

Climate related financial disclosures

TASK FORCE ON CLIMATE RELATED FINANCIAL DISCLOSURES (TCFD)

The Board recognises the global climate emergency and the risks and opportunities posed by climate change to the Group's business model and strategy.

Climate change was introduced as a principal risk for the Group in its 2018 Annual Report and Accounts and this year the Group has reported climate-related disclosures consistent with the TCFD Recommendations and Supporting Recommended Disclosures, and will continue to mature its level of reporting in accordance with the requirements. The focus, this year, has been on refining the understanding of impacts under different climate change scenarios.

The Group has set ambitious climate reduction targets to achieve net zero carbon homes in use for 2030 and net zero carbon in our operations by 2040. These are supported by science based targets for carbon emissions reductions which were validated by the Science-Based Target Initiative (SBTi) in August 2021.

Governance

Climate change is considered as a principal risk for the Group and as such, it is governed and managed in line with the Group's risk management framework. (See page 54 for further details).

The Board has overall responsibility for the management of risks and opportunities arising from climate change, and on an annual basis undertakes a company wide review which includes climate risk. In particular the Board has taken an active role in understanding the impacts of future legislation with a focus this year on readiness for changes to Part L of the Building Regulations and the Future Homes Standard.

The Sustainability Committee (SC) supports the Board's climate responsibility, and oversees the Group's climate change strategy, to ensure climate issues are being effectively considered and managed, and reports its findings and recommendations to the Board. During 2021, for example, the Committee reviewed the Group's fleet of fork lift trucks and assessed efficiency options and technology change to reduce carbon emissions.

The Committee also led on the setting of the Group's science based targets, and tracks performance. The Committee met 6 times and was comprised of the Group Chief Executive Officer (Chair), Group Strategy and Regulatory Director, Group Sustainability Manager and Company Secretary.

Under the remit of the Sustainability Committee, three Steering Groups have been established – comprising the Zero Carbon Homes Steering Group, Supply Chain Emissions Steering Group, and Operational Emissions Steering Group – to ensure climate related issues are effectively considered and built into business plans. The main area of focus this year has been developing the Part L and Future Homes Standard readiness and option roadmaps, and work will continue next year engaging the supply chain on embodied carbon, and reducing the Group's operational carbon footprint.

The Group Sustainability Director and Group Strategy and Regulatory Director are responsible for updating the climate risks within the Group risk register, and consult with key Group functions to ensure comprehensive coverage of potential impacts and mitigation plans. The findings are taken to the Sustainability Committee and communicated to the Steering Groups for action.

The Regional Managing Directors are responsible for ensuring all environmental surveys including flood risk assessments are undertaken prior to acquisition, with final approval going to the Land Committee who oversee all acquisitions.



Strategy

Our strategy sets out our pathway to net zero carbon for our homes in use by 2030, and for operations to be net zero carbon, including our manufacturing facilities, by 2040. In supporting delivery of these targets we have established science based emission reduction targets of 46% for our Scope 1 & 2 absolute emissions and a target of 22% reduction per m² completed floor area of Scope 3 emissions by 2030. The Science Based Target Initiative (SBTi) approved our targets in August this year. These targets are an ambitious step forwards in our approach to climate action and have been calculated to ensure that we play our part in limiting global warming to 1.5 degrees above pre-industrial levels.

We have defined four strategic focus areas to achieve our ambitions:

Create Low Carbon Homes

- Reduce energy demand: design homes to be more energy efficient
- Readiness plans are in place for Part L of the Buildings regulations and Future Home Standards
- Understand performance and customer experience: gather 12 months real life in-use data from our low carbon home at Germany Beck, York
- Innovation: continue to instigate technology trials to be at the forefront of innovation, build strategic relationships with supply chain and continue to invest in our off-site manufacturing facilities

Deliver Low Carbon Site Operations

- Reduce our use of diesel at sites through driver training, low carbon fuels
- Trial electric and hybrid plant when available
- Set standards and benchmarks for energy reduction and management on-site

Reduce Embodied Carbon

- Assess embodied carbon to identify high impact materials and services
- Evaluate the benefits from our vertical supply chain and maximise opportunities through design
- Supply chain: communicate our strategy to our suppliers, and work with our supply chain to reduce embodied carbon in materials

