



HVAC Carbon Group- Edenica Case Study

14th September 2022



Wired Score Platinum-rated and Smart Score enabled
 Setting exemplary sustainability benchmarks
 Creative circular economy-focused design
 BREEAM Outstanding
 Materials Passport
 WELL-enabled
 Nominated for the ACE best Net Zero Building Award

Sustainability & Innovation

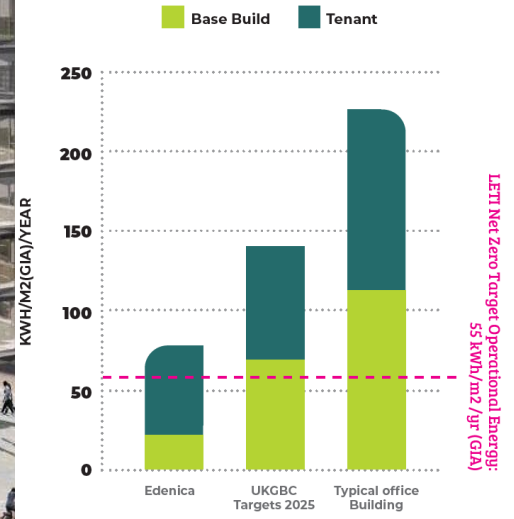
Edenica

London

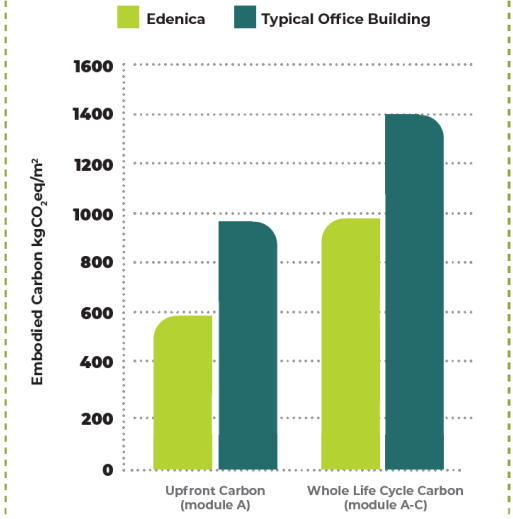
Client: BauMont Real Estate & Yard Nine
 Architect: Fletcher Priest Architects



Energy Performance



Embodied Carbon



© Courtesy of Fletcher Priest Architects

Edenica

Low Carbon Construction



Use of prefabricated elements to reduce embodied carbon

Embodied carbon is predicted to be 30% less than the current GLA benchmarks

Embodied carbon target aligned with LETI benchmarks

Meeting the UKGBC requirements for Net Zero in Construction

Protecting the Planet



100% electric building

Expected operational energy consumption lower than UKGBC 2030 target

Rain water capture through blue roof and smart tank attenuation combined with grey water harvesting to significantly reduce water consumption.

