

**Our Commitment to
Reducing Carbon Emissions
and Energy Consumption**

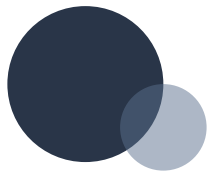


Catalyst

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Introduction



Driving change to address economic, social and environmental challenges is high on everyone's agenda and this is no different at Catalyst. From fostering positive workplaces, to achieving net zero, tackling climate change and nurturing environmental regeneration; change is needed.

Good intentions don't fuel change, but actions do and at Catalyst, we have been ahead of the game in our approach and practices to service our existing buildings, plan for new ones, and upgrade infrastructure with more efficient and sustainable technology as they evolve.

To date we are delighted to achieve a Carbon output across our property portfolio that is 3 times lower (8.89kg CO₂/m².) than the European Environment Agency's Benchmark (27.592kg CO₂ /m²). But, there is more work to do and more can be done to build a more sustainable future for all to thrive in, and we all have our part to play in this.

In the following pages, you'll learn about our policies and approaches that will help us reach carbon neutrality by the year 2040. As members of the Catalyst community, we value your input and actions that contribute to our goals and look forward to collaborating with you for your own carbon and energy consumption initiatives.

This policy is just the start, and I invite you to review this document, and in due course, we will arrange person to person engagements to discuss our strategies and hear your suggestions and feedback.

Mervyn Watley

Director of Corporate Real Estate
& Facilities, Catalyst

*CO₂ emissions per m² for space heating — European Environment Agency (europa.eu)

In 2021 Catalyst committed to further reduce our carbon footprint in our goal to achieve a Carbon Net Zero rating by 2040.

Across our three Innovation hubs in Northern Ireland, our buildings are all energy-efficient, using the latest sustainable building and construction methods available at the time to our intentional management of waste on each site. Catalyst sends zero waste to landfill and is recycled for future purposes and consumption.

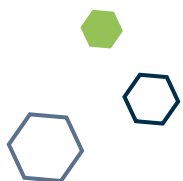
Adhering to the 'Oxford Principles for Net Zero Aligned Carbon Offsetting'* We will actively...

1. Cut carbon emissions by reducing consumption and optimising our usage.
2. Source the lowest carbon sources of energy.
3. Use high quality offsets by partnering with a carbon broker and investing in offsetting initiatives that zeroes our impact.
4. Regularly revise and align our offsetting strategy as best practices evolve.

Our approach to Carbon Net Zero is and will be an holistic one with the following actions:

1. Taking immediate, practical steps to plan our reduced carbon emissions.
2. Setting clear milestones for significant interventions for strategic capital investment into even more energy efficient plant machinery to that will reduce carbon emissions between now and 2040.
3. Investment in new portfolio of property technologies and fuel solutions to significantly reduce Carbon or Carbon equivalents across all operations in Catalyst.
4. Predicating all new build and refurbishment projects mindfully with their impact to the environment and/ or committing to using products low carbon impact.

* There are four key elements to credible net zero aligned offsetting, according to the multidisciplinary team from the University of Oxford: **Prioritise reducing your own emissions first, ensure the environmental integrity of any offsets used, and disclose how offsets are used**



Catalyst's Four Pillars of Environmental Sustainability

1

Energy Reduction

Reducing our energy consumption by investing in the latest in efficient technology and hardware, primarily focusing on our electrical systems. £75K investment between now and 2025.

2

Carbon Reduction

Our carbon emissions will reduce through new investments in our physical energy supply framework. £1.1M investment in source heat pumps, hydrogen boilers, solar photo voltaic panels between now and 2035.

3

Waste Reduction

Building upon our 'zero waste to landfill' policy, we pay an additional quality assurance premium to have our waste sorted and filtered to 100% ensure none of it makes its way to landfill. £9k per annum

