

# Climate Action Strategy

**The GRAHAM Net Zero Roadmap** 

graham.co.uk

### **Introduction to our** Climate Action Strategy



Foreword by Andrew Bill Group Executive Director

At GRAHAM we recognise the enormity of the challenge that we face in rapidly reducing GHG emissions and transitioning to net-zero. We also recognise the implications for the future of our planet and the consequences where we do not move fast or decisively enough to tackle these challenges. Climate Action is a key priority to us, it is business critical and embedded in all business-related decisions.

As an established construction company, we are at the forefront of action on the climate emergency. We have set out our climate ambition "*To eliminate carbon from our business and to measure and manage our progress toward a decarbonised economy*". We have adopted science-based targets to achieve net zero carbon by 2040 (at the latest) across our full value chain and to be net zero across our direct operations by 2030.

To guide our net zero ambitions and to outline the GRAHAM vision for delivering a zero-carbon future we have committed to producing an annual climate action strategy and reduction plan. Each year this will set out our climate actions – both short and long-term, so that we can strive to achieve the most ambitious action, quickly. Its purpose will be to push us to achieve improved climate and carbon outcomes, performance and to enhance collaborative action. Through each annual Climate Action Strategy, we will also chart our progress and achievements and detail collaboration with our stakeholders that help deliver a decarbonised economy.

> Delivering lasting impact

### **Overarching Environmental Focus Areas**

### We strive to make a difference



The GRAHAM guiding principle is

Delivering lasting impact

This feeds directly into our Environmental mission:

'To help protect and improve the environment, conserve resources and tackle climate change for the benefit current and future generations

### **KEY FOCUS AREAS**

Our environmental agenda is organised into four key focus areas.

Against each of the compenents, we have clear ambitions and actions that focus our activities on areas where we can make the most positive impact or where we can minimise the risk of negative environmental impacts.



### Alignment with the Sustainable Development Goals (SDGs)

# SUSTAINABLE G ALS

These key focus area are aligned with the following United Nations Sustainable Development Goals:



# **Structure, Roles and Responsibilities**

In line with the recommendations of the Task Force for Climate Related Financial disclosures (TCFD), GRAHAM have embedded a robust climate governance framework at the centre of our operations. The Board of Directors have oversight of all climate related risks and opportunities and provide direction in identifying our carbon reduction priorities and action. The Net Zero Committee oversee our climate action strategy and monitor its progress reporting quarterly to the board on performance against our ambitions and Key Performance Indicators. To promote Climate Action throughout all facets of the organisation, a climate action lead is dedicated toward each operational division.

#### **Climate Action Leads:**

- Lianne Taylor (Strategy)
- GIFO: David O'Hagan
- Civils: Jayne Walker
- Building North: John McGrory
- Building South: Rosie
   Barnett



## Links to GRAHAM Guiding Principle and Core Pillar

Guiding Principle & Core Pillar		Integration to GRAHAM Climate Action Strategy	
<b>~</b>	Guiding Principle Delivering lasting impact	We have aligned our approach with Global Sustainable Development Goal 13 (Climate Action) to take urgent action to compact climate change and its impacts. We instil in our workforce a commitment to tackle / address climate and carbon issues and we support our teams in delivering positive climate actions with lasting impacts.	
	Core Pillar We strive to make a difference	We measure our impact not only in the quality of the project delivered but in the longer-term impact on the environment, communities, and people. We are striving to lead the way in climate action to ensure that future generations are positively impacted by our operations.	

#### Case Study 1

#### Carbon Literacy Training for Construction

Together with three other Contractors and Keep Scotland Beautiful we helped to develop the UK's first accredited Carbon Literacy Training for the Construction Industry. We are now rolling the training out to our employees to provide them with the support and practical tools to help GRAHAM achieve our Net Zero Ambitions and to help understand the significant changes needed as we move to a low carbon economy.

#### Case Study 2

#### **100% Renewable Electricity**

In have partnered with the not-for-profit, social enterprise energy management consultancy (Planet First Energy) to procure new electricity connections for our sites and offices. In this way only "green" energy tariffs where all energy is renewable is sourced for all our projects.





#### Case Study 3 Electric fleet gets the green light

We are implementing a suite of initiatives to accelerate the adoption of electric vehicles throughout our business. Working collaboratively with our fleet provider we targeted that by the end of 2021, 75% of all available company cars would be either plug in hybrid or fully electric. This has already been successfully achieved and we are now working toward the transition to fully electric/ plug-in electric cars by 2023.