Best in class cycle facilities

Designed to be Net Zero in Operation

Intelligent Design



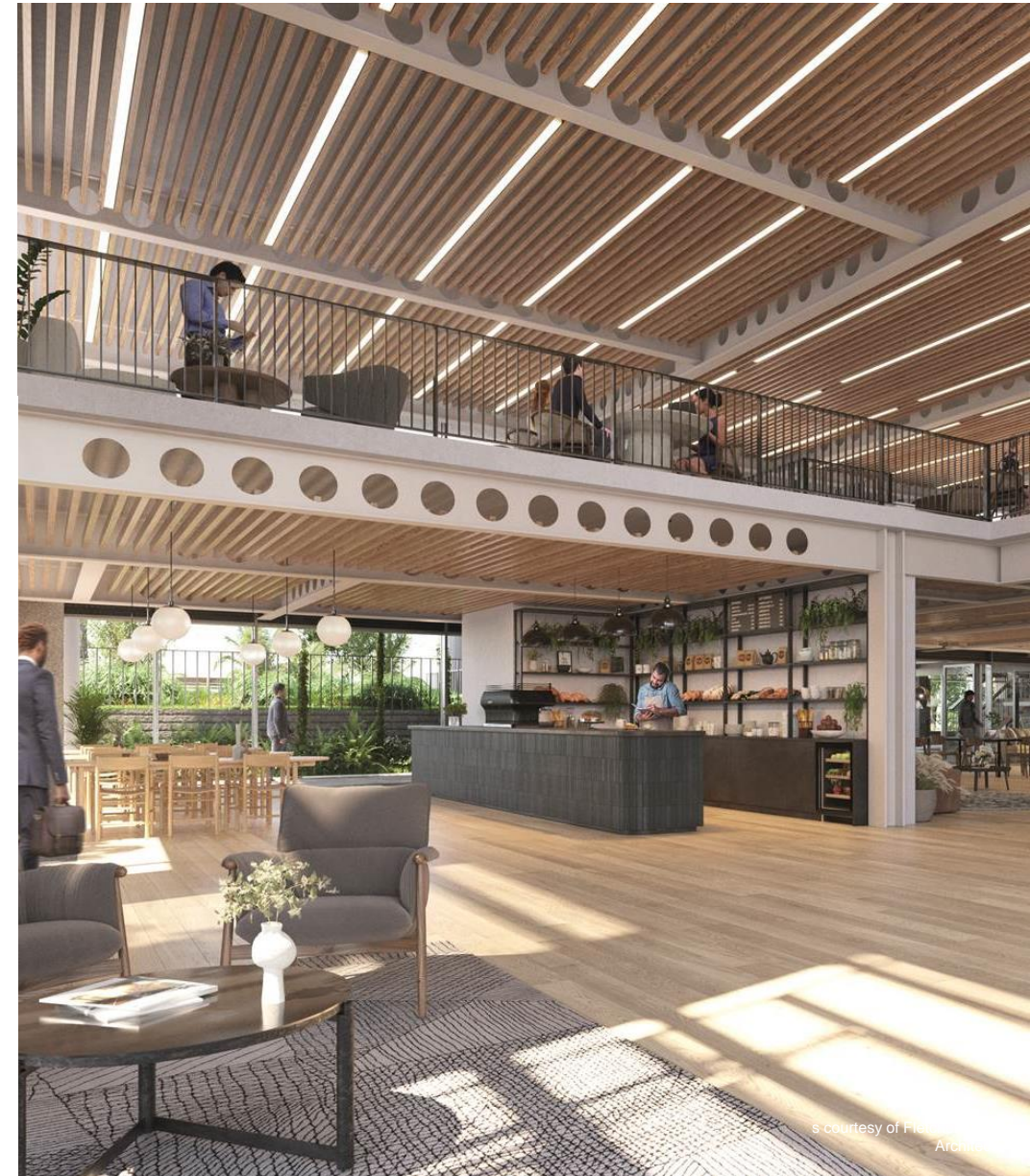
'Mixed Mode' optimising natural ventilation use to reduce reliance on air conditioning

'Night Purge' strategy cools concrete soffits to absorb heat during the day – reducing peak cooling loads

Underfloor heating and cooling solution to reduce whole-life carbon

'Fabric First' strategy to reduce energy use with high performance glazing and solar shading fins to control solar gain

Minimum 3.4m floor to ceiling heights allowing for optimal volume, improving Wellness



Images courtesy of F&L Architects

Sustainability & Innovation

Edenica

Sustainability Features

Mixed mode ventilation

Use of natural ventilation in combination with underfloor air distribution system.

Blue roof & water recycling

Rainwater capture through the blue roof and greywater.

Roof terraces

7,652 sq ft of above ground floor terraces.

Solar shading

Reduced solar gains through high performance glazing and solar fins.

100% electric building

Air source heat pumps for heating, cooling and hot water generation.

Underfloor heating

Underfloor heating within shower and changing areas.

Communal green space

Immediate access to 5,600 sq ft at ground floor (Edenica Gardens and St Dunstan's Gardens).

Best in class cycle facilities

Located on ground and mezzanine levels and visible from street level.



Photovoltaics

Discreet PV Arrays provided on plant screen.

Flexible floorspace

Arrangement of steel beams and high floor to ceiling heights allowing for highly adaptable space.

Underfloor air system

Provides heating and cooling whilst delivering enhanced 3.4m ceiling heights.

Passive cooling strategy

Exposed concrete soffits reducing reliance on air conditioning.