Ensure Climate Change Resilience

- Climate risk management: scenario plan our strategic land holdings, future acquisitions for climate resilience and mitigation
- Design: design in climate risk measures to mitigate risks, such as window sizing, orientations, modern methods of construction
- Nature based solutions: utilise blue and green infrastructure to mitigate against extreme weather events such as flooding, droughts

Climate scenario analysis

In last year's report we identified high level climate change related risks and opportunities over the short, medium and long term that are considered to have a potentially material financial impact on the Group strategy and business model.

This year we have further developed this understanding and commissioned a specialist consultancy to develop climate scenarios to provide a more developed framework from which to evaluate our business strategy and embed climate resilience.

In accordance with best practice and TCFD recommendations, contrasting science based scenarios have been developed to enable consideration of exposure to both physical and transition risks. These scenarios have been considered over 3 different time horizons:

- short term (to 2025); medium term (to 2030) and long term 2040+.

These timescales have been chosen as the most relevant to the business, reflecting major future legislative change in 2025 with the introduction of the Future Homes Standard, and aligning with the Group's net zero carbon and science based target commitments.

Net zero carbon world 1.5°C

- Assumes climate policies and controls are introduced early and become more stringent over a relatively short timeframe (2030). High transition risk in the short term, and very aggressive mitigation measures, but as a result physical risks are less severe compared to the 2°C scenario.

Paris consistent scenario ~2°C

- Relatively high transition risk in the short term, associated with aggressive mitigation actions to reduce emissions. As a result physical risks are less severe compared to the 4°C scenario.

Hot house world ~4°C

- Low transition risk in the short and long term as the world fails to transition to a low carbon economy. Consequently, physical risks become increasingly frequent and severe in the long term, resulting in serious impact on the global economy, the environment and human wellbeing.

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Task force on climate related disclosures (TCFD) continued

In line with the recommendations of TCFD, four typical categories of climate-related driving forces that a business should consider were evaluated against the 3 defined scenarios;

- policy and legal drivers
- technology shifts,
- markets and reputation, and
- physical risks

The outputs from the climate scenario analysis have been ranked (high, medium, low) against each other for their potential impact, against the most likely timescale

over which the impact would occur, and against the Group's current state of preparedness. This approach enables a prioritisation of actions and evaluations going forwards.

The Group already has a number of mitigation plans in place (see page 66), and this process has enabled further climate resilience activities to be identified, and which will be included in mitigation plans and opportunities.

Output from the climate scenario analysis for transition risk

The transition risks are anticipated to occur in a relatively short timeframe compared to physical risks, and this is already being seen with increasing legislation on energy efficiency in homes coming into force, with the changes to Part L of the building regulation and the Future Homes Standard for example. This will drive changes in technology, customer expectations and the Group is already evaluating alternatives, trialling innovative technologies and engaging with suppliers.

