

DESIGN GUIDANCE NOTE NO. 058

Environmentally Sustainable Development

REVISION HISTORY

Revision	Date	Author	Approval	Description
Rev A	03.03.2020	D&I Team	ED, ADI	First Issue

PURPOSE

The purpose of this Guideline is to provide instructions on how the Environmentally Sustainable Development (ESD) is to be addressed on all HI Projects.

BACKGROUND

Health Infrastructure (HI) is committed to improving the environmental performance and sustainability of its projects in accordance with NSW Government policy. This Guideline documents HI's process, and minimum expectations for HI Projects.

The process described in this Guideline involves a robust assessment of a project to determine its ability to meet HI's ESD criteria. This process will ensure practical and cost effective ESD outcomes on all HI projects while delivering results that facilitate good clinical solutions.

While based on the approach used by the Green Building Council of Australia's (GBCA) Green Star process, it is **NOT** a Green Star rating. Rather it is a set of scores that reflect the merit of various ESD initiatives applicable to health facilities, developed by ESD specialists to meet the needs of HI. We note the Evaluation Tool draws upon the GBCA's Green Star rating tool to establish an equivalent benchmark to sustainable building performance. Emphasis should be placed on meeting the intent of each initiative, with sufficient evidence to support the claim that the initiatives have been achieved. Further guidance has been provided within the FAQ section.

It is intended that this Guideline and tool is periodically updated to allow for development in line with NCC updates and any other relevant ESD standards specific to healthcare.

For all HI projects it is intended that an independent ESD consultant will be appointed for the duration of the project and they will not be novated. All consultants and contractors working on NSW Health Infrastructure projects are to allow for the process defined in this Guideline.

GUIDELINES

Evaluation Tool

The evaluation tool has been developed by Steensen Varming and Arup in consultation with HI. It uses some of the key ESD initiatives included in the GBCA rating tools however does not produce a "Green Star" rating, but instead prescribes a minimum number of "points" to be achieved. This document describes the assessment procedure required by HI on all of its projects and how to use the attached tool to evaluate the projects performance. HI has defined minimum targets for individual point categories, and these are outlined in the following Sections of this Guideline.

In summary, the required targets for the design are:

- A **minimum of 45 points** to be achieved by the design in accordance with HI's ESD Evaluation Tool; and
- A **minimum 10% improvement** in energy efficiency compared to a baseline of National Construction Code (NCC) Section J compliance applicable to the development.

In order to facilitate the above targets, the assessment of the development at the point of procurement of the Head Contractor shall contain a minimum of 5 buffer points. Buffer points are defined as points over and above the minimum 45 points required target. This is to allow for some variation during the construction period. Note that some point categories are required as standard HI practice and cannot be removed from the assessment, unless sufficient justification is provided that precludes the implementation of the initiative (See FAQs).

At project completion, the project **must achieve a minimum of 45 points**.

Town Planning Pathways

An assessment of all projects in accordance with the ESD Framework must be undertaken, and compliance is required for all SSD/ SSI Applications.

For all other projects not subject to SSD or SSI (i.e. any project that requires any other town planning approval pathway), if compliance with the framework cannot be achieved justification must be provided to HI Planning outlining:

- why compliance cannot be achieved; and
- what ESD initiatives have been committed to for the project.

A guidance Table is found at **Attachment A**.

HI ESD Consultant, Roles and Responsibilities

For all HI projects, an independent ESD consultant will be engaged by Health Infrastructure to review the project and provide advice on what mechanisms or design features are to be adopted to achieve the minimum 45 points required. Roles and Responsibilities for the ESD Consultant are provided at **Attachment B**.

ESD Process Overview

During the design phase of the project, the HI ESD consultant will provide input to the project team (incl architects, engineers etc) on performance requirements that the designers will be required to integrate into their design to meet 45 Points. This will ensure that the planning applications will be able to comply with the requirements of this guideline.

As part of the tender process, the design requirements will form part documentation along with the planning consent. By the time a Contractor (or ECI) is engaged, the ESD consultant will have sufficiently documented the required information into an ESD Performance Specification to provide confidence to the Contractor that the design achieves the required ESD performance.