Low carbon construction

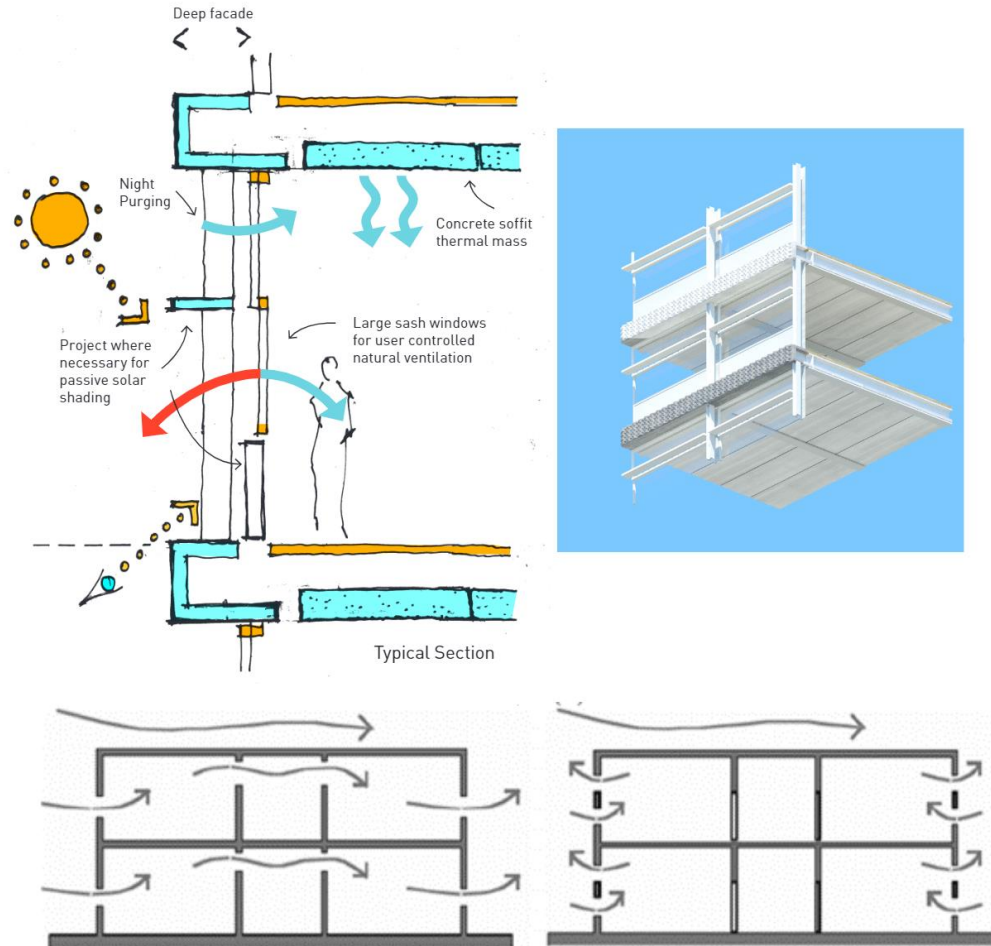
Off-site production using recycled, low carbon material.

Converged network

Networked Backbone within the building to connect all building systems. SMART building expansion.

