Green Star Buildings Rating Tool

4.3 Setting Sustainability Rating Requirements

The appropriate sustainability rating, reporting and certification requirements for each project are to be determined on a project-by-project basis. The decision as to which sustainability target or Green Star rating to apply will be made by the Customer Agency no later than the Project Definition Plan/Briefing stage, to align with their policy commitments and consistent with this Guideline.

DHW's Project Manager, in consultation with the Customer Agency's representative is responsible for ensuring that:

- an appropriate ESD budget is available from the Customer Agency to align with their ESD performance requirements,
- the consultancy contracts for consultants and sub-consultants include the nominated targeted ratings and reporting requirements (including where relevant, Round 1 and Round 2 submissions for GBCA's Green Star Certification Process) as a condition of the project,
- under this Guideline, an integrated design process is conducted, where the Customer Agency's Representative and relevant stakeholders meet to decide on the integration of appropriate sustainability initiatives to achieve the specified rating before schematic design is commenced, and
- refinement of the sustainability initiatives occurs throughout the design phase, and inclusion of these initiatives in the contract documentation.

Where the project should seek to obtain a formal certified rating, the documentation will be assessed by GBCA for compliance and hence registration of the project and submission of the documentation by the design team, needs to align with GBCA's certification process. Before committing to this process, it should be noted that to register a new building project for certification, all Minimum Expectation criteria will need to be achieved and some Credit criteria such as Energy Source, Energy Use, Impacts to Nature, etc, become more demanding as we approach 2030, (see Section 9. Anticipated Revision Trajectory).

Where either the Customer Agency has chosen not to have the project certified, or certification is not practicable due to constraints beyond the Customer Agency's control, a non-certified rating is permitted. In this instance it is important to note that the quality of the ESD component will not be equivalent to a project certified by GBCA and hence, though the project may strive to achieve a 4 Star rating or higher, no claim to the uncertified project achieving a Star rating can be made.

In addition, all Minimum Expectations and Credits deemed impracticable on the uncertified project, need to be agreed and signed off by the Customer Agency and all materials normally submitted to GBCA to demonstrate compliance, shall be submitted to the DHW's Project Manager instead. Where a Minimum Expectation cannot be achieved on a Credit, no Credit Achievement points or Exceptional Performance points can be claimed. For projects that are not certified by GBCA, the ESD consultant must ensure that an additional point is obtained from Credits that have the Minimum Expectation satisfied, or from a Credit that has no Minimum Expectation.

For all uncertified building projects, the use of the terminology of '4 Star - Best Practice', '5 Star - Australian Excellence' and '6 Star - World Leading', is inappropriate as these terms are associated with GBCA certified projects. Uncertified projects should continue to use the GBCA rating system and must demonstrate to DHW that they can achieve a minimum of 15 points from the rating system before classing the uncertified project as either a **Baseline Standard** or an **Advanced Standard**, as detailed in Table 2.

Table 2: DHW Uncertified Project Classifications

Point Score	DHW Descriptor
15-34	Baseline Standard
35 and above	Advanced Standard

All documentation is to be submitted to DHW's Project Manager at each stage of the project, (refer to Section 6. Project Deliverables).

Table 3 of this Guideline establishes expectations as to the minimum requirements that projects should achieve. As noted above, a project design brief that exceeds or fails to meet these expectations will require approval from the Customer Agency's Representative.

The Western Australian Climate Policy requires government agencies to lead by example. Therefore, Customer Agencies are encouraged to pursue higher design standards, where it aligns with their asset portfolio obligations and business objectives.

Table 3: Minimum Requirements					
Project Construction Values (Note 1)	**DHW's ESD Worksheet Required** (Note 2)	**DHW Non-Certified Rating** (Note 3)	**Green Star Certified Rating (Certification)** (Note 4)	**Green Star Accredited Professional required** (Note 5)	**All new services to be All Electric** (Note 6)
< $5 million	Yes	-	-	No	Yes
$5m to < $20m	No	**Baseline Standard**	-	Yes	Yes
$20m to < $100m	No	-	**4 Star**	Yes	Yes

Notes	
	1. Project construction value excluding FF&E, fees, design contingencies and GST.
	2. For projects less than $5 million or where no relevant rating tool exists for the type of project.
	3. For non-certified ratings, Minimum Expectations and Credits deemed impracticable on the project, need to be agreed and signed off by the Customer Agency.
	4. For projects to be certified by GBCA. Consultants must allow for Registering the project with the GBCA prior to Practical Completion, and for making formal submissions for Certification one year after Practical Completion. Consultants must allow for both Round 1 and Round 2 submissions in the Green Star Certification Process.
	5. Where projects have a construction value of $5 million or greater (i.e. those requiring a Business Case under the Government's Strategic Asset Management Framework), a GBCA Accredited Professional is required to deliver appropriate and timely advice, from inception to final certificate, or in the case of projects where a construction value is $20 million or greater, from inception to completion of the GBCA Certification process.
	6. Exceptions to an 'all electric' design are to be agreed and signed off by the Customer Agency.

4.4 Targeted Design Features

As noted above, there are eight categories included in the Green Star Building assessment, titled: **Responsible, Healthy, Resilient, Positive, Places, People, Nature, and Leadership**. Within the Green Star Buildings Submission Guidelines rating tool all categories with exception of the Leadership category, have a set of Minimum Expectations. The Minimum Expectations aim to, "*ensure all Green Star rated buildings meet a basic definition of a green building (energy efficient, water efficient, good healthy spaces, built responsibly, and on sites that are not critical natural areas)".*

Points are awarded within the eight categories for initiatives that meet the criteria of the rating tool's Credit Achievements (including Exceptional Performance credits). Credits are then totalled, and an overall score is assessed. The quality of the ESD solution is established by the overall project score obtained, aligning with the values set out in Table 1. There are no points awarded for the Minimum Expectations requirements.

As set out in Table 3 above, all projects with a construction value of $5m or greater unless otherwise approved by the Customer Agency's Representative and instructed by DHW's Project Manager, should achieve all Minimum Expectation criteria. Projects where the construction value is $20m or greater should achieve all Minimum Expectations and in addition should be certified under the GBCA Green Star Program.

