MUSE

Our Sustainable Future.

Sustainable Development Action Plan

July 2021

Purpose

The nationwide master developer, Muse, has almost 40 years of experience creating mixed-use communities across the UK.

We have a track record of leading complex, area-wide regeneration projects, and the experience to accelerate new neighbourhoods, with the emphasis on delivery, quality, and sustainability. We're working with partners in 40 places across the UK from Bradford to Brentford, from Salford to Lewisham, with close to 2,500 new homes and 800,00 sq ft of workspace currently on site and a gross development value of over £1.2bn.

As a network of regional businesses with a shared culture and goals, we combine local insight with the resources and capabilities of a large national player. Our regional teams are based in Salford, Leeds, London and Birmingham.

As part of Morgan Sindall Group, we have the financial strength of a leading UK construction and regeneration group with an annual revenue of £3.2bn behind us.

Our Sustainable Future reflects our dedication to being a responsible business, along with our values and behaviours that underpin what we do.

It defines success based on actual performance, whether that's at handover or in use. Our strategy is relevant, repeatable and value adding, embracing the latest industry best practice, as well as built-in flexibility to allow for future changes.

OUR VISION

To create exemplar, sustainable, net-zero developments that maximise social benefits and enhance the environment for future generations.

OUR GOAL

To build communities that are founded upon social value, health and wellbeing.

OUR PLEDGE

To fulfil these responsibilities with integrity, honesty and transparency.

Our Objectives

Six clear objectives will be the cornerstone of our Sustainable Development Strategy in all new places, with minimum and aspirational targets set for each.

NET CARBON ZERO

To be net zero carbon in construction and during operation.

ENHANCING BIODIVERSITY

Delivering a net gain in biodiversity, while providing high-quality green spaces.

CIRCULAR ECONOMY

Eliminating waste and improving resource efficiency through circularity.

HEALTH AND WELLBEING

Delivering high-quality spaces where people can live, work and thrive, while positively impacting both physical and mental health.

SOCIAL VALUE

The positive social, economic and environmental outcomes that we create for individuals, businesses and the government through our development activities.

WIDER SUSTAINABILITY

Capturing wider sustainability areas, such as water, transport and certification.

Sustainable Development Strategy Structure

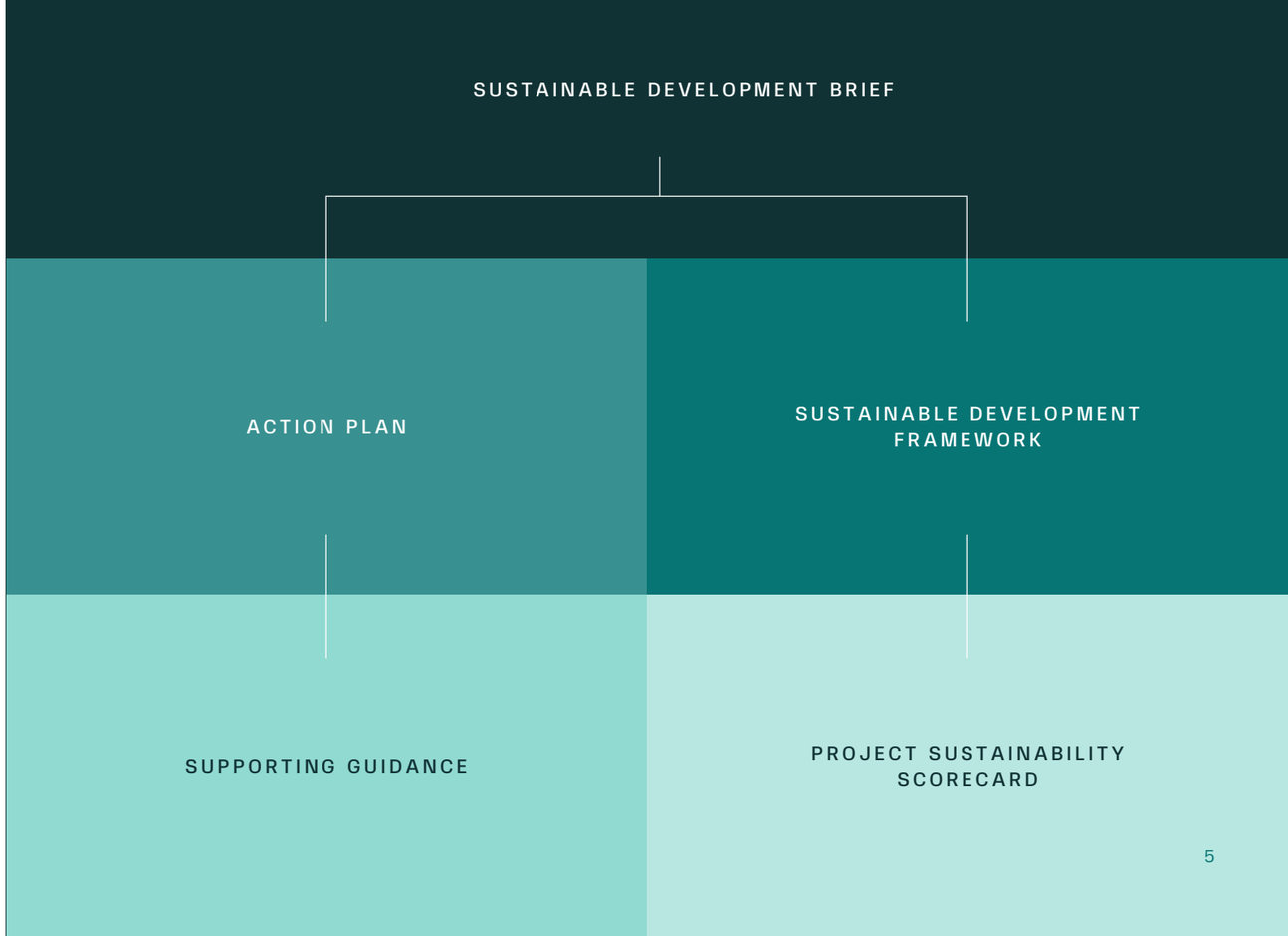
We've created a hierarchy that highlights the tools needed to provide guidance and outline what we need to report on.

