

Environmental Sustainability Strategy 2022-2026



Introduction

Hexagon Housing Association (Hexagon) owns and manages over 4,500 homes worth more than £0.5 billion, in South London, mainly across Southwark, Lewisham, Greenwich, Croydon, Bexley and North Kent. Hexagon develops *circa* 80 homes per annum and is a Greater London Authority (GLA) Investment Partner that delivers mixed tenure developments of rented, shared ownership, and outright sale homes.

Hexagon's Mission Statement is:

"To meet housing needs in South London through our commitment to existing and future residents, local communities and the environment"

Hexagon is committed to achieving environmental sustainability in all its activities in its head office, employment and business practices; in maintaining residents' homes, engaging with residents, and building new homes. Hexagon is committed to a holistic approach to environmental sustainability and aims to do so by balancing the following:

- Minimising the harm that Hexagon's operations have on the local, national and global environment.
- Improving residents' quality of life in their homes through well insulated homes and reduction of carbon emissions.
- Maintaining Hexagon's financial viability.

Hexagon's perennial commitment to environmental sustainability has been evident in its receipt of the prestigious Sustainable Homes for Tomorrow (SHIFT) Gold awards and most recently in 2020 and 2021. This places Hexagon amongst a relatively small group of top performers of social housing landlords in environmental sustainability.

During the term of its 2017 – 2021 environmental sustainability strategy, Hexagon achieved an average SAP score of 72.49 across its entire rented housing portfolio compared to the UK average of 68.

1.0 Strategic Context

- 1.1 The Environmental Sustainability Strategy (Strategy) provides the strategic framework of Hexagon's holistic approach to achieving its environmental sustainability objectives as set out in its Corporate Plan. Hexagon does so by ensuring environmental sustainability is full embedded in all activities in the following inter-dependent areas:

- a. Existing residents' homes
 - b. Offices
 - c. Partners/contractors
 - d. New homes
- 1.2 This Strategy is effective from 1 April 2022 to 31 March 2026 and should be read in conjunction with Hexagon's current asset management strategy.
- 1.3 This Strategy covers Hexagon's rented dwellings, albeit its content is applicable to all homeowners' dwellings within Hexagon's portfolio.
- 1.4 The Climate Change Act (2008) coupled with the government's net zero carbon strategy¹, and heat and buildings strategy² provide the legislative and government policy framework for Hexagon.
- 1.5 The Paris Agreement's³ main aim is for all countries to keep global temperature rise to significantly below 2 degrees Celsius.
- 1.6 The Government's Industrial Strategy focusses on 'clean growth'. One of the 'Grand Challenges'⁴ driving this government's strategy is to halve the energy use of new buildings by half by 2030.
- 1.7 Though all teams at Hexagon will collaboratively implement this Strategy, in conjunction with residents and partners, the key teams that will lead on its implementation are: Property Services Department; Facilities Team, Development and Sales Department and the Housing Services Department.
- 1.8 The Strategy is underpinned by Hexagon's following key corporate objectives:
- a. To be socially responsible in the way we run our business, and in particular, to focus our efforts on promoting environmental sustainability.

¹ [net-zero-strategy.pdf \(publishing.service.gov.uk\)](https://www.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/103111/net-zero-strategy.pdf)

² [Heat and buildings strategy \(publishing.service.gov.uk\)](https://www.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/103111/heat-and-buildings-strategy.pdf)

³ <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>

⁴ <https://www.gov.uk/government/publications/industrial-strategy-the-grand-challenges/industrial-strategy-the-grand-challenges>

- b. When we develop spending priorities for improving existing homes, we consider how we can help residents to reduce their energy bills and reflect that objective in our overall programme.
- c. To begin the process of transitioning away from fossil fuel boilers in existing homes.
- d. To respond positively to the climate emergency by designing new homes which incorporate meaningful carbon reduction measures and that minimise fossil fuel heating
- e. To minimise the harm the running of our office does to the environment (i.e. by reducing waste, increasing recycling, reducing energy consumption, and encouraging sustainable transport options for staff).
- f. To respond positively to the climate emergency by designing new homes and improving existing homes to enable residents to lead zero-carbon lifestyles.
- g. To continually improve the quality and range of our affordable homes and services through innovation and best practice.
- h. To be amongst the best in the provision of housing and related services.
- i. To be financially secure.

