Raven Housing Trust

Environmental Sustainability Strategy 2021-22 to 2025-26

1.0 Introduction

Climate change, environmental sustainability and Environmental, Social and Governance (ESG) matters have become ever higher profile in recent years. This strategy responds to that new environmental agenda while also linking with our core purpose of Building Homes, Changing Lives and our vision to become “The South East’s leading Housing Association focused on delivering … high quality, sustainable, and affordable homes”.

It also links to the Investment and Regeneration Strategy and Development Strategy, which both set out practical ways to deliver environmental sustainability within Raven’s homes and operations. The strategy links to the Social Housing Environmental, Social and Governance (ESG) Reporting Standard to give a clear scope and enable measurement. It reflects the challenges and opportunities arising from our current position and ambition.

The main objectives/deliverables/targets of the strategy are:

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3.0 Background and relevant national and policy context

We need to adapt to current and forthcoming national developments including:

- A legal commitment from the Climate Change Act 2008 (as amended in 2019), to achieve Net Zero Carbon (NZC) by 2050, along with the potential for new funding becoming available to help deliver it.
- Government's Industrial 'Clean Growth' Strategy target for our homes to meet Energy Performance Certificate (EPC) Band C by 2030 "where practical, cost-effective and affordable".
- The Sustainability Reporting Standard for Social Housing has just been published, supported by a cross-sector group of funders and housing providers, and setting a sustainability framework.
- A need to meet the expectations set out in the Social Housing White Paper 2020 to ensure residents can live in good quality homes.
- There is increasing opportunity and resident expectation with technological change; but also challenges from skills shortages and financial challenges and fuel poverty faced by customers due to the cumulative effect of welfare reform, Covid and Brexit. We need to provide homes that are affordable to run.

ESG Framework and scope

We need a clear framework, structure and way to measure success. We propose to adopt the Social Housing Environmental, Social and Governance (ESG) Reporting Standard to give a clear scope and enable measurement.
https://esgsocialhousing.co.uk/wp-content/uploads/2020/11/SRS_final-report-2.pdf .

ESG framework and reporting headlines for sustainability

1. EPC ratings of existing and new homes;
2. Direct greenhouse gas emissions, scope 1, including fuel combustion on site such as gas boilers, fleet vehicles, fridge and aerosol disposal). Indirect, scope 2, from generation of purchased energy. Note: we cannot report on scope 3 (supply chain) yet;
3. Energy efficiency actions taken
4. Mitigation actions for increased risk of flood and over-heating
5. Helping residents manage their homes through correct information on ventilation, heating, recycling etc.
6. Providing green space and promoting biodiversity
7. Actively manage and reduce all pollutants
8. A strategy for responsible sourcing of building materials and disposal of their waste
9. A strategy for good water management.

4.0 Objectives of the strategy

Vision

We will use our skills, technology, innovation, and partnerships to achieve a target that by 2050 Raven's buildings and operations will be 'net zero carbon'. Our buildings and work will be highly energy efficient and powered from on-site and/or off-site renewable energy sources, with any remaining carbon balance offset. We will take proactive measures to meet wider sustainability goals, including waste, biodiversity and water, and Environmental, Social and Governance reporting standards. We will weigh up impacts on embodied carbon in our decision-making.

Headline proposals and targets

Greenhouse Gases (GHG), including Net Zero Carbon (NZC)

2.1 Approach

In Raven the main sources of greenhouse gas (GHG) emissions are heating and electricity for our homes and offices, and fuel combustion for transport. Other potential sources are refrigerants, aerosol propellants, foam blowing agents, solvents, and fire retardants, which we need to consider in construction materials. Livestock, landfill and biofuel burning would be other potential sources, but not relevant to Raven.

The carbon footprint analysis below showed that the vast majority of Raven's greenhouse gas emissions are carbon dioxide from energy used by our homes. In this strategy we will therefore approach the reduction of GHG by an initial focus on decarbonisation of homes through retrofit to achieve net zero carbon NZC by 2050 or as early as resources allow.

2.2 Baseline for Net Zero Carbon

Using data from our asset management database, utility bills, transport costs and employee survey, Raven's carbon footprint in the baseline year, at December 2019, was **15,498 tonnes CO2 per year** across 5,759 properties supplied:

- Raven's average carbon emissions are 2.12 tCO2. The national average is 2.7 tCO2.

- Our average annual fuel bill is estimated at around £540 at today's prices[1] (this is for regulated emissions only, defined below, and excludes electricity for plug-in devices).