Following engagement of a Contractor, HI's ESD consultant will review the development of the Contractor's design. The Head Contractor (HC) will also engage their own ESD Consultant to manage the design finalisation of the ESD Strategy on behalf of the contractor. **Figure 1** below illustrates this approach.

When	What	Who
At design and before planning application lodged	ESD Report and Evaluation Tool	HI Project ESD consultant
Tender documentation	ESD Report, Evaluation Tool and Specification	HI Project ESD consultant
Before Award	Evaluate HC ESD response	Project Team incl ESD consultant
Before Commencement	Documentation validating detailed design meets target	Contractors ESD consultant
Within 6 months of Completion	As built evaluation	HI Project ESD consultant

Figure 1 – ESD Evaluation Process

Evidence of compliance of planning conditions will be managed in the same way as other aspects of the consent - by the PCA and Independent project audits. Should this process identify significant ESD discrepancies in the submitted documentation, HI's ESD consultant will review and provide HI with a strategy to ensure the minimum points are achieved. The contractor is then responsible for updating the documentation to satisfy the ESD design intent as nominated in the ESD Performance Specification in the contract.

The HI ESD Consultant will review and confirm the validity, process, and assumptions of the Contractors ESD submission, and whether it meets the intent of the ESD initiative criteria. The HI ESD Consultant will provide an assessment (through spot checks of ESD initiatives) to confirm the reliability of the contractor's ESD submission.

Upon completion of spot checks, the HI ESD Consultant will prepare a summary report outlining the findings of the assessment at the end of each stage, indicating discrepancies, further actions or acceptance of the Contractors self-certified submission. If discrepancies are identified, the Contractors ESD Consultant will be notified and the Contractor will be required to address the comments. The Project Manager will be responsible for submitting verification that any discrepancies are closed out.

At building sign-off, and to meet the conditions of DPIE, the building certifier will require the Contractors ESD submission and the HI ESD Consultant summary report confirming the acceptance of the submission. These two documents will form the basis of confirming that the project meets the minimum number of ESD initiatives. Verification of this is to be submitted to HI by the Project Manager

Evidence Requirements and NSW Health Infrastructure Specific Scoring Requirements

NSW Health Infrastructure's, ESD Matrix in Appendix B contains a detailed guidance on HI requirements and how these points are to be achieved. It has been developed in collaboration with Sustainability Consultants working in the construction and built environment industry. ESD Consultants engaged by HI to prepare reports, matrices and specifications in accordance with this Guideline are required to be suitably qualified to assess the design and as built plans to validate that the minimum points required for HI projects can and has been achieved.

Evidence requirements are as follows:

Pre-Contractor Procurement:	
a	- Written documentation of a design review and preliminary assessment matrix outlining how the design will achieve 45 points or how it can be amended to achieve this standard. - An ESD report and matrix for submission with the SSD application. Where relevant, specialist technical consultants will provide input to the ESD consultant for inclusion in the subsequent ESD performance specification.
Post-Contractor Procurement:	
b	- Contractors ESD consultant is to collate evidence from the relevant sub-contractors and sub-consultants to show compliance with the ESD performance specification. - Evidence, including relevant reports to certify that the trade sub-contractor and sub-consultant ESD requirements as nominated in the ESD performance specification have been installed/delivered. - Where evidence is qualitative and requires interpretation by the contractors ESD consultant, the contractors ESD consultant shall collate evidence as required and provide a comprehensive statement - Documentation is to be made available to the project's Independent auditor upon request for inclusion in the regular consent audit process.

Process for periodically updating the Evaluation Tool.

This Guideline and the Evaluation Tool will be periodically updated to reflect changes in the NCC and Government Policy, and/or to incorporate other relevant criteria from rating systems such as 'LEED' and the 'WELL Building Standard' and alignment with overall State level sustainability commitments and United Nations Sustainable Development goals.

ATTACHMENTS

- A – Town Planning Pathways
- B – ESD Consultant Roles and Responsibilities
- C – Health Infrastructure ESD Evaluation Tool
- D – Standard ESD Specification Template (under development)

FAQs

The following FAQs have been included to assist project teams with implementing the ESD Guideline. The FAQ's are intended to be periodically updated to provide guidance around recurring queries or clarifications.