To deliver on the State Government's Climate Policy, Waste Avoidance and Resource Recovery Strategy, and Waterwise Action Plans, certain Credit Achievements and Exceptional Performance credits, shall be incorporated into the project design, as identified and detailed in Appendix 2 - Tables A2A to A2H. The primary aim of this approach, in addition to compliance with Government directives, is to target features that address direct and indirect greenhouse gas emissions, climate resilience, waste minimisation, and water efficiency. Provided these targets are satisfied, the design team have flexibility in selecting Credit Achievements and Exceptional Performance credits to achieve the Green Star rating specified in Table 3, the selection of which is a collaborative assessment between the Customer Agency's Representative, design team and DHW.

5. Electrification

To facilitate achieving net zero emissions, buildings that currently use fossil fuels will need to progressively transition to renewable-energy powered electrification. All new buildings and upgrades to existing should therefore be fully electrified to avoid costly decarbonising in the future.

Fully electrified means - fossil fuels cannot be used on site. Hence, alternatives to fossil fuels are required to deliver services such as cooking, production of domestic hot water and space heating. This requirement includes base building and tenant services. As per the Green Star Buildings Submission Guidelines, fossil fuels for industrial processes are excluded from the assessment.

Where the buildings and systems cannot be fully electrified, they must be designed to be easily converted at a later date. As an example, where new gas fired boiler plant is installed it should not be designed to parameters that would preclude the gas fired plant being easily substituted by electric heat pumps that operate at lower supply and return water temperatures. In this example, the additional space and weight requirements of heat pumps would need to also be considered in the plantroom design, and spare capacity built into the electrical distribution system to avoid major disruption to the building when full decarbonisation eventually occurs.

Where fossil fuel fired plant or equipment has reached the end of its serviceable life and needs to be replaced on existing projects, it should be replaced with efficient all-electric plant and equipment, where possible. Only in exceptional circumstances should the project deviate from this requirement. The exceptional circumstances must be recorded and endorsed by the Customer Agency's Representative and may include circumstances such as:

- technical challenges to electrify that are deemed insurmountable, such as unavailable plant to meet tight project programmes,
- lack of project funds due to the business case for electrification not being endorsed,
- electrical infrastructure incapable of taking the additional load, or
- new fossil fuel fired equipment is deemed a component (i.e. child asset) within a larger parent asset or system, such as gas fired components in existing absorption chillers.

Any fossil fuels used for emergency power or laboratory equipment must be less than 1% of the total building energy consumption and where the project requires GBCA certification, will need to be offset for the first five years of operation, (refer to the Green Star Buildings Submission Guidelines).

Projects unable to meet the electrification requirements, should consider developing a Net Zero Carbon Action Plan (NZCAP), to propose activities and a trajectory for the project to achieve net zero by 2050.

6. Project's ESD Deliverables

ESD design principles must be reported on, either separately, or as a distinct section in the Lead Consultant's main report at each stage of the design and construction process. This shall specifically focus on how the design team is meeting the requirements of this Guideline and the National Construction Code (NCC) Section J.

Deliverables for each phase of the project are defined below in Table 4.

The Lead Consultant is to ensure that all relevant data is provided at the completion of each project stage and either submit:

- DHW's ESD Worksheet (Appendix 1), or
- GBCA's Green Star Buildings Submission Planner aligned to Appendix 2 Green Star Rating Tool Targets.

Table 4: ESD Reporting Deliverables

Project Stage	Customer Agency Role	Description of ESD Reporting Content
PDP	➢ Sets ESD standard and constraints. ➢ Endorsement of Project Brief	The ESD component of the Brief must acknowledge the ESD targets to be achieved relevant to the project type and scale. The Brief is to provide an overview of the intent of the project with respect to how it will achieve the ESD targets. The Brief must also define the stakeholders and their responsibilities for delivering key components of the project's ESD strategy.
Schematic Design (SD)	➢ Endorses ESD direction	Submit the level of documentation appropriate to the project value as detailed in Table 3 above, i.e.: DHW's ESD Worksheet (Appendix 1), for projects with a construction value below $5m, provide the completed ESD worksheet, including an update to the information provided at the briefing stage. For projects with a construction value of $5m or greater, provide a draft GBCA Green Star Buildings Submission Planner and a descriptive ESD Assessment Report.

Table 4: Continued…/		
Project Stage	**Customer Agency Role**	**Description of ESD Reporting Content**
Schematic Design (SD) Continued…/		ESD Assessment Report must include, but not limited to: • an update to the information provided at the briefing stage, • proposed design features and strategies relevant to the 41 categories detailed in Appendix 2, Tables A2A to A2H, • estimated costs for each of the ESD strategies (where there are competing options to deliver the ESD target an assessment of the options, including cost, is to be provided for the Project Manager to assess in consultation with the Customer Agency's Representative), • an assessment of the project's likely Green Star rating outcome or DHW's Non-Certified rating (and risk of not achieving that outcome), including a brief synopsis of GHG emission reduction strategies, and • a GBCA Climate Change Pre-screening Checklist as a minimum.
Design Development (DD)	➢ Approves ESD and budget trade offs	Update and submit all documents provided at SD stage, including, but not limited to: DHW's ESD Worksheet, or the Green Star Buildings Submission Planner & ESD Assessment Report where relevant, (refer to Table 3).

Table 4: Continued…/		
Project Stage	**Customer Agency Role**	**Description of ESD Reporting Content**
Contract Documentation (Con Docs)	➢ Confirms final ESD scope	Update and submit all documents provided at DD stage, including, but not limited to: DHW's ESD Worksheet, or the Green Star Buildings Submission Planner & ESD Assessment Report where relevant, (refer to Table 3). In addition, for projects valued at $5m and above submit the following: Estimate of Water Usage An estimate of annual water usage for the facility. NCC Section J, Provisions Reporting Checklist A detailed NCC Section J, Provisions Reporting Checklist, including anticipated energy usage. For details of the report content refer to Section 7 and associated template provided in Appendix 3. Estimate of Energy Usage An estimate of annual energy usage for the facility. Energy Modelling Data Energy Modelling data provided where available, with weather data provided in *.epw format, (see Section 8. Energy Modelling). Net Zero Carbon Action Plan (NZCAP) For projects where full electrification is not feasible, consider providing a NZCAP, to define how the project can be decarbonised by 2050.