Summary Description of Transition Risks	Potential Impact Ranking	Time-frame of impact	Business Readiness	
Policy & Legal Drivers				
Pricing of GHG emissions	Carbon pricing could manifest as a range of environmental, planning or sector wide taxes. Under the 1.5°C scenario, pricing of GHG emissions could be \$155-\$454 per tonne by 2030, and \$54-\$97 per tonne under the 2°C. Carbon pricing could be felt through the supply chain and material costs.	High	Short	Review in 2022
Increasing national regulation relating to more stringent environmental standards	Increasing stringency of building, planning regulations and design requirements to enable UK Gov to meet its 2050 Net Zero Carbon Target; inc Part L Building Regulations; Future Homes Standard, National Policy Planning Framework, and National Model Design Code. Many local authorities have declared their own climate emergencies, and the planning system will be a key vehicle for delivery. This could impact our development and growth plans, and increase build costs.	High	Short	In plan
Climate Change Litigation	Climate related litigation claims may be bought by investors, insurers, shareholders and public interest organisations. Reasons could include failure to adapt to climate change causing harm, greenwashing.	Low	Medium	Include in future plan
Enhanced Reporting Obligations	Additional emissions related reporting requirements likely in the UK by 2030. This could include needing a materials passport in order to increase the circularity of building supply chains, and updates to the Streamlined Energy and Carbon Reporting (SECR) regulations. Scope 3 emissions reporting could also become mandatory.	Low	Short – Medium	Include in future plan
Technology Shifts				
EV Use	To achieve the UK Government's Net zero carbon commitment by 2050, there will be an increasing number of electric vehicles. Sufficient charging points and grid capacity will be required, which will have an impact on build costs.	High	Short	In plan
Substitution of technology	Risk of installing technologies at the beginning of a planning process that then become obsolete or outdated. Could affect customer satisfaction and sales. This is especially at the point of the implementation of the Future Homes Standard.	Medium	Short	Under evaluation
Market				
Change in Customer Demands	There is a risk, if energy prices increase, property buyers will want lower carbon homes, and expect greater energy operational efficiency. Inefficient properties could also fall in value which could impact the market.	High	Short	Under continuous monitoring
Supply chain resilience and increasing cost of raw materials	Sourcing and availability of materials could be impacted by both transition and physical risks. There is a risk of increasing development costs, due to supply and demand, and likely carbon pricing on key materials such as glass, cement and insulation.	High	Short – Medium	Under evaluation
Cost of Capital	As credit ratings begin to incorporate climate change considerations, there is a risk of downgrading and the cost of capital increasing.	Low	Medium	In plan
Low carbon technology availability	Rapid uptake of low carbon technologies such as air source heat pumps could cause market shortages and delay delivery of homes.	High	Short	Under evaluation
Skill shortage impacting ability to install low carbon technology	In order to reduce emissions to comply with planning requirements, access to different skills such as renewable specialists and heat pump installers, will be required. A shortage could lead to delayed delivery and an increase in build costs.	High	Short	Under evaluation
Reputation				
Investment Risk	Risk to revenue and investment streams as clients and investors increasingly expect high levels of sustainability performance.	Medium	Medium	In plan
Stakeholder Risk	Over the next decade social pressure regarding sustainability and increased public awareness could create a reputational risk if there is failure to reduce both operational and embodied carbon. The impact of this could be seen through delays in the planning process as Local Authorities enact their own climate action requirements.	Medium – High	Short – Medium	In plan
Employee Risk	As employees are becoming increasingly concerned with climate change issues, negative publicity around failure to deliver targets could make it difficult to attract and retain talent.	Medium	Short – Medium	Review in 2022

Output from climate scenario analysis for physical risk

Whilst physical risks under the scenario modelling manifest over a longer time period, there is already an increasing occurrence being observed of more extreme weather events that are attributed to current climate change. These are typically observed as such as more excessive snow falls, rainfall, unusually high temperatures, and unseasonal weather patterns. The table below ranks the potential impacts, timescale and readiness based on those that will manifest more significantly in the future. Whilst physical risk is seen as a long term risk, a number have been highlighted for a strategic review in 2022 as part of long term business planning.

	Summary Description of Physical Risks	Potential Impact Ranking	Time-frame of impact	Business Readiness
Heat Stress	Hot summers are expected to become more common with more extreme temperatures. Under the Hot House Scenario, heatwaves could last 20 days. This will affect comfort for customers and therefore design criteria will need to be applied to avoid overheating. Construction site conditions and working practices will need to ensure worker health safety and wellbeing. Heat island effects will also become more prevalent in urban and built up areas.	High	Medium – Long	Review in 2022
Drought stress	Summers will become drier, with the south of the UK predicted to experience 2.5 – 3.5 months of drought under the Hot House Scenario. Locally this will impact water suppliers, and will become part of planning considerations	High	Medium – Long	Review in 2022
Precipitation	Greater chance of more rainfall in the winter and less in the summer. Seasonal and regional differences. Impact on site construction activities, customer gardens and supply chain.	High	Medium – Long	Review in 2022
Flood	High underlying flood risk in the present day. Under the Hot House scenario there is a 21%-56% increase in river peak flow rates, and the probability of flooding in a year could increase 3 to 10 times. Already a key requirement in the planning process. Increased number of flood plains in the future may impact build costs and / or land availability.	High	Medium	In plan
Windstorms	Classed as medium to high risk in all scenarios, but with greater severity under the Hot House scenario. Predicted to decrease in the south but increase in the Midlands, North, Wales and Scotland.	Medium	Medium	In plan
Sea Level Rise	Expected between 0.2 m – 0.6m under the Net Zero scenario and up to 1.1m in the Hot House. This will have an impact on coastal locations.	Low	Long	Include in future plan
Subsidence	Medium level risk of possible ground instability and building foundation issues. Regions around London most exposed. In the Hot House scenario there is a higher risk and greater area of impact in the south of England.	Medium	Long	Include in future plan
Infrastructure	The stress on water and energy utilities together with road transportation will increase. In the Hot House scenario there is the expectation of disruptions to critical services. This could impact supply chains, and result in production down times.	Medium	Long	Include in future plan

