HOME PERFORMANCE PATHWAY

TECHNICAL MANUAL

v1.0

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IGBC
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Peer Reviewed document

Home Performance Pathway Technical Manual

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Construct Innovate greatly values the work of the reviewers as their expert knowledge greatly contribute to the high standards of the Construct Innovate publications, therefore Construct Innovate thank the reviewers for their participation.

This Technical Manual is a part of 2024 Seed Fund Project:
Roadmap For Small Builders to Transition to Green Finance

and it has been Peer Reviewed through Construct Innovate in November, 2025.

1.0.

1.0. TERMS AND CONDITIONS

1.1. Disclaimer

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2.0.

2.0. TECHNICAL MANUAL PURPOSE

This is the technical manual for the *Home Performance Pathway* certification process. The *Home Performance Pathway* is a third party assessment and certification system and provides a progressive pathway towards building skills for *Home Performance Index* certification. The purpose of this manual is to support the assessment of new homes in line with the certification processes and procedures as set out by the IGBC; and in doing so allow the IGBC to make informed and measured certification decisions and approvals.

This technical manual acts as a reference / list of actions and indicators for any stakeholder involved in the development of new homes which are assessed against the approved certification standard. This includes homeowners and occupiers, clients and housing developers, the financial sector, project team members and wider stakeholder groups.

2.1. Version Log

Issue Number	Date of Issue
1.0	05/02/2026

3.0.

3.0. INTRODUCTION

Home Performance Pathway is a third-party assessment and certification system. Its primary goal is to provide a progression path in adopting new skills and practices for homebuilders from business as usual to the rigorous sustainability requirements of the *Home Performance Index* certification.

3.1. Who it is for

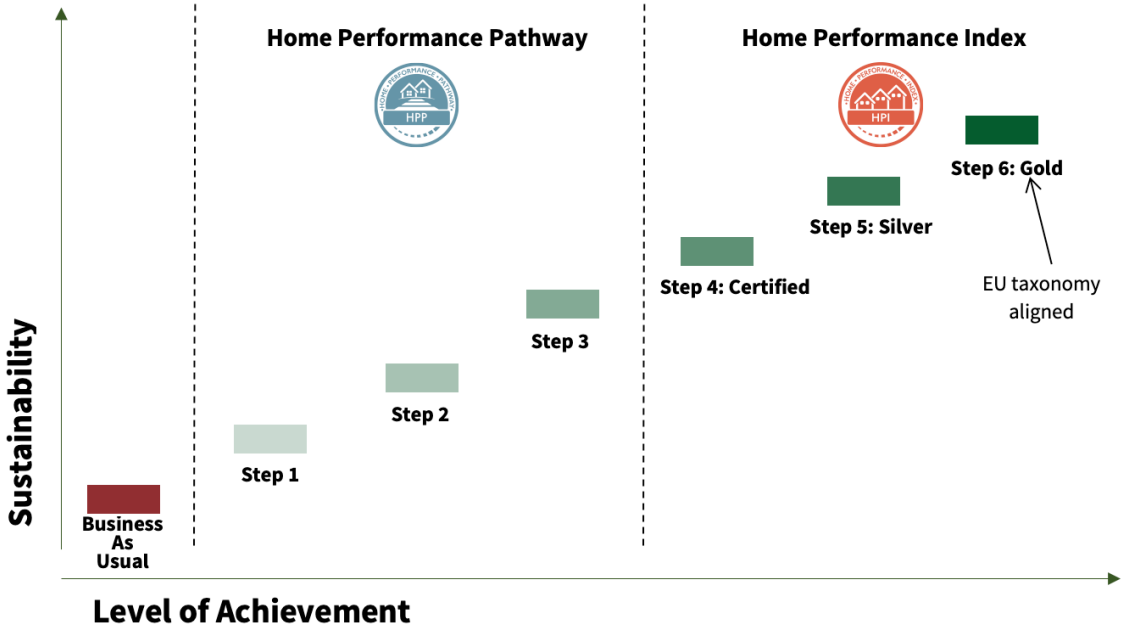
The primary market for the Home Performance Pathway certification scheme is small to medium homebuilders though the certification is open to all homebuilders.

3.2. Why was Home Performance Pathway developed

In 2016, the IGBC launched Ireland's national sustainability certification for the construction of new residential buildings called the *Home Performance Index* (HPI). Over the following years the certification has grown and has been adopted and used by the major public and private developers in Ireland.

In 2024, the IGBC reviewed its strategy towards certification. The need for a simpler certification for smaller residential projects was identified. In response a series of progression steps were developed, starting with business as usual construction processes, all the way to EU taxonomy aligned green construction. This enables all home builders to start on a sustainability path and award those going beyond business as usual.

Using Home Performance Pathway will help homebuilders develop knowledge and skills towards achieving the green certification offered in Home Performance Index on future projects.



3.3. Funding

The development of the Home Performance Pathway certification was funded by Construct Innovate, project number CISFC1-24_011 with industry support from Ardcairn Capital and Home Building Finance Ireland.

3.4. Alignment with national and international standards and goals

Home Performance Pathway aligns with national climate, planning and regulatory policy, global agreements such as the Paris Climate Agreement, and UN Sustainable Development Goals. It also provides a pathway for developing skills to meet the EU Taxonomy for Green Finance.

BCAR Building Control (Amendment) Regulations 2014
The Building Control (Amendment) Regulations 2014 strengthen the current arrangements in place for the control of building activity by requiring greater accountability in relation to compliance with the Building Regulations in the form of statutory certification of design and construction, lodgement of compliance documentation, mandatory inspections during construction and validation, and registration of certificates. Where possible and practical the indicators have been aligned with Building Control (Amendment) Regulations 2014 requirements for evidence. This eliminates duplication of paperwork and streamlines the certification process.

Government Climate Action Plan
It directly aligns with many of the key actions set out in the Climate Action Plan, particularly the phasing out of fossil fuels and assessment of embodied carbon in buildings.

Irish Context
The Home Performance Pathway indicators have been developed for their relevance to the Irish construction context. It is intended for use by all construction professionals, not just sustainability experts. The intention is that the scheme should be accessible, easy to understand and cost effective to use, thus facilitating mainstream adoption in the residential sector.

Energy Performance of Buildings Directive (EPBD)
Home Performance Pathway has integrated the Life-Cycle Global Warming Potential (GWP) methodology being developed by the SEAI ahead of its requirements in building regulations. Allowing homebuilders to learn and test the criteria prior to it becoming mandatory. The EPBD requires that the life cycle GWP of a building be included in the Building Energy Rating (BER) from:

- January 2028 for all new buildings with a useful floor area larger than 1000m^2
- January 2030 for all new building

EU Taxonomy
The EU Taxonomy is a classification system that helps companies and investors identify what is an environmentally sustainable economic activity. It provides eligibility for Green Financing and was introduced to support the European Green Deal. Home Performance Pathway has integrated aspects of the EU taxonomy technical criteria into its indicators as a pathway to Home Performance Index where the complete criteria of EU taxonomy have been integrated.

United Nations Sustainability Development Goals
The Sustainable Development Goals (SDGs) are 17 global goals designed to be a “blueprint to achieve a better and more sustainable future for all”. The SDGs were launched in 2015 by the United Nations General Assembly and are intended to be achieved by the year 2030. The indicators within Home Performance Pathway are aligned with the UN SDGs where applicable.

4.0.

4.0. HOME PERFORMANCE PATHWAY ASSESSMENT STRUCTURE

4.1. Entry Requirements

Projects seeking Home Performance Pathway certification need to meet the following requirements:

- Be located within the Republic of Ireland
- Have a valid planning permission for their project
- Comply with Irish Building Regulations and have BCAR Part A Certificate(s) of Compliance on Completion signed by the Assigned Certifier and Builder, supported by Ancillary Certificates from other members of the design team and by certificates from specialist sub-contractors upon completion of the subject residential project.
- Have signed *Home Performance Pathway* terms and conditions
- Have paid applicable registration and certification fees

4.2. Certification Structure

The certification scheme has twelve indicators made up of :

		Status	
Indicator	Step 1	Step 2	Step 3
P 1.0 – Controlled Ventilation	**Mandatory**	**Mandatory**	**Mandatory**
P 2.0 – Energy Efficiency	**Mandatory**	**Mandatory**	**Mandatory**
P 3.0 – Water Efficiency	**Mandatory**	**Mandatory**	**Mandatory**
P 4.0 – Biodiversity	Optional	**Mandatory**	**Mandatory**
P 5.0 – Summer Comfort	Optional	Optional	**Mandatory**
A 1.0 – Embodied Carbon	Optional	Optional	Optional
A 2.0 – Universal Design	Optional	Optional	Optional
A 3.0 – Acoustic Comfort	Optional	Optional	Optional
A 4.0 – Material Usage & Waste	Optional	Optional	Optional
A 5.0 – Construction Skills	Optional	Optional	Optional
A 6.0 – Aftercare and Guidance	Optional	Optional	Optional
A 7.0 – Post-Occupancy Evaluation	Optional	Optional	Optional

The certification scheme consists of three steps of achievement: Step 1, Step 2 and Step 3. The table below shows the breakdown of indicators needed to be achieved for each step to be awarded the relevant certification.

	Step 1	Step 2	Step 3
No. of mandatory indicators	3	4	5
No. of additional indicators	1	3	5
Total No. of indicators	**4**	**7**	**10**

4.2.1. Awarding of Certificates

Home Performance Pathway certification is awarded on a project-wide basis and not on an individual unit basis. Projects are defined by the approved planning permission and encompass all homes approved in the planning application unless agreed otherwise with IGBC.

Certification will only be issued upon the successful submission of evidence for all homes in the project.

To account for the potential time lag between the first home in a project and the last home being completed, projects can be split into phases and preliminary reports issued if certain conditions are met.

Depending on project size the following will be the maximum number of phases a project can be split into regarding submission of evidence for final review:

Project Size	Max no. of preliminary reports issued
1-20 homes	0 (i.e. no phases and the whole project is submitted in one submission)
21-50	1
51-100	2
101+	3

Each phase does not have to have an equal number of homes.

A preliminary report will state that the phase submitted is on course to be awarded a specific step (e.g. Step 1, Step 2 or Step 3), pending the submission and review of the entire project.

For a preliminary report to be issued a project must meet the following requirements:

- Have submitted evidence on the minimum number of indicators to meet the requirements of the targeted certification step
- Evidence submitted must either cover all the project

or

- Comply with the evidence requirements as set out for phased developments

Irrespective of phasing, fees must be paid for the entire development prior to the issuing of the first preliminary report.

4.2.2. Progression path and sunset period

Home Performance Pathway is intended to move construction towards higher levels of ambition within 10 years. The available steps will be reduced as follows:

- 31st of December 2027, will be the last date Step 1 certification can be awarded*. From that date on, only Steps 2 & 3 are available.
- 31st of December 2030, will be the last date Step 2 certification can be awarded*. From that date on, only Step 3 is available.
- 31st of December 2035, will be the last date Step 3 certification can be awarded*. From that date on, *Home Performance Pathway* certifications will no longer be issued.

*A project can be certified under a retired step if the first home in the project achieved its BCAR sign-off before that step's retirement date. BCAR signoff date will be taken as the date given on the BCAR Part A Certificate of Compliance on Completion signed by the Assigned Certifier and Builder.

Example:

- A 60-home project is seeking Step 1 certification

- Step 1 retired on the 31st of December 2027
- Scenario A (Eligible): The first home's BCAR sign-off was on 31st of December 2027. As this is on the retirement date, the project is eligible for Step 1
- Scenario B (Ineligible): The first home's BCAR sign-off was on 2nd of January 2028. As this is after the retirement date, the project is not eligible for Step 1 and must pursue Step 2 or 3

4.3. Assessment Process

The process is as follows:

1. Registration Stage
2. Optional design stage review
3. Optional project review
4. Mandatory final review
5. Certification stage

1. Registration Stage:

- Register project with the IGBC: Pay applicable fees and sign T&Cs. If a commencement notice is not submitted within 3 years of registration, the project registration will be cancelled in line with T&Cs
- Link to the evidence upload platform issued to the point of contact for the project. This person is referred to as the Head Assessor. This role can be reassigned as necessary
- The Head Assessor sets up the project on the platform, selecting the indicators that are being targeted and inviting the relevant team members to the project to upload evidence and setting access requirements

Two review stages are offered to projects. The first is a design review stage, which is optional, and the second is a final review stage, which is mandatory for the issuing of a certificate.