Table 4: Continued…/		
Project Stage	**Customer Agency Role**	**Description of ESD Reporting Content**
Contract Documentation (Con Docs) Continued…/		NATSPEC Embed detailed ESD specifications for the project, as outlined in GBCA's Specifying for Green Star Buildings using NATSPEC. The specification will also cover all requirements outlined in this Guideline that the contractor needs to execute during the currency of their contract. An outline of the requirements is provided below: *1. General* *1.1 Overview (Details of the project including intended ESD outcomes and details of each GBCA Green Star Buildings Rating Tool category targeted, where relevant).* *1.2 Responsibilities (Obligations on each party for the submission of documentation to demonstrate compliance and/or support the GBCA Certification process).* *1.3 Cross Reference (Include all work sections that the Contractor needs to reference, for example: 0164 Commissioning, 0171 General Requirements, 0172 Environmental Management, 0201 Demolition, etc).* *1.4 Interpretations, (explaining relevant technical terminology).* *2. Section J Compliance Requirement* *Identify the minimum standards to be achieved, i.e., for thermal properties, building sealing, etc.* *3. Submission Documentation (identifying the documentation required from the Contractor to show compliance with this Guideline and NCC, and where necessary include reference to the documentation required to support the submission to GBCA for Certification).* Where there are additional specification requirements relevant to the project that are deemed necessary to convey the intent of the design and obligation on the contractor, it is acceptable to create a separate specification referenced, 0168 ESD Requirements and Reporting.

Table 4: Continued…/		
Project Stage	**Customer Agency Role**	**Description of ESD Reporting Content**
Construction	➢ Approves ESD impacting changes	Testing and Commissioning Plan. Implement BSRIA Soft Landings Framework (Australian version) to all projects where the construction value is $5m or greater. For projects with a construction value of $20m and greater, engage an Independent Commissioning Agent, fulfilling the role required by GBCA's Verification and Handover credit. For projects requiring GBCA certification, register the project with GBCA prior to Practical Completion.
Handover / Practical Completion		Ensure building managers and users are trained on both passive and active ESD features and control configurations and processes required to achieve the energy efficiency, water efficiency and waste minimisation targets. NCC Section J Provisions Reporting Checklist For projects valued at $5m and above, at Practical Completion, the Building Surveyor must provide an updated NCC Section J Provisions Reporting Checklist supported by the Engineering Consultant's calculations (refer to Section 7 and Appendix 3), to demonstrate compliance with the design. This will form part of the Technical Documents referred to in BA17 - Certificate of Construction Compliance. Waste Management Report The Contractor is required to submit DHW's Waste Management Report indicating the project's compliance with DHW's C&D waste targets. Refer to Appendix 2 - Table A2.A Responsible Construction. https://www.wa.gov.au/government/document-collections/consultant-guidance-and-forms

Table 4: Continued…/		
Project Stage	**Customer Agency Role**	**Description of ESD Reporting Content**
Defects Liability Period (From Practical Completion and prior to Final Certificate)	➢ Assess performance outcomes to improve future projects	For projects valued at $5m and above provide: Water Usage Report At the end of the Defects Liability Period (DLP) and before a Final Certificate is issued, the Consultant is to submit to DHW's Project Manager, the actual water used during the DLP, compared to the anticipated use and provide narrative on the potential causes of any discrepancies. Energy Usage Report The consultant will report the Energy used at the end of each month, between Practical Completion and Final Certificate, to DHW's Project Manager, relevant consultants, and Customer Agency's Representative. Energy must be reported using the Department of DHW's Energy Use Report Form. The actual energy used monthly must be compared to the anticipated use and major differences highlighted, to ensure any potential discrepancies are dealt with in a timely manner. https://www.wa.gov.au/government/publications/energy-use-report-department-of-finance-projects At the end of the Defects Liability Period and before a Final Certificate is issued, the Consultant is to submit a completed Energy Report Form to DHW's Project Manager, with discrepancies between design and actual usage reconciled, and costed remedial measures provided where relevant. Submission for GBCA Certification For projects requiring GBCA certification, submit required data to GBCA for first-round assessment. Update the data to resolve issues identified by GBCA in the first-round assessment and resubmit to GBCA for second-round assessment.

7. NCC Compliance & Reporting

All government buildings must comply with the requirements of the National Construction Code (NCC) and meet the Minimum Energy Performance Standards (MEPS) for equipment.

Section J of the NCC sets minimum energy efficiency standards for new buildings. These standards relate to all facets of the building project including building fabric, glazing, sealing of the building, air quality, power and artificial lighting, hot water supply, commissioning, and access for maintenance.

Where the requirements of this Guideline provide a higher standard than the NCC for sustainability, this Guideline should be applied provided the building approvals process is not compromised.

For the purposes of this Guideline only, buildings will be designed to comply fully with Section J of the National Construction Code 2022. However, if the building approvals process is subject to a later NCC version than the above, the building designers must use that version. The Consultants are obligated to certify compliance with the applicable NCC version that applies to the building approvals process. It must be demonstrated that, for the proposed project, building attributes achieve or exceed the minimum requirements of NCC 2022 Section J, or later applicable version.

The report on compliance with Section J of the NCC, shall be sufficiently detailed to enable an independent assessor to ascertain that the design achieves compliance. For instance, NCC 2022 J1P4 requires a building to "*have features that facilitate the future installation of on-site renewable energy generation and storage and electric vehicle charging*". In addition, NCC 2022 J9D4 provides specific requirements for car park charging requirements based on building class. How the designer has considered these requirements in their design needs to be demonstrated and they are strongly encouraged to review the adequacy of the vehicle charging requirements in line with the Customer Agency's electric vehicle transition plans.

The checklist in Appendix 3 can be used as a reporting tool for Energy Efficiency. **Note: this reporting requirement is only relevant to this Guideline and does not form part of the building approvals process. However, it may be used as a check for verification purposes.**

NCC's Verification Method J1V3 - Verification Using a Reference Building is required for projects with a construction value of $5m or greater, when demonstrating a reduction in energy use when compared to a reference building.

At Practical Completion, the Contractor must provide an updated NCC Section J Provisions Reporting Checklist to demonstrate compliance with the design.

8. Energy Reporting & Modelling

For projects valued at $5m and above, the consultant is required to deliver to the Project Manager, an Energy Report as detailed in Section 6, Table 4. The report must be sufficiently detailed with supporting text to explain the anticipated energy use and (depending on the project phase) any deviation from the actual energy use.

It is imperative that the Consultant has in writing from the Customer Agency's Representative, the anticipated occupancy patterns, and hours of operation in order that the results can be reconciled with actual consumption, post-occupancy.

