VICTORIA FERN
HOMES

Victoria Fern Homes: The Future of Housebuilding

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Why buying a sustainable home through Victoria Fern Homes leads to happier sustainable living

Living in one of our homes can lead to a smarter and happier level of sustainable living because we prioritise eco-friendly building practices and innovative technologies.

Our homes are designed with energy efficiency in mind, incorporating renewable energy sources, high-quality insulation, and smart home systems that optimise energy use.

Building our houses using these methods not only reduces your carbon footprint but also lowers utility bills, making sustainable living more affordable. Additionally, our commitment to using sustainable materials ensures a healthier indoor environment, free from harmful chemicals and pollutants. By choosing our homes, you are investing in a future that values both environmental responsibility and personal well-being, leading to a more fulfilling and sustainable lifestyle.

To summarise why we are so proud of our methods and products we've broken down this information into nine sections:

- Zero Bills
- Carbon Zero
- Superior Health
- Future Technology
- Sustainable Materials
- Build Process
- The sequence of events and what you can expect
- Community & Ecology
- United Nations Sustainable Development Goals

Our Octopus Energy Deal

The Octopus Zero Energy Bill is an innovative energy tariff designed to eliminate energy bills for ten years for homes equipped with specific green technologies. Here's how it works:

Green Technology Installation:

Homes need to be fitted with solar panels, a home battery, and a heat pump. These technologies generate and store renewable energy, reducing reliance on the grid.

Energy Optimisation:

Octopus Energy uses advanced technology to optimise energy consumption and export. This means the system ensures that the energy generated by the solar panels is used efficiently, and any excess energy is sold back to the grid.

Zero Bills Guarantee:

For all of our homes, Octopus Energy guarantees zero energy bills for ten years. This is achieved by balancing the energy produced and consumed, ensuring that the household's energy needs are met without additional costs.

Low Energy Requirements

A zero-carbon home can significantly reduce energy bills through several key features. In all of our developments where it is possible, your new home will be built using the following methods to reduce your energy output vastly.

- High-Quality Insulation: We use high-quality insulation in walls, roofs, and floors to reduce heat loss.
- Air Tightness: We ensure the building envelope is airtight to prevent drafts and heat loss.
- Energy-Efficient Windows: Our homes are installed with triple-glazed windows with low-emissivity coatings that make them not only extremely efficient in terms of heat loss, but also make your home extremely good at blocking out any external noise.
- Renewable Energy Systems: We endeavour to incorporate solar panels, wind turbines, or other renewable energy sources.
- Smart Home Technology: Implementing smart thermostats and energy management systems to optimise your energy use.
- Sustainable Building Materials: As a sustainable developer, we strive to use materials with low embodied energy.
- Water Conservation: Installing low-flow fixtures and rainwater harvesting systems.
- Energy-Efficient Lighting: LED lighting is used to maximise natural light through design.

octopus energy

Overall, these features can lead to substantial savings on energy bills, making zero-carbon homes not only environmentally friendly but also cost-effective in the long run.

Carbon Zero

As an industry, we need to do a great deal more to ensure our planet is healthy for many generations to come. To achieve this, we need to reduce our carbon footprint. Below is why and how we intend to do as much as we possibly can.

Why Carbon Zero Is Important

Achieving carbon zero is crucial for mitigating climate change by reducing greenhouse gas emissions, which slows global warming and its adverse effects. It also protects public health by reducing air pollution, leading to fewer respiratory and cardiovascular diseases.

Additionally, it promotes sustainable development by encouraging the use of renewable energy sources and improving energy efficiency. Transitioning to a low-carbon economy helps preserve natural resources and ecosystems for future generations.

How Our House Achieves Zero Carbon

Very few housebuilders in the country have managed to achieve a zero-carbon house. We, however, aim to push the boundaries further and produce not just zero-carbon but negative-carbon houses. To achieve this, we design our buildings to reduce and offset carbon emissions to an industry-high standard. Below are the key steps to how we achieve negative-carbon houses.