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Task force on climate related disclosures (TCFD) continued

Resilience of the Groups Business Strategy & Business Model

The Group already has in place a number of climate change mitigation strategies and identified opportunities as part of its business model:

Transition risk mitigations and opportunities

- The Group has core house types used across its national network of development sites which helps ensure that any new regulatory requirements can be effectively and consistently applied across the Group.
- The Group delivers more energy efficient homes than the second hand property market with homes that are increasingly energy efficient, thereby attracting a strong customer base.
- The Group has developed its strategy for delivering to the new Part L regulations coming into force in June 2022 requiring new build homes to produce 31% less carbon emissions compared to current standards. Homes will have improved insulation, improved ventilation, more efficient boilers and some may have solar panels to achieve this improved efficiency. The Future Home Standard (FHS) in 2025 will require homes to produce 75%-80% less carbon emissions and will remove gas fired systems. This will require a switch to alternative heating systems such as air source heat pumps, higher levels of insulation and air tightness, and additional energy recovery or generation technologies.
- The Group has a number of pilot projects to assess the most effective method of achieving the Future Homes Standard. The pilot projects are being used to: trial new technologies such as infra-red heating; to assess the most effective build methods of achieving the improved efficiency required using a 'fabric first' approach; and, to gain feedback from customers on the 'liveability' of the homes.
- The improved efficiency of new homes is also a significant opportunity for the Group as we develop homes which will have a lower impact on the environment and provide a competitive advantage to the second hand housing market.

- In designing our developments particular attention is paid to all issues that surround the policy transition necessary to achieve new more stringent climate and environmental policy requirements. In order to deal proactively with local and site specific interpretation/application the Group has developed Design and Access Statement templates aligned with the National Model Design Code.
- The Group's business model includes vertical integration – The Group owns its own timber frame, wall panel and roof cassette manufacturing facilities. These modern methods of construction are considered likely to assist in building low carbon homes.
- The diverse and high quality land holdings supports the Group's strong network of outlets and ensures the Group is well positioned to invest in land at the right time in the cycle. The strong gross margins embedded in the Group's existing land holdings help to absorb potential volatility caused by increasing building costs.
- The Group's significant ongoing investment in training ensures that it maintains an appropriate skills base to manage changes to operations and processes required by climate change mitigation requirements.

Physical Risk response

The Group undertakes comprehensive environmental and flood risk assessments for each potential land acquisitions that it makes. (See pages 39 and 62 for more detail). Planning requirements principally influence the requirements for any flood mitigation, drainage requirements, and there is increasing consideration for use of blue and green infrastructure, which will also provide additional sustainability benefits such as enhancing biodiversity.

Priorities for 2022

The detailed climate scenario analysis has identified key areas of focus for 2022 shown in the tables on pages 64 to 65, and the Group will undertake the reviews, and embed the outcomes into business strategy and delivery to ensure continuing climate risk control and opportunities are maximised. The Group is mindful of the rapidly changing sustainability agenda and stakeholders growing interests in climate risk, and will ensure that those potential risks that have been identified as already "in plan" in the business, are on track and remain appropriate. The Group will continue to mature its level of reporting in accordance with the TCFD Recommendations and Supporting Recommended Disclosures, and further analyse and consider the potential financial impacts.