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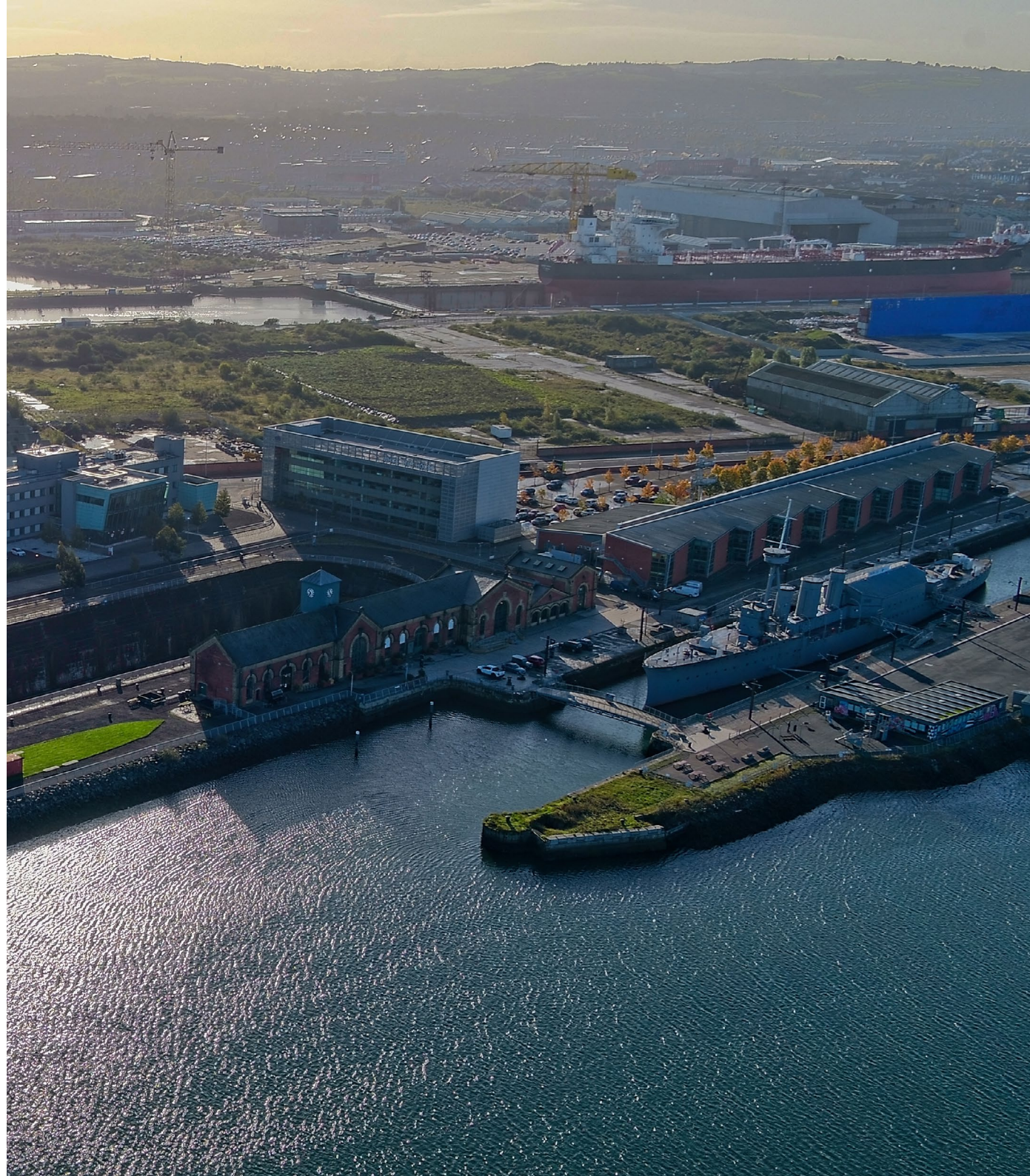
Considerate Construction

Radically assessing how we expand our property portfolio and looking at the environmental impact of constructing a new building weighted against refurbishing an existing building. If new construction is the most viable commercial solution, it is vital that low carbon is a consideration in every material selection.

The Progress So Far

We already

1. Have highly efficient buildings – BREEAM®* 'very good' ratings.
2. Regularly service our plant and small equipment at periodic intervals.
3. Operate night-time cooling of our buildings via our ventilation systems, naturally ventilating and cooling down our buildings with cooler air.
4. Have replaced the majority of our fan motors and mechanical pumps with more energy efficient models.
5. Have installed some of our solar water heating systems.
6. Have installed some of our photo voltaic panels.