Energy Efficiency:

To reduce energy consumption, improve insulation, eliminate air leaks, and install high-performance windows and doors.

Renewable Energy:

Install solar panels and other renewable energy sources to generate clean energy.

Carbon Sequestration:

We always try to use building materials that sequester carbon, such as wood or carbon-storing concrete.

Sustainable Practices:

Implement sustainable practices like rainwater harvesting, greywater recycling, and composting.

Smart Technology:

Using smart home technology optimises energy use and reduces waste.

By combining these strategies, a house can achieve a negative carbon footprint, meaning it removes more carbon from the atmosphere than it emits.

Why EPCs as an inaccurate measure of sustainability, need to be replaced

The EPC was the outdated method that the housing industry used to measure a dwelling's carbon impact until very recently. Energy Performance Certificates (EPCs) are not a measure of sustainability because they primarily assess the energy efficiency of buildings, focusing on energy consumption and carbon emissions which are essentially a measure of your monthly cost against typical energy usage.

Sustainability, however, encompasses a broader range of factors, including resource use, environmental impact, and social considerations. EPCs do not account for aspects such as water usage, waste management, or biodiversity impact, and they are based on standardised assumptions that may not reflect a building's actual performance. Therefore, while EPCs are useful for evaluating energy efficiency, they should not be relied upon as the sole measure of a building's sustainability.

The Home Energy Model (HEM) is set to replace Energy Performance Certificates (EPCs) in 2025, offering several advantages over the current system. Unlike EPCs, which rely on standardised scenarios and assumptions, HEMs use real-world data to accurately assess a home's energy performance. This includes energy usage patterns, occupant behaviour, and local climate conditions. HEMs also focus more on carbon emissions and incorporate detailed information about household appliances, insulation, and other building elements. This comprehensive approach ensures a more realistic and dynamic evaluation of a home's energy efficiency, making HEMs a better tool for assessing and improving energy performance.

We as a developer will always perform at the highest rating possible in the future HEMs sustainability assessment model.

Massive Health Benefits

Why is it important to have a house that is more beneficial for your health?

Having a house that is beneficial for your health is crucial because it directly impacts your overall well-being and quality of life. A healthy home environment can reduce the risk of respiratory issues, allergies, and other health problems by ensuring good indoor air quality, proper ventilation, and the use of non-toxic materials. Natural light and views can improve mood, boost mental health, and regulate sleep patterns, while ergonomic design and comfortable temperatures can prevent physical strain and promote relaxation. Additionally, a healthy home can enhance your productivity, reduce stress, and create a more enjoyable living space, ultimately contributing to a happier and healthier lifestyle.

How We Achieve This

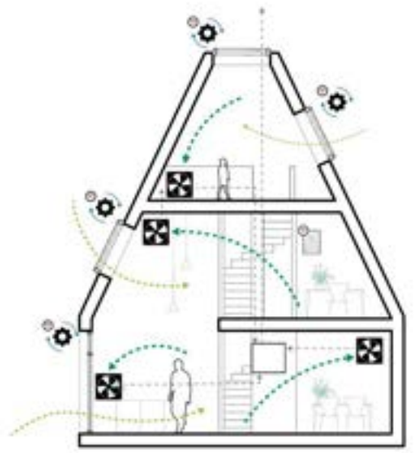
Improving a home to aid superior health involves several key aspects:

- **Indoor Air Quality:** Ensure proper ventilation, use air purifiers, and avoid materials that emit volatile organic compounds (VOCs).
- **Natural Light:** Maximize natural light through large windows and skylights to regulate circadian rhythms and boost mood.
- **Thermal Comfort:** Maintain a comfortable indoor temperature with proper insulation and energy-efficient heating and cooling systems.
- **Water Quality:** Install water filtration systems to provide clean and safe drinking water.
- **Noise Reduction:** Use soundproofing materials to reduce noise pollution and create a peaceful environment.
- **Non-Toxic Materials:** Choose non-toxic, eco-friendly building materials and finishes to reduce exposure to harmful chemicals.
- **Ergonomic Design:** Incorporate ergonomic design elements to promote good posture and reduce physical strain.
- **Green Spaces:** Including outdoor gardens improves air quality and provides a calming environment.
- **Smart Home Technology:** Implementing smart home systems to monitor and control indoor air quality, lighting, and temperature.
- **Accessibility:** Designing the house to be as accessible to all ages and abilities, promoting independence and safety.

