

The background is a teal-tinted image. The upper portion features a complex, white, geometric dome structure, likely a modern architectural design. The lower portion is filled with dense, green foliage, including various types of leaves and ferns, creating a natural, organic feel. The overall composition suggests a connection between modern architecture and nature.

GRIMSHAW

PAS 2080:2023

COMPLIANCE STATEMENT

August 2025



Contents

1.	Compliance statement	04
2.	Assessment methodology	05
3.	Our carbon management process	05
4.	Evidence of compliance summary	07
5.	Case studies	10
6.	Continual improvement	18
7.	Claims and limitations of conformity	18
8.	Appendix	19

1. Compliance statement

This document outlines Grimshaw's carbon management process for work undertaken on **UK based infrastructure and building projects** implemented as **lead designer** by **Grimshaw Architect LLP** in accordance with PAS 2080. PAS 2080:2023 is a standard that specifies the requirements for the management of whole-life carbon in buildings and infrastructure.

The process is applicable to the practice's role as a **designer** – as defined under the terms and definitions set out under clause 3 of the standard – and covers the design services and UK based infrastructure and building projects undertaken by our London studio in the capacity as **lead designer**.

For building and infrastructure projects where the practice is sub-contracted directly to the client or lead designer, we endeavour to support them in implementing their own carbon management process to meet the requirements of the standard, utilising our own experience in developing our own processes.

This compliance statement is self-validated.

2. Assessment methodology

Our methodology for self-validation has been developed and undertaken with reference to ISO 19011:2018 - Guidelines for auditing management systems, and the accompanying PAS 2080:2023 guidance document.

3. Our carbon management process

Grimshaw is committed to minimising the negative environmental impacts of our projects, and the wider built environment (more detail is included in our Environmental policy). [Add link]. We are also committed to reducing carbon impact across all life cycle stages.

- In 2019 the practice declared a climate and biodiversity emergency and committed to delivering net zero carbon ready infrastructure and buildings by the end of 2025;
- The practice participated in working groups tasked with the recent update to PAS2080:2023 and the development of the UK's first net zero carbon building standard;
- In collaboration with the World Business Council for Sustainable Development, the World Green Building Council and wider industry, we launched Minoro, a free to use online carbon management platform.
- Our carbon management process follows the activities and actions set out in the Minoro (www.minoro.org). It was created in consultation with experts from across the construction value chain and align with the requirements set out in PAS2080:2023. To demonstrate alignment with Minoro, all relevant projects – those where Grimshaw is commissioned as lead designer – are required to publish and maintain the following documents during each design stage, as detailed below.

CARBON MANAGEMENT PLAN

This document summarises the project specific decisions that have been made during each work stage in relation to the activities outlined in Minoro and our NZC ready design protocol.

CARBON ACTIONS & RESPONSIBILITY MATRIX

The matrix is used to assign action owners from across the project value chain and track progress against their completion during each project work stage.

CARBON REDUCTION OPPORTUNITIES TRACKER

The tracker is used to list carbon saving opportunities and progress assessing and integrating them at the relevant life cycle/work stage.

Carbon management activities

1. Leadership & governance
2. Target setting & baselines
3. Optimise in-use energy
4. Optimise embodied carbon
5. Procurement
6. Measure & manage
7. Monitor, report & verify



← Minoro interface + list of core carbon management activities.

While our carbon management process applies only to UK based projects, where Grimshaw has been commissioned as lead designer, all of our international infrastructure and building projects are required to comply with our in-house NZC ready design protocol. The protocol defines (1) which projects our NZC ready commitment applies to, (2) which Minoro actions these projects must follow at each design stage and (3) the evidence they must publish to demonstrate compliance they are compliant. A project audit is conducted across all studios every quarter to identify projects that do not comply with the protocol and any steps required to ensure they can achieve compliance.

CARBON MANAGEMENT PROCESS DIAGRAM

The following diagram illustrates how the key carbon management activities and actions outlined in Minoro, and our NZC ready design protocol, relate to the relevant clauses in PAS 2080:2023.

PAS 2080:2023		Project work stages and actions							
		Stage 0 Bidding	Stage 1 Briefing	Stage 2 Concept	Stage 3 Schematic	Stage 4 Technical	Stage 5 Construction	Stage 6/7 Handover/in-use	Stage 8 End of life
Clause 5+6	Leadership & governance	Include carbon management in scope/fee proposal	Agree scope and fee for NZC services						
Clause 8	Target setting & baselines		Investigate targets, baselines and standards	Confirm targets and measurement standards					
Clause 4+6	Optimise operational carbon			Undertake energy optimisation	Undertake energy optimisation	Undertake energy optimisation			
Clause 4+6	Optimise upfront embodied carbon		Challenge need to build new	Undertake embodied carbon optimisation	Undertake embodied carbon optimisation	Undertake embodied carbon optimisation			
Clause 6+7	Measure whole-life carbon			Undertake WBLCA + opportunities tracker	Undertake WBLCA + opportunities tracker	Undertake WBLCA + opportunities tracker			
Clause 9	Monitor, report & verify		Report progress to client/Sustainability lead	Report progress to client/Sustainability lead	Report progress to client/Sustainability lead	Report progress to client/Sustainability lead			
Clause 10	Procurement								
		NZC-READY DESIGNS PROTOCOL							