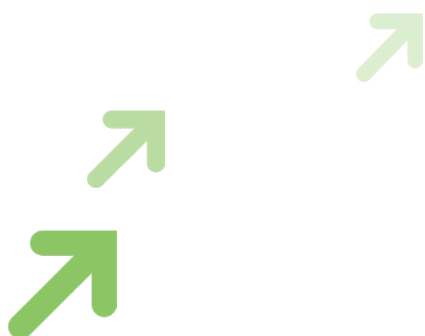


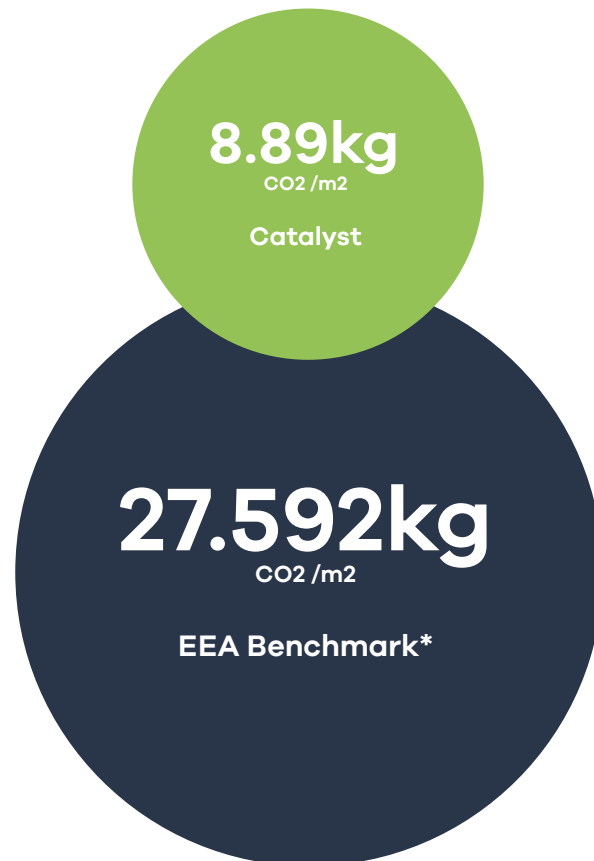
Our Plans for Further Energy and Carbon Reduction

We plan to further reduce energy use and carbon emissions by:

1. Continuing to purchase all our electricity from renewable sources - no fossil fuels.
2. Further reducing energy consumption using Smart Building Technologies (Building management system controls, time clocks, temperature sensors, lighting sensors etc.)
3. Further reduce energy consumption by upgrading older, less efficient plant or fittings to more efficient equipment (eg - fluorescent tube fittings replaced with LED fittings, old gas boilers replaced with more energy efficient boilers.)
4. Install Electric Vehicle charging points at Catalyst sites.
5. Install more photo voltaic and solar energy panels at our new developments.
6. Phase out gas boilers, moving to ground-source heat pumps and/or air-source heat pumps that use hydrogen fuel as and when the technology develops and becomes available.
7. Run regular marketing campaigns on energy reduction promoting awareness and encouraging mindful usage.
8. Provide energy consumption data to all tenants on a quarterly basis to raise awareness.
9. Source energy from renewable sources where possible.
10. Invest in carbon off-setting by partnering with a carbon broker and investing in offsetting initiatives that zeroes our impact.

*BREEAM® is the world's leading science-based suite of validation and certification systems for sustainable built environment.





How We Compare against Industry Standards

Our current real estate carbon emissions compares very favourably to the UK average real estate carbon emission benchmark.

We have achieved this low emission output by:

1. Having modern energy efficient buildings
2. Using electricity from renewable sources only
3. Effectively managing our energy use via Building Management Systems (web-enabled controls)
4. Implementing a programme to phase out florescent lights
5. Implementing a programme to replace our older pumps and fans with more energy efficient models

*CO2 emissions per m2 for space heating — European Environment Agency (europa.eu)

Reducing Waste

We already:



Send zero waste to landfill.



Recycle plastics, paper, aluminium and other recyclable materials.



Use coffee grounds and food waste in anaerobic digestion or composting.

We further plan to:



Provide data on waste production to all tenants on a quarterly basis.