Passive Design Strategy

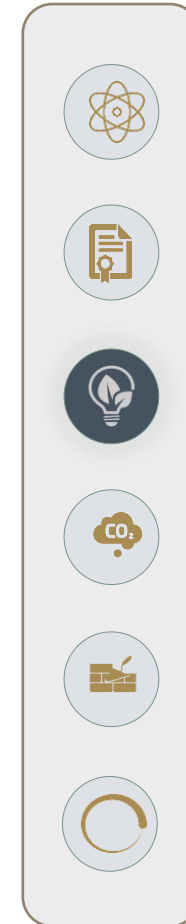
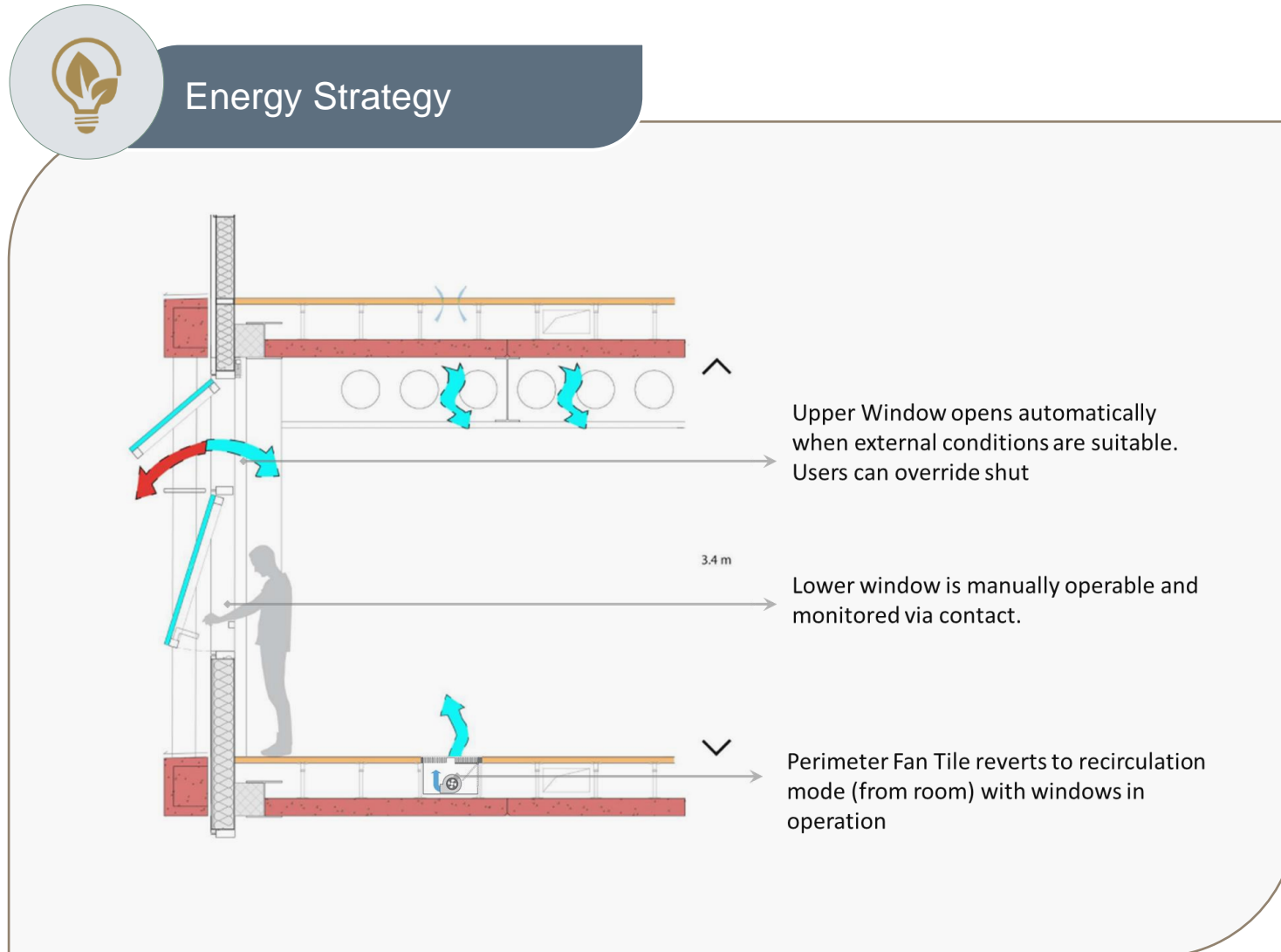
Passive Design Strategy



Natural ventilation and night purging

- **Mixed Mode** Strategy with optimised natural ventilation
- **High and mid-level openings** will maximise air circulation and ventilation effectiveness
- **Façade shading through deep reveals** to minimise solar gain - maximising natural ventilation periods
- **Exposed thermal mass** for heat absorption as part of a night-time purge strategy
- **Higher summer set points** – 26 degC