Some measures are already in place: low flow taps and sava flush fitted as standard at void stage; all homes have double glazing and loft and cavity wall insulation where possible. An External Wall Insulation pilot was completed last year. Recycling in the office was improved with labelled bins.

2.3 Definition of Net Zero Carbon for buildings

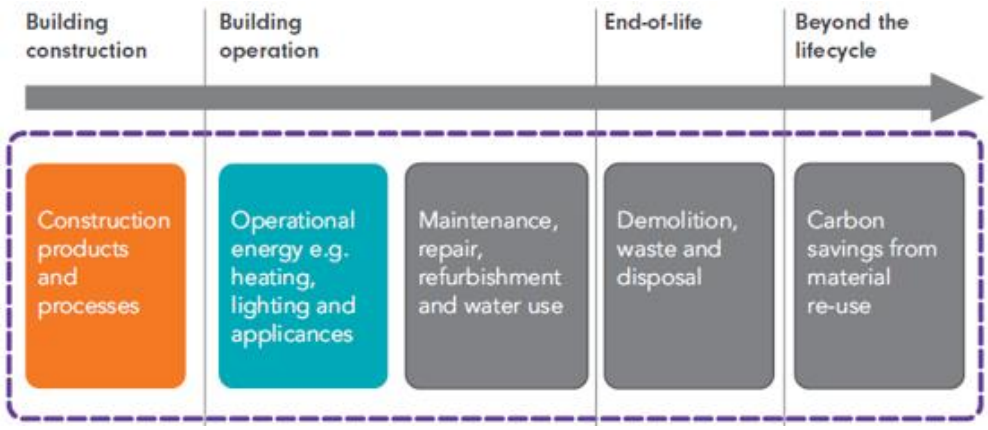
Our baseline footprint was calculated using:

- 'Regulated' energy of our homes (heating/cooling, hot water, lighting and energy needed to run pumps/fans etc to support heating/cooling/hot water) – 77%.
- 'Unregulated' energy of our homes (appliances and plug loads) – 21%.
- Staff commuting (0.83%) and business travel (0.18%), and office energy (0.48%).

This strategy aims to achieve an 85% reduction in the areas above, with the assumption that the remaining 15%, which is mainly in the area of unregulated energy, will be accounted for by the 'greening' of the national grid over time as governments increasingly invest in renewable to meet national targets. We will also be assisted in this by improvements in technology. We could deal with final residual emissions through off-site off-set, but only if necessary at 2050.

85% reduction is equivalent to:

- 13,000 return flights each year from London to New York, or
- a 106,600 m tall cube, the height of 340 Shard towers (and same width and depth).



For our buildings Raven will adopt the UK Green Building Council's (UKGBC) **operational energy** definition, below, as the core criteria for our work in this strategy.

Net zero carbon definition for operational energy: "The carbon emissions associated with a building's operational energy on an annual basis is zero or negative. The building is highly energy efficient and powered from on-site and/or off-site renewable energy sources, with any remaining carbon balance offset".

For the following, the strategy does not set out to achieve NZC, BUT will still make reductions to meet the requirements of the ESG Reporting Framework:

- Building materials and waste disposal - we will reduce our impact through procurement and waste management planning and monitoring/reporting

[1] https://www.statista.com/statistics/418126/electricity-prices-for-households-in-the-uk/ and gas in same location

- Supply chain - we will reduce our impact through procurement.
- NZC during construction, repair and demolition needs significant changes to the supply chain, so is not addressed in this strategy at the current time.

To emit 0kg carbon at comfortable internal temperatures, buildings must achieve Fabric Energy Efficiency Standard (FEES) of 39kWh/m2/yr for flats/mid-terraced, and 46kWh/m2/yr for end-terrace/semi-detached/detached homes.

2.4 Carbon from our existing homes

The plan is profiled to deliver by 2050 as the baseline scenario, but we will move as quickly as financially viable. The estimated gross cost to achieve this is approx.£170m, or £30k/home.

From this we have discounted savings against planned works that will no longer need to be done (including homes for disposal) and potential grant income, leaving a **net cost of £104m, or £18k/home**, across the 30-year plan:

- Including: preliminary/mobilisation costs, professional team, clienting, and an assumed average VAT value, but
- Net of: Grant, reduced costs over time, savings on our planned works programme.

