# Future Fortified

**Creating quality homes** 





The homebuilding sector's contribution to a sustainable future









# NEXTGENERATION IS THE ANNUAL SUSTAINABILITY BENCHMARK OF THE 25 LARGEST HOMEBUILDERS IN THE UK

This benchmark enables homebuilders, government, registered providers (RPs), investors, employees and the public to understand the sustainability of homebuilders' operations and the new homes they build.

NextGeneration works by inspiring companies to report against a range of criteria – developed in collaboration with the industry over ten years – relating to high-quality, sustainable homebuilding. The assessment is primarily based on publicly available information and has been a key driver of greater transparency and accountability within the sector. By showcasing leading firms, NextGeneration aims to create healthy competition amongst homebuilders and ultimately encourage them to deliver more sustainable homes and communities.

## **NextGeneration member companies benefit from:**

- Detailed insight into their competitors' approach to sustainability.
- A clear understanding of industry best practice.
- Enhanced assessments and bespoke reports to help improve their performance.
- Networking and knowledge-sharing events, to aid collaboration and create solutions.
- The opportunity to steer the benchmark and develop the benchmarking criteria.

## www.nextgeneration-initiative.co.uk

## **CONTENTS**

NextGeneration Facts	2
Introduction	3
Company Rankings	4
Detailed Results	5
Award Winners	6
Future Trends	8
Value for Stakeholders	11

## **NEXTGENERATION FACTS**

Benchmarked companies directly employ

40,941 People

3

## **Assessment categories:**

- Robust governance & strategy
- Respect for the environment
- Contribution to society & economy

£28bn

**Total turnover** of benchmarked companies

25

of the largest UK homebuilders benchmarked on their sustainability performance

101,478

New homes covered

Which equals to

48%

of all new homes built per annum

1 Innovation award

2006

First launched in 2006 to build on the success of previous benchmarking exercises undertaken by Insight Investment and WWF UK in 2004 & 2005



## **FOREWORD**

The demand for quality is a key driver of sustainability issues in the UK homebuilding industry. While great strides have been made in delivering sustainable homes since NextGeneration's inception in 2006, the challenge faced by the industry is how to fortify that progress and make bold new advances in order to deliver robust, thriving communities.

## Delivering more homes... Quality assured

The Government aims to deliver 1 million new homes from 2015-2020. Yet homebuilders are delivering just 50-60% of that target. Recently the Parliamentary Committee for Excellence in the Built Environment found "a clear pattern that demonstrates that more homes built correlates with a decline in homebuyers' satisfaction in terms of quality." The Grenfell Tower tragedy and the impact of quality on shareholder value within the sector highlight the need for better quality control. How is industry responding? The Farmer Report, government incentives and expanding implementation suggest modern methods of construction could be a key part of the solution. In addition, NextGeneration members continue to lead the industry, managing quality to fortify their license to operate: implementing placemaking principles, promoting health and wellbeing and measuring socio-economic impacts.

## **Key trends**

In this context, what are the key future trends for homebuilders? The 2017 NextGeneration report highlights three areas of risk and opportunity driven by the quality agenda: air quality, blockchain applications and home technology.

With public concern about air quality in both new build homes and neighbourhoods growing, we identify three practical solutions to this pressing issue on page 8. While most will be familiar with bitcoin, on page 9 we examine burgeoning applications of blockchain from home security to renewable energy networks. Pushing beyond established energy monitoring systems, on page 10 we look at how newly available technology can help consumers reduce waste, improve sleep and connect with their communities.

## **Analysis and awards**

Detailed results and analysis of the benchmark can be found on page 4, highlighting areas of strength as well as opportunities for improvement. The awards section on page 6 recognises the ongoing efforts of industry leaders to promote sustainability in homebuilding.