How Do We Achieve Natural Air ventilation that is superior to other houses?

We use a system of automated roof windows linked to a management system to ensure efficient oxygenation within the property.

Natural air ventilation is crucial for maintaining good health in your home. It helps remove indoor pollutants, such as dust, mould, and volatile organic compounds (VOCs), which can cause respiratory and other health problems. Proper ventilation also reduces humidity levels, preventing the growth of mould and mildew, which can trigger allergies and asthma. Additionally, fresh air circulation helps to regulate indoor temperatures, creating a more comfortable living environment. Overall, our automated natural air ventilation system improves indoor air quality, promotes better respiratory health, and enhances overall well-being.



So What Are VOCs?

Volatile Organic Compounds (VOCs) are a group of organic chemicals that easily evaporate at room temperature. They are found in many products and materials, including paints, varnishes, cleaning supplies, pesticides, building materials, and office equipment. VOCs can significantly impact indoor air quality and human health, causing symptoms such as eye, nose, and throat irritation, headaches, and even long-term health effects.

To reduce exposure to VOCs, it’s important to us that we use products with low VOC content.
In the near future we plan to offer an interior design package that includes the opportunity to purchase VOC-free furniture. Please feel free to ask for more details on this service.

The Importance of Lighting and Greenery

Lighting and views in your home are also crucial for health because they significantly impact your physical and mental well-being. Natural light helps regulate your circadian rhythm, which controls your sleep-wake cycle and improves sleep quality and overall health. Exposure to natural light also boosts vitamin D production, essential for bone health and immune function. Additionally, having views of nature or outdoor spaces can reduce stress, improve mood, and enhance cognitive function. Good lighting and pleasant views create a more comfortable and inviting living environment, contributing to a healthier and happier lifestyle. We do our best (site permitting) to provide as much light and greenery as is achievable for the project.

Future Technology

How technology will benefit you today and in the future

Technology is revolutionising the way we build and live in houses, offering numerous benefits both today and in the future. Smart home technologies, such as automated lighting, heating, and security systems, enhance convenience, energy efficiency, and safety. These systems not only work in the traditional sense of using a wall mounted thermostat, but can also be controlled remotely, allowing homeowners to monitor and manage their homes from anywhere. Additionally, integrating renewable energy sources, like solar panels and wind turbines, helps reduce carbon footprints and lower energy costs. Advanced building materials and construction techniques, such as our pre-fabricated component system and time and energy-efficient screw piles, improve the speed and quality of construction while minimising waste.

We are working on even more innovations in the future, such as AI-powered home management systems that optimize energy use and indoor environments based on real-time data. Overall, technology is making our homes smarter, more sustainable, and vastly more comfortable.

Examples of Technology We Incorporate

The technology we incorporate into our homes goes beyond their physical structure. We strive to integrate numerous electronic systems to enhance both the construction process and the living environment of your completed home.
Some of the systems we use are as follows:

- AI Systems
- PV Batteries
- EV Charging points
- Triple glazing
- Smart Home Control

Our Samsung Package

Samsung offer a range of energy-efficient appliances and an air source heat pump (ASHP) that isn't an eye sore like the majority of ASHPs you see on the market.

Using a full package of Samsung appliances and ASHP allows you to control from your phone and monitor your energy usage. This includes interaction with your home appliances and ASHP.

PV Batteries

Solar panels are common in today's newbuild environment, however batteries to store the energy produced are frequently at an additional cost into the thousands. Wherever possible we include batteries as standard so you can get full use out of having solar panels, as opposed to only using the panels to a fraction of their potential/purpose.

EV Charging Points

Many developers include EV charging points and some for an additional cost, but we include EV charging points where achievable as standard in all our homes.

