NET ZERO CARBON BUILDINGS AND CITIES: ADAPT AND DECARBONISE

Engineering Net Zero
In partnership with our planet

ATKINS
Member of the SNC-Lavalin Group

CHALLENGE

New Buildings can be designed to be Net Zero Carbon today, but 80% of the buildings that will exist in 2050 are already built.

Creating the Net Zero communities of the future relies on effective decarbonisation of existing assets, as well as bringing new buildings into the mix.

Project scale can vary enormously, from individual building developments, operating or maintaining campuses or estates, to looking at how to deliver sustainable cities. For large-scale projects, consideration of the wider system and infrastructure around and within which the new or existing development resides is the key to long-term success.

Whatever the project scale, organisations are having to add Net Zero considerations and strategies to an already burdensome load of competing commercial, economic, social and environmental priorities.

This has been more recently exacerbated by the devastating social and economic impact of Covid-19.

As such, translating the need for systems thinking into pragmatic and deliverable programmes that deliver Net Zero outcomes can be deeply challenging, depending on the business models organisations are bound by. However, smart and robust approaches exist to de-risk and overcome such challenges.

Our whole-system approach specifically targets this issue, enabling our clients to develop intelligent and cost-effective solutions where singular solutions can deliver multiple value outcomes at once.

MAKE CARBON VISIBLE

We do not see carbon as clearly as we see cost. It is often invisible in the design and construction process and obscured in production behind more obvious concerns of throughput, quality and reliability. To effectively tackle carbon we must see it, clearly and in all areas where it occurs, and quantify it such that we can prioritise our interventions and measure our success.

Atkins' carbon accounting tools ensure that construction and operational carbon is visible in the end-to-end process, upstream in material and component supply and downstream in distribution and end-of-life recycling.

We extend this visibility across the entire team to enable a proactive, Carbon Value Engineering (C-VE) focus on major contributors. Our detailed carbon budgeting allows success to be measured, inspiring our people and demonstrating commitment to customers, society and our world.

As part of our whole-system approach, our Net Zero Building proposition is augmented by our other Net Zero propositions, which together provide our whole-system capabilities.

Setting the standard for best practice ⟷ **Writing the legislation that drives Net Zero Carbon**

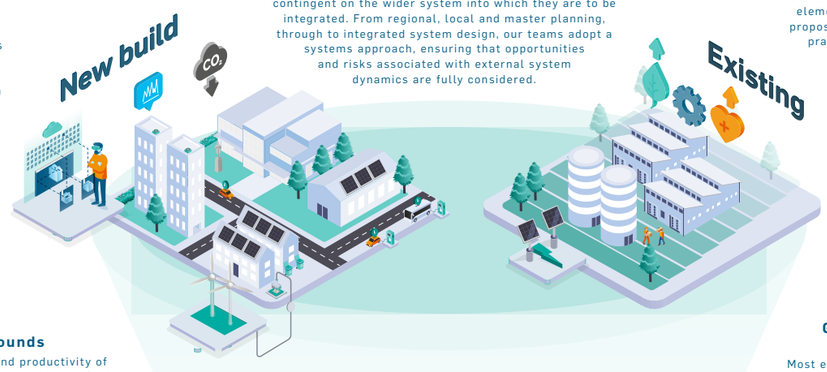
Integrated Digital Solutions / Data Capture and Management

Green Design
Whether a single building, new campus, or estate, Net Zero buildings start with a green design. We adopt industry-leading methods and practices to deliver high-performing buildings and developments, connected by smart and green systems and infrastructure.

Green MMC
Whether volumetric, panellised, component or platform, our teams can appraise, design and deliver a fully integrated Net Zero offering at varying scales (singular to campus) enabled through industry-leading 4D, 5D and increasingly 6D, BIM models.

Green Surrounds
Improving the wellbeing and productivity of those who live, work and use buildings of all typologies, while addressing the biodiversity and climate crises is of central concern to us. Our innovative designers will maximise the positive impact of your facility through greening the surrounds, while improving building performance.

Whole-System Planning and Integration
Delivering Net Zero buildings on any scale will be largely contingent on the wider system into which they are to be integrated. From regional, local and master planning, through to integrated system design, our teams adopt a systems approach, ensuring that opportunities and risks associated with external system dynamics are fully considered.



Green Energy
Powering your buildings, campuses or estates with green energy can provide supply resilience and a visible commitment to Net Zero. Whether a new or existing development, and as green energy costs fall, we can appraise, design and support the operation of a wide range of renewable and off-grid solutions.

Smart and Green Cities
One of the largest challenges is decarbonising large urban settings. Our whole-system approach takes all elements of our collective Net Zero propositions to provide ambitious, yet pragmatic, approaches to urban decarbonisation.

Green Portfolio Management
Through developing strategic Net Zero roadmaps our team can benchmark your existing portfolios, set targets across typologies and develop intelligent carbon- and cost-focused portfolio-management strategies through development of Marginal Abatement Cost Curves.

Green Facilities Management
Most emissions generated from a building are produced over its operational life. Through intelligent FM approaches our team can help you optimise the performance of your buildings and how people use and interact with them.

Climate Resilience and Adaptation

Advising clients on strategic investment.

Net Zero Energy Systems
Decarbonising existing energy systems or implementing new and innovative Net Zero energy solutions on any scale of project.

Strategic Carbon Advisory
Delivering industry-leading routemaps and pathways to credible Net Zero futures.

Net Zero Transportation
Decarbonising new or existing transport systems across road, rail and aviation and developing new and novel Net Zero transportation for any scale of project.

Net Zero Industry and Infrastructure
Decarbonising new and existing industrial processes and process emissions from a wide range of sectors, including manufacturing, water processes, steel and cement production.

Greenhouse Gas Removals
Deploying a range of nature-based solutions on varying scales to help clients optimise land use and integrate nature-based offsetting solutions into the built environment. We also provide GGR technologies appraisals.

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