We will prioritise helping customers in fuel poverty with affordability challenges, identified as homes where we know energy costs are high and/or where we know from data, or referrals from Moneywise/partners.

Our approach to the decarbonisation of our existing homes is to apply one of 3 different approaches for each home:

- ~21% of homes need 'low cost' solutions (net cost <£10k). These are newer build, higher performing fabric, where measures mainly address energy sources.
- ~54% of homes are 'mid cost' (net cost £10k-25k). A fabric first approach, likely to be incremental.
- ~25% of homes are 'high cost' (net cost £25k-70k), needing a single visit whole house retrofit eg Energiesprong.
  The three approaches will help to simplify planning, programming and procurement.

We will adopt a **'fabric first'** approach, to meet NZC targets in the efficient/cost-effective manner that we can:

- We will identify suitable projects, prioritising people in fuel poverty and homes with poor EPC ratings.
- We will engage with residents to understand their interests and needs, develop a plan together and communicate the benefits that they can receive from the project.
- We will improve the fabric of the building through energy efficiency retrofitt to reduce energy demand.
- Then we will seek to decarbonise the fuel source, and
- Optimise efficiency of supply.

We will begin to eliminate gas boilers from our estate as soon as it is feasible to implement the necessary fabric improvements to replace gas boilers with heat pumps. Early projects to begin in 2022.

2.5 EPC ratings

Raven's average EPC is better than average, with a 'SAP' (the EPC Standard Assessment Procedure) rating per home of 73.9, compared to a national social housing average of 68. Although we are committing to improve EPC ratings by 2030, Raven will not adopt a separate EPC target as our ultimate goal is NZC. Striving to meet an artificial intermediary EPC target on the way will introduce inefficiencies and waste. Our approach is to prioritise homes with worse EPC ratings (D and below) for the installation of NZC measures, or disposal or regeneration as appropriate.

2.5 Carbon from Raven's operations and transport/fleet

- **Office and communal energy**: we will continue to source electricity from 'green energy' suppliers, currently SSE Green, where 100% of our electricity is backed by Renewable Electricity Guarantee of Origin certificates (REGO's) with a zero-emission rating. The consumption used is matched with an equivalent volume of renewable electricity generated from large scale wind and hydro sources and exported onto the National Grid.
- **Decarbonisation of fleet:** In 2020 we procured 2 electric vans as a pilot. One charging point is installed at a sheltered scheme car park and the other at a member of staff's home (with a clawback agreement in place). We will assess the operations and costs of both approaches at the end of a year and develop roll-out plans.
- **Business mileage and staff commuting:** Some staff use personal cars and claim back mileage. We will encourage the use of more sustainable travel means by offering higher mileage payments for those who use a low emissions vehicle or cycle/walk. Through our Target Operating Model and Better Connected we will reduce the need to travel, through distributed working, optimised right first time and imprest stock management, remote viewing of customer issues and survey data.
- **Residents' vehicle emissions**: All Raven land-led new-build projects will include EV charging points from 2021. We will permit residents to install electric vehicle (EV) charging points at their homes at their own cost if they have a dedicated parking place. From 2023, once we have developed the detail of our policy and tested it, we will also begin to install pilot charging points in Raven customer car parks.

2.7 Carbon from new build and MMC

The Future Homes Standard seeks to reduce carbon emissions from new builds, requiring low carbon heating and energy efficiency. We will seek for all new build affordable homes to achieve operational net zero carbon as defined by the UK GBC above, to avoid the need for future retrofit works. Where the cost of meeting NZC is detrimental to project viability we will consider the level of sustainability we can reach and highlight the gap and cost to achieving. We will present options as part of the approval or accept that as we approach 2050 retrofit technology will have reduced in cost and designs improved and the 'greening' of the grid will serve to close the gap.

Where required, design will seek to ensure ease of retrofit. This approach for the life of this Strategy recognises that green building is in its relative infancy in the UK. We seek a 'fabric first' approach on our new homes before considering the use of mechanical or electrical building services systems. Our Employer's Requirements will be regularly updated to ensure best practice as well as linking effectively with our retrofit programme.

The majority of projects will be delivered utilising Modern Methods of Construction (MMC) to support our aims for NZC, standardisation and fire safety. Any utilised technology will have undergone testing and continuous learning to ensure its suitability, robustness and acceptable life cycle costs.

The first sites to be delivered under this Strategy will be Chavecroft and Pells in 2021. Monitoring and feedback will be key to ensuring we learn from residents' experiences and design and technology in-use performance.

