

# Delivering Net Zero Carbon

## BY DEFINITION

Net Zero is a one hundred per cent reduction in emissions when compared to the Part L Building Regulations baseline.

Source: Greater London Authority

# 39%

of all carbon emissions are produced by the Building & Construction industries

# 28%

of those emissions are operational (energy used to heat, cool and light buildings)

Source: World Green Building Council 2019



From heating our homes to filling up our cars, burning fossil fuels releases the greenhouse gases that increase global temperatures.

If we fail to limit global warming to 1.5°C above pre-industrial levels, the floods and fires we have seen around the world this year will become more frequent and more fierce, crops will be more likely to fail, and sea levels will rise.

But the good news is that there is, still, a path to avoid catastrophic climate change. The science could not be clearer: by the middle of this century the world has to reduce emissions to as close to zero as possible, with the small amount of remaining emissions absorbed through natural carbon sinks like forests, and new technologies such as carbon capture. If we can achieve this, global emissions of greenhouse gases will be 'net zero'.

## The Future Homes Standard means big uplifts are coming on energy for new homes.

The latest consultation proposed an ambitious uplift in the energy efficiency of new homes through changes to Part L. Changes to Part F mean ventilation and heating must step up too.

- **Up to 90% carbon reduction from current 2013 Building Regulations**
- **Double the performance on air-tightness for Passivhaus standard**
- **Zero carbon for regulated and unregulated energy**
- **Low embodied energy in materials used**

# We connect energy, construction and intelligent technologies to revolutionise the built environment and shape a sustainable future.

## OUR BUILD SYSTEM

We take MMC to the next level by supplying a versatile system for Net Zero carbon buildings.



### Construction

We use our panellised *4Wall* system to provide an airtight **superstructure**.



### Energy

Renewable technology generates energy via solar panels to provide heating and hot water to enhance the mechanical, electrical and plumbing (**MEP**).



### Intelligence

Our **IoT** system monitors and controls the heating system, lighting, motorised blinds, condition of the air and more.

# How does the Etopia system compare to traditional methods of construction?

## TRADITIONAL CONSTRUCTION

## ETOPIA'S SYSTEM



Average construction time for traditional house shell is **1460 hours**

Average construction time for Etopia house shell is **72 hours**



**150 tonnes** of CO2 produced over 25 years

**-13.125 tonnes** of CO2 produced over 25 years



Average EPC rating of a traditional new build is only **D** (55-68/100)

Average EPC rating of an Etopia house is **A** (105/100)



A **challenging**, or even **impossible** route to ESG compliance

All Etopia homes can prove **they are ESG compliant**



Energy within the home **is not** managed by a smart home system

All **Etopia Homes** have energy managed by our smart home system

## Panel performance



### LIGHT AND PORTABLE

Our heaviest panel weighs 97kg, so we can transport and erect quickly



### EXCEPTIONAL STRENGTH

Each panel has a structural loading strength of 825kn or 80 tonnes



### FLAMMABILITY AND SAFETY

Fire performance at over an hour, measured at 77 minutes



### AIRTIGHT

Superior air-tightness; over 50 Pascals - 0.07 L/S/M





# Our homes come with built in renewable technology, which is provided through our partnership with Samsung.



## Mechanical ventilation with heat recovery (MVHR)

We integrate and provide a ventilation solution bringing clean monitored air into the home. What makes our buildings so energy efficient is our ability to ensure we can provide fresh air into the home while recovering heat. This allows us to provide clean and filtered air without compromising the energy efficiency.



## Air source heat pump (ASHP)

We use state of the art air source heat technology from the world's largest tech company, Samsung. This air source heat pump heats and drives hot water around the building. This system works with our connected living system sensor so we can see energy usage, control the air quality and temperature within the home to ensure it is running at optimum performance thus reducing energy usage.



## Energy creation & management

Our homes are extremely energy efficient, and are all Net Zero ready. To scale the efficiency even higher, choose from two levels of solar; 2-4kWh. Our solar technology and inverter are a part of our integrated smart home system. This allows us to not only generate the energy the home uses, but also intelligently manage how that energy is used.



## Smart home tech

We have an in-house IoT products provider that makes wireless self-powered light switches, autonomous blinds and next generation sensors, all controlled by a hub. This technology audits the performance and provides luxury level controls for the building. The system exists through an integrated partnership with Samsung SmartThings, which allows for further integration into any other existing smart home technology, such as Bose, Sonos, Yale, Ring, Nest and more.

The eBlind is just one of the products in our smart home tech suite.

# Etopia is focused on identifying and partnering with key companies with the vision and drive to join us on our journey.



## Edge certification

EDGE stands for Excellence in Design for Greater Efficiencies. It has the goal of reducing the environmental impact of buildings in three areas: direct energy consumption, water consumption, and the energy footprint of construction materials.

- A member of the World Bank Group, EDGE empowers emerging markets to scale up resource-efficient buildings in a fast, easy, and affordable way
- EDGE enables developers and builders to quickly identify the most cost-effective ways to reduce energy, water use and embodied energy in materials. The strategies integrated into the project design are verified by an EDGE Auditor and certified by Green Building Certification (GBCI)
- Confirms eligibility for Green Funding
- Aligned with Lloyds Bank and Homes England

## SAMSUNG

### Samsung partnership

Etopia has signed a ground-breaking global partnership with one of the world's largest tech companies, Samsung Electronics. This partnership sets the benchmark for the true integration of technology into the built environment making a statement on how the future of building looks.

**“At Samsung, we believe that innovation is only truly meaningful if it enables people to make progress in their lives. Across everything we do, our efforts aim to be in harmony with our planet, and this partnership sets out to do exactly that.”**

*Francis Chun, President & CEO, Samsung Electronics UK & Ireland*



Etopia works closely with **UKBCSD** on their new smart construction programme, of which our CEO Joseph Michael Daniels is the chosen chair and part of the board. This programme focusses on the future of the construction industry aligning with the United Nations SDGs.



**Climate Neutral Now** invites organisations to work towards global climate neutrality by addressing their climate footprint, an approach fundamental to Etopia.



Etopia is named a fellow of the **Tech Nation Net Zero 1.0** cohort; a UK growth programme for sustainable, carbon conscious companies delivering Net Zero by 2050.



Etopia has constructed a hyper performing, energy positive example of a future home at the **BRE** innovation park in Watford.



We are delighted to partner with **One Carbon World**, whose work supports and measures greenhouse gas reduction and offsetting.