2. Optional design stage review:

- Evidence is updated on the upload platform. The Head Assessor then submits the project for design review. 50% of certification fees must be paid prior to review
- IGBC Auditor is assigned to the project. Project evidence is reviewed for alignment with indicator requirements, and feedback is provided. No preliminary report is issued at this stage

For the final review stage, dependent on their size, projects can be submitted in phases prior to the submission of the entire project, if preliminary reports are required.

3. Optional project review:

- Upon BCAR sign-off of all homes within a phase, evidence is updated on the upload platform. The Head Assessor then submits the project for phase review. Remaining certification fees are to be paid at the submission of the first phase. Review of evidence will not begin prior to receipt of payment

- IGBC Auditor is assigned to the project. Evidence is reviewed for alignment with indicator requirements, and feedback is provided. A preliminary report is issued if all requirements are met

4. **Mandatory final review:**

- Upon BCAR sign-off of all homes within the project, evidence is updated on the upload platform. The Head Assessor then submits the project for final review. Remaining certification fees to be paid. Review of evidence will not begin prior to receipt of payment
- IGBC Auditor is assigned to the project. Evidence is reviewed for completeness and audited for compliance and further information is sought where missing*

5. **Certification stage:**

- On successful submission of evidence, a recommendation is made by the IGBC Auditor to the IGBC Certification Manager for award of certification and a Certificate is issued once approved

Onsite Audit The IGBC holds the right to request an onsite audit prior to issuing any certification. IGBC's preference is to carry out onsite audits post practical completion to visually audit construction and installed items aligned with submitted evidence. Site visits require access to a sample of completed homes. This is not an onsite audit and does not relieve the developer of their responsibilities in submitting requested evidence in accordance with the Home Performance Pathway criteria or indicate compliance with building regulations.

Notice of practical completion for onsite audit purposes To avoid complications of access arising between the tight timelines of practical completion and handover, the Head Assessor is to keep the IGBC aware of the development timeline at least four weeks in advance of practical completion to ensure if an onsite audit is requested it can be facilitated.

Failure to provide this timeline or facilitate a site visit requested within a reasonable timeline may result in IGBC refusing certification of the project irrespective of payment of fees.

*In cases where additional information has been sought by the IGBC Auditor during the final review of the project. Project teams have 12 months from the date of the first feedback to resolve these issues and any subsequent issues identified by the IGBC Auditor. If the 12 months have elapsed and certification has not been issued, the project will be deemed cancelled and closed out. To reopen the project a new set of certification fees will need to be paid. The 12 months can be extended in cases where extenuating circumstances have arisen and approved by the IGBC.

4.4. Version Updates

Home Performance Pathway will be reviewed every 2-3 years in response to changes in EU directives, national regulations, to correct errors, resolve issues identified in the course of running the certification scheme, or be consistent with changes in the construction sector.

Any changes resulting from this review will be categorised under two headings: major changes and minor changes.

- Major changes, include changes to the criteria of an indicator, removal or addition of indicator to the certification scheme, or changes to the structure or scoring system
- Minor changes include changes to the required evidence for an indicator, addition of clarification notes, correction of text to improve the clarity of the scheme

Where a major change has occurred, a new version of the scheme will be launched as per the following sequence: v1.0, v2.0, v3.0 etc.

Where only minor changes have occurred, an amended version of the existing scheme will be published as follows: v1.1, v1.2, v1.3 etc.

Where an amended version (v1.1, v1.2, v1.3 etc.) has been launched, all relevant existing registered projects will be automatically upgraded to the amended version after six months of being launched. This will not apply to projects that are going through final review at the time of launch or submitted for final review within six months of launch.

Where a new version (v1.0, v2.0, v3.0 etc.) has been launched, existing registered projects will not be automatically upgraded to the new version. They may upgrade to the new version at no additional cost, provided they haven't submitted the project for final review. Once upgraded a project may not downgrade to an older version. Where a project has already had a final review carried out under a previous version and wishes to upgrade it will need to reregister under the new system.

4.5. Indicator Structure

4.5.1. Indicator Layout

In the manual, each indicator has been laid out under the following headings:

1. **Status:**
   States if the indicator is optional or mandatory, and if mandatory at which step(s).

2. **Intent:**
   States why the indicator has been included in the system and its relevance for Irish residential development.

3. **Criteria:**
   Outlines the requirements of the indicator and the targets that the project team must implement within the project.

4. **Evidence:**
   Sets out the type of evidence to be submitted to prove that the criteria of the indicator have been met.

5. **Notes:**
   Provides additional guidance on how to comply with the criteria and evidential requirements.

6. **Development guidance:**
   Provides basic guidance for the project team to consider at different project stages from pre-design stage through to the in-use stage for each indicator.

4.5.2. Mandatory Indicators

The purpose of mandatory indicators is to ensure that a minimum performance standard is consistently achieved in key areas across certified projects.

The following table lists the twelve indicators of the scheme and notes the mandatory indicators at each step.

		Status	
Indicator	Step 1	Step 2	Step 3
P 1.0 – Controlled Ventilation	**Mandatory**	**Mandatory**	**Mandatory**
P 2.0 – Energy Efficiency	**Mandatory**	**Mandatory**	**Mandatory**
P 3.0 – Water Efficiency	**Mandatory**	**Mandatory**	**Mandatory**
P 4.0 – Biodiversity	Optional	**Mandatory**	**Mandatory**
P 5.0 – Summer Comfort	Optional	Optional	**Mandatory**
A 1.0 – Embodied Carbon	Optional	Optional	Optional
A 2.0 – Universal Design	Optional	Optional	Optional
A 3.0 – Acoustic Comfort	Optional	Optional	Optional
A 4.0 – Material Usage & Waste	Optional	Optional	Optional
A 5.0 – Construction Skills	Optional	Optional	Optional
A 6.0 – Aftercare and Guidance	Optional	Optional	Optional
A 7.0 – Post-Occupancy Evaluation	Optional	Optional	Optional

4.6. Required Documentation

It is the project team's responsibility to provide clear and relevant evidence in support of each indicator for assessment. Evidence within documents must be clearly marked to show compliance with the indicator.

In addition to the evidential requirements listed in the indicators, the following evidence is needed for every project seeking certification:

- Copy of the approved planning permission(s) for the project or similar documentation in cases of Part 8 applications etc.
- General arrangement drawings of the project including but not limited to floor plans, site plans, elevations and sections
- Copy of commencement notice
- Copy of BCAR Part A Certificate(s) of Compliance on Completion signed by the Assigned Certifier and Builder for all residential buildings in the project

All evidence is to be submitted to the upload platform as instructed by the IGBC.

5.0.

5.0. INDICATORS

5.1. Principal Indicators

5.1.1. Controlled Ventilation

Code: P1.0

Status: Mandatory for steps 1, 2 & 3.

Intent:

- Ensure good indoor air quality throughout the home with a consistent supply of fresh air under all weather conditions.
- Limit the concentration of harmful pollutants in the air within the house.
- Encourage careful quality construction to minimise heat loss due to air infiltration.

Criteria:

The project needs to achieve the following three points:

- The project is to achieve an area weighted average air tightness level of less than or equal to 3.0m^3/(m^2.hr)@Pa q50 covering all homes.
- All homes to achieve an air tightness level of less than or equal to 5.0m^3/(m^2.hr)@Pa q50.
- All homes to be installed with 3rd party commissioned mechanical ventilation in line with TGD Part F.

Evidence:

i. Test certificate for each home and report from air tightness assessors stating residential home number and result.

ii. If not shown on air tightness test certificate(s), evidence that tester is NSAI or INAB certified.

iii. Individual Part F 1-4 certificates for each home filled out and signed by the installer, commissioner and 3rd party validator.

iv. Completed IGBC Area Weighted Airtightness Calculation Excel file.

Notes:

a. This indicator follows the guidance given in Part F of the Building Regulations. An example of what is to be included in Part 1-4 paperwork can be found at: https://assets.gov.ie/static/documents/installation-and-commissioning-of-ventilation-systems-for-dwellings-achieving-complian.pdf.
Native formatting may be used but all applicable points given in the example must be covered in the alternative formatting.

b. It is advised that ventilation validators should follow the unconditional method of airflow measurement, but this is not compulsory for meeting the criteria of the indicator. The unconditional method requires the use of a powered flow hood. The unconditional method is the preferred method in all installation scenarios because of its accuracy and simplicity. It is a method that is free from site-specific conditions such as fan type, fan model, airflow direction and instrumentation characteristics. Unlike the conditional method, there is no need to get the K-factor of all extract and supply grilles. It is advised that the commissioner also uses a powered flow hood to reduce complications arising on site when it comes to validation and delaying delivery of the project, but this is not compulsory for meeting the criteria of the indicator.

c. The purpose of the area weighted airtightness target is to award projects for seeking greater airtightness, while allowing leeway if one of the homes in a residential scheme exceeds an airtightness of 3.0m3/(m2.hr)@Pa q50.

d. A template of the IGBC Area Weighted Airtightness Calculation Excel document is provided on the Home Performance Pathway webpage.

e. For phased assessments and the issuing of a preliminary report, the following should be followed for evidence submission. Evidence items i-iv for the homes within the phase.

Development Guidance:

Pre-design:

- Make the project team aware of the requirements.
- Reflect on any learnings where indicator was targeted on a previous project, to inform achieving compliance on this project.

Concept design:

- Identify who in the design team has responsibility for ensuring design compliance with the criteria of the indicator.

Developed design:

- Review design, paying attention to the airtightness line, e.g. redline plans and sections, ensuring continuity.
- Adjust the design to ensure greater ease of implementation on site, such as reducing the introduction of complex junctions.

Technical design:

- Review design, consider openings in the airtightness line, location of service entry and exit points for easier air tightness control on site.
- Liaise with M&E sub-contractor/engineer on the design of the mechanical ventilation system.

Pre-construction:

- Coordinate with the design and construction team, including sub-contractors, ensuring everyone understands the requirements of the indicator and how compliance is to be achieved.
- Identify who has responsibility for ensuring compliance is met on site.

Construction:

- Assign an air tightness champion, who leads on site providing toolbox talks on best practice for installing, and maintaining the airtight barriers and tracks any openings made.
- Ensure that a no-blame culture on site facilitates sub-contractors reporting any damage to the airtightness layer to the air tightness champion.

- Separate commissioners and validators assigned for the mechanical ventilation and the correct Part F forms for all units filled out in full. Advise a powered flow hood is used for validation.

Handover and Evidence submission:

- Compile evidence ensuring that what is submitted accurately reflects what was built.
- Submit all applicable evidence items via the upload platform.
- Reflect on the steps taken in the design and construction process and what improvements could be made for the next project.

5.1.2. Energy Efficiency

Code: P2.0

Status: Mandatory for steps 1, 2 & 3.

Intent:

- Encourage the development of homes with low operational energy use and associated carbon emissions.
- Encourage the electrification of heating operations.
- Encourage the development of Net Zero operational energy and carbon buildings.

Criteria:

All homes achieve an Energy Performance Coefficient (EPC) of less than or equal to 0.27 and no home has an individual fossil fuel heating system.

Evidence:

i. Provide Building regulations TGD Part L Conservation of Fuel and Energy reports for all homes. These are available through the Dwelling Energy Assessment Procedure (DEAP).

ii. If unit averaging is done, Excel document showing the calculation of the area-weighted average EPC. (see notes a & c)

Notes:

a. Averaging of EPCs is allowed in cases that align with national methodology for showing compliance with Part L building regulations for MPEPC, such as for apartment blocks.

b. Consult with your BER Assessor on the best path to achieving the target EPC.

c. For evidence (ii), the Excel document should contain the following headings:
Unit BER number, internal floor area and unit specific EPC result.
A template of the Excel document is provided on the Home Performance Pathway webpage.

d. To meet criteria, reduce delivery costs and achieve user satisfaction, focus on the actual energy performance of the home in use. This is best achieved by the application of early design energy efficiency principles, rather than technology applied at later stages to achieve compliance. Detailed guidance on designing low energy homes is provided through the RIAI/IGBC Design for Performance framework.

e. For phased assessments and the issuing of a preliminary report, evidence requirements are the same as final submittal of the entire project but only need to cover the homes of the submitted phase.