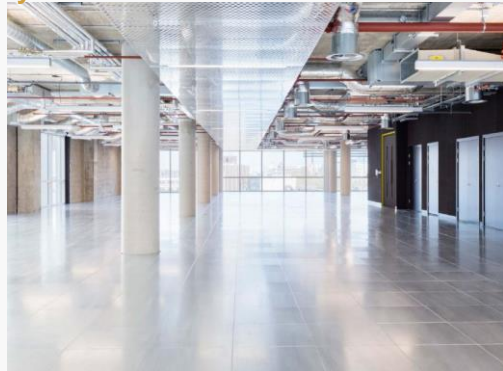
Edenica- Energy Strategy





Energy Strategy

Traditional VRF and Ducted Fresh air System



Under Floor Air Distribution (UFAD) System

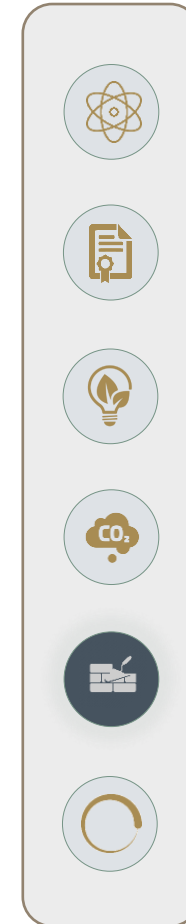
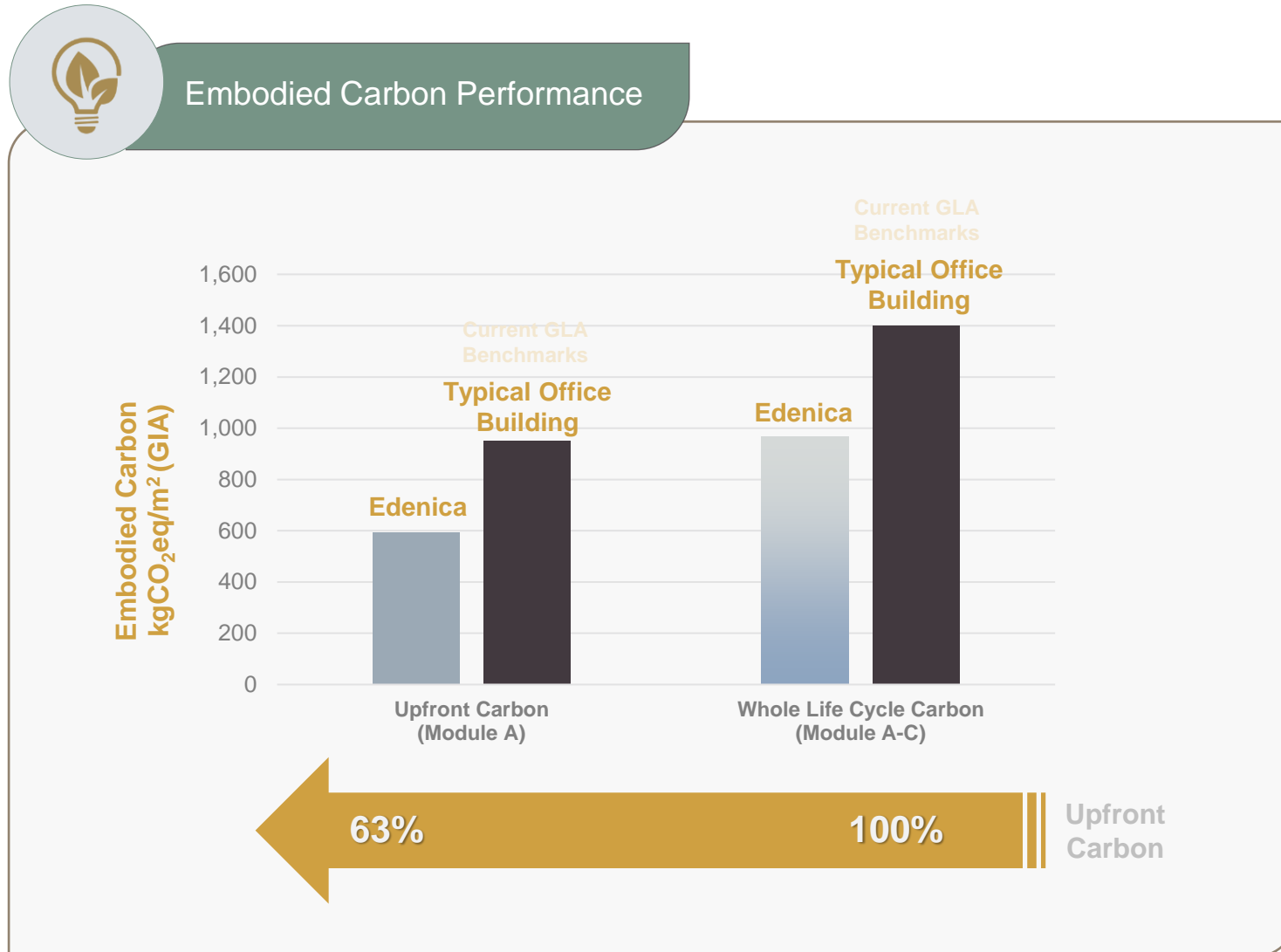


Why Underfloor Air Solution? Reduce Waste and Carbon

- Typically 30-50% of conventional Cat A services are removed / altered by Tenants as part of the initial fit-out
- Over the life cycle of the building this percentage increases significantly
- More moving parts / components needs replacement
- Alterations limited to moving swirl diffusers and lights / detectors
- Significantly reduced equipment replacement over building life
- Maximises opportunity for Net Zero Carbon Construction



Edenica- Embodied Carbon what can be achieved





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