Triple Glazing

As standard where possible, we include triple-glazed windows in all of our properties. The benefits you would see in your home from this would be the following:

- **Enhanced Insulation:** Triple glazing provides better thermal insulation compared to double glazing, helping to keep your home warmer in winter and cooler in summer.
- **Energy Efficiency:** Improved insulation reduces the need for heating and cooling, leading to lower energy bills and a smaller carbon footprint.
- **Noise Reduction:** The additional pane of glass and insulating gas layers help to reduce external noise, creating a quieter indoor environment significantly.
- **Increased Security:** Triple-glazed windows are more difficult to break, enhancing the security of your home and as a result potentially reducing the cost of your home insurance.
- **Condensation Reduction:** The improved insulation properties help to reduce condensation on the interior surfaces of the windows.
- **Comfort:** Triple glazing helps to maintain a more consistent indoor temperature, improving overall comfort

Smart Home Control

Smart technology that controls your home and offers several benefits:

- **Energy Efficiency:** Smart thermostats optimise heating and cooling schedules based on your daily routine, reducing energy consumption and lowering utility bills.
- **Convenience:** You can control the temperature remotely using your smartphone, ensuring your home is comfortable when you arrive.
- **Comfort:** Smart systems maintain a consistent indoor temperature, enhancing overall comfort.
- **Cost Savings:** By reducing energy waste, smart technology can lead to significant cost savings over time.
- **Environmental Impact:** Lower energy consumption means a smaller carbon footprint, contributing to environmental sustainability.
- **Customisation:** Smart thermostats allow for personalised temperature settings in different rooms, catering to individual preferences.
- **Integration:** These systems can integrate with other smart home devices, creating a seamless and efficient home environment.

Sustainable Materials

We pride ourselves on the fact that as far as we know, we are the only housing developer to carry out a lifecycle analysis of all our products.

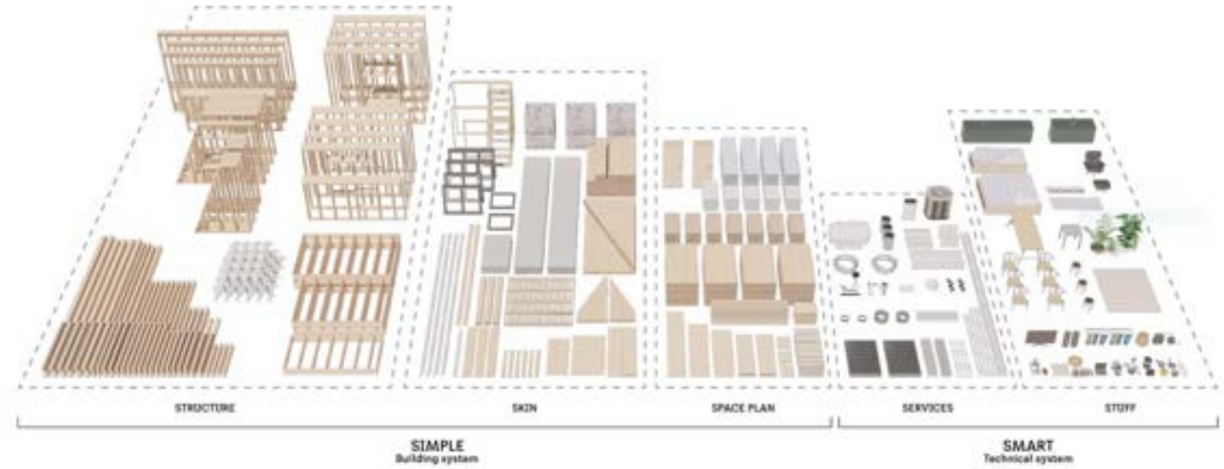
“We are following a tested Scandanavian model which demonstrates that the design and build type will have a built carbon footprint one third the kg CO2 per m2 of a typical UK house build. This represents a significant improvement on the large scale developers who mainly quote EPC A standard as best in class. We go much further than this with a whole life carbon analysis from production to end of life calculations.