- ESD benchmark Green Star - It is appropriate to follow guidance normally provided by the GBCA, such as within technical manuals, rulings and FAQ's.
- Marketing and registration – HI projects do not seek a formal Green Star rating and hence registering the project formally under GBCA is not required. Furthermore, projects should not advertise or claim any recognition of achieving a Green Star rating as this process has not been assessed or verified by the GBCA.
- Feedback – To assist HI with future updates of the ESD evaluation tool, it is requested that reasoning and justification for ESD initiatives that have not been targeted be provided within the Evaluation tool i.e. cost / site constraints / project programme etc.
- Standard Practice / High Priority Initiatives – HI's ESD Evaluation tool is a guidance tool and has been prepared with all projects in mind. Numerous ESD initiatives have been identified as 'Standard Practice/ High priority items' for Healthcare projects. The initiatives identified as 'Standard Practice/ High priority items' should be reviewed against the specific project to determine the merit of each initiative. Where a Standard Practice / High Priority initiative cannot be achieved, justification must be provided within the Evaluation tool.
- Evidence – Evidence for each initiative shall be defined and agreed between the HI ESD consultant and the Contractors ESD Consultant. The evidence is not intended to be exhaustive, however should be to the level that provides sufficient confidence to the HI ESD consultant that the ESD initiative has been achieved. The intention is that documents normally produced during design stages and construction (As-builts) be used as evidence and supplemented if required. Examples of evidence types have been included in the ESD Specification Template.
- Area Definition Plan – An Area Definition Plan should be developed for each project to define which spaces are required to meet relevant ESD initiatives. For instance, daylighting will be relevant forward spaces and not required for back of house spaces.
- Leveraging Current HI Practices – Health Infrastructure projects have a comprehensive design, construction and peer review process in place. Project teams should maximise any existing processes in achievement of ESD initiatives. For instance, the Independent Commissioning Agent (ICA) initiative can utilise HIs peer review process as an alternative to an ICA. Project teams should identify other processes that can be leveraged upon. Further tasks and responsibilities can be included to existing process in achievement of an ESD initiative.
- Modelling – Modelling of typical spaces for the daylighting initiative is acceptable, provided a sensible coverage of spaces is accounted for. Issues such as elevation, shading/overshadowing, orientation, window to wall ratio and material finishes should be considered for the determination of typical spaces.

Views can also be assessed using typical spaces.

Artificial lighting initiatives can also utilise typical spaces.

ATTACHMENT 1

HI Environmentally Sustainable Development (ESD) Framework – Applicability to Town Planning Pathways

What	Planning Pathway	ESD Framework Assessment Required?	Compliance with ESD Framework
New Building	SSDA/ SSI	Yes	Yes
	Crown DA	Yes	See HI Planning*
	REF	Yes	See HI Planning*
	Complying Development	Yes	See HI Planning*
Alterations and Additions to a building	SSDA	Yes	Yes
	Crown DA	Yes	See HI Planning*
	REF	Yes	See HI Planning*
	Complying Development	Yes	See HI Planning*
Demolition	Any	No	No
Car Parks	SSDA/	Yes	Yes
	Crown DA	Yes	See HI Planning*
	REF	Yes	See HI Planning*
	Complying Development	Yes	See HI Planning*

- An assessment of all projects in accordance with the ESD Framework must be undertaken, and compliance is required for all SSD/ SSI Applications.
- * For all other projects not subject to SSD or SSI (i.e. any project that requires any other town planning approval pathway), if compliance with the framework cannot be achieved justification must be provided to HI Planning outlining:
 - why compliance cannot be achieved; and
 - what ESD initiatives have been committed to for the project.

ATTACHMENTS 2

1. ESD Consultant - Roles and Responsibilities

1.1. Role Overview

An independent ESD consultant will be engaged by NSW Health Infrastructure on all of its projects. This consultant will be engaged for the duration of the project. The minimum scope for the ESD consultant is outlined below. Any additional scope requirements as identified on a project by project basis should be added to the minimum scope below.

All consultants and contractors working on NSW Health Infrastructure projects are to allow for the ESD process defined in DGN 058.