2.0 Key aims and objectives of the Environmental Sustainability Strategy

- 2.1 This Strategy aims to ensure Hexagon provides homes that are energy efficient and do not have an adverse impact on Hexagon's financial viability, the environment, the quality of residents' homes and their neighbourhoods.
- 2.2 The following are Hexagon's main objectives for all its operations, residents' homes, and its office(s):
 - a. All rented homes to have a minimum EPC rating C (*i.e.* SAP Scores 69 – 80) by 2030
 - b. All new and existing residents' homes to achieve net zero carbon by 2050.
 - c. The head office to achieve net zero carbon by 2050.
- 2.3 However, the underlying key measure of success will be the metric for heat demand, i.e. kWh/m². The latter metric is useful in assessing whether, as result of the retrofit works, residents are using less energy to heat their homes thereby emitting less carbon and spending less on energy.

3.0 Achieving the aims and objectives

The aims and objectives outlined in Section 2 above, will be achieved as outlined below:

- 3.1 Undertaking retrofit energy efficiency works required in *circa* 25% of existing residents' homes with sub-EPC rating C. These retrofit works were identified through a comprehensive technical review of existing residents' homes by Hexagon's specialist independent consultants.
- 3.2 In addition to its existing on-going investment, Hexagon will invest over £110 million in its current existing homes over the next 28 years to achieve the net zero carbon target by 2050.
- 3.3 Hexagon will undertake works in its head office, which have been recommended by its specialist independent consultants.
- 3.4 In line with a bespoke residents' engagement strategy, which will be developed together with residents, Hexagon will work closely with its residents to achieve the above-mentioned objectives.
- 3.5 Hexagon will develop new homes that require minimal or no future retrofit works to achieve the net zero carbon target by 2050.

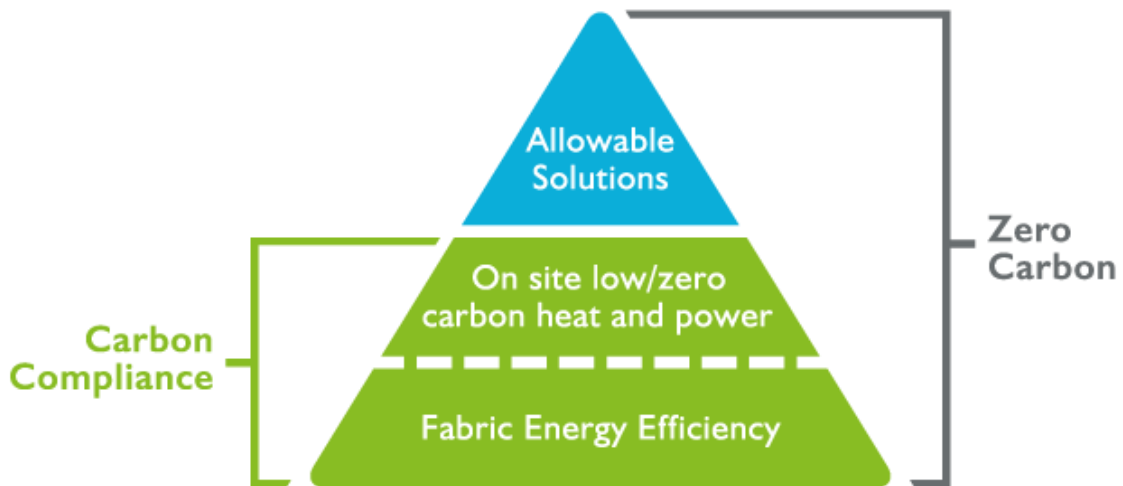
4.0 Delivering the Environmental Sustainability Strategy

4.1 Retrofitting existing residents' homes

- 4.1.1 Hexagon's approach to achieving its two targets outlined in Section 2.2 (a) and (b) is via a 3-stage approach as illustrated in Diagram 1 below.
- 4.1.2 The first stage is to undertake 'fabric first' retrofit works, which have already been identified and whose main aim is to ensure dwellings are well insulated. The second stage entails installation of low carbon/zero carbon heating systems.