Why Using Sustainable Materials Matters

Using sustainable materials to build a house offers numerous benefits. Firstly, it reduces the environmental impact by minimising resource depletion and lowering carbon emissions. Sustainable materials, such as reclaimed wood, and recycled metal, often have a smaller ecological footprint compared to traditional materials. Secondly, these materials can improve the energy efficiency of a home, leading to lower utility bills and reduced energy consumption. Additionally, sustainable materials are often healthier for occupants, as they tend to have fewer harmful chemicals and pollutants. They also contribute to the overall durability and longevity of the building, reducing the need for frequent repairs and replacements. Lastly, using sustainable materials can enhance the aesthetic appeal and market value of a home, making it more attractive to environmentally conscious purchasers if you ever needed to move home. Overall, incorporating sustainable materials in our developments promotes a healthier, more eco-friendly, and cost-effective living environment.

Examples of Some of The Materials We Use

- Insulation (recycled pulp)
- Timber all FSC and reclaimed where possible
- Recycled plastic where possible
- Recycled steel
- Natural stone



Why Do We Use A Component Technology Approach?

The component technology approach is a superior construction method on so many levels. We choose not to build using the more common methods for the following reasons:

Why We Don’t Use MMC

We don’t use MMC because it has not been successful in the UK for multiple reasons. While Modern Methods of Construction (MMC) offer a small number of benefits, there are several negative aspects to consider:

- **Supply Chain Issues:** MMC relies heavily on a consistent and reliable supply chain. Any disruption can cause significant delays and increased costs.
- **Transportation Challenges:** Transporting large prefabricated components to the construction site can be logistically challenging and costly.
- **Regulatory Hurdles:** Navigating building codes and regulations for MMC can be complex and time-consuming.
- **Insurance and Financing:** Obtaining insurance and financing for MMC projects can be more challenging due to the perceived risks.
- **Skilled Labor Shortages:** While MMC reduces the need for traditional skilled labour, it requires a different set of skills that are not readily available.

Why We Don’t Use Traditional Brick and Block

We don’t use traditional brick and block build because it is severely out of date by a number of decades. Using traditional brick and block building methods in house construction has several drawbacks:

- **Environmental Impact:** Traditional construction often relies on resource-intensive materials like concrete and steel, which have high carbon footprints and contribute to environmental degradation.
- **Energy Inefficiency:** Older building techniques may not incorporate modern energy-efficient practices, leading to higher energy consumption and utility bills.
- **Waste Generation:** Traditional construction methods can produce significant amounts of waste, including excess materials and debris, which can be challenging to manage and dispose of sustainably.
- **Longer Construction Time:** Traditional building processes can be time-consuming, leading to longer project timelines.
- **Limited Design Flexibility:** Traditional methods may not offer the same level of design flexibility and customisation as modern construction techniques.
- **Higher Maintenance Costs:** Buildings constructed using traditional methods may require more frequent maintenance and repairs, leading to higher long-term costs.
- **Health Risks:** Traditional materials and construction practices may expose workers and occupants to harmful substances, such as silica inhalation, posing significant health risks.
- **Inconsistent Quality:** The quality of traditional construction can vary depending on the skill and experience of the workers, leading to potential issues with structural integrity and durability.