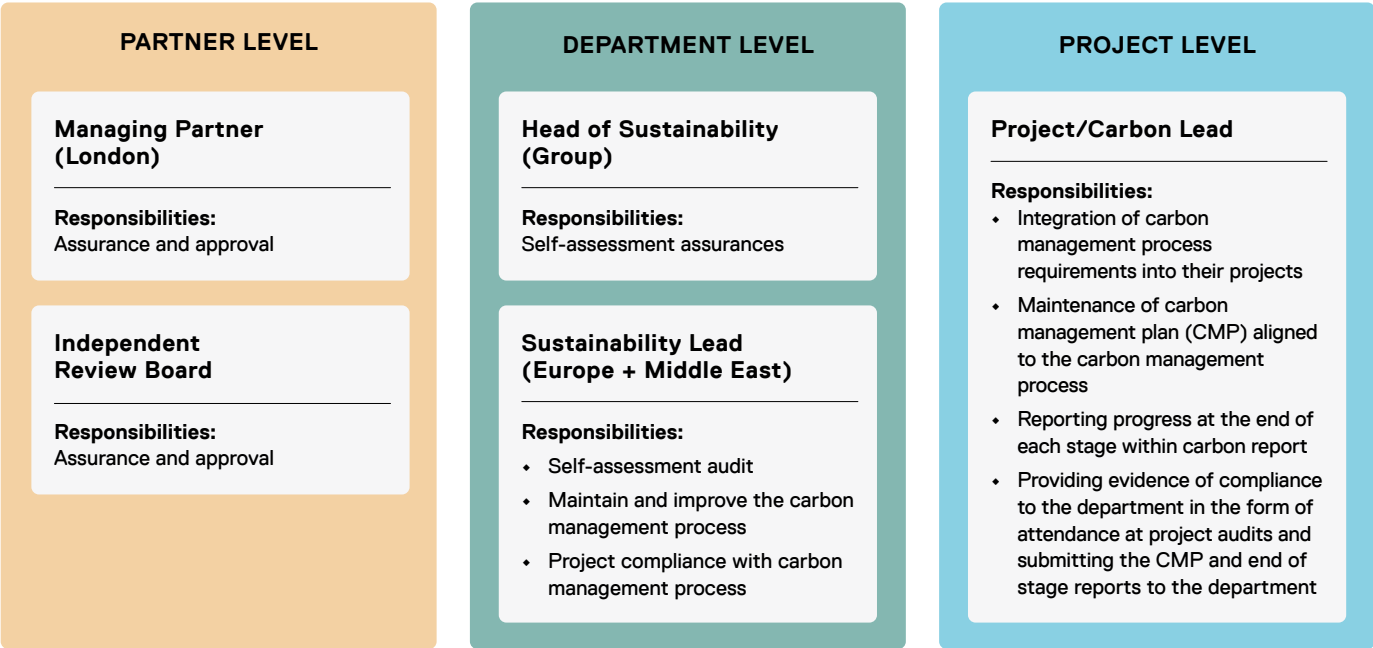
4. Evidence of compliance summary (Clauses 1-10 of PAS 2080)

The following section summarises how the requirements outlined in the relevant clauses and sub-clauses of the standard are met by our carbon management process. A detailed breakdown with evidence against each subclause has been produced as part of our self-validation process which can be found in the appendix to the document and further details can be shared on request.

(Clause 1): Scope	Our carbon management process is applicable to the practice's role as a designer – as defined under the terms and definitions set out under clause 3 of the standard. It covers the design services and infrastructure and building projects undertaken by our London studio in the capacity as lead designer and encompasses all project life cycle stages including initial design to construction and operation. Where we are not appointed as the lead designer, we will endeavour to support our clients implement their own carbon management process to meet the requirements of the standard.
(Clause 2): Normative references	We acknowledge and adhere to relevant national and international standards and guidance documents related to whole-life carbon assessment and environmental sustainability.
(Clause 3): Terms and definitions	In developing our carbon management process, we have utilised consistent terminology and definitions as outlined in PAS 2080:2023 and other relevant standards.
(Clause 4): Decarbonisation principles	The decarbonisation principles are integrated into our carbon management process and highlighted as key requirements that the project lead should support the asset owner/manager and other member of the value chain to follow. Managing whole life carbon under the control and influence: at the commencement of every new project the project/carbon lead is required to identify aspects of the project's whole life carbon that are under Grimshaw's control and influence at the asset, system and network level. For projects where we are lead consultant, our scope and influence across activities that result in carbon emissions at project level are recorded in the project's carbon management plan (CMP). Our projects are required to apply the carbon reduction hierarchy and manage whole life carbon emissions. At each work stage project leads are required to focus the relevant strategies – avoid, switch, improve – to identify specific opportunities to reduce carbon. Identification of specific carbon saving opportunities is undertaken during carbon workshops and recorded in project carbon reduction opportunities tracker. Implementing appropriate governance: decisions not directly linked to whole life carbon reduction, but may have a positive or negative impact, are monitored throughout each work stage and identified as an agenda item for discussion at carbon workshops led by the project carbon lead. Decision makers are also briefed at the briefing stage to raise any decision that have the potential to impact carbon with the project's carbon lead. Project leads are responsible, but senior management is involved for significant decisions. Our commitment to net-zero carbon ensures minimum project requirements like whole building life cycle assessment and compliance audits. Roles and responsibilities are defined, including a project carbon lead, to identify and manage carbon reduction opportunities. Resources are allocated when Grimshaw is lead consultant. Business processes are continually improved based on feedback and records are maintained for monitoring and reporting.

(Clause 5):
Leadership

Our leadership team has a strong commitment to whole-life carbon reduction across all levels of the business and ensures the necessary resources and support for the implementation of our carbon management processes. Key stakeholders and their responsibilities are mapped out below.



(Clause 6):
Integrating carbon management into decision-making

Our carbon management process sets out our requirements for the following decision-making activities established within clause 6 of the standard:

- Establish the level of control and influence each stakeholder and project team member has over the project
- Conduct whole-life carbon assessments on all relevant projects
- Set ambitious but achievable carbon reduction targets
- Identify and mitigate potential carbon hotspots
- Integrate carbon considerations into the design process

All projects are required to maintain a project specific carbon management plan (CMP) to record carbon management requirements and decisions. The CMP is reviewed and updated at the commencement of each work stage.

(Clause 7):
Whole life carbon assessment principles to support decision-making

We utilise robust and transparent methodologies and principles when undertaking whole-life carbon assessments to support decision making across our project considering all significant stages of the asset lifecycle. Methodologies used include the RICS professional standard for whole life carbon assessment.

**(Clause 8):
Target setting and
baselines**

We support and advise clients to establish clear and measurable carbon reduction targets, track progress against them at each work stage – as detailed under clause 9 below – establishing baselines and communicate these to other value chain members. Where targets have yet been set by our client's we challenge them to do so and when in place provide recommendations on how to improve them.

**(Clause 9):
Monitoring and
reporting**

We regularly monitor and report on the carbon performance of our designs to Partners and our staff. Our sustainability department is responsible for ensuring all project teams report, in relation to our agreed scope, on the following during each project work stage:

- Project-specific carbon emissions data.
- Progress towards carbon reduction targets.
- Identification of hotspots / areas for improvement.
- Publish case studies identifying good practice outcomes.

Compliance with clauses 8 and 9 of the standard is measured and reported through quarterly project audits within each of our regional studios. Reporting requirements are set out in our project compliance and reporting process which is managed under our ISO9001/14001 compliant Business Management System.

**(Clause 10):
Procurement**

We integrate carbon considerations into our procurement processes by:

- Stipulating low-carbon materials and products in our design specifications.
- Evaluating suppliers' and sub-consultants' environmental credentials as part of our procurement process.
- Engaging and collaborating with our supply chain to reduce their carbon footprint.
- Measuring our supply chain emissions and engage with suppliers on their actions to reduce the carbon footprint of the good and services they supply.
- Verifying our GHG assessments (independently) and publishing this on our website.
→ [2023_GHG_summary.pdf](#)

5. Case studies

CASE STUDY 1

Civil Engineering Building

University of Cambridge, UK



1.
Leadership
& Governance



2.
Target setting
& Baselines



3.
Optimise
in-use energy



4.
Optimise
embodied carbon



5.
Procurement



6.
Measure
& manage



7.
Monitor,
report & verify



[Click to read the full
Regenerative Design case study](#)

The design and delivery of the Civil Engineering Building, informed the development of Minoro (minoro.org). It is an exemplar of how to integrate carbon management into decision-making. The project is referenced in PAS 2080 (page 116) identifying how the project applied an energy cost matrix, and a methodology for energy and carbon management which was developed by Grimshaw in collaboration with the University of Cambridge.