Initially the ESD Consultant Scope must include:

- Advice on how the project can meet the point target outlined in the Evaluation Tool; advice should consider whole of lifecycle operating costs
- Provision of specific clauses etc or specification to other consultants to facilitate achieving points under the HI ESD Evaluation Tool as developed for each project.
- Collation of evidence and justification to support achievement of the nominated points in the HI ESD Evaluation Tool provided by other consultants during pre-contract phase;
- Provision of ESD summary reports for submission with town planning applications; and
- Assistance with the development of collateral for messaging to the community of the value of the ESD options provided by a project- e.g. fact sheet publicising key achievements.
- Support with presenting and communicating the ESD scope for the project, the rationale and benefits this will provide
- Advice on how the HI tool can be refined and feedback on industry best practice

The ESD Consultant is not required to undertake the following:

- Section J, JV3 and Energy Modelling. This is assumed to be undertaken by the mechanical engineering consultant as nominated in the current NSW Health Infrastructure Consultant Service Agreement scopes (unless identified by the ESD consultant in a separate project specific scope).
- Daylight and PMV modelling. This is to be procured by the Project Manager as an additional service if required.
- Independent Commissioning Agent is to be procured by the Project Manager as an additional service if required
- The Architect will act as the coordinating design consultant and be responsible for the design coordination

Note that at the point of procurement of a Head Contractor, the responsibility to address the scope outlined above will be taken on by the Contractor's ESD Consultant. HI will maintain the ESD Consultant in a peer review/ESD Guardian role as described in Section 2.0.

1.2. Deliverables relevant for all Parts

1. Statutory Requirements and Standards
The ESD Consultant must ensure their Deliverables comply with all Statutory Requirements, Government policies, guidelines and Standards for all Parts under which they are engaged and must provide the Project Manager with details of this compliance if requested by the Project Manager.
2. Reporting Requirements
The ESD Consultant must prepare monthly progress reports (generally no more than three pages in length) for inclusion in the Project Manager's report to the Principal and through the Project Governance Arrangements. The progress report must include a brief summary of the status of the work and outline any key issues or critical decisions to be made regarding design. The ESD Consultant must liaise with the Project Manager regarding the contents of these reports and provide details on specific issues and risks if requested.
3. Part Completion Checklists
The ESD Consultant must, as a condition precedent to completion of each Part, certify in writing to the Principal and to the Project Manager that: 1. The required Deliverables have been completed; 2. The Principal's Part checklists, where relevant, are completed and included in the relevant reports and/or documents compiled; and 3. The Deliverables and checklists have been uploaded onto the HI Portal at the end of each Part. Refer to relevant checklists and other guidance and available on the Knowledge Library.

4. Expert Reference Group (ERG)

The ESD Consultant must attend and contribute to all ERG meetings as required by the Principal.

1.3. ESD Consultant Deliverables by Part:

Part 0 – Project Initiation

a) Completion of Deliverables

The ESD Consultant has no deliverables during this Part.

Part 1 - Master Planning

a) Completion of Deliverables

The ESD Consultant must complete all Deliverables for this Part including:

1. Undertake an ESD Pre-Assessment using the HI ESD Evaluation Tool and provide advice and spatial impacts to the design team relating to points targeted within the matrix.

Part 2 - Feasibility

a) Completion of Deliverables

The ESD Consultant must complete all Deliverables for this Part including:

1. Update the ESD Assessment completed in Part 1 and provide advice and spatial impacts to the design team relating to points targeted within the matrix.
2. Consider the ESD opportunities from all Capital Consultants in meeting the ESD DGN. This includes passive design strategies and alternative and renewable systems.

Part 3 - Schematic Development

a) Completion of Deliverables

The ESD Consultant must complete all Deliverables for this Part including:

1. Update the ESD Assessment completed in Part 2.
2. Convene up to two (2) workshops with the design team to set targets for each individual point
3. Provide advice to what additional consultants are required in order to meet the targeted points in the ESD Pre-assessment
4. Provide advice to each consultant advising what is required for each targeted point
5. Provide an ESD Performance Specification detailing how the project will meet the requirements of the points matrix
6. Repeat the actions above for each Part 1, 2 and 3 as applicable
7. Should the project be procured on an ECI basis at this point, it is assumed that the Head Contractor's ESD consultant will take on responsibilities for parts 4 to 8
8. Contribute to the ESD report for the Planning application