Paul McGivern
Modern Methods of Construction
(Specialist)
Homes and Communities Agency

Sophie Walker UK Head of Sustainability JLL

Julie Hirigoyen Chief Executive UK Green Building Council

1 https://kj06q2hv7031ix2143c36tpx-wpengine.netdna-ssl.com/wp-content/ uploads/2016/07/APPG-Final-Report-More-Homes-fewer-complaints.pdf

## **OUR MEMBERS**











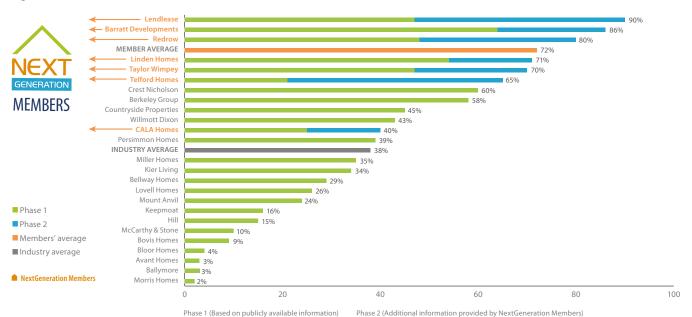






## **Company Rankings**

Figure 1: 2017 NextGeneration Results



#### **OVERALL ANALYSIS**

Lendlease garner the top place again in 2017. Barratt and Redrow finish strongly in 2nd and 3rd places. A special mention to Telford Homes who have won a silver medal during their first year as members, reflecting their focus on strategy and placemaking.

NextGeneration's 2017 rankings show a wide gap in how effectively homebuilders are addressing and communicating their approach to sustainability. NextGeneration members continue to lead with a member average nearly double the overall industry average (72% to 39%), reflecting the benefits of expert advice, peer learning and the greater disclosure of sustainability information by members to the benchmark. A lack of transparency leaves external stakeholders in the dark about how well homebuilders are managing sustainability risks and opportunities. We would encourage any developer, listed or non-listed, to engage with initiatives like NextGeneration and learn from the leaders who are already enjoying the benefits.

#### **LEADING STRATEGIES**

## Lendlease: "Creating places for people and meeting their needs of the future"

- Elephant & Castle 1 of 19 Climate Positive developments globally
- Shortlisted for the 2017 RIBA Stirling Prize (Trafalgar Square)
- Construction News Awards' Best Residential Developer 2017

#### Barratt Homes: "Building sustainable values"

- Committed to a net positive ecological impact by 2020
- HBF Customer Satisfaction Survey 2017: Only national housebuilder to retain 5 star rating for 8th consecutive year
- FTSE4Good index participant

## Redrow: "Embedding sustainability values throughout our operations"

- Construction News Awards' Best Residential Developer 2017
- 2017 Interior Design Awards' Housebuilder of the Year
- 5 commendations in the NHBC Health and Safety Awards



## **Detailed Results**

#### STRONGER PERFORMANCE

Two areas where this year's scoring is higher but where the industry still has opportunity to improve:

#### Waste

More companies are diverting high levels of construction, demolition and excavation waste from landfill, in line with an increased publication of waste diversion targets.

#### Procurement

As companies come to grips with the implications of the Modern Slavery Act 2015, we are seeing an increase in the use of external auditors to review supply chains, and the widespread adoption of sustainable procurement policies.

We found two areas where the industry is improving on last year's performance and is also showing a strong performance generally:

### Reporting

External assurance of sustainability information is on the rise, as is the use of KPIs for material sustainability issues as part of public reporting.

#### Health and Safety

Improvements in H&S training as well as training support for contractors are reflected by a below average number of incidents on site amongst members.

#### Figure 2: 2017 Results Breakdown

## **WEAKER PERFORMANCE**

#### Transport

Reducing car dependency, for example through provision of car club and cycling facilities, is an area that has not been embraced by the industry. Including a requirement for the provision of sustainable transport as part of the acquisition process can address this shortfall.