Development Guidance:

<u>Pre-design:</u>

- Make project team aware of the requirements.
- Reflect on any learnings where indicator was targeted on a previous project, to inform achieving compliance on this project.

Concept design:

- Identify who is responsible in the design team for ensuring design compliance with the criteria of the indicator.
- Consider compact size and use of simple forms, preferring terraced homes over semi-detached or detached homes to help reduce heat loss and costs.
- Consider impact of design on energy efficiency including orientation and window size/placement, optimum passive gains.
- Water efficient sanitary ware will help reduce hot water use.

Developed design:

- In coordination between the design team and the BER assessor, develop a pathway to achieve the EPC target.
- Prioritise fabric changes to achieve energy efficiency over mechanical and electrical solutions.
- Use actual calculated thermal bridge calculations over defaults in assessing compliance which will help reduce costs.

Technical design:

- Develop draft BER Part L reports and check if each home is on track to achieve the EPC target(s).
- Identify units that need further improvement.
- Coordinate with the design and construction team, including sub-contractors, ensuring everyone understands the requirements.

Pre-construction:

- Coordinate with the full design and construction team, ensuring all relevant members understand the requirements of the indicator and how compliance is to be achieved. Identify the person responsible for ensuring compliance is met on site.

Construction:

- Check that what is installed on site matches what was specified in the design including levels of airtightness, thermal bridge free junctions and M& E equipment such as heat pumps and ventilation meeting the calculated efficiencies.

Handover and Evidence submission:

- Compile evidence ensuring what is submitted accurately reflects what was built.
- Submit all applicable evidence items via the upload platform.
- Reflect on the steps taken in the design and construction process and what improvements could be made for the next project.

5.1.3. Water Efficiency

Code: P3.0

Status: Mandatory for steps 1, 2 & 3.

Intent:

- Reduce the consumption of drinking and potable water inside the home, through the design and specification of water-efficient fittings, appliances and recycling systems.
- Reduce the impacts associated with the treatment of potable water at the utility level.
- Reduce the impacts associated with heating domestic hot water.

Criteria:

Sanitaryware installed in all homes matches or have a lower flow rate than the following:

- WC – High volume flush of 6 litres and a low volume flush of 3 litres.
- Wash hand basin taps – 6 litres/minute @ 3bar.
- Kitchen taps – 6 litres/minute @ 3bar.
- Shower – 8 litres/minute @ 3bar.

Evidence:

i. Technical datasheets showing flowrates @ 3 bar of the different sanitaryware appliances installed for shower(s), wash hand basin(s) and kitchen tap(s) and technical datasheets for installed toilets, detailing flush capacity.

ii. Invoice(s) or delivery documentation showing the specified sanitaryware appliances as given in the technical datasheets purchased, with identifiable information linking the delivery address or the purchaser to the project. (Euro value can be redacted).

iii. Provide written confirmation that the sanitary ware has been installed exactly as per the specification.

Notes:

a. Flow rates to be calculated at 3-bar as given in the technical datasheets of each appliance, on-site measuring will not be accepted as an alternative.

b. For phased assessments and the issuing of a preliminary report, evidence requirements are the same as final submission of the entire project, except that it covers the homes of the submitted phase.

Development Guidance:

<u>Pre-design:</u>

- Make the design team aware of the requirements.
- Reflect on any learnings where the indicator was targeted on a previous project, to inform achieving compliance on this project.

Concept design:

- Identify who in the design team has responsibility for ensuring design compliance with the criteria of the indicator.

Developed design:

- n/a

Technical design:

- Identify suitable sanitaryware that does not exceed maximum flowrates.

Pre-construction:

- Ensure plumbing sub-contractor understands the requirements of the indicator and how compliance is to be achieved.
- Identify who has responsibility for ensuring compliance is met on site.

Construction:

- Check that what is installed on site matches what was specified in the design to meet compliance.
- Collect technical data sheets and invoices/delivery dockets for each sanitaryware item.

Handover and Evidence submission:

- Compile evidence ensuring that what is submitted accurately reflects what was built.
- Submit all applicable evidence items via the upload platform.
- Reflect on the steps taken in the design and construction process and what improvements could be made for the next project.

5.1.4. Biodiversity

Code: P4.0

Status: Mandatory for steps 2 & 3.

Intent:

- Enhance the site's ecological value and biodiversity.

Criteria:

At least 7 items from the biodiversity checklist have been installed on the project at the time of completion.

Biodiversity Checklist	
Item	Description
1	Bird boxes (excluding swift boxes) are installed (1 box per 5 homes), incorporating designs suitable to the surrounding environment. • In urban / suburban areas this may include common garden birds (e.g. finches, tits, blackbirds). • In rural areas it may include species such as barn owl or yellowhammer • Other boxes may be suitable to all environments, e.g. swallows, house martins
2	Nest boxes for swifts (1 box per 10 homes) are installed on buildings of at least 5 m height, designed using guidance from Birdwatch Ireland.
3	Bat boxes are installed (1 box per 10 homes) on retained trees located in parts of the development that are in complete darkness, i.e. with no artificial lighting.
4	Hedgehog boxes are installed in areas of dense shrubs (at least one per hectare) and at least four suitably-sized gaps (30cm height and width) are distributed around the site boundaries.
5	Provide a pond of minimum 4m2 suitable for frogs or newts within the landscaped area, as well as an adjacent habitat (e.g. a log pile) for frogs or newts to hibernate (1 per hectare and at least 1 per site that is smaller than a hectare).
6	Boxes providing habitat for solitary bees and other insects are provided in landscaped areas - 1 box per 5 homes. Micro-piles, exposed earth / sand banks, can also be provided where appropriate.
7	Designated wildlife dispersal corridors are provided to connect the site with green areas on adjacent land. These would consist of continuous lines of dense shrubs and ground vegetation, which are not obstructed by walls / fences / roads and are not illuminated by streetlights. Gaps of 30cm height and width are provided at the base of walls / fences to allow wild animals (e.g. hedgehogs) to move through the site.
8	The trees and shrubs proposed in the landscaping scheme includes at least 75% native trees and shrubs, with at least ten different native tree / shrub species. (See note b).
9	At least 25% of trees and shrubs in the landscaping scheme provide berries for birds (e.g. hawthorn, blackthorn, yew, rowan, whitebeam, bird cherry / wild cherry, alder buckthorn). (See note b).
10	At least 25% of grassland areas are managed as meadows, following guidance in the All Ireland Pollinator Plan. Sowing of wildflower seed is not necessary; existing grasslands can be converted to meadows through changes in management. If sowing is preferred, seed must consist only of native species of Irish provenance; non-native wildflower mixes would not qualify. The mowing regime and long-term management of meadows must be outlined in the Landscaping Plan and submitted and approved as part of the planning package.

11	20% of the landscaping is designated a 'rewilding area', i.e. left unmanaged and allowed to develop naturally. The long-term approach to this area is set out in the Landscaping Plan and submitted and approved as part of the planning package. Green roofs cannot be classified as a 'rewilding area'.
12	At least 50% of healthy existing trees and shrubs (preferably native trees, but including non-native trees) are retained and incorporated into the landscaping scheme. Only applicable to sites that have retained at least 10 trees or shrubs per hectare. Ash trees with Ash Dieback disease are excluded.
13	20% of total roof area in the project is developed as multi-species green roofs / brown roofs. Single species roofs such as Sedum would not meet these requirements.
14	25% of gables walls are planted with native climbing plants (e.g. ivy or honeysuckle) or pollinator-friendly climbing plants (as listed in the All-Ireland Pollinator Plan). (See note b).
15	50% of ornamental planting uses pollinator-friendly species, as specified in guidance from the All Ireland Pollinator Plan. (See note b).
16	Open-air SUDS features are provided, including attenuation ponds and swales. No underground attenuation tanks are used.
17	If the site contains a watercourse, all existing vegetation (excluding invasive species) within 5m of the banks is retained. Culverts or bridges are only used where strictly necessary, e.g. watercourse crossings.
18	An existing culvert (of at least 5m length) is daylighted, i.e. returned to an open watercourse. Appropriate native riparian planting is planted.
19	The morphology of existing modified watercourses is restored, to increase the diversity of riparian habitats, as per guidance from Inland Fisheries Ireland. This may include creation of high-flow and low-flow channels, creation of meanders, provision of boulders / cobbles / pebbles (as appropriate) and the planting of native riparian vegetation.

Evidence:

i. Item 1: Site layout plan showing the location of installed bird boxes.

ii. Item 1: Photos of each installed bird box, clearly showing that the minimum quota has been met.

iii. Item 2: Site layout plan showing the location of installed swift nest boxes.

iv. Item 2: Photos of each installed swift nest box, clearly showing that the minimum quota has been met.

v. Item 3: Site layout plan showing location of installed bat boxes, existing trees and installed external lighting.

vi. Item 3: Photos of each installed bat box, clearly showing that the minimum quota has been met. (See note c).

vii. Item 4: Site layout plan showing location of installed hedgehog boxes.

viii. Item 4: Photos of each installed hedgehog box, clearly showing minimum quota has been met.

ix. Item 5: Site layout plan showing location of installed pond(s). (See note d).

x. Item 5: Photos of installed pond(s).

xi. Item 6: Site layout plan showing location of installed bee boxes.

xii. Item 6: Photos of each installed bee box, clearly showing minimum quota has been met.

xiii. Item 7: Site layout plan showing wild corridors and external lighting through the site, location of 30cm2 gaps on site borders with wild corridor and green areas of adjacent land.

xiv. Item 7: Photos of wild corridor. (See note e).

xv. Item 8: Invoice(s) or delivery documentation showing the name and quantity of all trees and shrubs purchased, with identifiable information linking the delivery address or the purchaser to the project. (Euro value can be redacted).

xvi. Item 8: Schedule of all trees and shrubs purchased, showing percentage that meet the native definition (see note b).

xvii. Item 9: Invoice(s) or delivery documentation showing the name and quantity of all trees and shrubs purchased, with identifiable information linking the delivery address or the purchaser to the project. (Euro value can be redacted).

xviii. Item 9: Schedule of all trees and shrubs purchased, showing percentage that provide berries (see note b).

xix. Item 10: Copy of Landscaping Plan.

xx. Item 10: Link to approved planning application.

xxi. Item 11: Copy of Landscaping Plan.

xxii. Item 11: Link to approved planning application.

xxiii. Item 12: Tree survey report (see note f).

xxiv. Item 13: Site layout plan showing all roof types in the project.

xxv. Item 13: Schedule of roof types, showing their total area and overall percentage.

xxvi. Item 13: Photos of installed green/brown roof(s).

xxvii. Item 14: Site layout plan showing location of all gable walls and planted climbers.

xxviii. Item 14: Photos of each planted climber section.

xxix. Item 15: Invoice(s) or delivery documentation showing the name and quantity of all ornamentals purchased, with identifiable information linking the delivery address or the purchaser to the project. (Euro value can be redacted).

xxx. Item 15: Schedule of all ornamental plants purchased, showing percentage that are pollinator friendly (see note b).

xxxi. Item 16: Surface water drainage plan and drawings.

xxxii. Item 16: Photos of installed open-air SUDs measures.

xxxiii. Item 17: Site layout plan showing location of the water course.

xxxiv. Item 17: Photos showing water course pre- and post- construction.

xxxv. Item 18: Site layout plan showing location of the water course and the daylit section.

xxxvi. Item 18: Photos showing the daylit section of the water course pre- and post- construction.

xxxvii. Item 19: Site layout plan showing location of the water course.

xxxviii. Item 19: Photos showing water course pre- and post- construction.

xxxix. Phases: (optional) Implementation plan for targeted items. (See note g).

Notes:

a. The size of the site is as written in the approved planning permission application.

b. Lists of suitable plants for items 8, 9, 14 & 15 can be found in Appendix B. Additional supporting evidence needs to be provided for plants not on the list being submitted for compliance with one of these items.

c. Photos to also include wide angle shots of the general area where the bat boxes are located to understand the lighting conditions.

d. Layout plan to include area measurements of the pond(s).

e. Photos to include a sample of the corridor through the site and where it meets the border of the site, showing the minimum passageway gaps of 30m2 required.

f. Tree survey report to include the following: survey drawings and photos of all existing trees and shrubs prior to site clearance and their health condition; site layout drawings showing retained quantity of trees and shrubs and photos of retained trees and shrubs.

g. For phased assessments and the issuing of a preliminary report, the following should be followed for evidence submission. Relevant evidence for any items installed at the time of phase submission and implementation plan and timeline outlining when if any other biodiversity items will be implemented and installed in the project.