Our **Sustainable Development Brief (SDB)** outlines the requirements for all of our projects.

The **Action Plan** provides the expectations and actions needed to achieve each objective, which includes references to the methodology and supporting deliverables.

Supporting guidance around building design will be available.

Our **Sustainable Development Framework (SDF)** contains all our KPIs and supporting information needed to adjust the specific scope and typology of a projects. This should be read alongside the SDB.



Action Plan

Next Zero Carbon

To be net zero carbon at point of completion and during operation.

APPOINTMENT / SCOPE CLARIFICATION	STAGE
Whole life carbon lead (TM54/DfP/PHPP)	Feasibility
Operational energy lead (TM54/DfP/PHPP)	Feasibility

	PROJECT STAGE					
Upfront Embodied & Whole Life Carbon	Feasibility	Pre-Planning	Pre-Tender	Pre-Commencement	Completion	Post Completion
Review early stage considerations regarding upfront and whole life embodied carbon		■	■	■	■	■
Calculate Whole Life Carbon (A-C, Excluding B6) reporting separately A1-A5 following the RICS methodology 'Whole life carbon assessment for the built environment'. Include B6 data from the operational energy prediction	■		■	■	■	■
Update whole life carbon calculation based upon latest design proposals and provide at least 3 alternative initiatives/ interventions to reduce upfront and whole life carbon emissions. Further to the target and aspiration performance level, a 15% reduction in upfront embodied carbon should be demonstrated from the pre-planning stage.	■				■	■
Confirm the embodied carbon contractual responsibilities within the tender documentation.	■	■		■	■	■
Update Whole Life Carbon calculation based upon as-built information (reporting separately A1-A5)	■	■	■	■		■
Operational Energy						
Review early stage considerations regarding operational energy		■	■	■	■	■
Undertake review into facade/ HVAC strategies/building controls/building layout to explore impact on operational energy. Calculate operational energy (TM54 or Design for Performance or PHPP) on the latest design proposals and report on operational energy intensity and space heating demand.	■		■	■	■	■
Undertake a low & zero carbon feasibility study to maximise LZC utilisation on-site (Regulation 25A & BREEAM Ene 04 methodology). All available roof area should be covered in Solar PV.	■		■	■	■	■
Develop metering and sub-metering strategy to enable separate sub-metering of key energy consuming components in accordance with CIBSE TM39: Building energy metering and following the BBP metering guidance	■				■	■
Update operational energy calculation (DfP or PHPP) based upon latest design proposals and provide at least 3 alternative initiatives/ interventions to reduce predicted energy consumption	■				■	■
Confirm the operational energy contractual responsibilities within the tender documentation	■	■		■	■	■
Update operational energy model (DFP/PHPP) based upon as-built product specification, commissioning data and actual control strategy.	■	■	■	■		■
Monitor, verify and report on energy performance during operation. Undertake intensive fine tuning at quarterly intervals, each with a detailed review of BMS/controls/metering operation	■	■	■	■	■	
Ensure quarter reporting to compare performance to simulated predictions to identify performance gaps and remedial actions.	■	■	■	■	■	

Enhancing Biodiversity

Delivering a net gain in biodiversity, while providing high-quality green spaces.