Minoro: activities applied

Strategies adopted and outcomes achieved



1. Leadership & governance

Project team: University, Grimshaw, Max Fordham, Smith & Wallwork, Turkington Martin and Montessoro LLP;

An energy group was established during the project's briefing stage to govern decision-making in relation to the energy and carbon performance of different materials and systems.



3. Optimise in-use energy

Zero combustion, on-site renewables and a ground source heat pump array were adopted to achieve a 66% reduction in annual energy use against the university's baseline' for labs.

The building is operationally net zero carbon ready.



4. Optimise embodied carbon

Achieved a 50% reduction in embodied carbon of the cement used to form the sub-structure.



5. Procurement

90% of steel frame recoverable at end of life though adoption of circular design principles



6. Measure & manage

A comparative analysis tool – the Energy Cost Metric – was developed with engineers from the university and used to minimise the building's whole-life energy and carbon within a cost-conscious framework.



7. Monitor, report & verify

An extended 2-year commissioning and handover phase, facilitated through the adoption of the UK governments soft landings framework.

66% reduction in annual energy use against the university's baseline' for labs.

50% reduction in embodied carbon of the cement used to form the sub-structure.

90% of steel frame recoverable at end of life though adoption of circular design principles.

Bath Schools of Art and Design

Bath, UK



1.
Leadership
& governance



2.
Target setting
& baselines



3.
Optimise
in-use energy



4.
Optimise
embodied carbon



5.
Procurement



6.
Measure
& manage



7.
Monitor,
report & verify



[Click to read the full
Regenerative Design case study](#)

The success of the original Herman Miller building was due in part to the design's adherence to the clients brief that the buildings must be capable of adapting to the changing needs of the business without impacting on its day to day operation. This was achieved by implementation of a kit-of-parts approach that facilitated design for disassembly decades before the concept became mainstream.

That a factory has been so successfully converted into a practical and inspiring creative arts facility gives a showcase for adaptive reuse, demonstrating that existing buildings don't have to lead to compromises on sustainability or quality of environment.

Minoro: activities applied

Strategies adopted and outcomes achieved



1. Leadership & governance

Project team: Grimshaw, Arup, Mann Williams, Montessoro LLP, Structura and Willmott Dixon
Operational and embodied carbon assessment delivering net zero ready building project.



3. Optimise in-use energy

Upgrades to the façade's thermal performance (improved by 400%) and air tightness (tested to $<4\text{m}^3/\text{m}^2\text{h}@50\text{Pa}$), along with rooftop PVs providing 76,000 kWh/yr delivering best practice performance within a heritage structure.



4. Optimise embodied carbon

With the use of timber structure and 1,420 tonnes of carbon saved through the retention of existing structure, foundations, façade and concrete slab, the building delivers 403 kgCO₂e/m² meeting the RIBA 2030 target of $<540\text{ kgCO}_2\text{e}/\text{m}^2$



6. Measure & manage

Energy use intensity: 84 kWh/m²/year



7. Monitor, report & verify

In-use EUI is in line with the 2025 benchmark target for non-domestic buildings set out in the RIBA 2030 Challenge