Development Guidance:

Pre-design:

- Identify if this indicator is being targeted.
- If yes, make project team aware of the requirements.
- Reflect on any learnings where indicator was targeted on a previous project, to inform achieving compliance on this project.

Concept design:

- Identify the person responsible in the design team for ensuring design compliance with the criteria of the indicator.
- Decide which of the items on the checklist will be targeted and incorporated into the design.
- Identify suitable locations and spacing for the targeted items.

Developed design:

- Review design, paying attention to the items on the checklist being targeted and if any compromises have been made that could result in the item not being achievable when it comes to construction.

Technical design:

- Review design to ensure there is adequate spacing for the implementation of each targeted item and that identify non-compatible services that occupy the same space.
- Prepare production drawings and quantities for tendering.

Pre-construction:

- Coordinate with the full design and construction team, ensuring all relevant members understand the requirements of the indicator and how compliance is to be achieved.
- Identify the person responsible for ensuring compliance is met on site.

Construction:

- Check that what is installed on site matches what was specified in the design to meet compliance with the indicator, such as the type and quantity of different plant species.

Handover and Evidence submission:

- Compile evidence to ensure the submission accurately reflects what was built.
- Submit all applicable evidence items via the upload platform.
- Reflect on the steps taken in the design and construction process and the improvements that could be made for the next project.

5.1.5. Summer Comfort

Code: P5.0

Status: Mandatory for step 3.

Intent:

- Ensure that homes are designed to avoid a risk of overheating in the summer months.
- Ensure that homes are resilient to temperature extremes due to climate change over their lifetime.

Criteria:

All homes are designed to minimise overheating with a dynamic simulation showing homes comply with CIBSE TM59.

Evidence:

i. CIBSE TM59 compliance report (see notes a & b).

Notes:

a. The CIBSE TM59 report is to be compiled and signed by a suitably qualified Registered Engineer or Registered Architect.

b. Not all homes in the development need to be modelled, but where sampling is done it must follow the sampling guidance as given in CIBSE TM59, identifying the worst-case units.

c. For phased assessments and the issuing of a preliminary report, the following should be used for evidence submission. Where evidence is not ready for the entire project, then the submitted CIBSE TM59 compliance report must cover a sample of units within the project phase being submitted.

Development Guidance:

Pre-design:

- Identify if this indicator is being targeted.
- If yes, make project team aware of the requirements.
- Reflect on any learnings where indicator was targeted on a previous project, to inform achieving compliance on this project.

Concept design:

- Identify the person responsible in the design team for ensuring design compliance with the criteria of the indicator.
- Begin early massing and orientation studies to manage solar gain.
- Consider the impact of glazing design on the risk of overheating.

Developed design:

- Develop initial façade strategies, including the sizing and positioning of windows, and the possible incorporation of external shading devices (e.g., brise soleil, louvres, deep reveals).
- Specify the target Solar Energy Transmittance (g-value) for glazing and ensure it is integrated into the performance specification.
- Conduct preliminary thermal modelling to test the design against the CIBSE TM59 criteria and identify potential overheating risks.

Technical design:

- Finalise the building fabric specification, including glazing specifications (g-value, sizing etc) and thermal mass strategy.
- If needed develop detailed designs for any shading devices, ensuring they are structurally feasible and integrated with the architecture.
- Commission a CIBSE TM59 dynamic simulation from a qualified assessor on the final design to confirm compliance.
- Identify any units which are failing the criteria and make necessary design revisions.

Pre-construction:

- Coordinate with the full design and construction team, ensuring all relevant members understand the requirements of the indicator and how compliance is to be achieved.
- Identify who has responsibility for ensuring compliance is met on site, particularly regarding the installation of correct glazing and shading elements.

Construction:

- Check that what is installed on site matches what was specified in the design to meet compliance with the indicator. Key items to verify include:
  - The correct glazing units with the specified g-value.
  - The dimensions of glazing areas.
  - The proper installation and minimum free area of openable windows.
  - The correct installation of any specified shading solutions.

Handover and Evidence submission:

- Compile evidence ensuring that what is submitted accurately reflects what was built.
- Submit all applicable evidence items via the upload platform.
- Reflect on the steps taken in the design and construction process and what improvements could be made for the next project.

5.2. Additional Indicators

5.2.1. Embodied Carbon

Code: A1.0

Status: Optional indicator

Intent:

- Reducing material demand, lowering construction costs, and supporting sustainability by decreasing the embodied carbon and resource use associated with building projects.

Criteria:

At least 2 items from the Embodied Carbon checklist have been achieved on the project at the time of completion.

Item	Description
1	To ensure materials are used efficiently the mean average form factor across all apartments in the project is less than or equal to 1.15.
2	The mean average form factor across all houses in the project is less than or equal to 1.85.
3	A minimum of 90% of homes must primarily use structural materials for **foundations and floors** that are compliant with the list below. Projects may use any combination of the listed materials to achieve their structural needs. Compliant materials include: • A suspended timber floor system or other biobased material system. • Concrete incorporating a minimum of 30% GGBS (or an equivalent Portland cement clinker replacement). • Masonry blocks incorporating a minimum of 30% GGBS (or an equivalent Portland cement clinker replacement). • Structural steel (excluding rebar) for which a published Environmental Product Declaration (EPD) is available.
4	A minimum of 90% of homes must primarily use a **main vertical load bearing structure** constructed from one or more of the following compliant material systems. Projects may use any combination of the listed materials to achieve their structural needs. Compliant materials include: • Timber frame, Cross Laminated Timber (CLT) or other biobased material structure. • Concrete with a minimum 30% GGBS (or equivalent Portland cement clinker replacement). • Masonry blocks incorporating a minimum of 30% GGBS (or an equivalent Portland cement clinker replacement). • Structural steel (excluding rebar) for which a published Environmental Product Declaration (EPD) is available.
5	A minimum of 90% of homes must primarily use a **roof structure** constructed from one or more of the following compliant material systems. Projects may use any combination of the listed materials to achieve their structural needs. Compliant materials include: • Timber frame, Cross Laminated Timber (CLT) or other biobased material structure. • Concrete with a minimum 30% GGBS (or equivalent portland cement clinker replacement). • Structural steel (excluding rebar) for which a published Environmental Product Declaration (EPD) is available.

6	Thermal insulations covering at least 75% of external wall area have an A1-A3 Global Warming Potential (GWP) of less than or equal to 3.63 kgCO2e/kg as expressed through Environmental Product Declarations (EPD).
7	All thermal insulation installed in homes from 0.5 meters above ground level up to and including the roof is composed of biobased materials (insulation used around openings can be excluded).
8	A Lifecycle GWP calculation has been carried out for the development using national SEAI methodology.

Evidence:

i. Item 1 & 2: BER DEAP dwelling reports for all homes in the project.

ii. Item 1 & 2: Completed IGBC Form Factor Calculation Excel file.

iii. Item 3: Structural drawings and specifications for the foundation and floor systems.

iv. Item 3: Site photos showing a sample of homes with installed foundation and floor systems.

v. Item 3: Technical datasheets or manufacturers' declaration of concrete and or masonry blocks used, showing compliance with criteria.

vi. Item 3: EPDs of installed structural steel.

vii. Item 3: Invoice(s) or delivery documentation showing the specified materials as given in the technical datasheets/EPDs purchased, with identifiable information linking the delivery address or the purchaser to the project. (Euro value can be redacted).

viii. Item 4: Structural drawings and specifications for the vertical load bearing structure.

ix. Item 4: Site photos showing a sample of homes installed vertical load bearing structure systems.

x. Item 4: Technical datasheets or manufacturers declaration of concrete and or masonry blocks and or steel used to show compliance with criteria.

xi. Item 4: EPDs of installed structural steel.

xii. Item 4: Invoice(s) or delivery documentation showing the specified materials as given in the technical datasheets/EPDs purchased, with identifiable information linking the delivery address or the purchaser to the project. (Euro value can be redacted).

xiii. Item 5: Structural drawings and specifications for the roof structure.

xiv. Item 5: Site photos showing a sample of homes with installed roof structure systems.

xv. Item 5: Technical datasheets or manufacturers' declaration of concrete and or masonry blocks and or steel used to show compliance with criteria.

xvi. Item 5: EPDs of installed structural steel.

xvii. Item 5: Invoice(s) or delivery documentation showing the specified materials as given in the technical datasheets/EPDs purchased, with identifiable information linking the delivery address or the purchaser to the project. (Euro value can be redacted).

xviii. Item 6: Site photos showing a sample of homes with installed wall insulation.

xix. Item 6: Environmental Product Declarations (EPDs) for the thermal insulation products covering at least 75% of the external wall area.

xx. Item 6: Invoice(s) or delivery documentation showing the specified materials as given in the EPDs, with identifiable information linking the delivery address or the purchaser to the project. (Euro value can be redacted).

xxi. Item 6: Calculations showing the quantity of thermal wall insulation installed on residential buildings in square meters and the quantity of insulation covered by EPDs meeting the criteria.

xxii. Item 7: Site photos showing a sample of homes installed insulation from 0.5m above ground level.

xxiii. Item 7: Manufacturer's technical datasheets and product declarations confirming the biobased content of all installed insulation from 0.5m above ground level.

xxiv. Item 7: Invoice(s) or delivery documentation showing the specified materials as given in the technical datasheets purchased, with identifiable information linking the delivery address or the purchaser to the project. (Euro value can be redacted).

xxv. Item 7: A signed declaration from the main contractor confirming the insulation was installed as specified and that non-biobased materials were only used around openings as permitted.

xxvi. Item 8: Lifecycle GWP report of development.

Notes:

a. Duplexes are to be regarded as apartments.

b. Form factor = Total heat loss area / total internal floor area.

c. Internal floor area to be taken from the DEAP dwelling report for each home.

d. Heat loss area to be taken from the DEAP dwelling report for each home. Referred to within the DEAP dwelling report as "Total element area [m2]" under the Heat loss details section.

e. Average form factor to be calculated by adding up the individual form factor for each home within the typology category (houses or apartments) and dividing it by the number of homes within that category.

f. This criterion is only judged on buildings that have a residential component.

g. A template of the IGBC Form Factor Calculation Excel document is provided on the Home Performance Pathway website.

h. For phased assessments and issuing of a preliminary report, evidence requirements are the same as the final submission of the entire project. However, it only needs to cover the homes of the phase submitted.

Development Guidance:

Pre-design:

- Identify if this indicator is being targeted.
- If yes, conduct a preliminary review of the checklist to identify what items will be targeted. Make the design team aware of the requirements, particularly the form factor targets and material pathways is applicable.
- Reflect on any learnings where indicator was targeted on a previous project, to inform achieving compliance on this project.

Concept design:

- Identify the person responsible in the design team has responsibility for coordinating the embodied carbon strategy.

- Prioritise a compact, efficient building form to achieve the form factor targets for houses and apartments.
- Begin assessing structural material options against the checklist pathways.

Developed design:

- Calculate preliminary form factors to ensure the design is on track to meet the targets for Items 1 & 2.
- Develop outline specifications for the primary structural elements (floors, walls, roof) and insulation materials, aligning with the low-carbon pathways in the checklist.

Technical design:

- Finalise structural and material specifications, ensuring they comply with the selected pathways from the checklist (e.g. confirming minimum GGBS content in concrete, sourcing EPDs for insulation).
- For Item 8, carry out the Lifecycle GWP calculation using the SEAI methodology.
- Complete the Form Factor Calculation file with final DEAP data to confirm compliance.

Pre-construction:

- Coordinate with the main contractor and key sub-contractors, ensuring they understand the specific material requirements (e.g., concrete mix designs, sourcing of biobased insulation).
- Identify the person responsible for collecting and verifying evidence on site, such as material delivery tickets and EPDs.

Construction:

- Verify that materials delivered and installed on site match the specified low-carbon requirements.
- Collect and archive all necessary evidence, including:
  - Concrete pour tickets confirming GGBS content.
  - Invoices and EPDs for insulation and/or structural steel materials.
  - Documentation for any biobased materials used.