Part 4 - Design Development

a) Completion of Deliverables

The ESD Consultant must complete all Deliverables for this Part including:

1. Convene up to two (2) workshops with the design team to set targets for each individual point
2. Update the ESD Performance Specification to align with completed Design Development design proposals
3. Should the project be procured on a D&C basis at this point, it is assumed that the Head Contractor's ESD consultant will take on responsibilities for Parts 5 to 8

Part 5 Contract Documentation

a) Completion of Deliverables

The ESD Consultant must complete all Deliverables for this Part including:

1. Convene up to two (2) workshops with the design team to set targets for each individual point
2. Produce an updated ESD performance specification prior to the completion of the stage
3. Provide specification clauses for each point for individual consultants to integrate into their design reports and draft specifications
4. Finalise the ESD performance specification on this basis
5. Review specifications provided by the individual discipline consultants to check they have integrated the specific requirements
6. Should the project be procured on a D&C basis at this point, it is assumed that the Head Contractor's ESD consultant will take on responsibilities as nominated in parts 7, 8 and 9 below

Part 6 Tender Evaluation and Award

a) Completion of Deliverables

The ESD Consultant must complete all Deliverables for this Part including:

1. Review non-compliances and proposed value management and provide advice as to how this will affect the equivalence rating being targeted.
2. Receive accepted non-compliances and value management from the Project Manager and update the ESD Performance Specification to suit. The intention is that this ESD Performance Specification will form the basis of what is required to be delivered by the Head Contractor during Parts 7, 8 and 9.

Tender Evaluation and Award

1. The Project Manager is expected to collate any ESD related non-compliances identified in Head Contractors tender offers for the project and issue to the ESD consultant
2. The Project Manager is expected to collate any value management initiatives identified in Head Contractors tender offers for the project and issue to the ESD consultant.
3. It is expected that the Head Contractors ESD consultant will provide analysis and evidence for proposed non-compliances and value management for review by HI's ESD consultant

Part 7 and Part 8 Construction and Commissioning

a) Completion of Deliverables

The ESD Consultant must complete all Deliverables for this Part including:

1. It is expected that the Contractor's ESD consultant will receive evidence as identified in the following section and will review the status of the assessment at the following stages:
 - o Completion of structural construction documentation and shop drawings
 - o Completion of mechanical, electrical, hydraulic and fire shop drawings
 - o Completion of commissioning for the development
 - o Completion of architectural documentation, finishes schedule and specification
2. At each of the stages nominated above, it is the Contractor's ESD consultant's responsibility to collate the evidence and provide a single comprehensive submission to the HI's ESD consultant
3. At each of the stages nominated above, the Contractor's ESD consultant will:
 - o Identify shortfalls and gaps in the provided self-certification evidence
 - o Provide an assessment of the status of the overall design to HI's ESD Consultant
4. HI's ESD consultant will:
 - o Identify shortfalls and gaps in the provided self-certification evidence
 - o Undertake a one spot checks per discipline of evidence robustness.
 - o Provide an assessment of the status of the overall ESD performance or any risk to compliances to the Agreed HI ESD Evaluation Tool and proposed mitigation measures.

Part 9 Post Occupancy Evaluation

a) Completion of Deliverables

The ESD Consultant must complete all Deliverables for this Part including:

1. Two (2) months following the issue of practical completion for the development, the Head Contractor's ESD consultant shall finalise the ESD assessment and issue to HI. It is expected that the Head Contractor's ESD consultant will receive evidence as identified in the following section and will finalise the status of the assessment
2. The Contractor's ESD consultant will:

- Identify shortfalls and gaps in the provided self-certification evidence
- Provide an assessment of the status of the overall equivalence score to HI's ESD Consultant

3. The HI's ESD consultant will:

- Identify shortfalls and gaps in the provided self-certification evidence
- Undertake a representative number of spot checks of evidence robustness.
- Provide an assessment of the status of the overall ESD Performance
- Within three (3) months of practical completion of the development, provide a final assessment of the status of the ESD Score for the development
- The assessment shall take the form of a covering letter and report for issue to HI including a separate documents collating lessons learned.