4.1.3 The third stage entails undertaking activities that offset residual carbon emissions within Hexagon’s housing portfolio after completion of the first and second stages. These activities may include tree planting or Hexagon making a voluntary contribution to a certified carbon offset fund.

Diagram 1: Stages to achieving net zero carbon target



4.1.4 Table 1 below provides an outline of the key activities that Hexagon will be undertaking over the coming years to achieve its two key objectives outlined in Section 2.2 (a) and (b).

Table 1: Work to be undertaken to achieve EPC Rating C and Net Zero Carbon Targets

Timeframe	Work to achieve EPC rating C by 2030 in c. 25% of existing homes	Work to achieve net zero carbon target by 2050 in all existing homes
2022 – 2024	<ul style="list-style-type: none"> a. Continuing with on-going stock improvement works that improve the energy efficiency of homes b. Develop and start implementing a bespoke resident engagement strategy for net zero carbon c. Robust planning of the delivery of the works required to achieve EPC Rating C target in relevant dwellings d. Establishing procurement strategy, sustainable supply chains, partnerships and suitably skilled resources e. Explore and apply for grant funding opportunit(ies) that arise to achieve best value for Hexagon – though the retrofit programme not driven/dependent on grant funding 	<ul style="list-style-type: none"> f. Continuing with on-going stock improvement works that improve the energy efficiency of homes g. Develop and start implementing a bespoke resident engagement strategy for net zero carbon h. Robust planning of the delivery of the works required to achieve net zero carbon target in relevant dwellings i. Establishing procurement strategy, sustainable supply chains, partnerships and suitably skilled resources j. Explore and apply for grant funding opportunit(ies) that arise to achieve best value for Hexagon – though the retrofit programme not driven/dependent on grant funding
2024 – 2030	<ul style="list-style-type: none"> k. Undertaking of ‘fabric-first’ retrofit works commences: ensuring future proofing for installation of heating systems 	<ul style="list-style-type: none"> r. Finalise initial programme delivery plan s. Preparing and commencing planning applications for relevant properties

	<ul style="list-style-type: none"> l. Engagement/surveys with residents before, during and after the retrofit works have been completed (<i>throughout all seasons after works are completed</i>) m. Continue to install energy-efficient and/or hydrogen-ready boilers n. Regular audit by independent specialist consultancy firms to assess progress against milestones and main targets. o. Scale-up retrofit works year-on-year p. Embedding new ways of working/investment in existing homes so that it is business as usual q. Explore and apply for grant funding opportunit(ies) that arise to achieve best value for Hexagon – though the retrofit programme not driven/dependent on grant funding 	<ul style="list-style-type: none"> t. Capture lessons learnt from the on-going programme for the EPC rating C ‘fabric-first’ retrofit works. u. Embedding new ways of investment in existing homes so that it is business as usual v. Commence procurement process for first stage of works to delivered w. Explore and apply for grant funding opportunit(ies) that arise to achieve best value for Hexagon – though the retrofit programme not driven/dependent on grant funding
<p>2031 – 2050</p>		<ul style="list-style-type: none"> x. Undertaking of ‘fabric-first’ retrofit works commences: ensuring future proofing for installation of heating systems y. Engagement/surveys with residents before, during and after the retrofit works have been completed (<i>throughout all seasons after works are completed</i>). z. Cease installation of gas boilers in 2035. aa. Commence installation of suitable low carbon energy heating systems from 2036 onwards in fully insulated homes. bb. Regular audit by independent specialist consultancy firm to assess progress against milestones and main targets. cc. Reinforce new ways of investment in existing homes dd. Scale-up retrofit works year-on-year ee. Develop and agree solutions to offset any residual carbon emissions to achieve NZC after all retrofit works and installation of low carbon heating system(s) have been installed. ff. Explore and apply for grant funding opportunit(ies) that arise to achieve best value for Hexagon – though the retrofit programme not driven/dependent on grant funding