We also recognise the role Electric Vehicles must play in reducing emissions associated with our fleet of vans and how our materials are transported. Our fleet already use telematic systems and driver training initiatives to improve fuel efficiency and reduce emissions and in the longer term we will be looking towards opportunities and alternatives to Internal Combustion Engines for all site logistics.

### **Working Collaboratively on Climate Issues**

Partnerships and collaboration are crucial in taking meaningful steps to reverse climate change and we are embracing these strong partnerships and working together with clients, policy makers, subcontractors, peers, and other stakeholders on climate issues.

#### ACCREDITATIONS

GRAHAM have met the requirements of Carbon reduce certification having measured our GHG emissions in accordance with ISO 14064-1:2006 and having committed to managing and reducing our emissions in respect of our operational activities.

# - Achilles -

**Carbon Reduce Certified** 

Powered by Toitū Envirocare

MEMBER

#### **MEMBERSHIPS**

Our collaborative work on climate action includes that of our Partner Membership of the Supply Chain Sustainability School (SCSS), encouraging our supply chain to participate in the school and our specific involvement in the SCSS Climate Action Group.

#### **COLLABORATIVE WORKING**

SUPPLY CHAIN SUSTAINABILITY

**SCH** 

As one of the founding members of the BITC Construction Sustainability Forum NI and the Construction Employers Federation Construct Zero Task Force we are continuing to work with our peers to address and improve climate issues within the construction sector.

#### Case Study 4

#### **Climate Action Workshops**

In November 2020 we commenced a series of "Net Zero Carbon" workshops as one of a range of measures being implemented to accelerate our net zero carbon ambitions. The sessions were brought about to enhance opportunities and to share ideas and best practice when designing for reductions in whole life carbon.

#### **GRAHAM CORPORATE COMMITMENT TO CLIMATE ACTION**

- We have committed to set a Science Based Target through the "Science Based Targets Initiative"
- We have joined the "Race to Zero" though an official partner
- We have committed to the "Pledge to Net Zero"
- We have joined the "Contractors Declare" movement
- We have committed to the "BITCNI Climate Action Pledge"

# **Targeting Zero Carbon Buildings by 2030**

In the UK the built environment (the construction and operation of buildings) is responsible for nearly 40% of overall emissions. The construction sector therefore has a critical part to play in the climate emergency through the design and delivery of net zero carbon buildings.

At GRAHAM we have a rich history on which to draw when it comes to constructing iconic buildings. The creation of places with net positive impacts for the environment and communities is at the core of what we do. We understand that net-zero energy and zero carbon buildings must become the primary form of building construction and we are advocating for this.

Aligned to the UK GBC Net Zero Carbon Buildings Framework Definition for net zero carbon buildings and the London Energy Transformation Initiative Targets we are working with and supporting our clients to achieve a low carbon future. We have committed to identify to our clients, for all new buildings, operational and embodied carbon efficiency enhancements during the tendering process. Where we have the opportunity to design and deliver net zero for our clients our approach includes the following:



#### Net Zero Carbon Building

- Use of Whole Life Carbon Assessments to drive carbon reductions
- Use of Low Carbon Products
- Ensuring that buildings are designed and built to be highly energy efficient during operation. This includes a fabric first approach, consideration of shading design, natural daylighting and ventilation and increasing the energy efficiency of buildings systems
- Ensuring that Buildings are resilient to the impacts of our changing climate
- Working to achieve net zero emissions through onsite renewable installations and adding capacity to the grid via offsite renewable procurement.
- Ensuring that any remaining carbon balances are offset to achieve net zero carbon
- Ensuring that the carbon impacts of maintenance, deconstruction and the need for flexibility is considered within design

#### Case Study 5 Low carbon building

Our own **GRAHAM Headquarters** sets an excellent example of how to achieve a low carbon building and serves as an important blueprint for our business. The building is orientated to reduce heat demand in winter and heat gains in summer. Natural ventilation is achieved through automatic louvres and controlled via a BMS system. Automated controls exist within the central atrium to create passive stack ventilation and concrete pillars and exposed concrete ceilings increase thermal mass. Natural lighting is maximised through a glass roof, and only energy efficient light fittings are utilised, controlled via presence detectors. A biomass boiler has been installed equating to carbon savings in the region of 58 tonnes per annum and most recently EV charging points have been installed. The building was EPC A rated, certified as "BREEAM Excellent" and has an impressive haul of accolades to its name including three "most sustainable building" awards. The building has an exceptionally low energy demand, all of which is obtained via zero carbon electricity.