Therefore, the report should include the anticipated user patterns and any assumptions, such as specific actions that would need to be undertaken by the building managers and users to utilise the passive design features (e.g., lowering blinds to reduce solar gain).

Modelling, to satisfy the Minimum Expectation of the **Energy Use** credit, (see Table A2.D, Ref. 23), shall conform to the requirements of the NCC Section J, (i.e., ASHRAE Standard 140-2017 Addendum A).

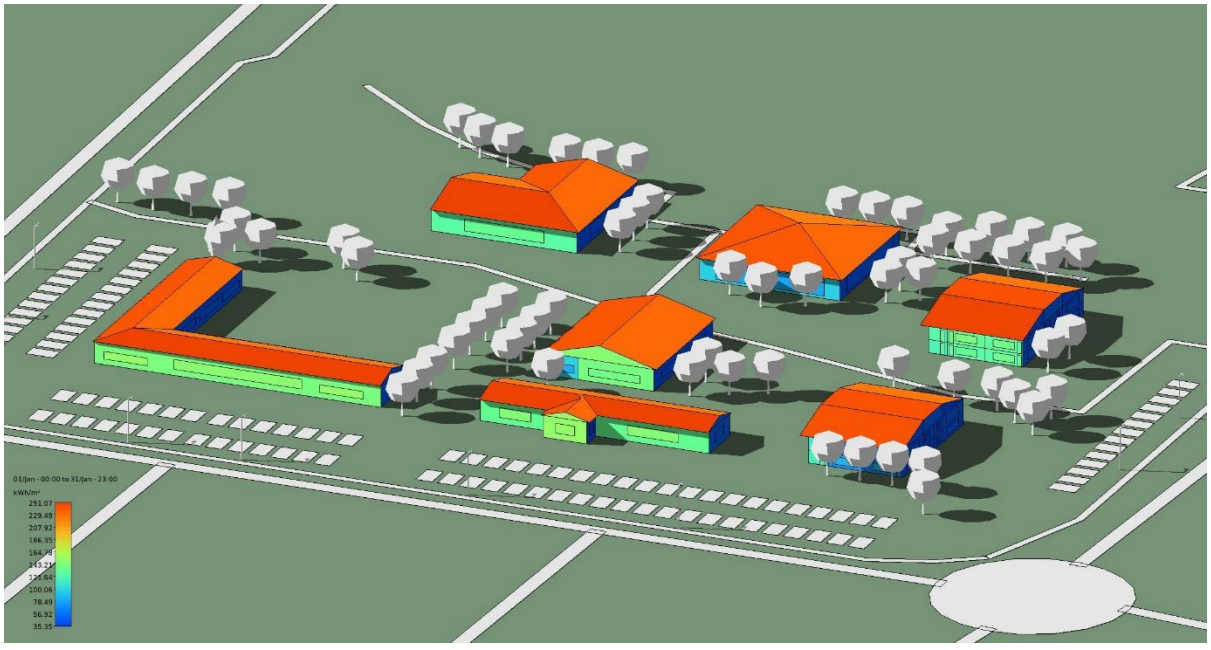

Figure 2: Example of Typical Primary School Energy Model

9. Anticipated Revision Trajectory

As noted previously, it is anticipated that this document will be updated frequently to align with future government legislation and decarbonisation targets.

In due course, the government owned non-residential buildings will become fossil fuel free, highly efficient buildings, powered by renewables, and built with low embodied carbon materials.

However, the following should be factored in when master planning projects. The Green Building Council of Australia's Climate Positive Pathway has the effect of increasing the ESD performance of each Green Star rating over time. As previously noted, a 4 Star building registered after 2030 will have a higher ESD performance requirement than one registered prior to this. By 2030, registering a new building project with a construction value of $20m and greater for 4 Star certification, will require a commitment to the Climate Positive Pathway, comprising:

- 100% renewable electricity ready.
- Up to 20% less energy use than those of a reference building.
- Up to 20% less upfront carbon emissions than those of a reference building.
- Refrigerants in the building do not exceed the Global Warming limit or Low Initial Charge as specified in the Green Star Buildings Submission Guideline.

Requirements for 5- & 6-Star buildings are likely to be more challenging than the above.

Projects teams should therefore check for the latest revisions to TG040 and GBCA's Green Star Buildings rating tool, to ascertain the submission requirements relevant to the date proposed to register the project and consider early registration where Green Star certification is required.

10. Glossary

Terminology and abbreviations used throughout this document.

Reference	Definition
BSRIA Soft Landings	Requirements as defined in GBCA's Green Star Buildings Rating Tool.
Carbon Neutral	Buildings that address all their emissions so that the carbon account is zero.
Customer Agency	The Customer Agency engaging the Department of DHW to deliver their non-residential buildings program.
Customer Agency's Representative	A person engaged by the Customer Agency to act on behalf of the agency.
DHW	Department of Housing and Works (typically represented by DHW's Buildings & Contracts Division).
GBCA	Green Building Council of Australia.
Lead Consultant	A person or practice/business engaged by the Department of Housing and Works to provide specialist advice or services to a project. Typically performed by an architect.
MEPS	Minimum Energy Performance Standards for equipment and appliances established through the Greenhouse and Energy Minimum Standards Act 2012 and subsequent amendments.
NABERS	National Australian Built Environment Rating System.
NCC	National Construction Code.
Net Zero Carbon	Balance between the amount of greenhouse gas produced and the amount removed from the atmosphere on a net annual basis.

11. Referenced Documents

The following documents are referenced:

- **National Construction Code 2022 Volume 1**

  (https://ncc.abcb.gov.au/editions/ncc-2022)

- **WA Government's Architectural Services Brief for Non-Residential Government Buildings**

  (https://www.wa.gov.au/government/publications/architectural-services-brief-non-residential-buildings)

- **WA Government's Waste Avoidance and Resource Recovery Strategy 2030**

  (https://www.wasteauthority.wa.gov.au/images/resources/files/Strategic_Direction_Waste_Avoidance_and_Resource_Recovery_Strategy_2030.pdf)

- **Kep Katitjin– Gabi Kaadadjan – Waterwise Perth Action Plan 3**

  (https://www.wa.gov.au/service/natural-resources/water-resources/program-kep-katitjin-gabi-kaadadjan-waterwise-action-plan-3)

- **Government Office Accommodation Standards,**

  (https://www.wa.gov.au/government/publications/government-office-accommodation-standards)