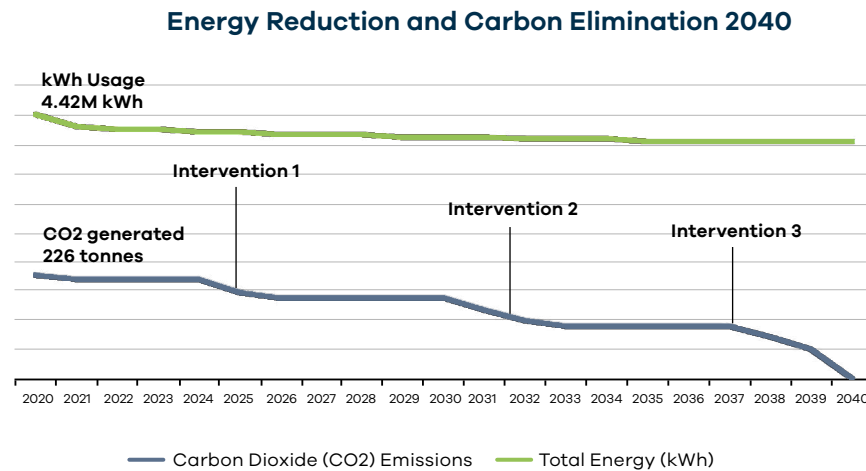
Run regular marketing campaigns on waste reduction promoting awareness and mindful usage.



Install photo voltaic technology to generate our own renewable energy on site at Catalyst.

Reducing our future energy consumption and CO2 emissions

Catalyst is committed to Net Zero carbon emissions of our real estate operations by 2040 (this is 10 years ahead of the UK's commitment to Net Zero by 2050). Ideally, we would do this by slowly reducing our carbon emissions every year. We recognise however that developments in technology and new fuels, as well as the optimal time for investment do not come in a linear fashion. The below graph shows how we would expect to see a reduction in CO2 over the next 20 years to happen.



Challenges to reducing carbon emissions and energy consumption

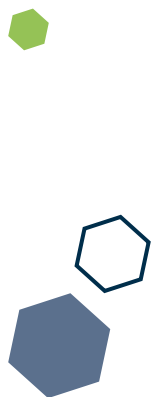
Our current carbon generation generally comes mainly from heating space and producing domestic hot water using natural gas. The use of natural gas as a fuel for heating is one of the largest obstacles to overcome in the attainment of net zero emissions.

Over time it will probably be possible to replace natural gas with hydrogen. It is probable that the natural gas network will initially have a small percentage of hydrogen introduced and then the proportion increased over time. Hydrogen requires significant volumes of electricity and a major consideration in all carbon reducing measures is how the source energy of the new fuel is produced.

In the interim the use of air-source heat pumps powered by clean electricity is a possible solution to reduce carbon but does not provide the heat return for energy invested that gas currently does. The dilemma therefore is whether in the short term to maintain/reduce

heating cost by continued use of natural gas or migrate to the new technology of air source heat pumps powered by electricity that is still evolving and performance will improve and productions costs drop over time. The carbon produced in replacing old heating systems must be considered in the migration away from natural gas as a heating fuel.

There is no firm strategy currently at Government Level as to how any transition away from fossil fuels will take place, nor is there accurate predictions on when technology will become widely available that is economically viable. Therefore, the changes in our building infrastructure will need to be weighed and reviewed regularly as to their economic and environmental viability.



Strategic Interventions to support our net zero goals.

Intervention 1 – to 2025

We will continue our policy to replace 'end-of-life' boilers with modern high efficiency and low emissions alternatives. We will reduce our electricity usage by phasing out all fluorescent tube lighting by 2025 across our portfolio of properties. This will happen as we gain vacant possession; refit common areas or tenants are encouraged to install LEDs as part of any fitout or refurbishment. The cost of the retrofitting of LEDs is estimated to be around £75,000.

Intervention 2 – 2030 and 2035

Currently around 50 natural gas boilers provide the majority of heating to lettable spaces throughout our buildings. These boilers circulate heated water at around 80 degrees centigrade through radiators. As technology develops these smaller boilers could be replaced with air-source heat pumps to provide the equivalent heating. Currently this is not a viable solution as the heat generated from circulated water using an air-source heat pump is only around 60 degrees centigrade compared to 80 degrees centigrade produced by a gas fired boiler. The implication is that while a saving in carbon would be made by converting to electric pumps, subject to being able to avail of renewable electricity, the overall energy consumption is likely to go up as there will be a requirement to run the air source heat pumps 24/7 to generate sufficient heat within the space or to install additional heat emitters.