APPOINTMENT / SCOPE CLARIFICATION	STAGE
Ecologist	Feasibility

Enhancing Biodiversity	Feasibility	Pre-Planning	Pre-Tender	Pre-Commencement	Completion	Post Completion
	PROJECT STAGE					
Seek to maximise the onsite Biodiversity Net Gain utilising Natural England' s Biodiversity metric 2.0. Accounting for the following: • Biodiversity should be maximised onsite prior to consideration of offsite options. • New ecological habitats are to refer to and incorporate recommendations from Local Biodiversity Action Plans. • Retain existing trees and habitats unless sufficient justification can be provided for their removal. • Contribute to the biodiversity and ecosystem pathway through providing appropriate habitat restoration and creation potential required for local species and reducing unnecessary human activity, construction work, habitat fragmentation, planting harmful species and water, noise and light pollution. • Identify opportunities to include green, brown and blues roofs. • Identify opportunities for the inclusion of bat, bird and insect boxes.	■			■	■	
All existing features of ecological value are to be protected in accordance with Biodiversity Code of Practice for Planning and Development BS 42020: 2013.		■	■	■		
Ecologist to confirm that all relevant UK and EU legislation has been complied with throughout project delivery.						
Include a section within the Handover guide to inform the owner or occupant of local ecological features, value and biodiversity on or near the site. This should include detailed management and maintenance plans as required by landscape and asset managers as well parts of the handover information for occupiers written in a format that encourages understanding and supportive behaviours. A landscape and ecology management plan or equivalent is to be developed in accordance with BS42020:2013 Section 11.1					■	

Social Value

The positive social, economic, and environmental outcomes that we deliver for individuals, businesses and government through the places we create.

APPOINTMENT / SCOPE CLARIFICATION	STAGE
Cost Benefit Consultant	Feasibility

Social Cost Benefit Analysis	Feasibility	Pre-Planning	Pre-Tender	Pre-Commencement	During Construction	Completion	Post Completion
	PROJECT STAGE						
Engage with the SV team to identify how to maximise the social value delivered by the development and define the anticipated KPI targets. Undertake local research and analysis.	■	■					
Calculate the forecasted Social Value Bank and provide input to Muse reporting and any planning or public consultation exercise.	■	■					
Define the SV targets for the supply chain and relevant clauses/queries to be include in procurement tenders.			■				
Confirm the SV targets, establish the monitoring and reporting arrangements.				■			
Supply chain and PM to gather data. Monitor actual performance against targets and provide regular reports. Implement any further actions to ensure the development maximises the potential SV returns.					■		
Conclude the data gathering and performance information; update the Cost Benefit Analysis.						■	
Review the social initiative performance and Social Value Bank outcome. Produce a SV case study with input from the supply chain. Identify lessons learned for future SV planning.							■

Circular Economy

Eliminating waste and improving resource efficiency through circularity.

APPOINTMENT / SCOPE CLARIFICATION	STAGE
Structural/ waste contractor/ main contractor/ architect	Feasibility

Circular Economy	Feasibility	Pre-Planning	Pre-Tender	Pre-Commencement	Completion	Post Completion
	PROJECT STAGE					
A circular economy review should be undertaken and documented to highlight opportunities to retain and limit use of virgin materials. If applicable this should include a pre-refurbishment/demolition audit. Likely waste streams should be identified and documented within a Site/Construction Waste Management Plan. (BREEAM Wst01).	■	■	■			
Where new materials are selected high levels of recycled content should be specified and reported. Of particular note should be the following materials: • Cement replacement (cast in-situ concrete substructure), Cement replacement (cast in-situ concrete superstructure), Cement replacement (Pre-cast concrete), Recycled content (structural steel), Recycled content (Aluminium), Recycled content (Steel reinforcement), Recycled content (Blockwork).	■	■		■	■	
Design operational waste facilities to allow in-use recycling as per local authority or relevant certification requirements.		■	■			
Include necessary tendering clauses and queries within the tendering pack relating to circular economy. These should be coordinated with the embodied carbon requirements. Include targets related to resource efficiency and waste diversion from landfill			■			
Update the Site/Construction Waste Management Plan with waste reports and provide comparison with design targets.				■	■	

Health & Wellbeing

Delivering high quality spaces where people can live, work and thrive while positively impacting their physical and mental health.