- **GBCA's Green Star Buildings Submission Guidelines**

  (https://www.gbca.au/product/green-star-buildings-v1-1-submission-guidelines)

- **GBCA's Specifying for Green Star Buildings using NATSPEC**

  (https://www.google.com/search?q=Specifying+for+Green+Star+Buildings+using+NATSPEC&rlz=1C1GCEA_enAU990AU990&oq=Specifying+for+Green+Star++Buildings+using+NATSPEC+&gs_lcrp=EgZjaHJvbWUyBggAEEUYOTIKCAEQABiiBBiJBTIHCAIQABiiBDIHCAMQABiiBDIHCAQQABiiBNIBDTMxMzU3MDY1ajBqMTWoAgCwAgA&sourceid=chrome&ie=UTF-8&safe=active&ssui=on)

- **DHW's Energy Use Reporting**
  (https://www.wa.gov.au/government/publications/energy-use-report-department-of-finance-projects)

- **State Electric Vehicle Strategy for Western Australia**

  (https://www.wa.gov.au/system/files/2020-11/State_Electric_Vehicle_Strategy_for_Western_Australia_0.pdf)

  https://www.wa.gov.au/system/files/2025-10/state_electric_vehicle_strategy_for_western_australia_progress_report_2025.pdf

- **ASHRAE Standard 140-2017 Addendum A**

  (https://www.ashrae.org/file%20library/technical%20resources/standards%20and%20guidelines/standards%20errata/standards/140_2017_a_20200901.pdf)

Appendices

Appendix 1: DHW's ESD Worksheet

Introduction to DHW's ESD Worksheet

DHW's ESD Worksheet has been designed as a guide to prompt the design team on possible sustainability initiatives. The design team should complete the checklist for projects with a construction value less than $5m, as specified in Table 3, and ascertain what sustainability improvement measures, over the NCC requirements, are employed on the project.

The NCC requirements are considered minimum acceptable standards rather than 'best practice.' Therefore, it is incumbent on the design team to improve on the NCC requirements where possible.

The worksheet promotes a holistic approach with considerations for energy and water efficiency, waste minimisation, materials, durability, universal access, indoor environment quality, etc. However, all projects should aim to minimise greenhouse gas emissions as a primary objective.

Note, the first section of the worksheet includes a Climate Change Resilience Assessment that should be completed by the Lead Consultant. Four tasks are suggested, as a prompt only. The design team are not limited to these tasks and should consider the project design in the context of the existing infrastructure and potential future environment.

Appendix 1: DHW's ESD WORKSHEET

Project:

Buildings & Contracts Project Manager:	**Updated On:**	**Consultant:**
Project Number:	**By:**	**Signature:**

Climate Change Resilience Assessment	Minimum Categories to be Considered (not exhaustive)	Design Team to Confirm Adaptation Measures Required
Task 1	Potential for component failure in extreme weather events, i.e. photovoltaic panel fixings on roof structure, shading elements fixed to façade, etc.	
Task 2	Accelerated structural material fatigue and degradation due to extreme weather, i.e. expansion and contraction causing structural distortion and shearing of bolts, cracks forming in caulking leading to infiltration of wind and rain, etc.	
Task 3	Undersized systems leading to poor performance impacting service delivery, i.e. size of roof drainage systems to manage intense rainfall, capacity of air conditioning systems to cope with excessive heat and humidity, etc.	
Task 4	Potential for exterior element to become air borne in a storm, i.e. tree branches are too close to the facility, lightweight sheds, etc.	

Sustainability Provision	Design Features Incorporated	Yes	No	Anticipated Capital Cost	Comments: advantages, disadvantages, alternative solutions
Re-use of Existing Building Assets	Adaptive Re-use				
Energy Efficiency	Passive solar design				
	Optimise daylighting penetration				
	Maximise passive cooling, heating and ventilation opportunities (consider including security screens and filters for night venting)				
	Minimise active heating and cooling requirements through energy efficient design				
	Provide energy efficient plant and equipment, compliant to mandatory MEPS requirements.				
	Provide energy efficient lighting systems				
	Provide efficient control and effective maintenance systems, including monitoring of energy consumption				

	Optimised opportunities to use renewable energy sources and incorporate renewable energy technologies and as a minimum provide for future installation of renewable energy systems (consider wiring and metering facilities, roof orientation and structure, access for cleaning and maintenance, etc)				
	Where specifically for office accommodation, meet the Government Office Accommodation Standards for specific energy rating criteria				
Water Efficiency	Provide water efficient appliances and fixtures Taps: 5 Star Toilet Cisterns: 4 Star Urinal Cisterns: 5 Star Showers: 3 Star				
	Ensure system design enables effective monitoring and maintenance of systems				
	Consider grey water reuse system (not recommended for schools)				

	Consider rainwater and stormwater collection tanks (only proposals that have a positive reduction on energy and water use in operation should be promoted)				
	Manage stormwater runoff on site to recharge aquifers				
Waste Minimisation	Consider opportunities to recycle materials such as green waste and excavated material on site within the works				
	Consider recycling all construction waste (minimum of 80% C&D waste to be diverted from landfill if the project is in the metropolitan area or within 50km of a regional recycling facility)				
	Design buildings for disassembly, to maximise the opportunities to recycle materials in future				
	Design buildings to maximise longevity through the quality of materials and creation of flexible and readily adaptable designs				

Building Materials	Design for resource conservation (using the minimum amount of material required for the function)				
	Maximise the use of recycled material				
	Use of materials, as much as possible, that can be sourced from suppliers close to the site				
	Minimise life cycle costs through using materials and equipment requiring minimal maintenance and with maximised expected useful life				
	Minimise or avoid the use of materials made from toxic or hazardous substances or which may result in off-gassing of emissions				
	Minimise the use of building materials with high embodied energy				
	Minimise building materials that have damaging ecological effects during harvesting, manufacturing and/or construction				

	Minimise building materials produced from limited or non-renewable natural resources				
Building Durability	Design the building elements to contribute to durability				
	Attach a schedule of manufacturers' recommended maintenance including frequency and anticipated costs derived through research				
	Minimisation of wilful and accidental damage opportunities				
Requirement for electric vehicle charging, and end of trip facilities in government buildings	Incorporate electric vehicle charging to Customer Agency requirements and at least to NCC standard, with power points for bicycle/scooter charging and appropriate end of trip facilities				
Universal Access	Compliance with Commonwealth Disability Discrimination Act 1992				
	Compliance with the NCC for Access for People with Disabilities				
Furniture Services	Choose materials with low volatile organic compound (VOC) emissions in:				

	- Floor coverings - Furniture components - Blinds				
	Give preference to bio plastics over synthetic plastics				
	Natural fabrics to have high flame resistance and low toxicity qualities				
	Materials to be selected which can be cleaned with organic products				
	Indoor plants that filter toxins from internal environments are preferred				
	Handover manual which specifies organic cleaning products and desired frequency of maintenance				

Note: the above requirements do not negate the obligations on consultants and contractors to comply with legislation, National Construction Code, Australian Standards, Codes of Practice, and Government directives and policy objectives.