### **PAS 2080 Framework**

GRAHAM Projects within transport, energy, water, waste and communication sectors are completed via processes which align with PAS 2080. In this way, we advocate that carbon across all the lifecycle stages of an asset are assessed and reduced. This avoids making a carbon reduction in one lifecycle stage which leads to an increase in carbon in a late lifecycle stage.



Beyond lifecycle D. Benefits & loads

Life cycle stages				
A. Before use	B. Use	C. End of life		
Material/products	• Use	Deconstruction		
<ul> <li>Transport</li> </ul>	<ul> <li>Operational</li> </ul>	Transport		
<ul> <li>Construction</li> </ul>	energy	Waste		
	Maintenance	processing		
	Repairs	<ul> <li>Disposal</li> </ul>		

#### How GRAHAM work within the value chain to adopt and implement PAS 2080

**Start Early** - We play our part in ensuring that carbon is considered early in an assets lifecycle to maximise scope for managing and reducing it.

**Collaborate and Innovate** – In order to achieve the greatest reductions in carbon, we promote and facilitate that all value chain roles, as identified in PAS 2080\*, work collaboratively in the interest of achieving innovative low-carbon solutions.

\*Asset owner, designer, constructor and product/ material supplier

**Baselines and Reduction Targets** – We support asset owners in developing baseline data via collecting and sharing data during tendering and design progresses. We co-ordinate with other value chain members to ensure that whole life carbon reduction targets set by asset owners are not only achieved but exceeded at all stages of delivery.

#### **GRAHAM carbon management process to align with PAS 2080**

- We ensure that our own organisational carbon targets align and where possible exceed those of our asset owners
- A carbon reduction culture is promoted through our organisation
- GHG emissions quantification is completed in line with PAS 2080 guidance
- Our design teams assess low carbon solutions (in outline and detailed design) using appropriate tools



- Carbon management principles are integrated into delivery systems via CORA, Supply Chain/ Procurement Processes and each Projects bespoke "Energy and Carbon: Management and Reduction Plan"
- We ensure that low carbon selection criteria are embedded in procurement processes and are communicated clearly to suppliers
- We employ low carbon construction techniques/ products/ materials and challenge design teams as required to achieve low carbon outcomes



- GHG emissions baseline calculated, measured, and published for the first time
- Five-year carbon reduction targets set by the GRAHAM Board of Directors
   Solar powered welfare unit
- botal power where where the first time at our site at Liverpool FC
   Delivered the first UK refurbishment scheme to achieve a BREEAM

"Outstanding" rating

- Establishment of a delivery partner to enable sites to offset their emissions (Natural Capital Partners)
- Finalist in the "Action Renewables association awards 2016" for practices relating to minimising energy usage and carbon
- Winner of an International Corporate Social Responsibility Excellence Award
- Environmental Forum/ working group established to drive innovation and best practice relating to environmental sustainability
- Participation in the BIG Biodiversity Challenge across all regions and divisions
- Winner of two Green Apple Awards for Folkstone and Piece Hall Halifax
- Hybrid Generator utilised for the first time at Strand Street Liverpool
- Energy Audit process established to assist in identifying energy efficiency improvements on site
- 2020 carbon reduction targets
   achieved ahead of time
  - Partnership established with an energy broker to manage procurement of electricity supplies, ensuring all new contracts are renewable and backed by REGO's Eco-Driver training conducted at Tilbury 2

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- We will have our carbon footprint externally verified to ISO 14064
- 75% of the company car vehicles in our fleet will be electric
- Standard process for identification of low carbon site options will be formalised across all sectors and regions
- Aspirations for Subcontractor low carbon solutions will be included within relevant supplier assessments

- PAS 2080 certification will be achieved for infrastructure projects
- All Top and Middle tier management will have undertaken carbon literacy training
- Climate performance will be benchmarked via voluntary CDP disclosure
- 100% of available company cars will be fully electric or PHEV
- EV Charging points will be made available at all fixed offices (where the premises are owned)

- 100% of all available company cars will be either fully electric or a plug-in hybrid
- Embodied carbon and costing data to be used on all key projects where we have design responsibilities
- Where necessary to generate energy off grid, only low/ zero carbon solutions will be implemented
- All projects >£20m to install EV charging