Sadberk Hanim Museum

Istanbul, Turkey



1.
Leadership
& governance



2.
Target setting
& baselines



3.
Optimise
in-use energy



4.
Optimise
embodied carbon



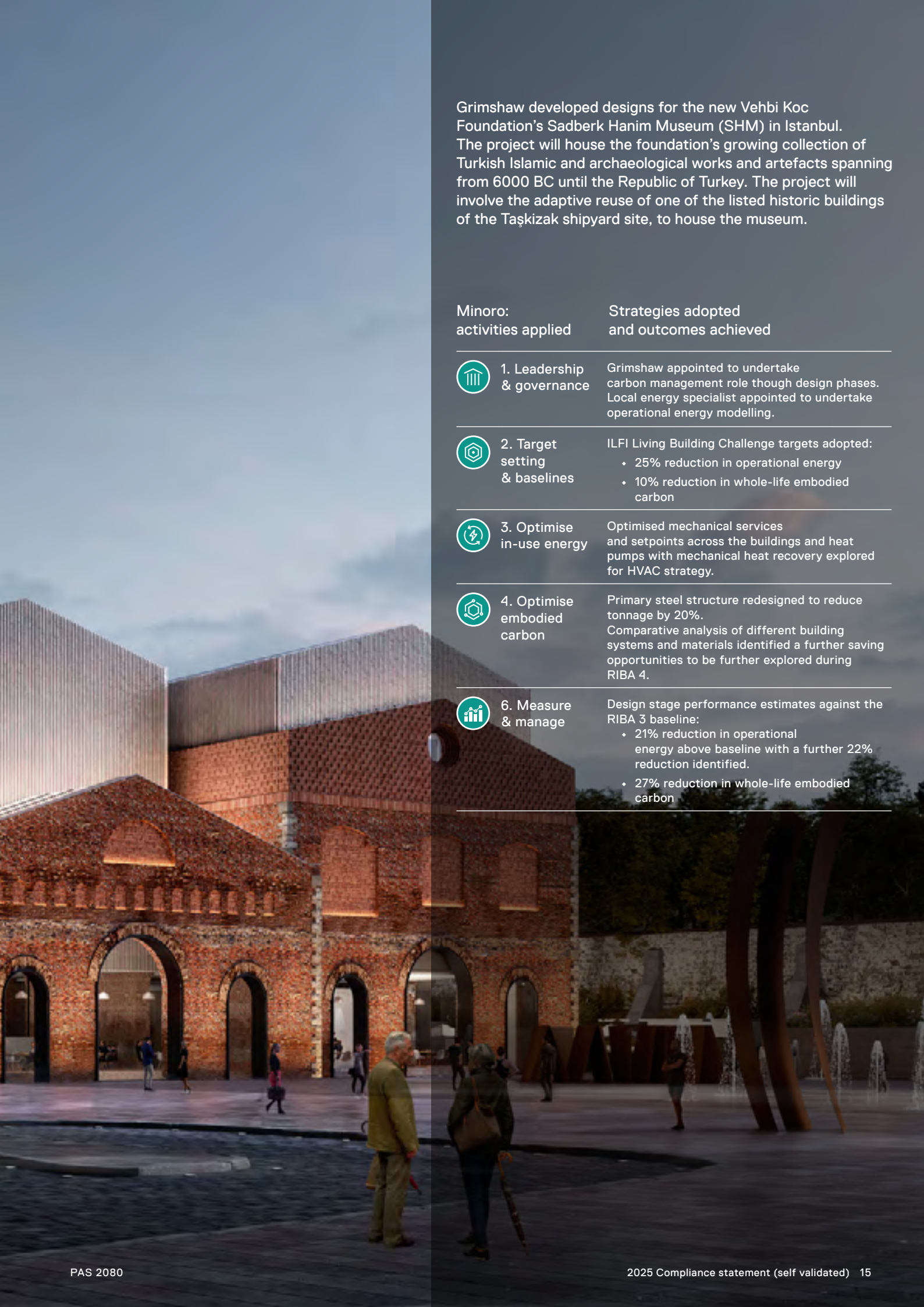
5.
Procurement



6.
Measure
& manage



7.
Monitor,
report & verify



Grimshaw developed designs for the new Vehbi Koc Foundation's Sadberk Hanim Museum (SHM) in Istanbul. The project will house the foundation's growing collection of Turkish Islamic and archaeological works and artefacts spanning from 6000 BC until the Republic of Turkey. The project will involve the adaptive reuse of one of the listed historic buildings of the Taşkızak shipyard site, to house the museum.

Minoro:
activities applied

Strategies adopted
and outcomes achieved



1. Leadership
& governance

Grimshaw appointed to undertake carbon management role though design phases. Local energy specialist appointed to undertake operational energy modelling.



2. Target
setting
& baselines

ILFI Living Building Challenge targets adopted:

- 25% reduction in operational energy
- 10% reduction in whole-life embodied carbon



3. Optimise
in-use energy

Optimised mechanical services and setpoints across the buildings and heat pumps with mechanical heat recovery explored for HVAC strategy.



4. Optimise
embodied
carbon

Primary steel structure redesigned to reduce tonnage by 20%. Comparative analysis of different building systems and materials identified a further saving opportunities to be further explored during RIBA 4.



6. Measure
& manage

Design stage performance estimates against the RIBA 3 baseline:

- 21% reduction in operational energy above baseline with a further 22% reduction identified.
- 27% reduction in whole-life embodied carbon

Teeside International Airport

Darlington, UK



1.
Leadership
& governance



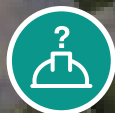
2.
Target setting
& baselines



3.
Optimise
in-use energy



4.
Optimise
embodied carbon



5.
Procurement



6.
Measure
& manage



7.
Monitor,
report & verify



Grimshaw was commissioned to develop a carbon reduction action plan covering the airports land and air-side operations and wider masterplan development. Minoro was used to inform the development of the plan.

Minoro:
activities applied

Strategies adopted
and outcomes achieved



1. Leadership
& governance

The action plan identifies key stakeholders and roles for implementing the action plan.



2. Target
setting
& baselines

Targets have been set for the airports scope 1,2 & 3 emissions.



3. Optimise
in-use energy

Actions identified to improve the airports energy consumption and expansion of renewable energy supplies.



4. Optimise
embodied
carbon

Requirements to measure and report embodied carbon impacts have been established.



5. Measure &
manage whole
life carbon

GHG emissions are to be measured and report to inform future decision making related to the implementation of measures to optimise operation energy and embodied carbon across the airport.



6. Measure
& manage

Requirements for supplies in relation to managing carbon have been established.



7. Monitor,
report &
verify

Governance structure established and pathway to verification under ACA scheme mapped out.

6. Continual improvement (Clause 11 of PAS 2080)

We continuously review and refine our carbon management processes based on performance data, stakeholder feedback, and industry best practices. This process is integrated into our ISO 9001/14001 certified business management systems. The following actions have been identified for further improvement to our carbon management process:

- Streamline project reporting process.
- Increase capacity to undertake LCA comparative analysis studies in-house to inform design stage decision-making

7. Claims and limitations of conformity (Clause 12 of PAS 2080)

This self-validation statement demonstrates Grimshaw’s commitment to the principles and requirements of the standard and our ongoing efforts to minimise the environmental impact of our projects.

DOCUMENTING EVIDENCE

Detailed evidence, demonstrating how our carbon management process has been deemed compliant with each clause, and their sub-clauses, has been documented as part of our self-validation process. A detailed evaluation is provided as an appendix to the document and further details can be provided on request.

LIMITATIONS

We do not currently claim formal third-party assured certification of our carbon management process to PAS 2080:2023.

CONTINUING CONFORMITY

This document will be updated annually to ensure the conformity of our carbon management process against current and future versions of PAS2080 will be audited annually and report progress against any actions identified during our internal audit.

AUDIT GOVERNANCE

This document has prepared and assured by the following individuals on behalf of Grimshaw Architects LLP:

INTERNAL ASSESSOR

Peter Swallow
Sustainability Lead
[Europe + Middle East]

ASSURANCE

Paul Toyne
Head of Sustainability
[Group]

INDEPENDENT REVIEW PANEL

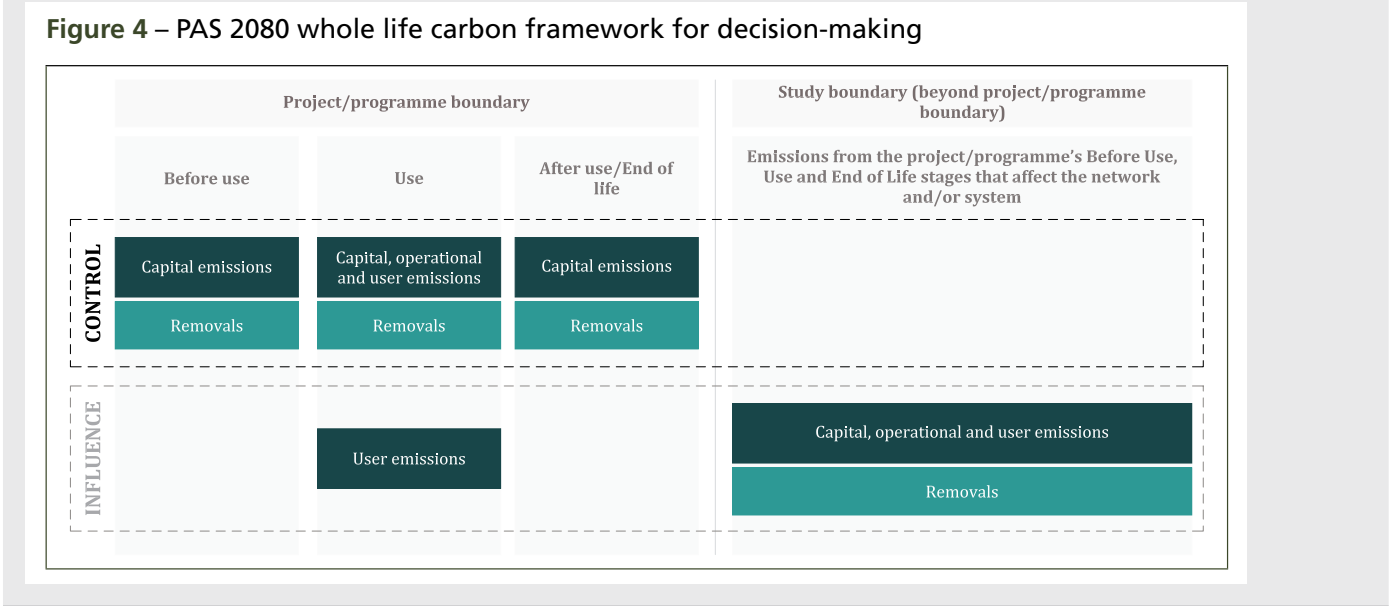
Graham Gibbon
Principal [London]
Andrew Thomas
Managing Partner [London]