Appendix 2: Green Star Rating Tool Targets

Introduction to Green Star Rating Tool Targets

As stated previously, provided that the targets for net zero GHG emissions are satisfied, the design team have flexibility in selecting Credit Achievements and Exceptional Performance credits to achieve the Green Star rating specified in Table 3, the selection of which is a collaborative assessment between the Customer Agency's Representative, design team and DHW.

The following tables provide guidance to the design team on specific areas of the GBCA's Buildings Rating Tool to be targeted (i.e., specifically required) on non-residential government building projects, for projects valued at $5m and above.

Descriptions in the tables below include Minimum Expectations (ME), Credit Achievement (CA), and Exceptional Performance (EP). Where CA (1) or EP (1) is shown the number in brackets denotes the maximum available points.

Table A2.A: Responsible Design Categories			
Ref	**Category**	**Description /(points available)**	**Actions**
1	Industry Development	CA (1)	Appointment of ESD Consultants - Projects with the construction value $5m and greater, require Green Star Accredited Professionals (GSAP) to guide the design. The GSAP must be qualified by GBCA in the use of the Green Star Buildings rating tool. This is a **key** requirement for DHW projects and is necessary if a point for Credit Achievement is to be awarded. A generic Scope of Work for the ESD Consultant is provided in the DHW's Architectural Services Brief for guidance. Refer also to Sect' 6, Table 4.
			Project Financial Transparency for GBCA - Not required unless the project is certified by GBCA.
			Marketing Sustainability Achievements - To avoid a potential breach of GBCA's copyright, advertising or extolling a project's sustainability merits is **not permitted** on any DHW delivered project unless the project is certified by GBCA, i.e. no claim to have achieved a 5-Star Green Star rating is acceptable unless GBCA certified. For non-certified projects: achieving 15-34 points is considered a Baseline Standard, and beyond 35 points is considered an Advanced Standard by DHW.
2	Responsible Construction	ME	Achieve the ME including requirements for Environmental Management System & Plan, maximising Construction and Demolition (C&D) Waste Diversion from landfill and ensuring the head contractor provides Sustainability Training relevant to the project. Divert 80% of C&D waste from landfill on metropolitan projects. Outside of the metropolitan area, a minimum of 80% of construction and demolition waste must be recycled/diverted from landfill unless the Contractor is unable to recycle

			the material within a 50km radius of the site's location. The project team should address this issue early in the project's design phase.
		CA (1)	Realise Credit Achievement where viable. Note, 90% waste diversion from landfill is generally achievable, especially on metropolitan projects.
3	Verification and Handover	ME	Achieve the ME including requirements for Metering & Monitoring, Commissioning & Tuning (specifically air tightness requirements) and providing relevant Building Information.
		CA (1)	Consider implementing BSRIA Soft Landings approach to all projects where the construction value is $5m and greater, especially where the building is new and not an addition to an existing campus. In addition to the above, for projects where the building services engineering component is greater than $20m, consider engaging an Independent Commissioning Agent combined with the BSRIA Soft Landings approach.
4	Responsible Resource Management	ME	Achieve the ME including requirements for Collection of Waste Streams, Dedicated Waste Storage Area and Safe & Efficient Access to Waste Storage.
5	Responsible Procurement	CA (1)	As stated in AS ISO 20400:2018, the ultimate goal should be to embed sustainability into existing procurement documents. It is important that the ESD Consultant undertakes a risk and opportunities assessment and ensures a responsible procurement plan is developed to mitigate risks and implement opportunities identified in the assessment.
6	Responsible Structure	CA (up to 2)	Determine whether this requirement is achievable, workable, and sustainable over the long term.
		EP (up to 2)	Determine whether this requirement is achievable, workable, and sustainable over the long term.

7	Responsible Envelope	CA (up to 2)	Determine whether this requirement is achievable, workable, and sustainable over the long term.
		EP (up to 2)	Determine whether this requirement is achievable, workable, and sustainable over the long term.
8	Responsible Systems	CA (1)	Determine whether this requirement is achievable, workable, and sustainable over the long term.
		EP (1)	Determine whether this requirement is achievable, workable, and sustainable over the long term.
9	Responsible Finishes	CA (1)	All internal building finishes (by cost) should meet a Responsible Product Value of at least 7.
		EP (1)	Determine whether this requirement is achievable, workable, and sustainable over the long term.
10	Impacts Disclosure	CA (1)	Determine whether this requirement is achievable, workable, and sustainable over the long term.

Table A2.B: Healthy Design Categories			
Ref	**Category**	**Description**	**Actions**
11	Clean Air	ME	For projects requiring GBCA certification: achieve the Minimum Expectation (ME), including providing the Ventilation System Attributes, Provision of Outdoor Air, and Exhaust or Elimination of Pollutants. With respect to Provision of Outside Air: Ideally this should be achieved using Mixed Mode Ventilation – taking into consideration the local climate, i.e. mixed mode is unlikely to be suitable for tropical environments. Review the requirement to achieve a 50% improvement of outdoor air required by AS 1668.2:2024 for all regularly occupied areas. For uncertified projects, i.e. projects not seeking GBCA certification, achieve the ME, including providing the Ventilation System Attributes, and

			Exhaust or Elimination of Pollutants. In this instance the Provision of Outdoor Air requirements are satisfied when using AS 1668.2:2024, i.e. there is no requirement for a 50% increase on the rates provided in the Australian Standard. In all instances, the building's ventilation systems shall allow for easy maintenance, and avoid the potential for pollutants to enter the air intakes.
		CA (2)	Determine whether this requirement is achievable, workable, and sustainable over the long term and address the question of Outdoor Air Provisions for vulnerable occupants, in alignment with ASHRAE Standard 241:2023.
12	Light Quality	ME	Achieve the ME including requirements for Lighting Comfort, Glare from Light Sources and Daylight Strategy.
		CA (2)	Achieve the CA by providing the best practice Artificial Lighting or best practice access to Daylight.
		EP (2)	Determine whether this requirement is achievable, workable, and sustainable over the long term.
13	Acoustic Comfort	ME	Achieve the ME including requirements for Acoustic Comfort Strategy.
		CA (2)	Achieve the CA including requirements for Acoustic Performance relevant to the Building Class.
14	Exposure to Toxins	ME	Achieve the ME including requirements for Paints, Adhesives, Sealants, and Carpets, Engineered Wood Products and Banned and Highly Toxic Materials.
		CA (2)	Determine whether this requirement is achievable, workable, and sustainable over the long term.
15	Amenity and Comfort	CA (2)	Achieve the CA including requirements for Comfortable Amenity Rooms relevant to the building type.