2.8 Carbon from demolition and decommissioning

This is currently outside the scope of our definition of Net Zero Carbon but impacts will be considered in decision-making (see Waste below). The industry has a long way to go in developing appropriate tools to manage and evaluate NZC for construction and end of life. We will however collect data on this and seek to make improvements.

3. Energy efficiency

Support, information and tools to assist residents on energy efficiency and managing their homes is delivered within the Healthy Homes project and help with managing costs and swapping supplier is offered via Moneywise. We will adopt a fabric first energy efficiency approach to the decarbonisation of our properties within the NZC programme.

4. Mitigation of flooding and overheating

We will continue to implement Sustainable Urban Drainage System (SUDS) principles and support drainage projects to reduce flood risk affecting our customers or homes, and ensure customers with over-heating problems have sufficient ventilation and shading.

For new builds we will focus on resilience to flood risk and temperature increases in line with the National Planning Policy Framework and best practice, including shading, SUDS and attenuation. The Fabric First approach requires a focus on the risk of overheating, although not yet covered by Building Regulations. We will adhere to and promote best practice and the UK GBC's approach, focusing on thermal comfort, feeding through to design, procurement and construction.

5. Supporting residents to manage their homes

We will provide information and support for customers who have new NZC technology or who need support with home energy use, ventilation or recycling. We will invest in the Healthy Homes project until 2023, offering support with mould, condensation and damp, with physical issues including IoT data and management support. We will install humidity and temperature controls in homes that we retrofit and 'problem homes' to enable residents to see and control issues, and Raven to assist. A sustainability communications plan will inform customers about this strategy.

6. Green space and biodiversity

Raven Neighbourhood Wardens will continue to improve existing green spaces with benches, play projects, pond clearance, bird and bat boxes. For our new build programme we will seek to improve the ecological value of sites in our programme. Ecology and environmental surveys and monitoring as well as dedicated landscape designs form part of our standard approach to development. We will also work with residents to assess preferences for flora on new sites (for example incorporating edible varieties, bee friendly etc), and promote the role of allotments/gardens from a place making and sustainability angle, eg community projects between residents and local schools.

7. Pollutants

We will review substances that we use in our maintenance, cleaning and operations that currently fall under COSHH assessments and seek to replace harmful and polluting materials with less harmful products where possible. We will continue to dispose of fridges and aerosols responsibly.

8. Building materials and waste

We already work with our building materials supplier, Buildbase, to identify products that have reduced pollutant and GHG emissions associated, whilst maintaining value for money. We will reports on and grow this work.

Waste: Britannia Crest who also report on weights and %ages recycled. Currently recycling 89%. We will continue communications campaigns to residents about the cost and environmental impacts of fly-tipping, as 65% of Raven tipping costs are generated by residents.

Our move to MMC for new builds will reduce waste on site, reducing off-cuts, over-ordering and deliveries to match stages on site closer. In our regeneration programme we will reduce waste in demolition, utilising a waste planning hierarchy that prioritises on-site re-use of materials and minimises waste to landfill.

9. Water

Since 2011 we have installed small water saving devices at void stage such as tap aerators, shower heads, shower flow regulators and dual flush devices. We are working with Sutton and East Surrey Water to support them on a project to install water meters in all Raven homes that do not have them. They are also beginning a new round of small device installation, which we are working closely on. We will run campaigns to explain the benefits and how to make savings.

These devices can save residents up to 20-30 litres/home/day, or £150/year if on a water meter. These savings are across water and energy bills, so those not on a water meter will still see small savings on energy.

Approach and programme delivery for retrofit

Innovation

Nationally, decarbonisation skills, technology and supply chains have huge potential to improve, particularly over the next 5-10 years. Raven's programme will be open-minded about technological solutions to ensure that, as supply chains grow and technology and skills improve we can stay abreast of innovation and take full advantage. We will choose technologies that are 'customer-friendly', easy to control and maintain.

Learning and early projects

We will learn from the experience of others wherever possible as we cannot test all technologies and approaches ourselves. We will learn from all projects to develop our skills, and test new ideas or delivery, communications, procurement or legal/governance approaches in the local context, with strong project evaluations and reviews.

Delivery

Raven will use lean process engineering approaches with an aim of making up to 30% savings against the initial baseline cost. The traditional approach is to set up a site office and then work on each home in turn. Under the lean approach we will map installation and time-line, analyse the whole programme and design the process in

detail, using a ‘right people, right process, right time’ approach. There will be a schedule of weekly agile meetings which will analyse data and learning from the previous week’s delivery, and plan for the week ahead.