- At least 50% of all fuels utilised will consist of low carbon alternatives
- We will undertake tree planting projects in the UK and Ireland to assist in the sequestration of carbon
- All assets (offices) will have been subject to upgrade of energy management control systems

- Net Zero Emissions will be achieved across scope 1 and 2
- GHG Emissions will be reduced by 50% (across the entire value chain)
   All new buildings and major
- All new buildings and major refurbishments will achieve net zero operational carbon

### **GRAHAM Climate Action Ambitions and Targets**

Focus Area	Ambition	Target	Measurement
CLIMATE ACTION	To eliminate carbon from our business and to measure and manage our progress towards a decarbonised economy	PHASE 1 – By 2030 at the latest, achieve Net-zero carbon emissions (across our scope 1 and 2 emissions) PHASE 2 – By 2040 at the latest, achieve Net-zero carbon emissions (across the full value chain – scope 1,2 &3).	Absolute reduction measured in tCO <sub>2</sub> e

In order to progress against our overarching climate action ambition and target, we have identified six climate action sub focus areas. Within each of these areas of focus we have set actions and Key Performance Indicators which map out how we will achieve our Net Zero ambitions.





#### Case Study 6 Carbon performance management

During 2020 we made a significant capital investment in a bespoke software tool (Cora) designed for the purpose of:

- Expanding our scope 3 carbon inventory
- Enhancing how energy and environmental performance is measured across our site locations
- Enhancing the visibility of data across the organisation
- To expand our internal benchmarking process
- To identify energy trends and carbon hotspots on sites

### **GRAHAM Net Zero Action Plan 2021**

Focus Area	Actions	Key Performance Indicator	Short Term Target	Long Terr
	Increase the use of low carbon alternatives to fossil diesel (E.g. Biofuels such as HVO)	Alternative fuels used as a % of overall fuel usage	<b>2023</b> At least 25% of all fuels will be derived from low carbon alternatives	<b>2025</b> At least 50% o alternatives
NET ZERO PLANT & FLEET	Conduct trials on new solutions and technologies relating to low/ zero carbon energy to gain understanding of the advantages, benefits and potential barriers	Total number of low/ zero carbon energy solutions implemented (with associated case study and cost/ benefit analysis)	<b>2021</b> Trials to include; 1) alternatives to off grid power supply (incl solar and hydrogen) 2) Grid-tied plug in solar systems 3) Low and zero carbon integrated welfare units	<b>2023</b> Where necessa carbon solution
	Conduct trials on new solutions and technologies relating to low/ zero carbon <b>construction plant</b> to gain understanding of the advantages, benefits and potential barriers	Total number of low/ zero carbon construction plant solutions implemented (with associated case study and cost/ benefit analysis)	<b>2021</b> Trials to include; 1) Low/ zero carbon lighting solutions 2) fully electric digger 3) fully electric dumper 4) fully electric telehandler 5) crane utilising flywheel technology 6) hydrogen powered equipment	<b>2022</b> Where alternat will be propose
	Advance the installation of charging facilities at office and long-term project locations	Total number of charging points installed	<b>2022</b> EV Charging points will be made available at all fixed offices where the premises are owned	<b>2023</b> All projects >£ establishment
	Support and incentivise subcontractors toward the use of low or zero emissions plant and equipment	Total number of Subcontractor initiatives designed to support the supply chain to reduce their carbon emissions	<ul> <li>2021 <ul> <li>Aspirations for Subcontractor low carbon solutions will be included within relevant supplier assessments (including Supplier SHE questionnaires and pre-negotiation meeting minutes).</li> <li>Subcontractor carbon emissions performance will be included within supplier appraisals</li> </ul> </li> </ul>	<b>2022</b> A metric will be supplier use of
	Formalise the process for identification of low carbon site options across all sectors and regions	Process approved, communicated, and implemented	<b>2021</b> Process and associated proformas will be drafted for implementation	2022 Process will be
	Enhance the use of telematics to inform emissions reduction processes e.g., decreased idling	Year on year increases in the percentage of sites using telematics to reduce machine idling times and improve fuel economy	<b>2021</b> Opportunities for improvement will be investigated amongst internal systems, plant hire and subcontractor systems. The process will be mapped, and baseline set	<b>2022</b> New target rela
	Company Car and Fleet Policy to favour ultra- low emission vehicles	Percentage of ultra-low emission vehicles	<ul> <li>75% of all available company cars will be classified as ultra-low emissions vehicles</li> <li>Trial of fully electric van will be undertaken</li> </ul>	2023 • 100% as ult • 25% ( emiss
	High mileage drivers (those driving 15,000 or more business miles per annum) are offered the opportunity to attend eco driver training	Total number of drivers that have attended eco driver training.	N/A – Ongoing KPI	N/A – Ongoing
	An employee incentive scheme to encourage greener car choices will be put in place	Incentive scheme embedded within GRAHAM processes	<b>2022</b> Details of incentive scheme will be outlined for implementation	<b>2023</b> N/A – Process
	Facilitate flexible home working options (where achievable within job roles) and support the use of online meeting platforms to reduce emissions associated with business travel and commuting	Year on year reduction in business mileage	<b>2022</b> A 4% reduction in business mileage (from 2019/20 baseline) will be achieved	2025 A 10% reduction will be achieve