4.2 Developing environmentally sustainable new homes

- 4.2.1 Hexagon will not install gas boilers but only low carbon/zero carbon heating systems in its newly built homes.
- 4.2.2 Hexagon is mindful of the high cost of retrofitting new homes if they are not well insulated and so it is committed to developing environmentally sustainable homes. However, Hexagon has to balance the cost of developing homes at much higher standards than those set by the government, the level of development grants it receives from the government and what Hexagon can afford to invest from its own reserves. This approach ensures that Hexagon is competitive enough in the market to deliver new homes and therefore, Hexagon will remain ambitious but cautious.
- 4.2.3 In 2023, Hexagon will partake in the government's technical consultation on legislation that would be expected to be implemented in 2025 with the aim to ensure that once a new home has been built, no retrofit works will be necessary to reach the net zero carbon target as the electricity grid continues to decarbonise.
- 4.2.4 The Department for Levelling Up, Housing and Communities announced major Building Regulations changes that will come into effect from June 2022, one of which is that new homes in England will have to produce around 30% less carbon emissions compared to the current standards, which have been in place since 2013. There will also be changes to Part L (fuel and power) and Part F (ventilation) of the Building Regulations as well as the announcement of a new Approved Document O to mitigate the risk of overheating in new homes. Hexagon will adhere to these new regulations.
- 4.2.5 As a Greater London Authority (GLA) Investment Partner, and where relevant, Hexagon will also ensure it aligns its development programme with the London Mayor's new environmental standards for developers wishing to use City Hall funds to build affordable housing. These standards include making all developments with 10 or more homes net zero-carbon and air quality neutral.
- 4.2.6 A minimum on-site reduction of at least 35% beyond Building Regulations (2013) is required for developments of 10 or more homes, of which 10% should be achieved, through energy efficiency measures. Where it is clearly demonstrated that the net zero carbon target cannot be fully achieved on-site, any shortfall would be provided via a cash-in-lieu payment or 'off-site'.
- 4.2.7 The energy hierarchy set out by the GLA/Mayor has the following four strands:
- a. Be lean: use less energy and manage demand during operation

- b. Be clean: exploit local energy resources (such as secondary heat) and supply energy efficiently and cleanly
- c. Be green: maximise opportunities for renewable energy by producing, storing and using renewable energy on-site
- d. Be seen: monitor, verify and report on energy performance.

4.2.7 Hexagon will have a robust framework that applies to all new homes it builds. The above-mentioned government's pending policy changes to building regulations will guarantee that new homes built from 2025 onwards will be net zero carbon or net zero carbon ready. Therefore, Hexagon is committed to achieving all of the government's/GLA's targets on all new developments that Hexagon develops in its own right, i.e. non-Section 106 new developments. Hexagon will aim to achieve these GLA targets on-site rather than off-setting via financial contributions as outlined in Section 4.2.5 above.

4.2.8 The Passivhaus Standard is regarded the 'gold' standard for new homes. It adopts a whole-building approach with clear, measured targets, focused on high-quality construction, certified through an exacting quality assurance process. However, some additional work on heating systems and renewables is still needed to meet net zero carbon standards. The costs of building to this standard range from 9 – 20% more than using traditional construction methods and there is minimal knowledge and experience in building to this standard in the construction sector.

4.2.9 Hexagon will not adopt the Passivhaus Standard as the default to developing all new homes. However, Hexagon will pilot some Passivhaus principles⁵ on one of its small infill developments, subject to planning consent from the Local Authority. This pilot will 'test' the viability of achieving Passivhaus Standard on a small development. All lessons learnt from this pilot development will be used to inform Hexagon's future planning of relevant new developments.

4.2.10 The London Energy Transformation Initiative's (LETI) approach to achieving net zero carbon in new build homes focuses on whole-life carbon, which is comprised of two key components:

- a. Operational Carbon: A new building with net zero operational carbon does not burn fossil fuels, is 100% powered by renewable energy, and achieves a level of energy performance in-use in line with national climate change targets.

⁵ No thermal bridging, Superior windows, Mechanical ventilation with heat recovery, Quality insulation, Airtight construction

- b. Embodied Carbon: Best Practice targets for embodied carbon are met, and the building is made from re-used materials and can be disassembled at its end of life in accordance with the circular economy principles.