From experience of projects elsewhere, we believe that after the baseline cost of the first home of each project type, lean learnings and efficiencies should enable us to drive savings of 5% - 30%.

We are likely to prefer off-site manufacture for components such as external or internal wall insulation to ensure high quality and accurate planning and manufacture. Delivery will be ‘just in time’ to save on site storage.

Technology

We propose to review opportunities such as those below and invest in delivery where benefits are best. Eg:

- Energiesprong - this whole-house retrofit approach is more expensive but incorporates a long-term guarantee on performance. The alternative is to deliver an assembled range of technologies more cheaply and manage any performance failure ourselves via a trained DLO and specialist sub-contractor base.
- 360-degree survey technology to improve customer experience, data and control.
- Satellite and machine learning survey technology may also be of interest.
- We will commit to installing good ventilation within each retrofitted home with a minimum air quality standard.
- We will use sensor technology to track benefits/use of new systems, and to help residents manage their home. This may require internet access in homes and blocks and we will review how best to achieve our aims for this.
- We will seek to make use of battery storage technology where business cases allow.
- We will use technologies such as low-cost tariff energy to maximise customer savings where possible.

Commercial offer

GIC has reviewed a proposal to launch a new business stream, targeting the renewable technology market. We see this as a stand-alone service with a separate brand and website, targeting the net zero carbon agenda, adapting heating systems and installing heat pumps, insulation and solar energy. Initially, we’ll target the B2B markets, within established supply chains with MSC and TrustMark accreditations before targeting the B2C market, as Better Connected progresses and we’re better equipped to manage B2C

Resourcing and skills for the future

We will respond to changing technologies and build methods to ensure that our staff and supply chain have the skills the need for the future. We will work with partners, including local colleges, and invest in training and consultancy to ensure that our team has the necessary skills. We will raise awareness amongst staff through internal campaigns and staff champions. We will uphold culture and continuity as teams expand to manage delivery of this programme. Additional capacity is built into the plan, with a Carbon Programme Manager post in the 2021-22 budget request.

5.0 Impact on Customer Experience

Links to the Customer Experience Strategy are:

- A customer centric culture where staff own CX, use empathy and understanding, develop services from a customer viewpoint: Falcon were consulted on the early findings and ideas in September 2020, and Falcon and other customer groups will help to work up the programme and develop the approach. We will not discuss detail of individual properties until the correct time to maximise stability and reassurance for customers.
- Customer facing actions demonstrating how they are aligned to Raven's values: Managing changes to homes sensitively, involving customers affected and taking account of their needs
- Direction, and delivery of goals for customers demonstrating a clear golden thread to strategic plan and other key strategies: This strategy was set out as a key objective in the strategic plan.
- A clear focus on most important priorities for customers & actions needed to deliver them: Customer views fed into the development of the strategic plan and as above will be taken account of in delivery.
- Data providing one version of the truth, giving clarity and confidence to knowing, owning and using customer data to make decisions: Extensive data analysis has gone into the decision-making behind this strategy.
- Clearly defined service standards – that we deliver: The purpose of this strategy is to improve standards for customers both of comfort and affordability. We will maintain decent homes standards for all homes.

Services beyond just customer satisfaction – seeking to impress: sensitive management of the change process. We will seek to understand and respect customers' wishes through data, engagement and excellent consultation, to shape the principles and programme plans with them and set clear standards and plans to deliver what we hear is needed. We will make things easy for the customer and ensure their benefits are at the heart of decision-making. They will benefit from reduced bills and increased comfort. We will pass savings on where unaffordable.

- Communications plan will promote the benefits to these homes and offer information via housing choice, settling in service and marketing teams. We will engage with customers well before delivery begins.
- We will work with and learn from others in the sector as to the best ways to do this including homes demonstrations, videos, after care, microsites etc.
- We will ensure resident liaison and training on new technology, including ongoing support to re-let in the future.
- Sensor technology will help customers with home management, benefits tracking and diagnosis of problems.
- A key component of the new build programme will be the 'onboarding' of residents (at installation/first let and beyond) to ensure they understand how to live in their homes comfortably and efficiently.
- We will use lean analysis, off-site construction and continuous improvement to minimise disruption.
- To ensure quality we will have clerk of works/retrofit coordinators for all delivery.