This increase in electricity consumption may not be available from a renewable supply, which would not only negate any carbon reductions but ironically increase carbon emission. It may also depend on the scale of new heating technologies and gas as a fuel replacement we may chose not to intervene using air-source heat pump solutions and delay until our final intervention using hydrogen fuel technology. The cost of replacing our small boilers (Less than 35KW) would be in the region of £625,000.



Intervention 3 – 2035 to 2040

The consensus is, that hydrogen is the fuel of the future and Government appear to be banking on this as a solution. There is some early-stage development in the use of hydrogen for transportation and fuel cells. We envisage that this technology will extend into the realm of heating with the natural gas network being progressively replaced with hydrogen. This will most likely happen in a phased basis as the natural gas supply is mixed with increasing amounts of hydrogen similar to the way petrol has increasing amounts of bio ethanol within its composition. This change over will continue until we are at zero emissions due to pure hydrogen burning.

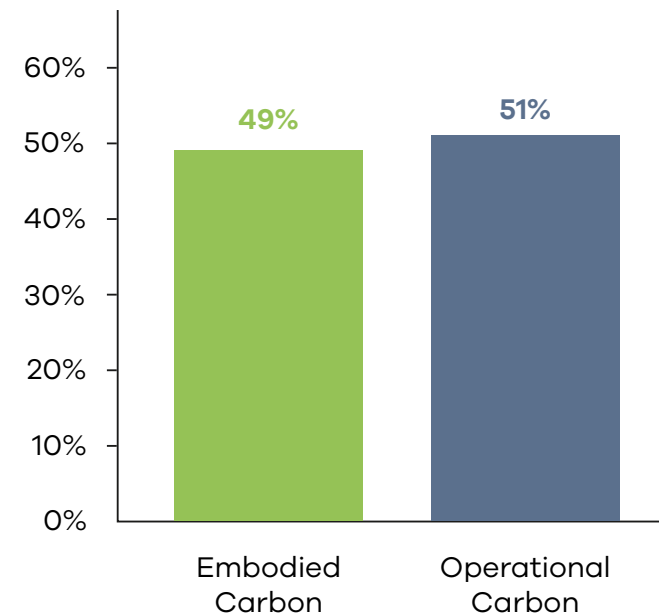
Boilers running on fossil fuels will slowly be phased out, replaced by those which operate purely on hydrogen with a hybrid solution in the interim. The change-over will be very challenging to manage as replacing boilers too early could result in technical issues and not having the most efficient system versus leaving too late and having supply issues with obtaining new boiler plant. Large, above 50KW boilers of which we have 10 will cost of roughly £50,000 per boiler to install requiring £500,000 of investment.

Embodied Carbon

Embodied carbon is distinct from operational carbon — the carbon that comes from energy, heat, lighting, etc. Thanks to advances in reducing operational carbon, recent data indicates that embodied carbon is becoming a larger portion of a building's overall carbon footprint.

Embodied carbon is the carbon dioxide (CO₂) emissions associated with materials and construction processes, Throughout the whole lifecycle of a building or infrastructure. It includes any CO₂ created during the manufacturing of building materials (material extraction, transport to manufacturer and manufacturing) the transport of those materials to the job site, and the construction practices used. Put simply, Embodied carbon is the carbon footprint of a building or infrastructure project before it becomes operational. It also refers to the CO₂ produced in maintaining and eventually demolishing the building and transporting its waste and recycling materials.