Handover and Evidence submission:

- Compile evidence ensuring the submission accurately reflects what was built.
- Submit all applicable evidence items via the upload platform.
- Reflect on the steps taken in the design and construction process and what improvements could be made for the next project.

5.2.2. Universal Design

Code: A2.0

Status: Optional indicator

Intent:

- Provide homes that are accessible and usable by everyone to the greatest extent possible, regardless of age or ability.
- Ensure resource and space efficient design that balances area efficiency with long term flexibility.
- Ensure flexibility is designed in, to allow homes to be adaptable for occupants' needs throughout their lives.

Criteria:

5% of all homes to have an internal layout that is compliant with UD Home (at least 1 home to be compliant for developments of less than 20 homes).

Evidence:

i. Site plan identifying location and number of compliant homes.

ii. Completed UDH Excel checklist(s) for unit type and variation.

iii. Report(s) containing relevant drawings with measurements, showing the relevant implemented criteria for each unit type and variation.

Notes:

a. The criteria for UD Home can be found on the Centre for Excellence in Universal Design website. All criteria where relevant needs to be implemented to be compliant. The UDH Excel checklist helps guide what criteria is relevant based on the typology. This checklist can also be found on the Centre for Excellence in Universal Design website.

b. For evidence (iii), all relevant criteria for a specific unit type are to be shown within the same report. Multiple unit types and variations may be contained within the one report or split out into their own respective reports.

c. The UD Home criteria were created by the Centre for Excellence in Universal Design. To assist on the implementation of this criteria, they have created guidance documents, which can be found on the Centre for Excellence in Universal Design website.

d. All furniture used in the drawings needs to meet the minimum size requirements as given in Appendix C to ensure compliance.

e. For phased assessments and the issuing of a preliminary report, evidence requirements are the same as final submittal of the entire project.

Development Guidance:

<u>Pre-design:</u>

- Identify if this indicator is being targeted.

- If yes, make design team aware of the requirements.
- Reflect on any learnings where the indicator was targeted on a previous project, to inform achieving compliance on this project.

Concept design:

- Identify the person responsible in the design team for ensuring design compliance with the criteria of the indicator.
- Decide how many units will implement the UD Home measures ensuring that the minimum quantity is met.

Developed design:

- Locations of the UD Home units on site identified and internal layouts developed in accordance with the criteria.
- Draft UD Home Excel checklist(s) developed for each applicable typology.

Technical design:

- Review final design, noting the status of each item in the UD Home criteria.
- Identify which items need further production drawings and specifications.
- Update the draft UD Home Excel checklist(s).

Pre-construction:

- Coordinate with the full design and construction team, ensuring all relevant members understand the requirements of the indicator and how compliance is to be achieved.
- Identify the person responsible for ensuring compliance is met on site.

Construction:

- Check that what is installed on site matches what was specified in the design to meet compliance with the indicator.
- Complete final UD Home Excel checklist(s) for evidence submission and develop report showing installed measures.

Handover and Evidence submission:

- Compile evidence ensuring that what is submitted accurately reflects what was built.
- Submit all applicable evidence items via the upload platform.
- Reflect on the steps taken in the design and construction process and what improvements could be made for the next project.

5.2.3. Acoustic Comfort

Code: A3.0

Status: Optional indicator

Intent:

- Ensure that houses and apartments are built to maximise acoustic comfort and provide privacy between homes.
- Reduce noise transfer to effect change in the perception of urban dwelling and therefore encourage better use of land and resources.

Criteria:

All domestic acoustic test results submitted as part of BCAR compliance on the project are to have a result of at least a 3dB improvement on TGD-E targets.

The following results need to be achieved as a minimum:

- Airbourne sound insulation for Floors – 56dB or higher.
- Airbourne sound insulation for Walls – 56dB or higher.
- Impact sound insulation for Floors – 55dB or lower.

Evidence:

i. Testing schedule (see note a).

ii. Copy of all domestic acoustic test results uploaded to Building Control Management System (BCMS).

Notes:

a. Testing schedule is to outline the number of units needed for testing in compliance with Section 2 of TDG E. The testing schedule should also outline the name and location of the units being tested within the project.

b. For phased assessments and the issuing of a preliminary report, the following should be followed for evidence submission. Testing schedule submitted outlining timeline of when tests will be carried out. Any tests carried out on the phase being examined to be submitted as part of evidence.

Development Guidance:

<u>Pre-design:</u>

- Identify if this indicator is being targeted.
- If yes, make the project team aware of the requirements and the higher performance targets (3dB improvement on TGD-E).
- Reflect on any learnings where indicator was targeted on a previous project, to inform achieving compliance on this project.

Concept design:

- Identify the person responsible in the design team for ensuring design compliance with the criteria of the indicator.
- Review the unit layout to minimise potential acoustic issues, e.g. avoiding placing bedrooms of one unit against the living room of an adjacent unit.
- Select robust, high-performance wall and floor separating constructions as the baseline design.

Developed design:

- Develop detailed wall and floor build-ups designed to achieve requirements.
- Pay close attention to flanking transmission paths (e.g., through continuous slabs, party walls intersecting with external walls) and design appropriate detailing to mitigate these.

Technical design:

- Finalise acoustic specifications for all separating elements (walls, floors) and flanking details.
- Integrate comprehensive acoustic details into the construction drawing set, showing how junctions are to be sealed and constructed to maintain acoustic integrity.
- Develop a pre-completion testing schedule in line with TGD E requirements.

Pre-construction:

- Coordinate with the full design and construction team, including sub-contractors, ensuring all relevant members understand the acoustic performance requirements and the critical importance of workmanship.
- Identify who has responsibility for ensuring compliance is met on site, including the supervision of critical acoustic detailing.
- Conduct pre-start meetings with relevant trades (e.g., dryliners, flooring installers) to emphasise the acoustic requirements.

Construction:

- Implement on-site supervision to ensure the approved acoustic details are followed precisely.
- Protect acoustic elements from damage by subsequent trades.
- Carry out acoustic testing.

Handover and Evidence submission:

- Compile evidence ensuring that what is submitted accurately reflects what was built.
- Submit all applicable evidence items via the upload platform.
- Reflect on the steps taken in the design and construction process and what improvements could be made for the next project.

5.2.4. Material Usage & Waste

Code: A4.0

Status: Optional indicator

Intent:

- Encourage good waste management to reduce the use of resources and embodied impacts in the construction of homes.
- Promote circularity within the construction industry.

Criteria:

Complete quantity in metric tonnes of construction waste is tracked, covering the entire construction period including demolition, and reported using the IGBC waste log template.

AND

The quantity in metric tonnes of primary and secondary raw material used in the project is tracked using the IGBC circular material log template for specific materials.

Evidence:

i. Completed IGBC waste log Excel file of applicable construction waste (see note a & c).

ii. Copy of waste collection dockets issued during the project.

iii. Completed IGBC circular material log Excel file of applicable construction materials.

iv. Completed main contractor waste and material management declaration (see note c).

Notes:

a. Construction period covers from the commencement notice to BCAR sign-off. If any demolition work is carried out, this is to be included within the construction period.

b. IGBC waste template was adapted from the EPA Best Practice Guidelines – For the preparation of resource and waste management plans for construction and demolition projects (Appendix D of the EPA document).

c. Waste and materials managed by the main contractor must be reported on. It would be beneficial but not compulsory to also have waste and materials managed by sub-contractors reported on. To account for the potential data gaps of waste and materials managed by sub-contractors, the main contractor is to fill out the “main contractor waste and management declaration”. For the declaration, the main contractor reports on the categories of waste and material usage that they do not have data for and have not reported on, however they are aware of its use in the project.

d. Secondary raw materials mean materials that have been prepared for re-use or recycled in accordance with Article 3 of the Waste Framework Directive and have ceased to be waste under Article 6 of that Directive.

e. A template of the IGBC waste log Excel document is provided on the Home Performance Pathway webpage.

f. A template of the IGBC circular material log Excel document is provided on the Home Performance Pathway webpage.

g. For phased assessments and issuing of a preliminary report, evidence requirements are the same as final submission of the entire project however, only need to cover up to the timeframe of submitted phase.

Development Guidance:

Pre-design:

- Identify if this indicator is being targeted.
- If yes, make the project team aware of the requirements.
- Reflect on any learnings where indicator was targeted on a previous project, to inform achieving compliance on this project.

Concept design:

- Identify if there are any structures on site that are being demolished and assess if any material can be reused within the new project.

Developed design:

- Develop Waste Management Plan, ensuring reporting requirements align with the conditions of the EPA Best Practice Guidelines.
- Identify any sources of reused materials in the area and if they can be incorporated into the project.

Technical design:

- Ensure tender package accurately reflects the requirements to meet compliance with the indicator, such as the record keeping of construction waste in the approved format and any requirements on the use of secondary raw materials.

Pre-construction:

- Coordinate with the full design and construction team, ensuring all relevant members understand the requirements of the indicator and how compliance is to be achieved.
- Identify who has responsibility for ensuring compliance is met on site.

Construction:

- Implement Waste Management Plan, ensuring waste is being accurately tracked and inputted into a suitably formatted Excel document with corresponding waste collection dockets collected.
- Secondary raw material used on site is tracked and catalogued.

Handover and Evidence submission:

- Compile evidence ensuring that what is submitted accurately reflects what was built.
- Submit all applicable evidence items via the upload platform.
- Reflect on the steps taken in the design and construction process and what improvements could be made for the next project.

5.2.5. Construction Skills

Code: A5.0

Status: Optional indicator

Intent:

- Support the development of a skilled workforce in the Irish construction sector by creating employment and training opportunities for apprentices.
- Ensure knowledge transfer and the practical application of modern construction techniques on site.

Criteria:

Dependent on the size of the project, the following minimum number of apprentices from SOLAS run courses are involved in the construction of the project.

Project Size	Minimum number of apprentices
1-25 homes	2
25-50 homes	3
51-75 homes	4
76-100 homes	5
101+ homes	6

Evidence:

i. Signed declaration from the SOLAS approved assessor confirming the scope of works and duration of each apprentice's involvement on the project (see note e).

ii. Summary report from the main contractor listing the apprentices, their employment company, their trades, and the phases of the project they worked on (see note d).

Notes:

a. Apprentices must be formally registered with SOLAS in a recognised construction apprenticeship program during the construction of the project. Individuals who have completed their apprenticeship prior to the start of construction cannot be considered as being compliant with the above criteria.

b. The involvement should be for a meaningful duration of the construction period to ensure effective skills development.

c. For phased projects, the apprentice quota is based on the total project size and can be distributed across the phases.

d. For evidence in item ii, the summary report is to include for each apprentice, their SOLAS apprentice registration number and the SOLAS company registration number of their employer company.

e. The SOLAS approved assessor is an individual from the company that employees the apprentice and is in charge of supervising their work. This role is a mandatory requirement of SOLAS courses.

f. For phased assessments and the issuing of a preliminary report, evidence requirements are the same as the final submittal of the entire project.

Development Guidance:

Pre-design:

- Identify if this indicator is being targeted.
- If yes, the developer and main contractor should assess the project's scope and duration to determine the feasibility of integrating apprentices.
- Reflect on any learnings where indicator was targeted on a previous project, to inform achieving compliance on this project.

Concept design:

- Identify who (e.g., the Main Contractor or a sub-contractor) has responsibility for fulfilling the apprentice quota.
- If relevant, begin engagement with SOLAS to understand the process for recruiting and registering apprentices.

Developed design:

- Review the project program to identify key trade packages and phases where apprentice involvement would be most suitable and beneficial.
- Develop a preliminary plan for integrating apprentices, considering supervision requirements and site safety.

Technical design:

- Finalise the plan for apprentice deployment, specifying the targeted trades (e.g., carpentry, electrical, plumbing) and intended start dates aligned with the construction program.
- Incorporate the commitment and associated costs for supervision and training into tender packages for relevant sub-contractors.

Pre-construction:

- Finalise the recruitment and registration of apprentices with SOLAS to ensure they are ready to commence work.
- Identify on-site mentors and ensure they understand their role in supporting the apprentices' development.

Construction:

- Integrate apprentices into the site team with clear briefings, adequate supervision, and a structured induction.
- Monitor the progress and welfare of the apprentices, ensuring they are gaining meaningful experience across their chosen trade.
- Maintain records of apprentice registrations and their ongoing involvement in the project.