8. Appendix: Compliance evaluation (All sub-clauses of PAS 2080)

Clause 4 – Decarbonisation principles

4.1 Managing whole life carbon under the control and influence (All value chain members)

- a) Identify all activities that result in carbon emissions or removals they control and influence, at the asset, network and system level, as set out in Figure 4 of PAS 2080:2023



For projects where we are lead consultant, our scope and influence across activities that result in carbon emissions at project level are recorded in the project's carbon management plan.

Identification of specific carbon saving opportunities is undertaken during carbon workshops and recorded in project carbon reduction opportunities tracker.

- b) Identify interdependencies, synergies and relationships between their own project and/or programme of works and the network and system, and engage with relevant stakeholders to identify carbon reduction opportunities and risks at an asset, network and system level

Carbon workshops are used to as an opportunity to establish relationships between the project and network and system level and identify carbon reduction risks/opps at all levels within and adjacent of the project boundary.

- c) Prioritise nature-based solutions for reduced whole life carbon emissions and potential for carbon removal, as well as the associated co-benefits

See case studies provided in section 5 of this document

- d) Engage with other value chain members or other stakeholders (such as planning authorities, financiers, government and regulators, among others) to align approaches to carbon reduction and maximize decarbonisation opportunities for the project and/or programme of work and, where possible, an economic sector or geographical region

Guidance for engaging with these stakeholders is provided in Minoro (minoro.org)

- e) Identify the work stages within which they have control or influence in terms of identifying, managing or delivering low-carbon solutions. Where opportunities or risks to influence system-wide decarbonisation exist and are significant, these shall be prioritised

See response to 4.1.a above

- f) Assess emissions and removals in accordance with the whole life carbon framework for decision-making in Figure 4 of PAS 2080:2023 and the assessment principles in Clause 7

See response to 4.1.a above

- g) Demonstrate that the level of accuracy appropriate for informing decision-making at the stage of the project or programme has been taken into account (as per Clause 7)

Refer to clause 7 response for details. Appropriate measurement methodology documented for each stage in the project carbon plan [PCP]

- h) Integrate whole life carbon reduction in their decision-making processes in accordance with Clause 6.

See response to Clause 6 below

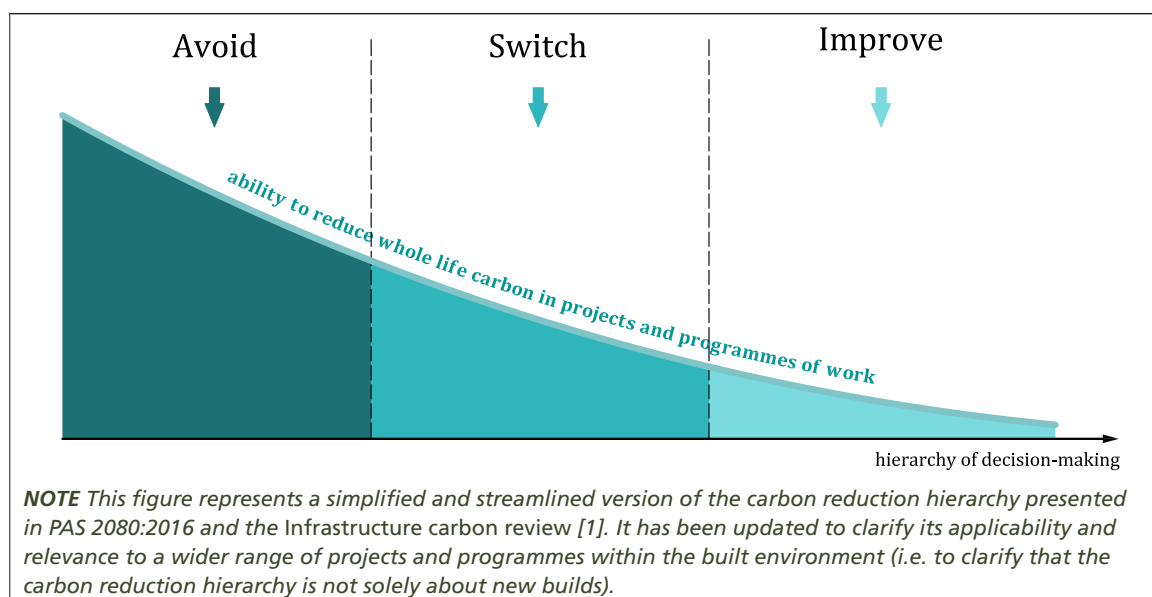
4.2 Aligning to net zero carbon transition (Asset owners/managers)

Not applicable

4.3 Managing whole life emissions by applying the carbon reduction hierarchy (All value chain members)

- a) Follow the carbon reduction hierarchy as presented in Figure 5 of PAS 2080:2023 (in the order of priority shown) when identifying potential opportunities to reduce whole life carbon emissions. When conducting carbon workshop the agenda and discussions follow the elements of the hierarchy appropriate to the current work stage.

Figure 5 – Carbon reduction hierarchy



- b) In applying the carbon reduction hierarchy, demonstrate they have considered the following: avoid, switch, improve

The carbon opportunities tracker template, used by all projects following Grimshaw's carbon management process, is structured to follow the carbon hierarchy, ensuring discussions focus on the issue relevant to the work stage in question.

4.4 Implementing appropriate governance (All value chain members)

- a) Align whole life carbon impacts of any decisions made with the decarbonisation principles in Clauses 4.1 to 4.3

Decision not directly linked to whole life carbon reduction, but may have a positive or negative impact, are monitored throughout each work stage and identified as an agenda item for discussion at carbon workshops led by the project carbon lead. Decision makers are also briefed at the briefing stage to raise any decision that have the potential to impact carbon with the project's carbon lead.