CLIMATE CHANGE RISK AND OPPORTUNITIES

Risk management

As a principal risk for the Group, climate risk is governed and managed in line with the Group's risk management framework see page 54. The framework requires identification of the risk, evaluation of the potential impact, the consequences, allocation of the risk owner, probability assessment, description of controls and controls owner, and finally an evaluation of any residual risks. The Group's identification and assessment of risks is managed by the Risk Committee, with the Board taking ultimate responsibility for Risk Management.

The climate risks, their potential consequences and their current impact on the Group's business model, are identified and reviewed by the Group's executive team, senior members of the Group Finance team, Group Sustainability Director, and Group Internal Audit Manager. A wide range of insights and resources are used to ensure climate related impacts are effectively tracked and considered to include; climate insights & trends, emerging legislation and government policies, consultations, local authorities positions, and industry body resources.

The climate risk register is reviewed and updated, as required, on at least an annual basis. It is arranged into transitional risks and physical risks. As risks are identified, the Group considers whether the business's strategy and business model already manages/mitigates the relevant risk.

If any gaps are identified, then in accordance with the Risk Framework, the Group establishes the appropriate response.

The climate scenario analysis has provided detailed assessment of transition and physical risks against three time horizons. This has provided greater depth of understanding, and enabled prioritisation of climate related risks, and through 2022 the Group will be embedding the findings into its climate risk and opportunities management.

Metrics

The Group monitors emissions from its own operations, which have been measured in accordance with the GHG Protocol Corporate Accounting and Reporting Standard (Revised Addition). Detailed GHG emissions information is located on page 43 in accordance with the requirements of the Streamlines Energy and Carbon Reporting requirements, and disclosures are for Scope 1, 2 and an emerging level of information for Scope 3 (supply chain products & services, and homes in use).

The Group is committed to playing its part in the international effort to reduce greenhouse gas emissions by reducing its own emissions across the business's operations, and also the supply chain and from the homes we sell.

As such, The Group has set an ambitious target to be:

- Net zero carbon in our homes in use by 2030 and
- Net zero carbon in our own operations by 2040.

This commitment is supported by interim science based carbon reduction targets to reduce our operational emissions (Scope 1 & 2) by an absolute of 46.2% (vs 2019 baseline) and our indirect emissions (Scope 3) from our supply chain and homes in use, by 22% per m² completed floor area by 2030. These reductions will be achieved through wider supply chain engagement, product innovation as well as changes to current operational processes.

In 2022, 5% of the Executive Annual Bonus will be an environmental target focused on steps taken to support achievement of our Scope 1 and 2 science based targets (see page 126). The Board believes in the importance of ESG and cultural metrics and this is reflected in the use of customer care and quality in both the annual bonus and PSP but at this time recognises that further analysis of more robustly calibrated meaningful metrics, linked to the Group's sustainability approach, is needed before meaningful long-term targets can be set (see page 111). The Remuneration Committee aims to incorporate specific environmental targets in the 2023 PSP award.

Time Period	Target	Metrics
Short Term (2022 – 2025)	Continue to embed climate risk and opportunity analysis into the business strategy and operations	Qualitative
	Reduce our operational footprint (Scope 1 & 2)	% reduction in diesel fuel use % energy efficiency
	Maintain 100% carbon neutral electricity purchased – green/REGO backed	Zero CO ₂ from Scope 2 sources
	Undertake embodied carbon assessments, set reduction targets	Tonne CO ₂ /m ² completed floor area
	Supply chain engagement on embodied carbon	Action plans in place to reduce carbon content of top CO ₂ contributors
Medium Term (to 2030)	Homes to be net zero carbon in use by 2030	SAP calculation
	Reduce absolute Scope 1 & 2 GHG emissions by 46% by 2030 (2019 baseline)	Transition pathway – tonnes/CO ₂ against a 2019 baseline
	Reduce Scope 3 Purchased goods and services, and use of sold products by 22% per m ² completed floor area	Tonnes/CO ₂ /m ² completed floor area against a 2019 baseline over their lifetime
Longer term (to 2040)	Net zero carbon emissions in our own operations (Scope 1 & 2) by 2040	% zero carbon % carbon offsets