Handover and Evidence submission:

- Compile evidence ensuring that what is submitted accurately reflects what was built.
- Submit all applicable evidence items via the upload platform.
- Reflect on the success of the apprenticeship program and what improvements could be made for the next project.

5.2.6. Aftercare and Guidance

Code: A6.0

Status: Optional indicator

Intent:

- Provide information to occupants on how to best manage their home to reduce the environmental impact during the operation of the home, and ensure that integrated systems, such as heating and ventilation, are maintained and run correctly.

Criteria:

Home User Guide(s) created for all homes using the IGBC template and shared with the occupiers.

Evidence:

i. Copy of Home User Guide for each respective unit type in the development (see note a).

ii. A schedule identifying the homes covered by each Home User guide and the reason for the different guides.

Notes:

a. Different Home User Guides will need to be created in cases where the guidance is different between homes. An example of where this would arise would be if some of the homes are build-to-sell compared to build-to-rent, as maintenance guidance will differ another example is where different heating or ventilation setups are installed across the project.

b. A template of the IGBC Home User Guide is provided on the Home Performance Pathway webpage.

c. For phased assessments and the issuing of a preliminary report, evidence requirements are the same as final submission of the entire project.

Development Guidance:

Pre-design:

- Identify if this indicator is being targeted.
- If yes, make the project team aware of the requirements.
- Reflect on any learnings where the indicator was targeted on a previous project, to inform achieving compliance on this project.

Concept design:

- n/a

Developed design:

- n/a

Technical design:

- n/a

Pre-construction:

- Identify the party that has responsibility for producing the Home User Guide(s).

Construction:

- Develop and review Guide(s), checking that all components have been addressed, and that it accurately reflects what was built and installed.
- Identify who has responsibility for supplying Guide(s) to occupants and submitting evidence.

Handover and Evidence submission:

- Provide Home User Guide(s) to the occupants.
- Submit all applicable evidence items via the upload platform.
- Reflect on the steps taken in the design and construction process and what improvements could be made for the next project.

5.2.7. Post-Occupancy Evaluation

Code: A7.0

Status: Optional indicator

Intent:

- Help identify areas for improvement, enhancing future building designs, and ensuring that homes meet their intended performance goals, ultimately supporting healthier and more comfortable living environments.

Criteria:

Post occupancy survey using IGBC template completed by 10% of homes using either path A or B.

Path A: Survey carried out on current project after 12 months of occupation and within 18 months of BCAR sign-off.

Path B: Survey carried out on a previous project built by the same developer. This other project must have achieved BCAR sign-off within the last 5 years. Previous projects must have no fewer than 75% of the number of units of the current project being assessed for certification.

Evidence:

i. Path A: Signed commitment letter stating survey results after 12-month observation period and within 18 months of BCAR sign-off will be submitted (see note b).

ii. Path A: Upon a 12-months observation period and within 18 months of BCAR sign off, survey response data.

iii. Path B: Supporting evidence that the alternative project was developed by the same developer as the current project (see note d).

iv. Path B: Supporting evidence that alternative project was built within the last 5 years (see note e).

v. Path B: Survey response data.

vi. Path B: Site location map.

vii. Path B: Site layout plan.

viii. Path B: Floor plans of all residential unit types in the project.

Notes:

a. When calculating how many homes are to be surveyed, the figure should always be rounded up. For example, in a development of 24 homes, 10% would equal 2.4. This would mean that a minimum of 3 survey responses is needed.

b. A template of the confirmation letter is provided on the Home Performance Pathway webpage.

c. All homes sharing data need to have been occupied for at least 80% of the time over the 12-month period.

d. To ensure speedy certification processes, projects following Path A will be marked as achieving this indicator with the submission of evidence (i), the signed commitment letter. Though if a project fails to follow up with evidence (ii), survey results within 18 months of BCAR sign off, IGBC holds the right to refuse the assessment of this indicator on future projects being submitted by the same or similar

project team. Further, if for whatever reason (e.g. delay in evidence submission) the project is being audited for certification and 18 months have elapsed since BCAR signoff, evidence (ii) needs to be submitted for this indicator to be awarded.

e. For evidence item (iii), proof needs to be in the form of an official/legal document that connects the existing developer to the past project. Letters of self-declaration will not be accepted.

f. For evidence item (iv), proof needs to be in the form of an official/legal document such as BCAR Certificate of Compliance on Completion, commencement notice etc.

g. Projects submitted under Path B may only be submitted once for any IGBC certification, that includes both as the Path A option or Path B option. Double submission of the same evidence will not be considered.

h. For phased assessments and the issuing of a preliminary report, evidence requirements are the same as final submittal of the entire project.

Development Guidance:

Pre-design:

- Identify if this indicator is being targeted.
- If yes, make project team aware of the requirements.
- Reflect on any learnings where indicator was targeted on a previous project, to inform achieving compliance on this project.

Concept design:

- If indicator had previously been targeted in a past project, review results.
- Identify if any issues brought up in the survey are relevant for the existing project.
- If yes, decide how they could be addressed to avoid them rising in this project.

Developed design:

- n/a

Technical design:

- n/a

Pre-construction:

- n/a

Construction:

- n/a

Handover and Evidence submission:

- Identify the person responsible for implementing surveys and submitting evidence.
- Submit commitment letter evidence via the upload platform.
- Develop a strategy on how to implement the survey.

In-use:

- After 12 months of occupation and within 18 months of BCAR sign off, carry out a survey.
- Submit all applicable evidence items via the upload platform.
- Reflect on the steps taken in the surveying process and the improvements that could be made for the next project.

6.0.

6.0. APPENDIX A POST OCCUPANCY EVALUATION SURVEY (POE)

Post-Occupancy Evaluation Survey for New Homes in Ireland

Introduction:

Thank you for participating in this survey. Your feedback is invaluable in helping us understand how well your new home meets your needs and expectations. This survey should take approximately 10 -15 minutes to complete. Survey responses are being shared with the Irish Green Building Council for the purposes of meeting the criteria of the *Home Performance Pathway* certification they operate. All responses will be treated confidentially.

The survey has eight sections:

1. General information
2. Overall Satisfaction
3. Home Design and Layout
4. Comfort and Useability
5. Quality and Performance
6. Outdoor Spaces and Environment
7. Community and Location
8. Additional Feedback

6.1. Section 1: General Information

This section collects basic information about your home and household to help us understand the context of your responses.

1. **Name of Housing Development:**
2. **Date of Survey:**
3. **Date you moved into your home:**
4. **Average number of occupants (people) in your home:**
5. **Number of bedrooms in your home:**
6. **Select which type of home you live in:**
    1. Detached house
    2. Semi-detached house
    3. End of terrace house
    4. Mid-terrace house
    5. Ground floor apartment
    6. Mid floor apartment
    7. Top floor apartment
    8. Lower duplex
    9. Upper duplex
    10. Other

6.2. Section 2: Overall Satisfaction

This section focuses on your general experience living in your new home over the past 12 months. This section only covers the home itself and not its location or the surrounding public space. These are covered in later sections.

7. **How satisfied are you with your new home overall?**
    - o Very Satisfied
    - o Satisfied
    - o Neutral
    - o Dissatisfied
    - o Very Dissatisfied

8. **Has your home met your expectations?**
    - o Yes, completely
    - o Yes, mostly
    - o Somewhat
    - o Not really
    - o Not at all

9. **Would you recommend this development to others?**
    - o Definitely
    - o Probably
    - o Not Sure/Neutral
    - o Probably Not
    - o Definitely Not

6.3. Section 3: Home Design and Layout

This section explores your thoughts on the design, layout, and functionality of your home.

10. How well does the design and layout of your home meet your household's needs?

- o Very Well
- o Well
- o Neutral
- o Poorly
- o Very Poorly

11. Are there any areas of the home that feel inadequately sized for their function? (e.g. bedrooms too small, corridors and circulation space too big)

- o Yes (please specify):
- o No

12. Optional: What do you like or dislike about the design and layout of your home?

(Open-ended response)

13. Do you think this home will be able to meet your future needs or do you think you will need to move in the future? (e.g. of future needs: having a family, growing old, health issues)

- o Yes, it will meet my future needs
- o No, I believe I will have to move in the future

14. Optional: If No, what are the reasons your current home won't be able to meet your future needs?

(Open-ended response)

6.4. Section 4: Comfort and Useability

This section focuses on your experience and comfort levels living in your home.

15. During the summer months how easy have you found it to keep your home at a comfortable temperature?

- o Very easy
- o Easy
- o Neutral
- o Hard
- o Very hard

16. Have you experienced any issues with managing dampness and mould?

- o Yes, it's a significant problem
- o Yes, it's a minor problem
- o No

17. How would you describe the level of daylight the living spaces (kitchen, living room, dining room etc) in your home receive?

- o Very bright
- o Bright
- o Adequate
- o Dark
- o Very dark

18. How easy have you found it to operate and maintain your heating system?

- o Very easy
- o Easy
- o Neutral
- o Hard
- o Very hard

19. How easy have you found it to operate and maintain your ventilation system?

- o Very easy
- o Easy
- o Neutral

- o Hard
- o Very hard

20. Optional: Please share any additional comments about heating, ventilation, or comfort in your home.

(Open-ended response)

6.5. Section 5: Quality and Performance

This section assesses the quality of construction and any issues you may have encountered.

21. How would you rate the overall construction quality of your home?

- o Excellent
- o Good
- o Average
- o Poor
- o Very Poor
- o No opinion

22. Have you experienced any of the following issues in your home? (Tick all that apply)

- o Dampness or mould
- o Cracks in walls or ceilings
- o Plumbing issues
- o Heating system problems
- o Ventilation system problems
- o Higher than expected noise intrusion from neighbouring properties
- o Trouble opening/closing windows and doors
- o Draughty
- o Other (please specify):
- o n/a

23. Optional: If you would like to provide further details on the issues you identified in the previous question.

(Open-ended response)

24. Select which bracket your yearly household bills for heating and electricity cost (excluding energy credits and supports).

- o €0-500
- o €501-1000
- o €1001-1500
- o €1501-2000
- o €2000+
- o Don’t know

6.6. Section 6: Outdoor Spaces and Environment

This section explores your satisfaction with outdoor spaces and landscaping of your home and the surrounding housing development.

25. How satisfied are you with the personal outdoor spaces of your home (e.g., garden, balcony)?

- o Very Satisfied
- o Satisfied
- o Neutral
- o Dissatisfied
- o Very Dissatisfied
- o n/a

26. How would you rate the quality of the landscaping and communal areas of the development?

- o Excellent
- o Good
- o Average
- o Poor
- o Very Poor
- o n/a

27. Have you noticed any issues with drainage or flooding within the communal areas?

- o Yes
- o No

28. Optional: What do you like or dislike about the outdoor spaces and environment of your home and the development?

(Open-ended response)

6.7. Section 7: Community and Location

This section assesses your satisfaction with the location, surrounding amenities, and sense of community.

29. How satisfied are you with the location of your home?

- o Very Satisfied
- o Satisfied
- o Neutral
- o Dissatisfied
- o Very Dissatisfied

30. How would you rate access to amenities by foot or bicycle (e.g. schools, shops, public transport)?

- o Excellent
- o Good
- o Average
- o Poor
- o Very Poor

31. How safe would you feel to travel to the above amenities by foot or bicycle?

- o Very safe
- o Safe
- o Neutral
- o Not safe
- o Very not safe

32. How well does the public transport in the area meet your needs to reach locations you regularly visit?

- o Excellent
- o Good
- o Average
- o Poor
- o Very Poor

33. Do you feel a sense of community in your development?

- o Yes, strongly

- o Yes, somewhat
- o Neutral
- o Not really
- o Not at all

34. Optional: Do you have any additional thoughts on the community and location of your home, you would like to share?

(Open-ended response)

6.8. Section 8: Additional Feedback

This section provides an opportunity for you to share any additional thoughts or suggestions.

35. Optional: What do you like most about your new home?

(Open-ended response)

36. Optional: What do you like least about your new home?

(Open-ended response)

37. Optional: Do you have any suggestions for improvement?

(Open-ended response)

7.0.