will be maintained

on in business mileage (from 2019/20 baseline) d

Focus Area	Actions	Key Performance Indicator	Short Term Target	Long Term
	Innovate and collaborate with Universities and other organisations on research and development projects relating to low/ zero emission alternatives	Number of R&D projects completed	<b>2021</b> At least one R&D project will be completed	<b>2022</b> At least one R&I
INNOVATION AND COLLABORATION	Establish an internal Carbon Reduction Steering Group	Group established	<b>2021</b> Group will be established with agenda/ remit to include progress toward targets, review of low carbon initiatives and plant/ technologies	Maintain
	Staff to undertake "Carbon Literacy Training"	Percentage of staff having undertaken accredited carbon literacy training	<ul> <li>2021</li> <li>50% of Top and Middle tier management will undertake carbon literacy training</li> <li>50% of Estimating and Procurement staff will undertake carbon literacy training</li> </ul>	2022 • 100% o underta • 100% o underta
	Participate in research and development toward hydrogen-based solutions	Research options investigated	<b>2021</b> Opportunities will be explored for participation	<b>2022</b> Opportunities wi
	Continue to host Climate Action workshops with key design partners	Number of zero carbon workshops held	<b>2021</b> At least one zero carbon workshop will be held	<b>2022</b> At least one zero
	Tree Planting projects will be undertaken in the UK and Ireland	We will plant trees in order to sequester atmospheric carbon	<b>2021</b> We will undertake planting of at least one tree for every employee	<b>2023</b> We will increase annum
	Offer clients Net Zero enabled designs for all new buildings and major refurbishments. (To include both Net Zero operational and net zero embodied carbon*).	Number of Net Zero carbon building proposals developed and presented to clients**	<b>2023</b> Net zero operational and embodied carbon reduction options will be proposed on 75% of projects	<b>2025</b> Net zero operati will be proposed
Focus Area	Actions	Key Performance Indicator	Short Term Target	Long Term

LEADING THE SUPPLY CHAIN	Supplier performance data relating to climate action is to be reported (Materials/ transport/ energy use/ waste)	% of suppliers reporting climate action performance data	<b>2021</b> Reporting mechanisms for suppliers will be reviewed and enhanced to improve data quality	<b>2022</b> 100% of suppli
	Facilitate targeted training and upskilling of our key Supply Chain partners	Percentage of our supply chain (by carbon contribution) that have set a science- based carbon reduction target	<b>2021</b> A series of engagement events and activities will be undertaken with our Supply Chain partners to promote supply chain commitment to the climate agenda	<b>2022</b> 50% of our sup set a science-b

#### n Target

&D project will be completed

o of Top and Middle tier management will take carbon literacy training o of Estimating and Procurement staff will take carbon literacy training