- b) Make carbon management underpin all projects and/or programmes of work (as per the requirements in Clause 6), regardless of their scale or work stage

Our NZC commitment sets out minimum project requirements outlined in our NZC protocol/policy:

- Undertake comparative analysis to guide decision making
- Undertake WBLCA on all projects
- Project compliance audits undertaken half yearly.
- Environmental management policy outlines commitment to operational and project level aspects of our work and mitigation measures for negative impacts, including minimising carbon.

- c) Embed whole life carbon into business and management processes, forming part of decision-making alongside cost, time, and risk

We provide support to the asset owner/manager and/or cost/project manager who are responsible for completing this activity.

- d) Define and establish roles and responsibilities for carbon management to promote the outcomes and behaviours required for decarbonisation

See above answer + project carbon lead assigned on all projects – either the project lead or a nominated architect - see roles and responsibilities organogram provide in response to Clause 5 below.

- e) Put in place roles and responsibilities for engagement with other value chain members and stakeholders so that system-wide opportunities and risks are identified and managed

See above answer

- f) Allocate resources (human and financial) to support the delivery of carbon management processes

See above answer

Resources provided where Grimshaw is lead consultant and carbon management is within our scope.

- g) Put processes in place to assess GHG emissions, identify carbon reduction opportunities, and implement them in projects and programmes

See answers above

- h) Support the implementation of low-carbon solutions

Done through advocacy and engagement across the project value chain, demonstrated through the requirement to undertake carbon workshops during each work stage.

- i) Collaborate across the value chain, sharing expertise, knowledge and data to drive decarbonisation across the industry

Demonstrated at business level through our development of Minoro.org and our Carbon neutral business commitment, including SBT's, and implementation of carbon management plan to minimise GHG emissions across all studios.

- j) Improve business processes based on feedback from other value chain members

Minoro – We regularly engage with stakeholders from across the value chain to improve Minoro and our NZC ready design protocol.

Continual improvement protocol: Consultation with other value chain members is sought through our continual improvement process outlined within our ISO9001 and 14001 business and environmental management systems – See response to clause 5 below for more information on this process.

- k) Allocate senior management support to all decision-making that has a significant effect on carbon management

Process level decision making – Identification of updates and improvement to the carbon management process is the by regional sustainability lead. Any changes are presented to our global head of sustainability and the managing partner for consultation and sign off.

Project level decision making – Project leads are responsible for reporting key but the integration of carbon into decision making is still in development on Grimshaw led projects

- l) Keep records in support of carbon management monitoring and reporting practices (as per Clause 9)

To demonstrate alignment with Minoro, all relevant projects – those where Grimshaw is commissioned as lead designer – are required to publish and maintain the following documents during each design stage:

- **Carbon management plan** – This document summarises the project specific decisions that have been made during each work stage in relation to the activities outlined in Minoro and our NZC ready design protocol.
- **Carbon actions & responsibility matrix** – The matrix is used to assign action owners from across the project value chain and track progress against their completion during each project work stage.
- **Carbon reduction opportunities tracker** – Used to list carbon saving opportunities and progress assessing and integrating them at the relevant life cycle/work stage.

Clause 5 – Leadership

5.3 Requirements (All value chain members)

- a) Set an organisational policy/strategy for carbon management

Carbon management is covered under Grimshaw's environmental management policy and net zero carbon statement which covers the business's carbon neutral status and commitment to delivering net zero carbon ready design from the end of 2025. These documents are available for download from our website.

We have established science-based reduction targets for our scope 1 and 2 emissions, measure our scope 1-3 emissions annually and maintain a carbon action plan. More information about these initiatives is available on request.

- b) Assign responsibilities for management of the carbon management process

See organogram in section 4 of this document for studio and project level roles and responsibilities.

- c) Communicate importance of carbon management process to staff

We provide regular updates on our carbon management efforts as a business and our expectation for carbon management across our projects to staff as per our internal comms schedule. All internal and external comms are managed and recorded under our ISO9001/14001 compliant Business Management System (available upon request).

- d) Training programme in place

Grimshaw support the development of staff competency through several means; including our CPD programme that includes lectures and demonstrations on carbon-related issues such as steel manufacturing; all members of staff receive mandatory training on NZC ready design commitments; in-house tools and training include Minoro, NZC framework, LCA applications.

- e) Adequate resources to manage carbon management process

Our sustainability department is responsible for maintaining our carbon management process, monitoring project compliance and supporting our business development team to outline carbon mgmt. services in our scope and fees proposals for new commissions.

- f) Commitment to continuous improvement through sharing of good practice (Case studies and advocacy work)

We regularly publish case studies on our website (see [here](#)) and contribute to industry forums and conferences sharing our knowledge and learning from others.

- g) Promote culture that rewards efforts to drive down carbon internally and externally

Communications with staff encourage active engagement through competitions and recognise the efforts of department heads and project leads that delivering carbon savings.

- h) Make CMP compatible/integrated with other systems

Our CMP is integrated into our ISO9001/14001 compliant business management system.

- i) Communicate with value chain + stakeholders to collab on goal of reducing whole life carbon at system level

Evidenced through work on Minoro / UKNZCBS / PAS2080:2023 and through regular wider industry discourse and thought leadership: blogs, papers, panel events.

- j) On projects, collab with value chain members and stakeholders to decarb at the asset/network/system level

Project carbon leads work with sustain team to engage with value chain and stakeholders to identify carbon reduction opportunities. Opportunities are during design reviews and project audits.

- k) Proactively collab with value chain to promote/implement decarb solutions within their control/influence
[Clause 4]

Refer to answer above.

5.4 Requirements (Asset owners/managers)

Not applicable

5.5 Requirements (Designers)

- a) Support asset owners/managers in identifying and implementing whole life carbon reduction opportunities within their control and influence

All project teams are required to record carbon saving opportunities to align with the agreed carbon budget/targets. Where carbon management is outside of the project team's scope, a review of the available opportunities will be conducted by Grimshaw's sustainability department and project architect.

- b) Challenge existing standards, guidance and requirements, or equivalent, where relevant, to drive low-carbon solutions

We work with our specialist consultants to ensure that the latest best practice is being applied to all decision-making across all project work stages to drive low carbon solutions.

- c) Set clear requirements and guidance for their own suppliers working on projects and programmes to help prioritise whole life carbon reduction outcomes

Our procurement process for sub-consultants requires evidence of their corporate commitments to carbon reduction and associated carbon management plans.