#### Water

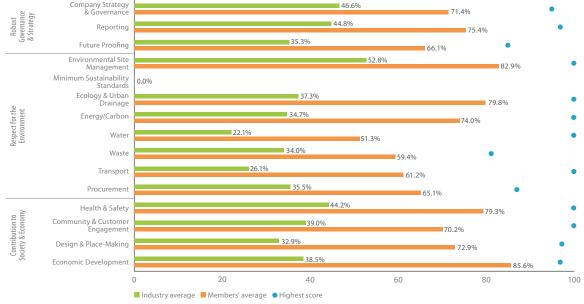
Many companies are not setting targets nor measuring water consumption for sites and offices, and are not providing highly water efficient homes. The need for these will become more pressing as the UK suffers the predicted increase in water stress.

#### Community & Customer Engagement

While we have seen an increase in the number of initiatives put in place to promote community well being, very few companies are measuring the impacts of these programs. Improvement can be made on performance in the Considerate Constructor Scheme. Customer satisfaction is also an area where there is opportunity for improvement.

#### Procurement

Embodied carbon is an area that is just starting to come to the fore and performance is expected to improve in the coming years as companies start to embrace the benefits of modern methods of construction.



<sup>\*</sup>Next Generation are currently carrying out an independent review of Minimum Sustainability Standards to inform a revision of this criterion.

# AWARD WINNERS

## **THE AWARDS**

Our Gold, Silver and Bronze awards are given to the top performing companies in the benchmark.

They enable stakeholders to easily identify the UK homebuilders who are industry leaders in the promotion of sustainability. The awards also help the winners to demonstrate recognition of their efforts and accomplishments to partners and customers.





2017 INNOVATION AWARD



**SWIFT BRICK** 

Providing more nesting sites for swifts has been one of the aims of the partnership between Barratt Developments and RSPB. Working together, they commissioned Manthorpe to develop a new swift nest box design that could be easily installed during construction.







2017 has been another bumper year for LendLease from a sustainability perspective

as a number of flagship UK residential projects came to fruition.

A standout project was the successful delivery of our Futurehome townhouses at Elephant Park, the first zone 1 homes in central London to be certified to Passivhaus standards. Centred in the heart of one of London's greenest regeneration projects, Futurehome presents a transformative step-change in sustainable, inner-city living. Complementing this commitment to sustainable living we are also proud to have opened a new public park and planted hundreds of new trees across Elephant and Castle to enhance the local biodiversity and provide green space for the benefit of the local community.

Anita Mitchell Head of Sustainability - Europe - Lendlease



Our aim at Barratt Developments is to be the UK's leading national sustainable housebuilder and we are proud of

the tangible achievements we have made, contributing to our progress this year. These include reducing our waste by over 15,000 tonnes, improving our accident injury rate, and ensuring our material suppliers are all members of the Supply Chain Sustainability School. We have delivered more homes through modern methods of construction and improved the average number of training days per employee. Adhering to our industry leading placemaking and design principles, we hold more Built for Life accreditations than all other major housebuilders combined. We also lead the industry in sustainability indices such as NextGeneration, CDP and FTSE4Good. All of this shows our commitment to delivering sustainable change at scale across the UK.

Sarah Pratt, Head of Corporate Sustainability at Barratt Developments

## REDROW Redrow focus

on delivering

high quality homes and creating physical environments that encourage a better way to live, connecting people to community and nature, enabling happier, healthier lifestyles. This year our approach to environmental management was strengthened by obtaining certification to ISO 14001. We developed a suite of Placemaking design principles to better articulate our blueprint for creating better places to live. A record number of 150 trainees will join the Group at the start of this new training year and by delivering 6,800 training days, we develop all of our people, to help them achieve their full potential.

Robert MacDiarmid, Group Sustainbility Director, Redrow

## Taylor Wimpey

Adopting sustainable practices is not only the right thing to do, it

contributes to our success today and creates a more resilient business. At Taylor Wimpey, our investment in skills and diversity fosters a productive and engaged workforce. Listening to and working with our stakeholders helps us access high-quality land and achieve planning consents. Integrating sustainability into design helps create great places to live, and embedding our new customer approach will deliver an excellent service. By working with supply chain on innovation, we can reduce environmental impacts and future proof the business. All this can safeguard our reputation and ensure that we build a sound legacy.