4.2.11 The LETI guidance has informed much of the GLA’s latest approach set out in its Design Guide.

4.2.12 Hexagon will be working with a specialist environmental sustainability consultancy firm that was one of the founding members of LETI to help steer Hexagon’s approach to net zero carbon on one of Hexagon’s new development projects. This consultancy firm will also advise Hexagon the specifications for air-source and ground-source heat pumps, compliance with the Mayor’s ‘Be seen’ strand (see Section 4.2.6) and mechanical, electrical and plumbing installations.

This work will ensure that successful technological solutions that Hexagon eventually adopts are informed by knowledge, experience and expertise. Subject to government regulations/policy, financial analyses and outcomes of any pilot projects, Hexagon aims to move towards a LETI standard for its our new build homes as this is closely aligned to the GLA’s direction of travel. The additional costs of meeting the LETI standard is estimated at 4.2% for a development with less than 10 dwellings. In the first 18 months of this Strategy, Hexagon will undertake financial modelling to establish the affordability of the LETI approach across Hexagons’ future new build programme across different types and sizes of homes.

4.2.13 The planned broad targets for newly build homes are set out in Table 2 below. Hexagon will undertake further work to establish the most suitable/viable and measurable targets.

Table 2: Hexagon’s targets for new homes

Target	Constraint	Strategies	Timescale
Design for low energy use by focusing on the fabric energy efficiency and setting targets for heat demand kWh/m ² .	Need to establish an appropriate kWh/m ² target which is financially viable	Commission further work with a specialist consultancy firm to establish appropriate kWh/m ² target to include input from supply chain partners	March 2023
On future land led developments install heat pumps and solar photovoltaics (PVs) on the roof (Flatted blocks – for communal areas).	Solar PVs on roofs of houses – tenancy agreements / shared ownership leases do not reflect need reviewing	Project Brief/Design excludes use of fossil fuels and sets out requirements for air source heat pumps and solar PV installations. Communal heat pumps, electric boilers, ground source heat pump, specifications to be incorporated into Project Brief/Design.	All new developments starting on site in 2022/23 (where updated Project Brief used) to feature heat pumps and solar PVs