- d) Enable/encourage cross-discipline coordination to drive low-carbon solutions throughout design development

Specific carbon workshops during the design stage enable cross-discipline coordination to meet this requirement. The outcome of these workshops is recorded in the project's carbon management plan and new opportunities actively tracked.

- e) Develop a culture to encourage design and technological innovation that drive decarbonisation

Innovation is a core component of our design philosophy at Grimshaw and we have participated in a variety of research programmes this is evidenced by our reference on websites for example EU Circuit ([website link](#)). [www.Minoro.org](#) is an outcome of our culture.

Grimshaw's design teams are always encouraged to innovate and adopt new technologies and methods that can lead to significant carbon reductions. Within Minoro there is a carbon opportunity tracker which we use to collate feasibility studies on different innovations. Benchmarking and Performance Measurement: Continuous improvement is driven by measuring carbon performance, benchmarking against industry standards, and setting targets for improvement.

5.4 Requirements (Constructors)

Not applicable

5.5 Requirements (Product/material suppliers)

Not applicable

Clause 6 – Integrating carbon management into decision-making

6.1 Requirements (All value chain members)

6.1.1 Identify control and influence in whole life carbon reduction

- a) The level of control and influence they have during the work stages for delivering projects and/or programmes of work (as discussed in Clause 4)
- b) The necessary collaborations with other stakeholders that will enable whole life carbon reductions under their control and influence
- c) The network(s) and system(s) with which the project or programme of work interacts, and the nature of those interactions

As per Grimshaw's NZC Ready Design protocol, where the practice is appointed as lead consultant, all projects must complete a Carbon Management Plan [CMP]. The CMP contains sections for documenting [1] the level of control and influence the design team across all work stages, [2] necessary collaborations with stakeholders and [3] the networks and systems with which the project interacts.

6.1.2 Establish and implement a carbon management process

- a) Understand & prioritise requirements of the carbon management process
 - b) Identify & prioritise system-wide carbon reduction opportunities
 - c) Prioritise system-wide decarbonisation
 - d) Challenge current practices
 - e) Collaborate for carbon reduction
 - f) Assess & record whole life carbon emissions/reductions
 - g) Identify low-carbon alternatives
 - h) Report carbon removals separately
-
- a) As per Grimshaw's Whole Life NZC Ready protocol, where the practice is appointed as lead consultant, all projects must complete a Carbon Management Plan [CMP] incorporating a Carbon Actions & Responsibilities Matrix [CARM] used to assign action owners and prioritise requirements of the project's Carbon Mgmt. Process.
 - b-c) As per Grimshaw's Whole Life NZC Ready protocol, where the practice is appointed as lead consultant, all projects must produce and maintain a carbon opportunities tracker.
 - d-e) Guidance on how and when to challenge current practices is provided in Minoro.org
 - f) As per Grimshaw's Whole Life NZC Ready protocol, where the Practice is appointed as Lead Consultant, all projects must complete a Whole Building LCA at the end of each work stage covering life cycle stages A-C.
 - g) Ref to 6.1.2.B above

6.2 Requirements (Asset owners/managers)

Not applicable

6.3 Requirements (Designers)

- a) Challenge the standards requirements that impact whole life carbon

Covered in response to Clause 5.

- b) Integrate whole life carbon reduction opportunities in the design of the project or programme

All projects are required to maintain a carbon reduction opportunities tracker.

A template is available on Minoro.org to download [here](#)

- c) Have governance structures in place, as per Clause 4, that promote whole life carbon reduction opportunities

Carbon management workshops are required during each work stage during the design process and carbon is required as a discreet discussion topic for design and project team meeting agendas.

d) Comply with targets and challenge where there's potential for improvement

At the commencement of each work stage we review the carbon targets/budgets and provide guidance on any change required to remain aligned with the latest science based targets or local legislation, whichever is deemed to be the more onerous.

e) Set net zero targets where the asset owner/manager has not

When whole life net zero carbon targets/budgets have not been briefed by the client, we provide guidance on the most appropriate targets/budgets for the given project typology and record this in the appropriate briefing document.

f) Assess whole life carbon emissions of design options using an approach that is consistent with the requirements of Clause 7

At each work stage, we undertake comparative life cycle analysis to inform design optioneering across all scale that fall within our direct scope or influence, including at the asset/network/system level. This analysis is undertaken using the measurement methodologies agreed for the project and results, conclusions and recommendations communicated to relevant members of the design team and client to inform their decision-making.

- g) Demonstrate adherence to carbon reduction hierarchy [Clause 4], inc. how they have assessed; reuse materials; spec'd low-carbon materials, spec'd energy efficient and/or renewable energy gen, and minimised resource use.
- h) Demonstrate that they have assessed future adaptability and material recovery, and
- i) Submit carbon reduction proposals to relevant stakeholders/decision makers

Activities undertaken to comply - Carbon workshops with relevant members of the client project and design teams are held during each work stage to review relevant opportunities outlined in the hierarchy.

Discussions, recommendations and outcomes are documented in the project's carbon management report to summarise outcomes at the end of each work stage.

6.4 Requirements (Constructors)

Not applicable

6.5 Requirements (Product/material suppliers)

Not applicable

Clause 7 – Whole life carbon assessment supporting decision making

7.1 Requirements (All value chain members)

7.1.1 Assessing GHG emissions over the whole life to inform decision-making at the asset, network and system level

- a) Set study boundaries
- b) Assess emissions and removals for all sources within control and influence of value chain at all stages
- c) Assess impacts of all emission and removals to a level of detail that supports decision making
- d) Assess and record emissions and removals associated with land use change (including nature-based and climate resilience solutions) as part of the decision-making process
- e) not include market-based offsets within the assessment boundary

All boundaries and emission sources are documented in the LCA report included in each project's CMP to a level of detail required to support decision making. Land use change is not currently included in the LCA's undertaken in-house. Market-based offsets are not included.

7.1.2 Selecting an appropriate level of accuracy and detail

- a) Adopt the whole life carbon framework for decision-making (See Clause 4) to inform the decision-making process

Minoro provides guidance for setting up and maintaining a whole-life carbon framework for decision-making.

- b) Value chain members shall seek to improve the accuracy of their assessment(s), to neither overestimate nor underestimate actual emissions, and to reduce uncertainty as much as practicable

All in-house assessments are reviews by members of our sustainability team with the necessary competency to identify errors and areas for improvement.

7.1.3 Selecting a GHG assessment methodology

- a) Assess whole life emissions using appropriate assessment methodologies from existing standards / sources
- b) Identify the limitations in existing methods
- c) Compare the whole life carbon impact of options using one methodology

Minoro provides guidance to project teams related to selecting methodologies, identifying their imitations and conducting comparative assessment.