will be explored for participation

ero carbon workshop will be held

se tree planting to a minimum of 5000 trees per

tional and embodied carbon reduction options ed on 100% of projects

#### m Target

liers will report climate action performance data

upply chain (by carbon contribution) will have based carbon reduction target

Focus Area	Actions	Key Performance Indicator	Short Term Target	Long Ter
	Expand the measurement of scope 3 emissions to include all purchased materials	Refine methodology for collecting and tracking emissions derived from all purchased materials	<b>2021</b> Methodology for collecting and tracking emissions derived from all purchased materials will be streamlined and centralised	2022 Emissions de
NET ZERO MATERIALS	Reduce the emissions intensity of materials supplied to GRAHAM	Establish baseline and measure percentage reduction from baseline year (in tCO <sub>2</sub> e/£1m)	<b>2025</b> We will achieve a 20% reduction in product $CO_2e$ intensity from baseline	2030 We will achie from baseline
	Prioritise the use of materials and products with low carbon impact and Environmental Product Declarations (EPD's)	Refine methodology for collecting and tracking use of materials with EPD's	<b>2021</b> The methodology for collecting and tracking materials and products with EPD's will be streamlined and centralised	<b>2022</b> Low impact n
Focus Area	Actions	Key Performance Indicator	Short Term Target	Long Ter
	Continue to ensure that all electricity we procure from the grid is from renewable sources	MWH of renewable energy backed by Renewable Energy Guarantees of Origin (REGO's)	<b>2021</b> 100% of new connections will be procured as renewable REGO backed tariffs	<b>2022</b> 100% of new REGO backed
	Continue to undertake energy audits across projects to identify potential energy savings	Total number of energy audits undertaken	N/A – Ongoing KPI	N/A - Ongoing
	All GRAHAM building assets to have an energy assessment rating with opportunities for improvement identified	Percentage of assets with a valid energy assessment rating	<b>2022</b> 25% of assets will have a valid energy assessment rating	<b>2023</b> 50% of assets
	Energy management control systems to be installed within key assets (incl hardware and software for submetering, monitoring and controls) to enable pro-active energy management	Percentage of assets within which energy management control systems are available to allow the building to perform more efficiently	<b>2023</b> 50% of assets will have energy management control systems	2025 All assets will management
Focus Area	Actions	Key Performance Indicator	Short Term Target	Long Te
MEASUREMENT	Gain assurance and verification of our GHG emissions and carbon management via compliance to ISO 14064 and PAS 2080	Certification to ISO 14064 and PAS 2080	<b>2021</b> Group level certification to ISO 14064 will be achieved	2022 • Mai • We
	Solutions to be used (both internally and by our design partners) to determine embodied carbon data as part of - Proposed design and/ or estimating process - Project Reporting	Percentage of schemes where there has been a measure of embodied capital carbon	<b>2021</b> We will measure the percentage of schemes where there has been an evaluation of embodied capital carbon	2023 -Embodied of potential em key projects -An embodie project
	Benchmark climate performance via annual completion of the CDP voluntary disclosure program	Completion and submission of the CDP Climate Change questionnaire	<b>2021</b> Gap analysis to be completed ahead of CDP voluntary disclosure submission	2022 Submission
	Demonstrate that our Climate ambitions and targets are recognised as credible and science based	Join/ partner/ pledge in campaigns such as the race to zero, pledge to net zero and the Science Based Targets Initiative	<b>2021</b> We will join and play an active role in at least two climate campaigns to demonstrate and evidence our robust, science-based targets and action plans	<b>2022</b> We will mair
	Ensure full alignment with the Task Force on Climate Related Financial Disclosures (TCFD)	Alignment to the recommendations of the TCFD	<b>2022</b> The contents of our annual reports will align with the recommendations of the TCED	<b>2023</b> Alignment to
	All categories of scope 3 emissions (as identified within the Corporate Value Chain scope 3 accounting and reporting standard) to be included within reported emissions	All categories of scope 3 emissions included within reported emissions	<b>2021</b> At least five categories of scope 3 emissions to be measured and reported	2023 All categorie the Corporal reporting sta emissions

\*UKGBC Net Zero Carbon Buildings: A framework approach to net zero operational carbon

\*\*Where we have design responsibility at RIBA stage 2 or before

#### rm Target

rived from all material usage will be reported

eve a 50% reduction in product  $CO_2e$  intensity e

naterials with EPD's will be prioritised

#### m Target

connections will be procured as renewable tariffs

g KPI

s will have a valid energy assessment rating

have been subject to upgrade of energy control systems

#### rm Target

intain certification to ISO 14064 e will obtain certification to PAS 2080 for rastructure projects

carbon and costing data to be used to assess nbodied or operational carbon savings on all

ed carbon dashboard will be available on each

#### made to CDP

ntain participation in climate campaigns

#### o TCFD maintained

es of scope 3 emissions (as identified within te Value Chain scope 3 accounting and andard) to be included within reported

# Low Carbon Sites Solutions and Technologies

To transition to zero carbon site operations, we continue to trial and implement low and zero carbon technologies to understand how these technologies perform in real life environments and the emissions savings that can be achieved. There isn't a "one size fits all" solution to decarbonising our operations and we will continue to work with manufacturers, suppliers and our entire value chain to ensure that the right solutions and technologies are implemented as new products and innovations come to market.