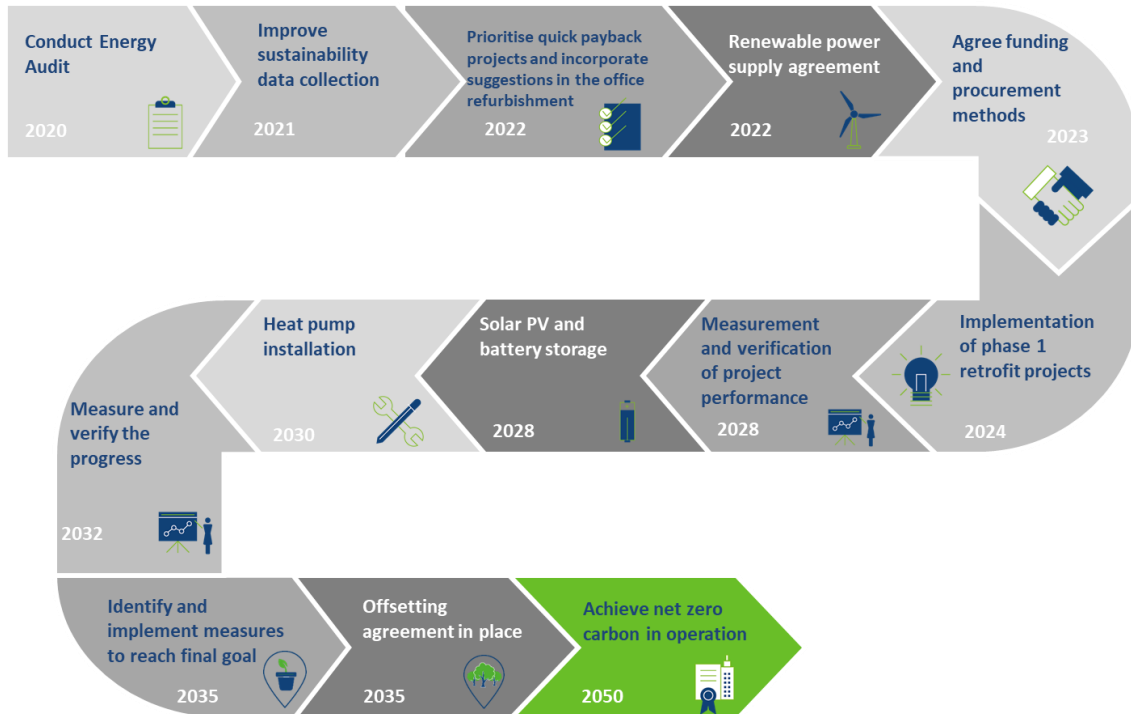
		Tenancy Agreements and shared ownership leases to be updated to capture solar PV electricity generation	Tenancy Agreements and leases (houses) updated for solar PV installations – December 2022
Identify and account for the embodied carbon in newbuild homes	Not enough knowledge about embodied carbon measures and financial implications	Commission further work with a specialist consultancy firm to establish an appropriate method to measure embodied carbon e.g. LETI carbon primer	March 2023
Establish individual component efficiency standards	Not enough knowledge about the deliverability and financial implications of increasing component efficiency standards	Commission further work with a specialist consultancy firm to establish appropriate component efficiency standards for windows, doors and floors	March 2023
Establish an air tightness target	Not enough knowledge about the deliverability and financial implications of increasing air tightness (air permeability) targets	Commission further work with a specialist consultancy firm to establish appropriate air tightness targets	March 2023
Roll out training and build-on existing skills within team	None	Training programme for all Development team members to be finalised with a specialist consultancy firm	April 2022
All newly built homes to be targeted to achieve EPC Rating B	None	Current Project Brief/Design sets out a minimum requirement for EPC Rating B	In place
All GLA funded homes in 2021/26 programme to meet the sustainability and zero carbon targets set out in funding prospectus. Minimising use of off-sets.	Not enough knowledge about the deliverability and financial implications of meeting requirements without off-set approach.	Commission further work with a specialist consultancy firm to establish deliverability and financial implications of meeting GLA standards, taking account of ambition and targets set out in this strategy.	March 2023
Establish deliverability of Passivhaus Standard	Market / supply chain not yet mature enough to deliver Passivhaus Standards	Use learning from the pilot project at a development to inform approach on future developments (<i>subject to planning consent</i>)	March 2023

4.3 Hexagon's head office

4.3.7 Between 2022 and 2035, Hexagon will carry out several initiatives to eliminate the use of fossil fuels and increase energy efficiency in our office building.

4.3.8 The roadmap in Diagram 2 below illustrates the work that has/will be done to achieve the net zero carbon target by 2050:

Diagram 2: Hexagon's Head Office's Roadmap to Net Zero Carbon by 2050



4.3.9 The key steps that Hexagon has already taken are:

- Commissioned an Energy Audit to provide initial advice and guidance on improving energy efficiency in our offices.
- Improved data collection including half hourly data on electricity consumption.
- Installed Pyroelectric/Passive, Infrared (PIR) lighting into all refurbished meeting rooms.
- Overhauled the existing Heating, Ventilation and Air Conditioning (HVAC) system to ensure it is running as efficiently as possible.

4.3.10 The key steps that Hexagon will take between 2022 and 2035 are:

- Ensure our electricity supply is from certifiable renewable sources.
- Improve data quality and monitoring to enable us to establish practical actions to be taken to reduce energy consumption during peak periods.
- Implement a building management system that enables control of energy sources outside of normal business hours.

- d. Replace the hot water tank with point of use water heating.
- e. Optimise the existing HVAC system by obtaining specialist advice on cooling loads, Fan Coil Units (FCUs) and Electronically Commutated (EC) motors.
- f. Replace existing windows with thermal efficient, low Ultraviolet (UV) products.
- g. Identify and install the most suitable energy conservation measures with longer payback periods (solar PV and heat pump feasibility).
- h. Conduct a new energy audit to identify and implement any additional measures might be required to reach the net zero carbon goal.
- i. Set an agreement to offset any remaining carbon emissions.