Clause 8 – Target setting and baselines

8.1 Requirements (All value chain members)

8.1.1 Carbon reduction target

- a) Adopt the carbon reduction targets set by the asset owner/manager as a minimum (see 8.2.1); and
- b) Communicate and share carbon targets with other value chain members

Guidance is provided in Minoro to facilitate this requirement – See actions 0-06, 1-03, 1-04, 2-01, 2-07, 3-01 and 4-04.

8.1.2 Baselines

- a) Collect and report asset and whole life carbon data relevant to their activities when delivering projects and/or programmes of work to inform future baselines
- b) Identify limitations in the accuracy of setting baselines when making comparisons against their activities during the delivery of projects and/or programmes of work, and transparently report any uncertainties at appropriate stages of infrastructure and buildings delivery

See above response

8.2 Requirements (Asset owners/managers)

Not applicable

8.3 Requirements (Designers)

Not applicable

8.4 Requirements (Constructors)

Not applicable

8.5 Requirements (Product/material suppliers)

Not applicable

Clause 9 – Monitoring & reporting

9.1 Requirements (All value chain members)

- a) Identify roles, responsibilities, reports
- b) Report work stage emissions
- c) Report progress against targets
- d) Record low-carbon options
- e) Share good practice outcomes

All projects following our carbon management process are required to maintain a carbon management plan that captures these requirements.

9.2 Requirements (Asset owners/managers)

Not applicable

9.3 Requirements (Designers)

- a) Monitor, report, design emissions
- a) Recommend reporting improvements
- b) Identify, report carbon hotspots

See response to 9.1 a-e above

9.4 Requirements (Constructors)

Not applicable

9.5 Requirements (Product/material suppliers)

Not applicable

Clause 10 – Procurement

10.1 Requirements (Asset owners/managers)

Not applicable

10.2 Requirements (Designers)

10.2.1 Contracts

- a) Support appropriate risk allocation approaches set in contracts by the asset owner/manager that promote low-carbon solutions
 - b) Engage with the asset owner and/or other value chain members involved in the contract to agree on a solution that is acceptable to all relevant parties, where the risk allocation approach needs to be challenged
 - c) In responding to tenders for projects and/or programmes of work, demonstrate the approach they will take to identify low-carbon options of relevance to the specific objectives for the project
 - d) Provide regular updates to the asset owner/manager of the contract's performance against the agreed carbon reduction targets, and review performance against these targets on par with performance against cost and programme
 - e) Demonstrate how they will meet the requirements of the asset owner's/manager's carbon management process
-
- a) Proposed risk allocation approaches will be reviewed and agreed upon at Partner level under advice by our legal team.
 - b) Proposed risk allocation approaches will be reviewed and challenged when appropriate.
 - c) Approach documented in our standard response provided to BD to answer this type of question in bids
 - d) No policy to currently do this for individual projects though we do report internally.
 - e) At tender stage - See response to 10.2.1.c above

10.2.2 Engagement

- a) Promote their low-carbon solutions within the value chain
- b) Engage with the value chain to identify ways in which incentives within their design contracts encourage the implementation of low-carbon solutions
- c) Identify opportunities to collaborate with the value chain to develop low-carbon skills and capability
- d) Where opportunities exist, actively collaborate with the value chain to develop and integrate capability

- a) Promoted via external advocacy, talks and training
- b) Managed by client PM, CM or procurement specialist
- c) Identified via external advocacy, talks and training
- d) Participation in ConcreteZero and Responsible Steel initiatives provides opportunities to collaborate with the wider value chain to develop and integrate capability.

10.3 Requirements (Constructors)

Not applicable

10.4 Requirements (Product/material suppliers)

Not applicable

Clause 11 – Continual Improvement

11.1 Requirements (All value chain members)

- a) Establish a process of continual improvement and innovation that targets the development of low-carbon solutions, organizational capability to deliver low-carbon, and improvements in procurement processes and the relevant carbon management process components (Clause 6)
- b) Capture carbon emissions information and share it with other value chain members in order to facilitate continual improvement in future carbon management between organizations within the infrastructure and building sectors
- c) Capture carbon reduction solutions and share learning with other value chain members to inform good practice
- d) Maintain ongoing engagement across the value chain – asset owners/managers, designers, constructors and product/material suppliers – to build learning on industry innovations to further drive whole life carbon reductions at the asset, network and system level

We continuously review and refine our carbon management processes based on performance data, stakeholder feedback, and industry best practices. This process is integrated into our ISO 9001/14001 certified business management systems. Further, we regularly consult with members of the wider value chain to maintain the guidance and actions found in Minoro to ensure this is kept up to date with the latest research and guidance published globally.

The following actions have been identified for further improvement to our carbon management process:

- Streamline project reporting process
- Increase capacity to undertake LCA comparative analysis studies in-house to inform design stage decision-making
- Share carbon emissions information with wider value chain – utilising open databases

11.2 Requirements (Asset owners/managers)

Not applicable

11.3 Requirements (Designers)

- a) Provide input to asset owner/manager continual improvement requirements and share improved carbon data to inform future delivery of projects and/or programmes of work; and
- b) Put in place a process to assess the skills and capability within their organizations and, where necessary, provide further training and/or guidance in relation to GHG assessment, baselines, targets, identifying and promoting whole life carbon reduction, and delivering low-carbon solutions.

We provide support and guidance to asset owners/managers as and when required and advocate for the use of Minoro on projects that do not currently have a carbon management process.

Our in-house staff training program provides staff with access to carbon management training modules covering a an intro to NZC, undertaking LCA's and other guidance related to managing and reducing carbon across the design, construction and operational life cycles of buildings and infrastructure projects.

11.4 Requirements (Constructors)

Not applicable

11.5 Requirements (Product/material suppliers)

Not applicable

Clause 12 – Compliance

12.2 Basis of claim

12.2.4 Self-validation

Organisations shall be able to demonstrate that their carbon management process has been established in accordance with this PAS and publish supporting documentation on a website and make information available upon request. The supporting document shall detail:

- a) The scope of the claim, in terms of the organizational entity, programme or project which is claiming conformity;
- b) Summary evidence for each clause which demonstrates that the relevant requirements have been met;
- c) Any limitations of the claim due to data quality or data gaps;
- d) The key stakeholders/roles involved in the carbon management process; and
- e) Summary of actions for the further improvement of the carbon management process.

This document is structured to comply with the above requirements

12.3 Permitted forms of disclosure

12.3.2 Designers

- c) For claims of conformity based on self-validation in accordance with 12.2.4: “Carbon management process for work undertaken on [insert unambiguous identification of asset or programme of work] implemented as designer by [insert unambiguous identification of the claimant] in accordance with PAS 2080, self-validated.”

This document outlines our carbon management process for work undertaken on UK based infrastructure and building projects implemented as lead designer by Grimshaw Architect LLP in accordance with PAS 2080, self-validated.