7.0. APPENDIX B BIODIVERSITY PLANT LIST

The following trees and shrubs are considered 'native' for the purposes of indicator M4.0 Biodiversity:

	Name
1	Alder *Alnus glutinosa*
2	Alder Buckthorn *Frangula alnus*
3	Ash *Fraxinus Excelsior* (not recommended for planting due to Ash Dieback
4	Aspen *Populus tremula*
5	Bird Cherry *Prunus padus*
6	Blackthorn *Prunus spinosa*
7	Broom *Cytisus scoparius*
8	Crabapple *Malus sylvestris*
9	Dog Rose *Rosa canina*
10	Downy Birch *Betula pubescens*
11	Elder *Sambucus nigra*
12	Gorse *Ulex europaeus*
13	Guelder Rose *Viburnum opulus*
14	Hawthorn *Crataegus monogyna*
15	Hazel *Corylus avellana*
16	Holly *Ilex aquifolium*
17	Honeysuckle *Lonicera periclymenum*
18	Juniper *Juniperus communis*
19	Pedunculate Oak *Quercus robur*
20	Rowan *Sorbus aucuparia*
21	Scots Pine *Pinus sylvestris*
22	Purging buckthorn *Rhamnus cathartica*
23	Sessile Oak *Quercus petraea*
24	Silver Birch *Betula pendula*
25	Spindle *Euonymus europaeus*
26	Strawberry Tree *Arbutus unedo*
27	Irish Whitebeam *Aria hibernica (formerly Sorbus aria)*
28	Wild Cherry *Prunus avium*
29	Willows *Salix* spp (multiple species)
30	Wych Elm *Ulmus glabra*
31	Yew *Taxus baccata*

The following trees and shrubs are considered providing berries for birds for the purposes of indicator M4.0 Biodiversity:

	Name
1	Alder Buckthorn *Frangula alnus*
2	Blackthorn *Prunus spinosa*
3	Bird cherry / Wild cherry *Prunus avium*
4	Crab apples *malus sylvestris*
5	Cotoneasters *Cotoneaster spp.*
6	Hawthorn *Crataegus monogyna*
7	Holly *Ilex aquifolium*
8	Honeysuckle *Lonicera periclymenum*
9	Irish Whitebeam *Aria hibernica (formerly Sorbus aria)*
10	Ivy *Hedera helix*
11	Pyracantha *Pyracantha crenulate*
12	Rowan/Mountain Ash *Sorbus aucuparia*
13	Yew *Taxus baccata*

The following are considered native and pollinator-friendly climbing plants for the purposes of indicator M4.0 Biodiversity:

	Name
1	*Clematis heracleifolia* (Tube clematis)
2	*Hedera colchica* (Persian ivy)
3	*Campsis radicans* (Trumpet honeysuckle)
4	*Clematis cirrhosa* (Spanish traveller's joy)
5	*Convolvulus tricolor* (Dwarf morning glory)
6	*Hydrangea anomala subsp. petiolaris* (Climbing hydrangea)
7	*Jasminum officinale* (Common jasmine)
8	*Parthenocissus tricuspidata* (Boston ivy)
9	*Pileostegia viburnoides* (Climbing hydrangea)

The following are considered pollinator-friendly plants for the purposes of indicator M4.0 Biodiversity:

	Name
	Annuals
1	*Ageratum houstonianum* (Flossflower)
2	*Amberboa moschata* (Sweet sultan)
3	*Anchusa azurea* (Large blue alkanet)
4	*Anchusa capensis* (Cape alkanet)
5	*Antirrhinum majus* (Snapdragon)
6	*Argemone platyceras* (Crested poppy)
7	*Borago officinalis* (Borage)
8	*Calendula officinalis* (Common marigold)
9	*Callistephus chinensis* (China aster)
10	*Centaurea cyanus* (Cornflower)
11	*Centratherum punctatum* (Manaos beauty)
12	*Cerinthe major* 'Purpurascens' (Honeywort 'Purpurascens')
13	*Clarkia unguiculata* (Butterfly flower)
14	*Cleome hassleriana* (Spider flower)
15	*Consolida ajacis* (Giant larkspur)
16	*Cosmos bipinnatus* (Cosmea)
17	*Cosmos sulphureus* (Yellow cosmos)
18	*Cucurbita pepo* (Courgette)
19	*Cuphea ignea* (Cigar flower)
20	*Echium vulgare* (Viper's bugloss)
21	*Eschscholzia californica* (California poppy)
22	*Gilia capitata* (Blue thimble flower)
23	*Glebionis segetum* (Corn marigold)
24	*Gypsophila elegans* (Annual baby's breath)
25	*Helianthus annuus* (Common sunflower, avoid pollen free cultivars)
26	*Helianthus debilis* (Cucumberleaf sunflower)
27	*Heliotropium arborescens* (Common heliotrope)
28	*Iberis amara* (Wild candytuft)
29	*Lavatera trimestris* (Annual lavatera)
30	*Limnanthes douglasii* (Poached egg flower)
31	*Linaria maroccana* (Annual toadflax)
32	*Lobularia maritima* (Sweet alyssum)
33	*Malope trifida* (Large-flowered mallow wort)
34	*Nemophila menziesii* (Baby blue eyes)
35	*Nicotiana alata* (Flowering tobacco)
36	*Nicotiana langsdorffii* (Langsdorff's tobacco)
37	*Nigella damascena* (Love-in-a-mist)
38	*Nigella hispanica* (Spanish fennel flower)
39	*Papaver rhoeas* (Poppy)
40	*Phacelia campanularia* (Californian bluebell)

41	*Phacelia tanacetifolia* (Fiddleneck)
42	*Phaseolus coccineus* (Scarlet runner bean)
43	*Reseda odorata* (Garden mignonette)
44	*Ridolfia segetum* (False fennel)
45	*Sanvitalia procumbens* (Creeping zinnia)
46	*Scabiosa atropurpurea* (Sweet scabious)
47	*Tagetes patula* (French marigold)
48	*Tithonia rotundifolia* (Mexican sunflower)
49	*Trachymene coerulea* (Blue lace flower)
50	*Tropaeolum majus* (Garden nasturtium)
51	*Verbena × hybrida* (Garden verbena)
52	*Vicia faba* (Broad bean)
53	*Zinnia elegans* (Youth and old age)
	Bulbs
54	Allium species ornamental and edibles (when allowed to flower) (Allium)
55	Colchicum species (Autumn crocus)
56	Crocus species (Crocus, autumn-flowering)
57	Crocus species (Crocus, spring-flowering)
58	Crocus species (Crocus, winter-flowering)
59	*Eranthis hyemalis* (Winter aconite)
60	*Galanthus nivalis* (Common snowdrop)
61	*Muscari armeniacum* (Armenian grape hyacinth)
62	*Ornithogalum umbellatum* (Common star of Bethlehem)
	Biennials
63	*Alcea rosea* (Hollyhock)
64	*Angelica archangelica* (Angelica)
65	*Angelica gigas* (Purple angelica)
66	*Campanula medium* (Canterbury bells)
67	*Dianthus barbatus* (Sweet william)
68	Digitalis species (Foxglove)
69	*Eryngium giganteum* (Miss Willmott's ghost)
70	Erysimum species (Wallflower)
71	*Lunaria annua* (Honesty)
72	*Lychnis coronaria* (Rose campion)
73	*Matthiola incana* (Hoary stock)
74	Myosotis species (Forget-me-not)
75	Oenothera species (Evening primrose)
76	*Onopordum acanthium* (Cotton thistle)
77	Verbascum species (Mullein)

	Perennials
78	Achillea species (Yarrow)
79	*Aconitum carmichaelii* (Carmichael's monk's hood)
80	*Actaea japonica* (Baneberry)
81	*Actaea simplex* (Simple-stemmed bugbane)
82	Agastache species (Giant hyssop)
83	*Amsonia tabernaemontana* (Eastern bluestar)
84	*Anemone* × *hybrida* (Japanese anemone)
85	*Anemone hupehensis* (Chinese anemone)
86	*Anthemis tinctoria* (Dyer's chamomile)
87	Aquilegia species (Columbine)
88	*Arabis alpina* subsp. *caucasica* (Alpine rock cress)
89	*Armeria juniperifolia* (Juniper-leaved thrift)
90	*Aruncus dioicus* (Goat's beard, male form only)
91	*Asparagus officinalis* (Common asparagus)
92	Aster species and hybrids (Michaelmas daisy)
93	*Astrantia major* (Greater masterwort)
94	Aubrieta species (Aubretia)
95	*Aurinia saxatilis* (Gold dust)
96	Bergenia species (Elephant ear)
97	*Buphthalmum salicifolium* (Yellow ox-eye)
98	*Calamintha nepeta* (Lesser calamint)
99	*Campanula carpatica* (Tussock bellflower)
100	*Campanula glomerata* (Clustered bellflower)
101	*Campanula lactiflora* (Milky bellflower)
102	*Campanula latifolia* (Giant bellflower)
103	*Campanula persicifolia* (Peach-leaved bellflower)
104	*Campanula poscharskyana* (Trailing bellflower)
105	*Catananche caerulea* (Blue cupidone)
106	*Centaurea atropurpurea* (Purple knapweed)
107	*Centaurea dealbata* (Mealy centaury)
108	*Centaurea macrocephala* (Giant knapweed)
109	*Centaurea montana* (Perennial cornflower)
110	*Ceratostigma plumbaginoides* (Hardy blue-flowered leadwort)
111	Chrysanthemum species & hybrids (Chrysanthemum)
112	*Cirsium rivulare* 'Atropurpureum' (Purple plume thistle)
113	Coreopsis species (Tickseed)
114	*Crambe cordifolia* (Greater sea kale)
115	*Cynara cardunculus* including Scolymus Group (Globe artichoke and cardoon)
116	*Cynoglossum amabile* (Chinese forget-me-knot)
117	Dahlia species & hybrids (Dahlia)
118	Dahlia species (Dahlia)
119	*Delosperma floribundum* (Ice plant)

120	*Delphinium elatum* (Candle larkspur)
121	*Dictamnus albus* (Dittany)
122	*Doronicum* × *Excelsum* (Leopard's bane)
123	*Echinacea purpurea* (Purple coneflower)
124	Echinops species (Globe thistle)
125	Erigeron species (Fleabane)
126	*Eriophyllum lanatum* (Golden yarrow)
127	*Eryngium* × *tripartitum* (Eryngo)
128	*Eryngium alpinum* (Alpine eryngo)
129	*Eryngium planum* (Blue eryngo)
130	*Erysimum 'Bredon'* (Wallflower 'Bredon')
131	*Erysimum* × *allionii* (Siberian wallflower)
132	*Eupatorium maculatum* (Eupatorium 'Purple Bush')
133	*Euphorbia amygdaloides* (Wood spurge)
134	*Euphorbia characias* (Mediterranean spurge)
135	*Euphorbia cornigera* (Horned spurge)
136	*Euphorbia cyparissias* (Cypress spurge)
137	*Euphorbia epithymoides* (Cushion spurge)
138	*Euphorbia nicaeensis* (Nice spurge)
139	*Euphorbia sarawschanica* (Zeravshan spurge)
140	*Ferula communis* (Giant fennel)
141	*Foeniculum vulgare* (Fennel)
142	*Fragaria* × *ananassa* (Garden strawberry)
143	*Gaillardia* × *grandiflora* (Blanket flower)
144	*Gaura lindheimeri* (White gaura)
145	Geranium species (Cranesbill, summer-flowering)
146	Geum species (Avens, summer-flowering)
147	Helenium species (Helen's flower)
148	*Helianthus* × *laetiflorus* (Perennial sunflower)
149	*Heliopsis helianthoides* (Smooth ox-eye)
150	Helleborus species & hybrids (Hellebore, spring flowering)
151	Helleborus species and hybrids (Hellebore, winter flowering)
152	*Hesperis matronalis* (Dame's violet)
153	*Iberis saxatilis* (Alpine candytuft)
154	*Iberis sempervirens* (Perennial candytuft)
155	Inula species (Harvest daisy)
156	*Knautia macedonica* (Macedonian scabious)
157	*Lamium maculatum* (Spotted dead nettle)
158	*Lathyrus latifolius* (Broad-leaved everlasting pea)
159	*Leucanthemella serotina* (Autumn ox-eye)
160	*Leucanthemum* × *superbum* (Shasta daisy)
161	*Liatris spicata* (Button snakewort)
162	*Limonium platyphyllum* (Broad-leaved statice)