4.4 Resident Engagement

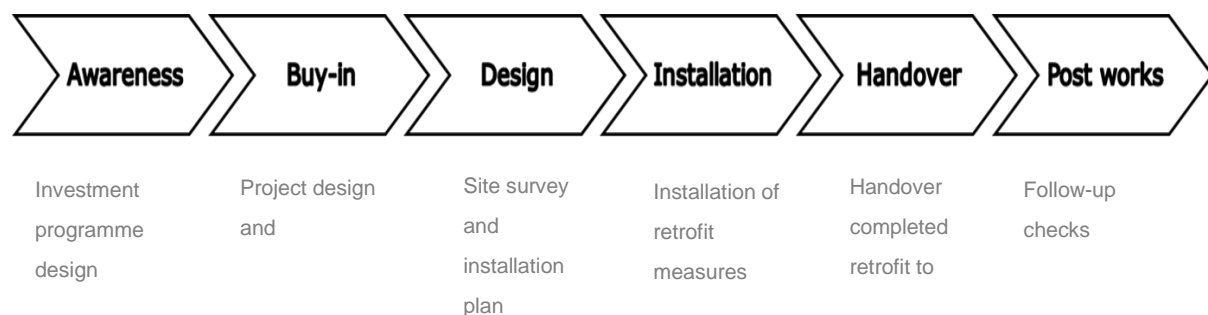
4.4.1 Residents will be central to the successful planning and implementation of the retrofit works in their homes. Therefore, residents’ early awareness and buy-in of the objectives of this Strategy is critical. So, in 2022, Hexagon will draw-up a bespoke resident engagement strategy that focusses on residents’ invaluable contribution to delivering this Strategy.

4.4.2 Hexagon will also continue to work with its residents and partners on increasing recycling practices and where possible, contribute to other relevant initiatives, which improve the environmental sustainability of an area. Additionally, with the support of specialists in environmental sustainability, Hexagon will work with residents on helping them use their homes in a way that reduces their energy bills and carbon emissions.

4.4.3 Diagram 3 below provides an outline of a resident’s entire journey when their home has to undergo retrofit works, i.e. from raising awareness to

Diagram 3: Resident’s journey for retrofit projects/works in their homes

Retrofit projects: The resident’s engagement journey



4.4.4 Most importantly, before undertaking retrofit works, Hexagon will also consider the cost of energy to residents, convenience of the retrofit works to the residents and the air quality in residents' homes.

4.5 Hexagon's employees and Board members

4.5.1 Hexagon will encourage its employees and Board members to minimise travel, i.e. wherever possible, or consider alternative ways of travelling, such as public transport, cycling or walking to work and where possible, hold online meetings, without compromising the benefits of in-person interactions.

4.6 Hexagon's partners

4.6.1 Hexagon's partners include its contractors, consultants, managing agents, local authorities and several organisations and companies that deliver services to Hexagon and/or on behalf of Hexagon. Hexagon expects its partners to adhere to the key principles and objectives of this Strategy and, where possible, Hexagon will incorporate relevant environmental sustainability requirements in its contracts with partners.

4.6.2 Hexagon will continue to work with the local authorities in which Hexagon operates by fostering partnership working that achieves the environmental sustainability goals of an area. Where possible, Hexagon will contribute to the development of the local authorities' respective environmental sustainability strategies and ensure they align with Hexagon's Strategy.

5.0 Independent benchmarking and assessment

5.1 Hexagon will work with SHIFT (Sustainable Homes Index for Tomorrow), who will continue to benchmark Hexagon with other social landlords in England. The results of the benchmarking will be incorporated into Hexagon's continuous improvement plans.

5.2 Additionally, Hexagon will engage an independent specialist firm to undertake annual reviews of all relevant activities that Hexagon will be undertaking to ensure Hexagon is on course to meet its three main objectives outlined in Section 2.2 (a), (b) and (c) above and also ensure it is successfully delivering other aspects of this Strategy, including the bespoke resident engagement strategy on environmental sustainability. Results of these annual reviews will be reported to Hexagon's Board and published in Hexagon's annual reports.

Prepared by: Property Services Director

Approved by: Hexagon's Board

Approved date: March 2022

Date of last review: September 2017

Document Owner: Property Services Director

Date of Next Review: March 2026

Hexagon