16	Connection to Nature	CA (1)	Determine whether this requirement is achievable, workable, and sustainable over the long term.
		EP (1)	Assess the feasibility, practicality and long-term viability of meeting this requirement.

Table A2.C: Resilient Design Categories			
Ref	**Category**	**Description**	**Actions**
17	Climate Resilience	ME	Achieve Minimum Expectations Complete the GBCA Climate Change Pre-screening Checklist.
		CA (1)	Climate Change Risk & Adaptation Assessment - achieve the Credit criteria on all projects where the construction value is $5m and greater and the Climate Change Pre-Screen Checklist has identified adaptation measure are necessary. Conduct the assessment using Shared Socio-economic Pathway SSP3-7.0 unless unavailable at the time of the assessment, then use Representative Concentration Pathways RCP 8.5, ideally for 2050 & 2070 timeframes. Note: Where DHW provides Climate Adaptation (CA) Technical Guidelines in the future, it will be incumbent on the designers to apply relevant advice from these CA Guidelines on the project.
18	Operations Resilience	CA (2)	In consideration of Operational Resilience, the Customer Agency's emergency management plans take precedence and hence the achievement of the CA, including requirements for Operations Resilience Assessment, Managing Risks and Addressing Power Loss need to be addressed in that context. However, the feasibility, practicality and long-term viability of meeting this requirement should be assessed.
19	Community Resilience	CA (1)	Community Resilience Plan should be developed for projects with a construction value of $5m and greater, where community social cohesion, health and wellbeing are part of the customer agency's service delivery model, and these factors should be specifically supported by the facility.

20	Heat Resilience	CA (1)	Heat Island Reduction should ideally be achieved for projects with a construction value of $5m and greater, provided it is considered feasible within the site boundaries, practically achievable given the restriction on the building design and it is considered viable in the long-term, i.e. there are means of maintaining landscaped areas specifically from a water requirement perspective. Where trees are being introduced, it is incumbent on the landscape designer to use native varieties and only use exotics where they are guaranteed to enhance the environmental outcome. Where possible consult with local communities for selection of appropriate species.
21	Grid Resilience	CA (2)	Grid resilience is a key component in the transition to fully electrified buildings and hence, methods to reduce peak electrical demand shall be considered for all projects.
			Irrespective of whether this CA is achieved, Passive Design Solutions are vitally important attributes for reducing greenhouse gas emissions and need to be considered on all projects. Therefore, as a minimum requirement the façade design should demonstrate a 10% improvement over a reference building.

Table A2.D: Positive Design Categories

Ref	Category	Description	Actions
22	Energy Source *[Climate Positive Pathway (CCP)]*	ME	For projects requiring GBCA certification: achieve the Minimum Expectation (ME), including providing All-electric Building Services (note this requires the purchase of carbon offsets for fossil fuels used in laboratories or emergency power systems) and developing a Remaining Emissions Roadmap for Process Loads that use fossil fuels - an unlikely requirement for DHW projects. For uncertified projects, i.e. projects not seeking GBCA certification, achieve the ME but exclude the purchase of carbon offsets. *[Note, purchasing carbon offsets is not currently recommend by DHW.]*

		CA (2)	Determine whether this requirement is achievable, workable, and sustainable over the long term.
		EP (2)	Determine whether this requirement is achievable, workable, and sustainable over the long term.
23	Energy Use *[CCP]*	ME	Achieve the ME including Reducing Energy Use by at least 10% less than a reference building.
		CA (up to 3)	Ideally the project should target the CA by reducing energy use up to 20% less than a reference building. Note, projects aiming for a Green Star rating of 5-Stars need to achieve this Credit.
		EP (up to 3)	Assess the feasibility, practicality and long-term viability of meeting the more stringent requirement of the EP.
24	Upfront Carbon Reduction *[CCP]*	ME	Achieve the ME including Reducing Upfront Carbon Emissions by at least 10% less than a reference building.
		CA (up to 3)	Assess the feasibility, practicality and long-term viability of meeting this requirement. Noting that, if there are buildings on site that need to be fully or partly demolished, that are less than 50 years old, the carbon content of the demolished portion needs to be compensated by purchasing carbon offsets. *[Note, purchasing carbon offsets is not currently recommend by DHW.]*
		EP (up to 3)	Determine whether this requirement is achievable, workable, and sustainable over the long term.
25	Upfront Carbon Compensate *[CCP]*	CA (1)	Assess the feasibility, practicality and long-term viability of meeting this requirement. *[Note, purchasing carbon offsets is not currently recommend by DHW.]*
		EP (up to 2)	Determine whether this requirement is achievable, workable, and sustainable over the long term.