163	*Linaria purpurea* (Purple toadflax)
164	*Lythrum virgatum* (Wand loosestrife)
165	*Malva moschata* (Musk mallow)
166	*Mentha spicata* (Spearmint)
167	*Monarda didyma* (Bergamot)
168	*Nepeta* × *faassenii* (Garden catmint)
169	*Origanum 'Rosenkuppel'* (Marjoram 'Rosenkuppel')
170	Paeonia species (Peony)
171	*Papaver orientale* (Oriental poppy)
172	*Persicaria amplexicaulis* (Red bistort)
173	*Persicaria bistorta* (Bistort)
174	*Phlox paniculata* (Perennial phlox)
175	*Phuopsis stylosa* (Caucasian crosswort)
176	*Polemonium caeruleum* (Jacob's ladder)
177	Potentilla species (Cinquefoil)
178	Pulmonaria species (Lungwort)
179	Rudbeckia species (Coneflower)
180	Salvia species (Sage)
181	Salvia species (Sage, autumn flowering)
182	*Scabiosa caucasica* (Garden scabious)
183	*Scabiosa columbaria* (Small scabious)
184	*Sedum spectabile* & hybrids (Ice plant)
185	*Sedum telephium* (Orpine)
186	*Sidalcea malviflora* (Checkerbloom)
187	Solidago species (Goldenrod)
188	*Stachys byzantina* (Lamb's ear)
189	*Stachys macrantha* (Big sage)
190	*Stokesia laevis* (Stokes' aster)
191	*Tanacetum coccineum* (Pyrethrum)
192	*Tanacetum vulgare* (Tansy)
193	*Telekia speciosa* (Yellow ox-eye)
194	*Teucrium chamaedrys* (Wall germander)
195	*Verbena bonariensis* (Purple top)
196	*Veronica longifolia* (Garden speedwell)
197	*Veronicastrum virginicum* (Culver's root)
	Shrubs
198	× *Fatshedera lizei* (Tree ivy)
199	*Aesculus parviflora* (Bottlebrush buckeye)
200	*Arbutus unedo* (Strawberry tree)
201	*Berberis darwinii* (Darwin's barberry)
202	*Brachyglottis* (Dunedin Group) 'Sunshine'
203	*Brachyglottis monroi* (Monro's ragwort)

204	*Buddleja globosa* (Orange ball tree)
205	*Bupleurum fruticosum* (Shrubby hare's ear)
206	*Callicarpa bodinieri* var. *giraldii* (Beautyberry)
207	*Caryopteris* × *clandonensis* (Caryopteris)
208	Chaenomeles species (Japanese quince)
209	*Cornus alba* (Red-barked dogwood)
210	*Cornus mas* (Cornelian cherry)
211	*Cotoneaster conspicuus* (Tibetan cotoneaster)
212	*Elaeagnus* × *ebbingei* (Ebbinge's silverberry)
213	*Elaeagnus angustifolia* (Oleaster)
214	*Elaeagnus pungens* (Silverthorn)
215	*Enkianthus campanulatus* (Redvein enkianthus)
216	*Erica* × *darleyensis* (Darley dale heath)
217	*Erica carnea* (Alpine heath)
218	*Erica vagans* (Cornish heath)
219	*Erysimum* 'Bowles's Mauve' (Wallflower 'Bowles's Mauve')
220	Escallonia species (Escallonia)
221	*Fatsia japonica* (Japanese aralia)
222	Hebe species (Hebe)
223	*Hydrangea paniculata* (Paniculate hydrangea, cultivars with many fertile flowers e.g. 'Kyushu', 'Big Ben', 'Floribunda', 'Brussels Lace')
224	*Hyssopus officinalis* (Hyssop)
225	*Kalmia latifolia* (Mountain laurel)
226	*Laurus nobilis* (Bay tree)
227	*Lavandula* × *intermedia* (Lavandin)
228	*Lavandula angustifolia* (English lavender)
229	*Lavandula stoechas* (French lavender)
230	*Lavatera olbia* (Tree lavatera)
231	*Ligustrum ovalifolium* (Garden privet)
232	*Ligustrum sinense* (Chinese privet)
233	*Lonicera* × *purpusii* (Purpus honeysuckle)
234	Mahonia species (Oregon grape)
235	Olearia species (Daisy bush)
236	*Perovskia atriplicifolia* (Russian sage)
237	Phlomis species (Sage)
238	*Photinia davidiana* (Stranvaesia)
239	*Pieris formosa* (Lily-of-the-valley bush)
240	*Pieris japonica* (Lily-of-the-valley bush)
241	*Prostanthera cuneata* (Alpine mint bush)
242	*Prunus incisa* 'Kojo-no-mai' (Cherry 'Kojo-no-mai')
243	*Prunus tenella* (Dwarf Russian almond)
244	*Ptelea trifoliata* (Hop tree)
245	Pyracantha species (Firethorn)

246	*Ribes nigrum* (Blackcurrant)
247	*Ribes rubrum* (Redcurrant)
248	*Rosmarinus officinalis* (Rosemary)
249	*Salix aegyptiaca* (Musk willow)
250	*Salix hastata* 'Wehrhahnii' (Halberd willow 'Wehrhahnii')
251	*Salix lanata* (Woolly willow, male form only)
252	*Sarcococca confusa* (Sweet box)
253	*Sarcococca hookeriana* (Sweet box)
254	*Skimmia japonica* (Skimmia)
255	*Spiraea japonica* (Japanese spiraea)
256	*Stachyurus chinensis* (Stachyurus)
257	*Stachyurus praecox* (Stachyurus)
258	*Tamarix ramosissima* (Tamarisk)
259	Thymus species (Thyme)
260	*Vaccinium corymbosum* (Blueberry)
261	*Viburnum lantana* (Common wayfaring tree)
262	*Viburnum tinus* (Laurustinus)
263	*Weigela florida* (Weigelia)
264	*Zauschneria californica* (Californian fuchsia)

8.0.

8.0. APPENDIX C UNIVERSAL DESIGN FURNITURE CRITERIA

This appendix details typical sizes and numbers of items of furniture, per type of furniture, in Tables C.1 to C.5 to be used in drawings showing compliance with UD home criteria for indicator A2.0 Universal Design.

Table C.1 - Armchair and sofa sizes

Typical furniture item	Minimum size (mm)
Armchair	850 x 850
Two-seat sofa	1300 x 850
Three-seat sofa	1800 x 850

Table C.2 - Minimum seating in a living space

Number of bed spaces	Minimum number of armchairs and sofas
2	A sofa or seating arrangement for three persons
3 or 4	A sofa or seating arrangement for four persons
5	A sofa or seating arrangement for five persons
More than 5	A sofa or seating arrangement for each additional person

Table C.3 - Dining Table size

Number of bed spaces	Minimum dining table size (mm)
2 to 4	1200 x 800
5 or more	1800 x 800

Table C.4 - Bed size

Typical bed type	Minimum bed size (mm)
Double bed	2000 x 1500
Single bed	1900 x 900
Single profiling bed	2300 x 1100

Table C.5 - Desk size

Number of bed spaces	Minimum number of desks	Minimum desk size (mm)
Any	1	1200 x 500

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10.0.

10.0. GLOSSARY

Air Tightness: A measure of how leaky a building's fabric is to uncontrolled air movement. Measured in m^3/(m^2.hr) at 50 Pascals (q50), a lower number indicates a more airtight and energy-efficient building.

Area Weighted Average: An average value that takes into account the size (area) of each component. For example, the area weighted airtightness is the average airtightness of all homes, with larger homes having a greater influence on the final result.

BCAR (Building Control Amendment Regulations): Irish regulations that govern the control of building activity. A "BCAR signoff" refers to the formal certification of compliance with building regulations, issued by an Assigned Certifier.

BER (Building Energy Rating): A label with a scale of A to G that rates the energy performance of a home, with A1 being the most energy efficient. The rating is based on a DEAP assessment.

Biobased Materials: Construction materials derived from renewable biological resources, such as timber, hemp, straw, or cork.

Biodiversity: The variety of living species—plants, animals, fungi, and microorganisms—within an ecosystem; in this certification, biodiversity measures aim to enhance ecological value on-site.

Building Control Management System (BCMS): The online system used in Ireland for submitting and managing Building Control documentation such as commencement notices and certificates.

CIBSE TM59: A methodology published by the Chartered Institution of Building Services Engineers for assessing the risk of overheating in residential buildings.

DEAP (Dwelling Energy Assessment Procedure): The official Irish software and methodology used to calculate the Building Energy Rating (BER) of a dwelling.

Dynamic Simulation: A computer-based modelling technique used to evaluate a building's environmental performance over time, particularly for assessing overheating and comfort.

Embodied Carbon: is the Global Warming Potential associated with all construction materials and products over a building's whole life cycle; 'cradle to grave'; EN15978 modules A1-A5, B1-B5, and C1-C4.

EPC (Energy Performance Coefficient): A key number in Irish Building Regulations (Part L) that represents the calculated primary energy consumption of the proposed dwelling divided by that of the reference dwelling.

EPD (Environmental Product Declaration): are a standardised way of providing data about the environmental impacts of a product through the product life cycle. In Europe, they must conform to the European Standard, EN 15804, which ensures that EPD for construction products use a common methodology, report a common set of environmental indicators and have a common reporting format.

EU Taxonomy: A classification system established by the European Union to define environmentally sustainable economic activities, crucial for accessing green financing.

Form Factor: A measure of a building's compactness, calculated as the ratio of its total heat loss area to its total internal floor area. A lower form factor indicates a more compact and thermally efficient shape.

GGBS (Ground Granulated Blast-furnace Slag): A by-product from steel production used as a partial replacement for cement in concrete, reducing its embodied carbon.

GWP (Global Warming Potential): A measure of how much heat a greenhouse gas traps in the atmosphere over a specific time period (usually 100 years), compared to carbon dioxide (CO_2).

Head Assessor: The designated point of contact for a project who is responsible for managing the certification process and submitting evidence via the IGBC's upload platform.

IGBC (Irish Green Building Council): An independent, non-profit organisation that owns and operates the Home Performance Pathway and Home Performance certification schemes.

Indicator: A specific, measurable criterion within the Home Performance Pathway certification, covering areas such as energy efficiency, biodiversity, or health & wellbeing.

Lifecycle GWP Calculation: An assessment that quantifies the total global warming potential of a building or its components across its entire lifecycle, from material extraction to end-of-life.

Mandatory Indicator: An indicator that must be achieved to be awarded certification at a specific step. These ensure a minimum performance standard across all certified projects.

Mechanical Ventilation: A system that provides continuous, controlled ventilation in a home, typically with heat recovery (MVHR), to ensure good indoor air quality while conserving energy.

NSAI (National Standards Authority of Ireland): The national accreditation body for Ireland. Certification from an NSAI accredited tester ensures the reliability of results, such as air tightness tests.

Part E / Part F / Part L: Sections of the Irish Building Regulations. Part E covers Sound, Part F covers Ventilation and Part L covers Conservation of Fuel and Energy.

Post-Occupancy Evaluation (POE): A process of assessing building performance and occupant satisfaction after a building has been occupied for a period of time, typically through surveys.

Primary Raw Material: Virgin material sourced directly from natural resources, which has not been used or processed before.

Secondary Raw Material: Material that has been recycled or prepared for re-use and has officially ceased to be classified as waste.

Step (1, 2, or 3): The level of achievement within the Home Performance Pathway certification. Step 1 is the entry level, with progressively more stringent requirements for Steps 2 and 3.

SUDS (Sustainable Urban Drainage Systems): A natural approach to managing surface water that mimics natural drainage, using features like swales and ponds to reduce flooding and improve water quality.

Sunset Period: The planned phase-out period for the Home Performance Pathway certification steps, designed to encourage the industry to progress towards the full Home Performance Index standard.

TGD (Technical Guidance Document): Documents that accompany the Irish Building Regulations, providing detailed guidance on how to comply with the regulations.

Home Performance Pathway: An IGBC certification scheme designed as a stepping stone for homebuilders, particularly SMEs, to develop skills and practices on the pathway to the more rigorous Home Performance Index standard.

UD Home (Universal Design Home): A set of criteria, developed by the Centre for Excellence in Universal Design, that ensures homes are accessible, adaptable, and comfortable for people of all ages and abilities.

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