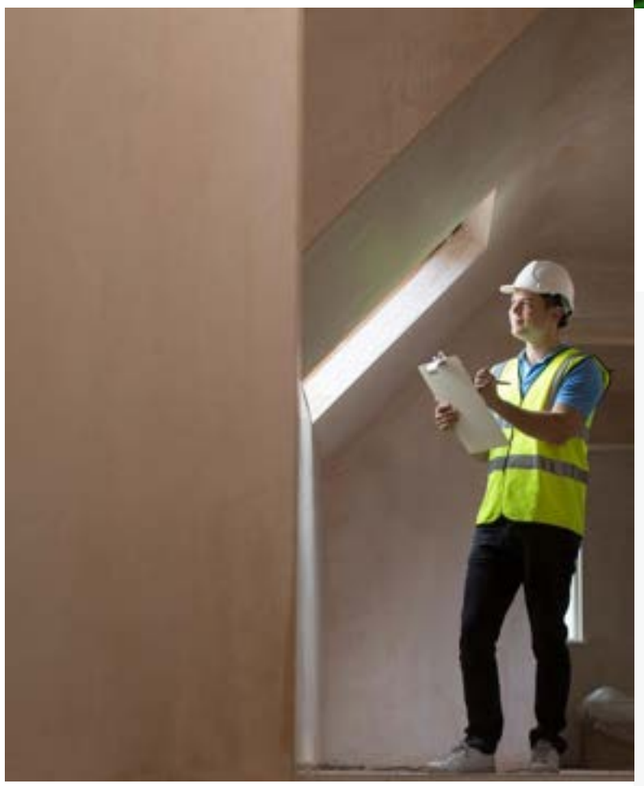
These challenges highlight the need for more sustainable, efficient, and innovative construction methods in the housebuilding industry. This is one of our main reasons for wanting to push the industry into the 21st century.

Why We Don’t Use Standard Timber Frame

We don’t use standard “timber frames” because they may be faster and cheaper to use, but the housing industry is inundated with problems due to this method of building.
Using standard timber frame construction in housebuilding has several drawbacks and these below are just a few:

- **Fire Risk:** Timber is more flammable than other building materials, increasing the risk of fire during construction and throughout the building’s lifespan. (All of our properties even though they may be made from timber components, are wrapped in an A1 fire-rated material that gives our houses the maximum level of fire protection)
- **Structural Stability:** Timber is less dimensionally stable than materials like steel and concrete, which can lead to issues with shrinkage and movement. (Most timber frame properties are built from a layer of timber and a layer of brickwork which means the settlement of each layer is different and movement can be significant. All of our properties have one single frame that does not include a cavity and as such almost no differential movement is possible.)
- **Insurance and Mortgage Considerations:** Timber frame homes may face higher insurance premiums and more stringent mortgage conditions due to perceived risks. (Our fire rating and mitigation of differential movement vastly reduce these risks)

These challenges highlight the need for careful consideration and planning when using timber frame construction in housebuilding. We believe we have addressed these challenges and as such produce a vastly superior product to a standard timber frame house.



Community & Ecology

Why It’s Important to Us

Community and ecology mean a lot to us as a company. Firstly, we take pride in supporting the local community through initiatives such as local hiring, sponsorships, and involving ourselves in charitable activities. Secondly, we also prioritise ecological sustainability by adopting sustainable practices, such as reducing waste, conserving resources, and minimising emissions. We consciously endeavour to contribute to the well-being of the planet and ensure the long-term positive impact our business can provide via a strong commitment to our community and ecology.

Our Plans for The Next 5 Years

We have big plans for the next 5 years as to how we can further benefit our local communities and ecology. Our list that no doubt will continue to expand includes the following examples:

- Collaborate more with schools
- More charity construction projects
- Sponsorship of struggling sports clubs
- Apprenticeship schemes
- Supporting local wildlife projects
- Using smaller independent local businesses
- Local carbon capture of each site (this is achieved by collecting and burning timber)