6.0 Protecting our brand

We are continuing to promote the Raven Group as a sector leader on the net zero carbon agenda, and on environmental sustainability more widely as time goes on.

7.0 Value for money (VFM)

The sustainability offer is part of our VFM strategy.

Financial constraints currently prevent an ambition earlier than NZC by 2050. We are beginning our investment now but increasing slowly to being with as Building Safety costs are high over the next 5 years. We plan for hgiher NZC investment later in the programme. In order to be able to afford to invest in NZC regeneration and retrofit, we plan to draw on all finance mechanisms available to us and to dispose of very poor, unviable or un-popular property. We will achieve this as follows:

Income from disposals - We will sell poor stock to the open market and release sites to regeneration (see Investment & Regeneration Strategy). This will release cash in the early years of the plan to enable earlier investment in NZC but has a relatively low impact on the plan across its life due to reduced income from those lost homes in later years.

Bringing forward existing future spend – We will not need to spend the currently planned investment for some planned works (eg some doors, windows, roofs, heating systems), so this has been netted off the forecast cost.

Grants - we will seek to access these funds where they suit the needs of our programme, and will ensure that we allow for the resources required to do so (fund-raising, bid writing, etc).

Innovation/collaboration – We will seek to adopt any innovative approaches that suit our ends and can reduce the costs involved. The main element of this is the Lean process engineering described previously and incentivisation of contractors to reduce costs. We will collaborate with other housing providers to maximise supply chain leverage where feasible.

Resident contribution to a comfort plan – To help fund the investment some organisations are charging residents a portion of the savings that they make on energy bills, and in recognition of the increased warmth they receive. Mechanisms to do this and actual bill savings need to be confirmed, so we will not use this for the early projects but will consider whether it may be necessary to do this if we cannot afford works otherwise.

We are speaking with organisations who would consider funding part of the work if they can claim back costs from residents. As above this is not the funding route of first choice but will be evaluated in case it could form part of a suite of funding means if we need it in order to be able to act more quickly.

Treasury – We will review our treasury strategy to maximise income and seek agreements with existing lenders to enable us to use income from disposals to help meet interest covenant requirements.

Sustainability-Linked Loans and bonds - We will seek to re-finance, including consideration of ESG and sustainability-linked loans (SSL) and Social or Sustainability bonds, in order to achieve our ambitions. SLLs incentivise borrowers' commitment to social and environmental-based performance through an interest rate dependent on that performance. Listing bonds as Sustainability bonds requires

housing associations to measure and report on their ESG credentials. This is why we have adopted the ESG reporting standard.

Voids and arrears - There may be some potential other savings from voids & arrears as affordability improves for customers from home standards as well as carbon retrofit.

8.0 Procurement

We will drive responsible sustainability- related activity through our procurement and contracts wherever possible. Our procurement evaluation measures and contract management will give an advantage to those who adopt stronger measures to improve performance against the ESG measures, for example by meeting stronger waste minimisation targets or reduced carbon emissions. We will keep VFM at the centre of the delivery programme to maximise the value that we can gain for customers. We will link to the Social Value work elsewhere in Raven.

Our procurement plan will have best value for Raven at its heart alongside how we can link with our values and ensure community commitment and equality and diversity. Best value will be measured in both financial and social terms.

Procurement of the carbon retrofit programme: We are keen to consider procurement innovations to enable stronger leverage of the supply chain, including:

- Joint procurement with partners, where that could enable assembly of a larger programme that would drive economies of scale by giving the confidence to the supply chain.
- Partnering contracts to incentivise the contractor to drive the lean process to create project savings, with an open book approach and means of sharing benefits from the savings gained.
- The lean approach will be embedded into the contract and procurement from the outset.

9.0 Stakeholder engagement

Partnerships are absolutely critical for effective delivery of this programme and will include procurement partnerships with fellow housing providers, delivery partnerships with suppliers, contractors and consultants. Detailed partnership and communications plans will be drawn up for the programme at the next stage.

10.0 Assurance and risk

Key sources of assurance for the Board that we are managing the programme and associated risks effectively will be:

Group Investment Committee reports

- Financial and Programme Dashboard; and
- Annual review of Strategy and progress on key actions.

Group Board reports:

- Annual report on performance against Strategy and Action Plan.

Programme and project risk will continue to be managed within the department and reviewed by the Director of Assets and Services and LT (programme level).

The Risk register attached was drawn up with reference to our appetite framework.