#### Case Study 7 Fully Electric Digger

We've been trialling the industry's first ever fully electric mini excavator. The machine is part of the JCB E-TECH range of products with zero emissions at point of use. It was set to work on the M11 Jct7a scheme to help us to understand its performance and inform future low carbon choices regarding our earth moving needs. We continue to work with our suppliers to advance our usage of electric construction plant with trials already planned for several large plant items.





#### Case Study 8 Zero Emissions Welfare Units

The Ecosmart ZERO  $CO_2$  welfare unit, in use on our M25 J25 project, uses solar panels along with a back-up hydrogen fuel cell to eliminate carbon emissions at the point of use. Our trials have demonstrated that throughout the summer months, 100% of our power demands can be met via the solar panels, enabling significant emissions reductions. The positive performance means we are already planning to use more units on upcoming projects.

#### Case Study 9 Alternative Fuels

Over the last year, GRAHAM have commissioned a study and undertaken a trial using Hydrogenated Vegetable Oils (HVO) which is made from 100% renewable raw materials. Our results have shown significant reductions in greenhouse gas emissions relative to diesel (-90%). Whilst we await the emergence of fully net zero carbon fuels and technologies, we recognise that HVO offers us an immediate solution to lower our emissions. As a result, we have a target to increase our use of HVO in the short term.





#### Case Study 10 Hydrogen Lighting

We have been delighted to bring the power of hydrogen to a number of our projects via tower lighting products. The zero emission lighting towers have been found to be very successful in contributing to overall reductions in site emissions whilst still achieving excellent performance. Hydrogen cylinders replace the use of diesel-powered generators and lighting sets while producing comparable brightness and reducing associated carbon emissions.

Speaking with the BBC on July 6th, 2021, GRAHAM Project manager, David Slevin, reports that this substitution replaces "like for like in terms of functionality with much improved emissions and reduced carbon".

# Low Carbon Sites Solutions and Technologies

#### Case Study 11 Low Carbon On-site Energy Generation

Grid connection timescales and remote locations mean that sometimes (particularly during initial elements of the programme) we need to generate energy off-grid. In these instances, we actively seek opportunities to use technologies which collect and store renewable energy and reduce GHG emissions in comparison to traditional diesel generators.

Recent low carbon off grid power solutions on GRAHAM sites include:

#### **Solar Hybrid Generator**

During August 2021, our project at White City in the London Borough of Fulham and Hammersmith trialled a solar hybrid generator. Despite being surrounded by tall buildings and relatively dull days the generator achieved a run time of 86% on solar / battery over the trial period. This represented a 69% reduction in run hours and associated emissions. The trial was a very valuable exercise and the first time it had been completed at an inner-city location. We are now working with our suppliers to further expand our usage of solar technologies for on-site energy generation.



#### Load on Demand

At several of our Projects, rather than utilise a constantly operating generator, two smaller generators have been employed which can be powered up or down automatically according to demand on site. Our results have demonstrated that when demand for power reduces, one of the generators can power down when not required thereby increasing efficiency and reducing emissions.

#### **Solar Energy Store**

Our site team at A47 Longthorpe Bridge (National Highways Construction Works Framework) sought to identify a sustainable, low carbon solution to off-grid power on their site. The solution identified integrates renewable power and storage with diesel-powered back-up to reduce fuel consumption and carbon emissions. During daytime operation the energy created by the solar panels is harvested and stored in an on-board large AGM battery pack. The standby generator is configured to run only when batteries are depleted or where there is a high AC load. Although the project is currently in its early stages, we look forward to benchmarking its carbon data with other schemes, with a view to replication of this solution on other projects.