26	Future-Ready Refrigeration Equipment *[CCP]*	ME	Achieve the ME including providing the Future Ready Refrigerant Design Register.
		CA (1)	Determine whether this requirement is achievable, workable, and sustainable over the long term. *[Note, purchasing carbon offsets is not currently recommend by DHW.]*
		EP (2)	Determine whether this requirement is achievable, workable, and sustainable over the long term.
27	Low-Emissions Transport	CA (1)	Where car parking is provided, assess the feasibility, practicality and long-term viability of meeting this requirement.
28	Design for Circularity	CA (2)	Determine whether this requirement is achievable, workable, and sustainable over the long term.
		EP (1)	Determine whether this requirement is achievable, workable, and sustainable over the long term.
29	Water Use	ME	Achieve Minimum Expectations and in particular the building must install water fixtures complying with the following WELS rating efficiency: Taps: 5 Star Toilet Cisterns: 4 Star Urinal Cisterns: 5 Star Showers: 3 Star Toilet cisterns shall be dual flush. Cisterns for urinals shall not be set-cycled or activated by any method other than manual or use activation. This requirement does not apply to a programmed solenoid operated flushing system if programmed to shut down during extended periods of non-occupancy of a building. Where sensor control is used for urinal flushing, sensors should be located to avoid unnecessary 'nuisance' flushing triggered by pedestrian traffic. On completion of the contract documentation, an estimate of the likely annual water consumption should be provided to the Project Manager. At the end of the DLP the estimate should be

			compared with actual usage and the difference reconciled by the ESD consultant and reported to the Project Manager.
		CA (up to 3)	Ideally the building should use 45% less water compared to a reference building. Therefore, exploring opportunities for recycling water is encouraged. However, only proposals that have a positive reduction on energy and water use in operation, should be promoted.
		EP (up to 3)	Determine whether this requirement is achievable, workable, and sustainable over the long term.

Table A2.E: Places Design Categories

Ref	Category	Description	Actions
30	Movement and Place	ME	For projects requiring GBCA certification: achieve the Minimum Expectation (ME), including providing Changing Facilities and Safe Ingress. For uncertified projects, i.e. projects not seeking GBCA certification, determine whether this requirement is achievable, workable, and sustainable over the long term. Consult with the Customer Agency's Representative to ascertain the EV charging requirements.
		CA (2)	Determine whether this requirement is achievable, workable, and sustainable over the long term.
31	Enjoyable Places	CA (2)	Determine whether this requirement is achievable, workable, and sustainable over the long term.
32	Contribution to Place	CA (2)	Determine whether this requirement is achievable, workable, and sustainable over the long term.
33	Culture Heritage and Identity	CA (1)	Determine whether this requirement is achievable, workable, and sustainable over the long term.

Table A2.F: People Design Categories			
Ref	**Category**	**Description**	**Actions**
34	Inclusive Construction Practices	ME	Achieve the ME by providing appropriate Facilities & Equipment and Policies & Training.
		CA (1)	Ideally the CA should be obtained on all projects valued at $5m and higher.
35	First Nations Inclusion	CA (2)	Ideally the CA should be obtained on all projects valued at $5m and higher.
36	Procurement and Workforce Inclusion	CA (up to 2)	Ideally the CA should be obtained on all projects valued at $5m and higher.
		EP (1)	Determine whether this requirement is achievable, workable, and sustainable over the long term.
37	Design for Equity	CA (2)	Ideally the CA should be obtained on all projects valued at $5m and higher.
		EP (1)	Determine whether this requirement is achievable, workable, and sustainable over the long term.
Table A2.G: Nature Design Categories			
Ref	**Category**	**Description**	**Actions**
38	Impacts to Nature *[Nature Positive Pathway (NPP)]*	ME	For projects requiring GBCA certification: achieve the Minimum Expectation (ME), including assessing Sensitive Sites and Species Protection, Metrics Disclosure (were relevant and approved by the Customer Agency) and Managing Light Pollution. For projects not requiring GBCA certification, consider what element of this Credit are achievable, workable, and sustainable over the long term.
		CA (2)	Determine whether this requirement is achievable, workable, and sustainable over the long term.

39	Biodiversity Enhance-ment *[NPP]*	CA (up to 3)	Determine whether this requirement is achievable, workable, and sustainable over the long term.
		EP (up to 3)	Determine whether this requirement is achievable, workable, and sustainable over the long term.
40	Nature Connectivity	CA (2)	Determine whether this requirement is achievable, workable, and sustainable over the long term.
41	Nature Stewardship	CA (2)	Determine whether this requirement is achievable, workable, and sustainable over the long term.
42	Waterway Protection	CA (2)	Determine whether this requirement is achievable, workable, and sustainable over the long term.

Table A2.H: Leadership Design Categories

Ref	Category	Description	Actions
40	Market Transform	CA (up to 5)	Consider the potential to use products with higher quality and efficiency especially those that may encourage local manufacturing and can minimise embodied carbon and waste.
41	Leadership Challenges	CA (up to 5)	Determine whether this requirement is achievable, workable, and sustainable over the long term.

Appendix 3: NCC Section J Provisions Reporting Checklist

Appendix 3: NCC SECTION J PROVISIONS REPORTING CHECKLIST

Project:

Buildings & Contracts Project Manager:	**Updated On:**	**Consultant:**
Project Number:	**By:**	**Signature:**

Description	Details of How the Standard is achieved
J1 Energy Efficiency Performance Requirements	
J1P1 Energy use	
J1P4 Renewable energy and electric vehicle charging	
Verification Methods	
J1V3 Verification using a reference building	
J1V4 Verification of building envelope sealing	
J4 Building fabric	
J4D3 Thermal construction — general	
J4D4 Roof and ceiling construction	
J4D5 Roof lights	
J4D6 Walls and glazing	

J4D7 Floors	
Part J5 Building sealing	
J5D3 Chimneys and flues	
J5D4 Roof lights	
J5D5 Windows and doors	
J5D6 Exhaust fans	
J5D7 Construction of ceilings, walls and floors	
J5D8 Evaporative coolers	
Part J6 Air-conditioning and ventilation	
J6D3 Air-conditioning system control	
J6D4 Mechanical ventilation system control	
J6D5 Fans and duct systems	
J6D6 Ductwork insulation	
J6D7 Ductwork sealing	
J6D8 Pump systems	
J6D9 Pipework insulation	

J6D10 Space heating	
J6D11 Refrigerant chillers	
J6D12 Unitary air-conditioning equipment	
J6D13 Heat rejection equipment	
Part J7 Artificial lighting and power	
J7D3 Artificial lighting	
J7D4 Interior artificial lighting and power control	
J7D5 Interior decorative and display lighting	
J7D6 Exterior artificial lighting	
J7D7 Boiling water and chilled water storage units	
J7D8 Lifts	
J7D9 Escalators and moving walkways	
Part J8 Heated water supply and swimming pool and spa pool plant	
J8D2 Heated water supply	
J8D3 Swimming pool heating and pumping	
J8D4 Spa pool heating and pumping	

Part J9 Energy monitoring and on-site distributed energy resources	
J9D3 Facilities for energy monitoring	
J9D4 Facilities for electric vehicle charging equipment	
J9D5 Facilities for solar photovoltaic and battery systems	

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