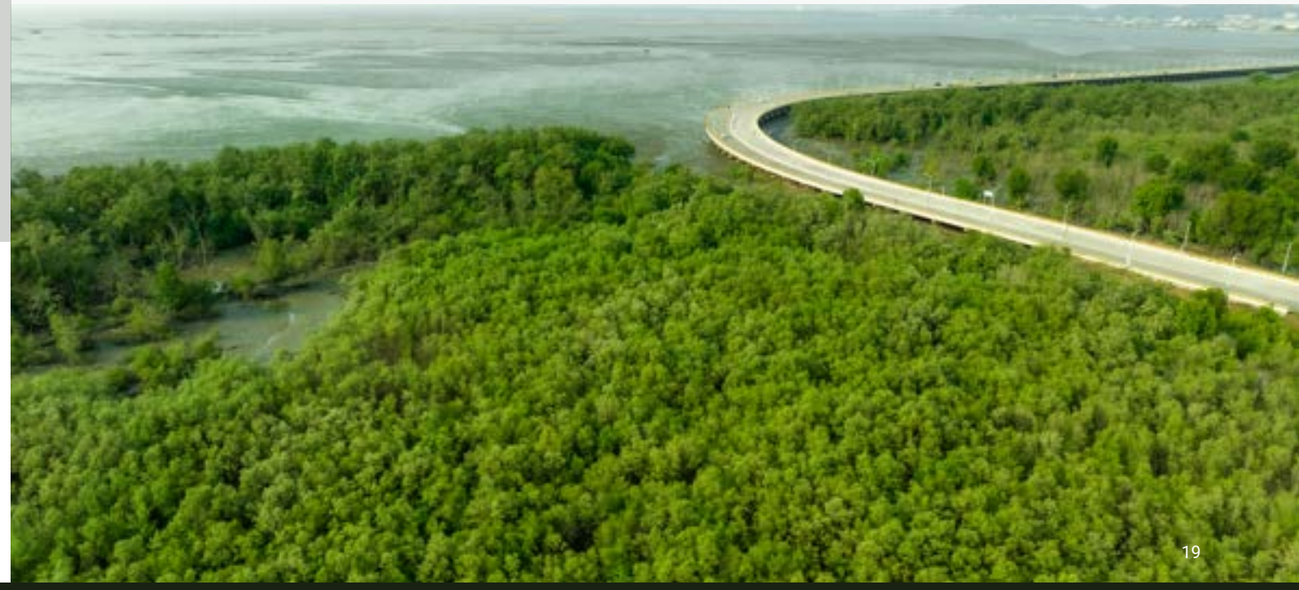
What Are the United Nations Sustainable Development Goals (UN SDGs) and Why Is It Important That We All Do Our Part

The United Nations Sustainable Development Goals (UN SDGs) are a set of 17 global objectives aimed at achieving a better and more sustainable future for all. Adopted by all UN Member States in 2015, these goals address a wide range of global challenges, including poverty, inequality, climate change, environmental degradation, peace, and justice. The SDGs are interconnected and designed to leave no one behind, promoting inclusive and sustainable development across economic, social, and environmental dimensions. They serve as a universal call to action to end poverty, protect the planet, and ensure prosperity for all by 2030.

How We Aim to Do Our Part So You Can Do Your Part

We endeavour to do as much as we can in each of the respective 17 SDG goals, even if some of the 17 goals are currently difficult for us to have an effect in. The 12 goals of which we can currently make a difference in the production of your home are the following:

- **SDG02 Zero Hunger:** Feed the homeless events & supplying healthy foods to our staff
- **SDG03 Good health & wellbeing:** The air quality of our homes and the subsequent positive mental wellbeing for you and your families.
- **SDG04 Quality education:** Offer apprenticeship opportunities and presentations in educational facilities on why sustainable construction matters.
- **SDG05 Gender equality:** We hire our staff based on their skillset with pay representing their contribution to the team and the overall build process.
- **SDG06 Clean water & sanitation:** Sustainable management of water is a high priority for us on all of our developments.
- **SDG07 Affordable and clean energy:** Renewable energy sources produced by all of our houses.
- **SDG08 Decent work & economic growth:** Inclusive employment in an industry that commonly falls behind.
- **SDG09 Industry, innovation & infrastructure:** Innovative designs to provide homes for the future.
- **SDG11 Sustainable cities & communities:** Making our developments safe and sustainable for all.
- **SDG12 Responsible consumption and production:** Ensuring we use sustainable production materials wherever possible.
- **SDG13 Climate action:** Building to Carbon zero standards as a minimum and hopefully maintaining negative carbon levels as a business, as well as the homes we produce.
- **SDG15 Life on land:** We endeavour to protect, restore, and promote ecosystems wherever possible and halting biodiversity loss as much as is achievable.



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