# **GRAHAM Environmental Sustainability Highlights & External Recognition**

The Big Biodiversity Challenge Award winner 2021	Announced on 15 <sup>th</sup> September 2021, our project at Tilbury 2 was recognised in CIRIA's <b>Big Biodiversity Awards</b> as Project of the Year (Large - medium scale biodiversity enhancement 5ha and above) against tough competition. These sought-after awards are hard won, and the judges are single minded in acknowledging those projects which have done the most to advance biodiversity.
The Energy Institute's 2021 Awards Shortlist	Announced on the 8 <sup>th</sup> of September 2021, we have been shortlisted within the Energy Institute's 21 <sup>st</sup> annual awards competition for our " <b>Energy Management</b> " entry. The EI Awards showcase organisations, projects and individuals of excellence in the energy sector. The judges were particularly impressed with the "high-level of commitment, innovation and potential" that GRAHAM were able to demonstrate.
2021 Constructing Excellence Awards Shortlist	Two GRAHAM projects have been shortlisted in the <b>Sustainability</b> category of the 2021 <b>Constructing Excellence Awards</b> Yorkshire and Humber: • Sovereign House Leeds • University of York Student Accommodation.
2021 Green Apple Awards	<ul> <li>GRAHAM have been successful in the 2021 Green Apple</li> <li>Environmental Best Practice Awards across four different projects: <ul> <li>The M11 J7a</li> <li>Sovereign House Leeds</li> <li>University of York</li> <li>LIV Belfast</li> </ul> </li> </ul>
2021 CEF Constructing Excellence Awards Shortlist	We have been shortlisted for the CEF Construction Excellence Awards 2021 within the <b>"Environmental and Sustainability"</b> Award category. We were shortlisted because of our dedication to achieving environmental and sustainability excellence across areas such as waste minimisation, water usage, biodiversity protection and enhancement, energy and resource efficiency and staff training
The Green Awards 2021 (Green Large Organisation)	GRAHAM was awarded third place at the Green Awards 2021 under the "Green Large Organisation of the Year" category. Launched in 2008, the Green Awards recognise the extraordinary contribution and commitment that companies make towards growing a greener future in Irish business today
2020 Constructing Excellence Award Winner	Oundle School Sports Centre was recognised as <b>Sustainability</b> <b>Project of the year</b> in the Construction Excellence, East Midlands 2020 Awards. Announced on the 4th December via a virtual awards ceremony, the accolade was positive external acknowledgement of the project and design teams' efforts to construct an environmentally sound facility for the school.

# **GRAHAM Environmental Sustainability Highlights & External Recognition**

2020 BITCNI Environment Leadership Champion	GRAHAM was recognised as a <b>2020 Responsible Business Champion in</b> <b>the 'Environmental' category</b> . The judges were impressed with our significant commitment and contribution to environmental sustainability across our sites. Running for over 16 years, the awards select Champions who exemplify best practice that can motivate and inspire others to environmental Action
2020 CIEEM Best Practice Awards	At the 2020 Chartered Institute of Ecology and Environmental Management (CIEEM) Awards, the A536 Congleton Link Road was highly commended for its entry in the <b>'Large-Scale Mitigation and Enhancement'</b> category. The CIEEM Awards are a fantastic celebration of the success of projects, businesses and individuals who have made significant contributions to protecting the natural environment.
2020 Construction News; Environmental Contractor of the Year	GRAHAM were shortlisted for " <b>Environmental Contractor of the Year</b> " within the Construction News Awards. Our entry detailed our company commitment to the low-carbon agenda, circular economy and resource efficiency.
2020 Construction News; Sustainable Project of the Year	The A6 Dualling Scheme – Phase 1 (Randalstown to Toomebridge) was shortlisted in the Category of <b>Sustainable Project of the year</b> . The submission provided tangible evidence that the road project has exceeded its environmentally sustainable goals during construction and is an exemplar for best practice in environmental protection and low carbon construction. Benefits included the improvement of local habitat, reduction in waste to landfill, reduced carbon footprint of construction and the promotion of sustainability initiatives within the local community.
2020 National Recycling Awards - Recycling Excellence	For the 2nd year running GRAHAM were shortlisted in the <b>Recycling</b> <b>Excellence</b> category of the 2020 National Recycling Awards. Organised by Material Recycling World publication, these are the most prestigious awards in the recycling and resource management industry.
2020 Constructing Excellence Southeast CBE Awards	Shortlisted as a finalist for <b>sustainable practice</b> across a selection of our building and civils projects throughout London and the southeast.
2019 Green Apple Awards	At the Green Apple Awards in the Houses of Parliament in November 2019, GRAHAM had a clean sweep – A Gold, Silver and Bronze for <b>Environmental</b> <b>Good Practice.</b> • Gold for GRAHAM BAM – RAMHIF • Silver GRAHAM - Copthall Leisure Centre • Bronze GRAHAM Farrans JV – A6 Dualling

# Climate Action Strategy



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