Ian Heasman, Director of Sustainability, **Taylor Wimpey** 



This year our primary focus **Linden** at Linden Homes has been on reducing our carbon

footprint, particularly emissions linked to travel, and we are proud to have reduced our overall emissions by 9% despite growing the business. Placemaking, wellbeing and our supply chain relationships remain focus areas and in recognition of the industry skills shortage we have also bolstered and developed our approach to diversity and inclusion.

Andrew Hammond, Divisional Chairman, **Linden Homes** 



As a responsible business, Telford Homes have been working

in innovative and sustainable ways for many years. We launched our "Building a Living Legacy" sustainability strategy in 2016. It underpins our commitment to create places that stand the test of time by making a positive long term contribution to London's built environment. Economic, social and environmental principles are central to our ambition to create thriving places for future generations.

Andrew Day, Head of Sustainability, **Telford Homes** 



Crest Nicholson is one of two non-member companies to win an award in 2017. Its score is based only on publicly available information demonstrating an exemplary commitment to both sustainable development and transparent reporting.

Well known for its industry leading "Make Waste History" campaign, it continues to drive sustainability in UK housebuilding through new market opportunities including the private rental sector and off-site manufacturing.



Berkeley Group is one of two non-member companies to win an award in 2017. Its score is based only on publicly available information

demonstrating an exemplary commitment to both sustainable development and transparent reporting. Since implementing Vision 2020, Berkeley Group has put in place actions to incorporate sustainability into each part of its business to ensure that it delivers high quality, sustainable homes. The company has committed to becoming the UK's first carbon positive listed housebuilder.



## **Quality: Driving future trends**

This year's report highlights three compelling areas of risk and opportunity driven by the quality agenda: air quality, blockchain applications and home technology.

## **Air Quality**

We spend 90% of our time indoors in the UK, so most of the 15,000 litres of air we breathe each day is inside a building. Breathing poor quality air inside our homes, offices and schools is associated with a plethora of health problems including fatigue, headaches, asthma, cancer, and heart disease. Yet research on new-build, air-tight UK homes with advanced ventilation systems has shown that they frequently fail to deliver good indoor air quality. 1 2 3

A 2016 Royal College of Physicians report warned that air pollution causes 40,000 deaths a year in the UK and lasting harm to young children and babies. Fifty primary schools in the most polluted areas of London are being audited for air quality and 16 areas in the UK, including London, Leeds and Birmingham regularly breach the EU's air quality thresholds. Unsurprisingly, in May 2017, a Telegraph article cited property professionals predicting air quality ratings could knock up to 15% off home values. The UK market demands a leap forward for air quality, to an age where new developments reduce external pollution levels, homebuilders market asthma-free homes and consumers can check air quality minute by minute.

We've turned up 3 practical approaches that can be layered on top of the proper design and installation of ventilation and low VOC material selection that leading homebuilders already pursue.



## Green infrastructure

Put the natural power of plants to work to improve air quality. In urban locations with constrained space, moss installations with built-in watering systems and air sensors can filter as much air as 275 trees, reducing pollution by 30% in a 50 meter radius. On large sites, such as Dubai's Sustainable City where 10,000 trees have been planted, large trees are excellent filters for urban pollutants and fine particulates and have been shown to increase land value.<sup>8</sup>



## Air filtration

Integrating air filters into ventilation systems can be a costly business, which not every homeowner wants to pay the price for. So, it is great news that the extremely rigorous WELL Standard for healthy buildings has recognised wall-mounted HEPA air filters as equivalent to integrated air filtration. Homebuilders can offer these as an upgrade or as part of the standard package, depending on local air quality.



## Marketing and monitoring

Standards are an excellent means for conveying build quality to consumers. Over 1100 homebuilders in the USA use the EPA Indoor airPLUS® standard to market the health benefits of their homes. In the UK, NICE is currently drafting guidelines for indoor air quality in homes to be released in 2019.

Monitoring is becoming mainstream. Leading European and North American homebuilders are beginning to offer smart technology hubs connected to advanced air quality monitors.