Total Carbon Emissions of Global New Construction from 2020-2050



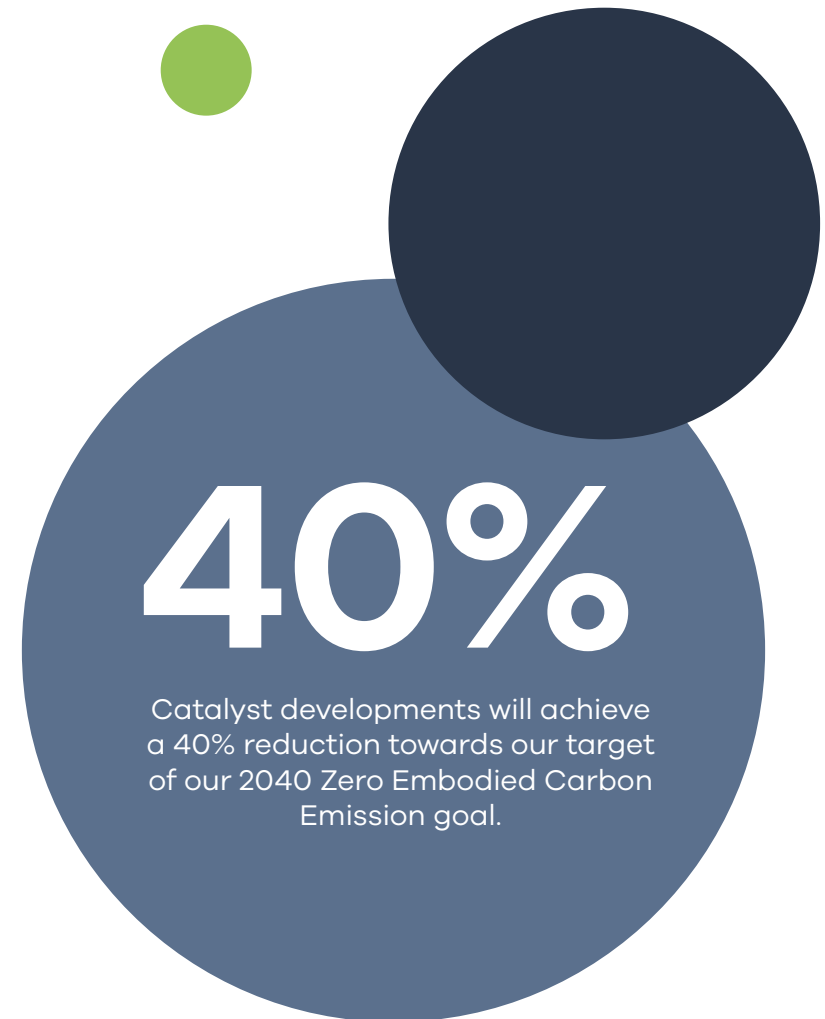
At Catalyst we will endeavour for new developments whether refurbishment of existing structures or building of new ones to assess its carbon impact using the EN15978* standard and the RICS professional standard for whole life carbon assessment for the built environment.**

Catalyst developments will achieve a 40% reduction towards our target of our 2040 Zero Embodied Carbon Emission goal.

It is unlikely at the current time that we will be able to reduce the embodied carbon in our existing estate. However as older systems become redundant, or spaces need refurbished we will seek to use products with a reduced embodied carbon where this makes economic sense to do so. Where possible we will look to meet with the RIBA 2030 targets for embodied Carbon for our new build offices to be at least Grade A i.e. <345kgCO₂e/m²

*This European Standard specifies the calculation method, based on Life Cycle Assessment (LCA) and other quantified environmental information, to assess the environmental performance of a building, and gives the means for the reporting and communication of the outcome of the assessment.

** A whole life approach to reducing carbon emissions within the built environment. It sets out specific mandatory principles and supporting guidance for the interpretation and implementation of EN 15978 methodology.





Catalyst

Summary

Our journey to carbon neutral is well underway with electricity accounting for most of our energy consumption which is exclusively purchased from green sources. We hope to shortly install our own Photo Voltaic panels at The Innovation Centre to generate our own renewable electricity on site at our Titanic Quarter hub.

Gas boiler heating technology alternatives such as air source heat pumps and natural gas fuel replacement will be the key drivers to our future carbon zero position. These solutions are at various stages of development, we will keep our strategy under regular review by closely watching technology and market developments.

Our future expansion whether new build or existing building refurbishment will require very careful analysis. If new build is to be a solution to our growth design and material selection to achieve a low-carbon building will be very important in the decision-making process. We will update this report on an annual basis. In the interim we will continue to minimise our energy consumption via the Building Management Systems which we have just upgraded making it more tenant/user friendly and increased functionality.



Mervyn Watley

Director of Corporate Real Estate
& Facilities, Catalyst

If you have any questions or require any further
information, please do not hesitate to get in contact.

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