- $www.research gate.net/publication/273167700\_Indoor\_air-quality\_investigation\_in\_code\_for\_sustainable\_homes\_and\_passivhaus\_dwellings$
- www.fourwalls-uk.com/wp-content/uploads/2016/03/MVHR-Meta-Study-Report-March-2016-FINAL-PUBLISHED.pdf
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- 8 http://new.unhabitat.org/news/building-greener-cities-nine-benefits-urban-trees-0



## **Beyond Bitcoin**

Blockchain is an online public transaction ledger that enables transparent, near instant and simultaneous transactions. It has recently surged into the property sector with the promise of cutting through costly, time-consuming layers of middlemen. A leading property transactions company, which has already facilitated £200 million in online binding contracts, announced it is weeks away from releasing a blockchain platform for the UK housing market. Land Registries around the world are experimenting with blockchain – Sweden, Georgia, Honduras, and Brazil. And the UK Land Registry's Digital Street project plans to explore the technology with the private sector.

The revolutionary potential of blockchain is so widespread that it is important to also point out some drawbacks that may slow blockchain's meteoric rise – heavy power consumption, ePrivacy, security risks and regulatory uncertainty. A single bitcoin transaction, underpinned by blockchain, has been calculated to take roughly 5,000 times more energy than a typical credit card payment. Blockchain contains a transparent record of data and may not be compliant with EU General Data Privacy Regulations coming into effect in 2018. High profile hacks of Ether and Bitfinex, worth \$50 million USD, showed that despite its security advantages, blockchain can be hacked and once a hack occurs, the immutable blockchain record makes it impossible to reset the system. China's recent crackdown on "initial coin offerings" and bitcoin exchanges demonstrates how central the role of regulators will be in determining the legal utility of blockchain.

From the wide and wild world of blockchain, 3 creative applications for homebuilders to help improve the quality of their product include:



## Internet of things security

In the push to manage energy use, the exponential growth of smart appliances gives hackers access to home networks through the weakest link in the technology chain. Security will become increasingly important for homeowners, who could face anything from privacy invasion to financial theft. The EU-funded GHOST project has designed secure electronic gateways for home networks using blockchain. To trick the blockchain, a hacker would have to commandeer half the machines in the network, making home hacking significantly more difficult.<sup>11</sup>



# Revolutionising planning and due diligence

The Dubai Blockchain Strategy, launched in April, aims for Dubai to become the first blockchain-powered city by 2020.12 A property and planning system based on blockchain could provide immediate, transparent access to sustainability requirements, flood risk, Section 106 requirements, CIL and a host of other information that now needs to be hunted down individually. All the various agencies that need to review a planning application can do so nearly simultaneously and instantaneously and certain planning checks could be automated. Transparency means that all parties see the same information and will be alerted to any changes.13



# Peer-to-Peer renewable energy trading

Imagine homeowners able to instantly trade excess renewable energy with their neighbours, obtaining better prices on both ends by cutting out the grid operator. That's what blockchain will enable in the Brooklyn Microgrid in New York City14 and in Auckland, New Zealand. Both projects are very small, just 50 members in Brooklyn and Power Ledger is ramping up to 500 homes in New Zealand. To maintain energy efficiency, Power Ledger uses a different method called "proof-of-stakes" to validate transactions on the blockchain.<sup>15</sup>

- 9 www.businessinsider.com/resiconf-2017-how-developers-want-to-fix-uks-broken-housing-market-2017-9?r=UK&lR=T&lR=T/#4-blockchain-could-revolutionise-property-sales-4
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## **Intelligent living**

Often the technology available during the design phase of a residential development is obsolete by the time the homes are completed. Homebuilders are understandably tempted to minimise this risk by restricting technology provision to a cable conduit. However, this approach presents another risk – being left behind by competitors who innovate with useful technologies that act as differentiators and enhance quality of life. The smart home technology market is pushing beyond energy meters and heating controls, featuring innovative products that deliver great sustainability benefits for homebuyers. We spotlight 3 areas of innovation – waste, lighting and wellbeing.



## Getting smart on waste

Less than half of the 7.3 megatonnes (Mt) of household food waste produced in the UK in 2016 was recycled or recovered<sup>16</sup>. Indoor food recyclers, now available to consumers, enable homeowners to recycle a week's worth of food waste into home-made fertilizer in 24 hours. This is a great piece of green bling – a stylish, convenient, and smart appliance that works at the touch of the button to deliver real environmental benefits.



## Lighting for sleep

"Circadian lighting" that allows users to tune the colour and brightness of light to support the body's natural sleep cycle is making the leap from office and healthcare settings to the home. Light is a critical signal for the body's sleep cycle and designing lighting systems to mimic the natural solar light cycle has been shown to improve sleep and productivity. This understanding of the body's systems is having an impact both in research projects and consumer products. HondaSmartHome, certified as a Zero Energy Building by the International Living Future Institute (ILFI), integrates circadian lighting throughout the home. Mainstream manufacturers are making circadian lighting systems easily available and adaptable to existing lighting fixtures and apps. Remote controlled colour and intensity and compatibility with a range of smart home systems are features of these new systems that enhance quality of life for homeowners.



## Technology for wellbeing

NHS Healthy Towns' demonstration schemes are banking on smart homes to deliver important wellbeing benefits for new residents. Digital healthcare infrastructure is a key feature of many Healthy Town schemes – linking patients to GPs, hospital records and self-care options. In addition, Darlington and Lea are launching a Happy Places app to promote social interaction and reduce loneliness. Ebbsfleet are introducing a Digital Movement Project that utilises personal fitness devices to encourage greater physical activity among Garden City residents and workers. NW Bicester is offering 100Mb super-fast broadband and each home comes with a Shimmy tablet information system that includes real-time energy use, live bus times, a system to check car club availability and a portal for community information and events.

www.meeland.nhs.uk/ourwork/innovation/healthy-new-towns www.england.nhs.uk/ourwork/innovation/healthy-new-towns/halton-lea-runcorn www.england.nhs.uk/ourwork/innovation/healthy-new-towns/ebbsfleet www.england.nhs.uk/ourwork/innovation/healthy-new-towns/eco-bicester

<sup>16</sup> www.wrap.org.uk/sites/files/wrap/Estimates\_%20in\_the\_UK\_Jan17.pdf www.ikea.com/gb/en/this-is-ikea/newsroom/press-release/ikea-takes-the-next-step-in-home-tech-innovation-with-new-smart-lighting-range-launch/www2.meethue.com/en-gb



## **VALUE FOR STAKEHOLDERS**



#### NextGeneration enables homebuilders to:

- Compare performance against peers
- Demonstrate sustainability credentials to local authorities, investors, staff and customers
  - Capture cost-saving opportunities



#### NextGeneration encourages companies to:

- Reduce household energy bills through energy-efficient homes
- Improve quality of life through quality housing
- Provide exemplary levels of customer service



#### NextGeneration rewards homebuilders who:

- Build a range of housing types and mixed tenure communities to serve local people
- Create jobs, improve skills and provide training
- Engage with communities through proactive engagement and consultation



#### NextGeneration can help investors to:

- Identify companies who are managing short and long term risks
- Create opportunities to generate long-term value
  - Discern innovative sector leaders with good management and potential for future growth



NextGeneration provides a robust and challenging framework that enables homebuilders to demonstrate their commitment to creating sustainable homes and thriving communities.

As we increase the number of homes built, it is important that we continue to ensure that sustainability remains a priority.

**Nick Walkley** 

**Chief Executive, Homes and Communities Agency** 



NextGeneration continually strives to promote best practice for sustainable homebuilding. JLL's ongoing involvement in this fantastic initiative supports our goal to transform the UK property sector both by integrating sustainability into all our advice and by supporting our clients with our leading sustainability expertise.

Sophie Walker Head of Sustainability, JLL UK



Building quality homes that put both people and planet first is as important as ever. NextGeneration plays a key role in helping housebuilders drive up standards and increase ambition.

Julie Hirigoyen Chief Executive, UKGBC

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#### JLL

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www.ukgbc.org



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