APPOINTMENT / SCOPE CLARIFICATION	STAGE
POE champion, Air quality, MEP Acoustician, thermal modelling consultant, POE	Pre-Planning

POE	Feasibility	Pre-Planning	Pre-Tender	Pre-Commencement	Completion	Post Completion
	PROJECT STAGE					
Develop a Post Occupancy Evaluation (POE) strategy to gather suitable feedback. For office developments this should follow the BUS survey methodology. For developments other than office, the primary aim should be to confirm the percentage of people satisfied.			■			
One year after occupation implement the POE/BUS survey and report findings and feedback to the project and client team. Rectify any significant issues or concerns within the survey. A summary of the findings should also be provided to the occupiers.						■
Indoor Air Quality						
An indoor air quality plan is prepared to define the strategy for handing over and maintain good indoor air quality in use. The internal environment should be designed to achieve the following internal conditions: • TVOCs <500 µg/m^3 over 8 hr • PM2.5 <25 µg/m^3 over 24 hr • PM10 <50 µg/m^3 over 24 hr • CO2 <800 ppm • Formaldehyde <100 µg/m^3 over 0.5 hr		■	■			
Indoor air quality against the above criteria should be tested measured post completion but preoccupancy following the BREEAM Hea02 or WELL V2 methodology as appropriate. If performance falls short of the targets, the air quality should be rectified and retested. If multiple buildings included within the development a representative sample should be taken.		■	■	■		
Indoor air quality against the above criteria should be tested measured 12 months into occupation following the BREEAM Hea02 (TVOCS & formaldehyde) or WELL V2 (PM2.5, PM10 & CO2) methodology as appropriate. If performance falls short of the targets, the air quality should be rectified and retested. If multiple buildings included within the development a representative sample should be taken.		■	■	■		
VOC content of adhesives, sealants, paints, finishes and coating should not exceed <30 g/l as aspire to be <5 g/l. Datasheets should be provided to evidence the performance		■	■			
100% of building materials should be ethically sourced			■			
All finishing wood & timber to have a E1 formaldehyde rating			■	■	■	
No products with an acutely toxic hazard label			■	■	■	
Indoor Air Quality						
Review existing site conditions to establish the feasibility of passive ventilation. If deemed currently unfeasible, future proofing measures should be incorporated to allow for openable windows.	■	■				
Undertake thermal comfort assessment following CIBSE TM52/59/ CIBSE Guide A (where relevant). CIBSE future weather files 2050 & 2080 should be used to confirm compliance. This should be updated if there are significant design alterations at each stage.		■	■	■		
Review internal layouts to ensure occupied spaces are within 7.5m of an external window with a view out.		■	■	■	■	
Internal ambient noise levels are design to achieve the requirement performance requirements for the applicable building type.			■			
Internal ambient noise levels should be measured as part of handover process to ensure performance requirements are achieved. This should be following the BS 8233:2014 methodology and where performance falls short the performance should be rectified and re-tested.					■	

Wider Sustainability

Capturing wider sustainability issues such as Water, Climate Adaptation, Transport & Certification.
See objectives page.

APPOINTMENT / SCOPE CLARIFICATION	STAGE
MEP, drainage, transport, certification	Pre-Planning

	PROJECT STAGE					
	Feasibility	Pre-Planning	Pre-Tender	Pre-Commencement	Completion	Post Completion
Operational Water						
Operational water consumption should be calculated following the Approved Document G. Operational water consumption should be designed to limit daily consumption through careful specification of water components. This calculation should be updated at each stage based upon the latest design.	■					
Feasibility review into greywater recycling should be undertaken.	■	■				
Feasibility review into rainwater recycling should be undertaken.	■	■				
Review in-use water consumption performance compared to development target.			■			■
Climate Change						
Undertake a climate change risk assessment following BREEAM methodology to highlight future climate change risks. Design team members to develop mitigation strategies to limit residual climate risks to low.		■				
Flood risk and drainage strategy to report on the climate change allowance included as part of the proposals.	■	■	■	■	■	
Certification						
A feasibility review into the implementation of the following certification methodologies: • BREEAM • WELL Building Certification • WELL health Safety Rating • AirScore • NABERS UK This should include a simple cost benefit analysis and outline potential rating/scores that could be achieved. This is to be presented to the client team for review and comment. If deemed feasible the assessment methodology as outline by the standard should be implemented and achieved. Where formal WELL Building Certification is not sought, commercial developments should be WELL 'enabled' to allow incoming tenants to easily pursue WELL Certification for their fit-out.	■		■	■	■	■
An accredited energy assessor should advise on the early stage feasibility of achieving a certain EPC rating.	■					
A draft EPC should be generated for each stage, accompanied by a report highlighting assumptions and EPC improvement strategies. Where multiple dwellings are on site a representative sample should be modelled during the early stages.		■	■	■	■	
As-built EPC should be provided as per legislative requirements					■	
Transport						
A review into the provision of electric vehicle charging points. All spaces should have the capability to be adapted in the future.	■	■	■	■	■	
Cycle parking provision should be provided in a clear accessible location which are both covered, and secure as per the BREEAM requirements. Supporting cycle facilities such as cycle workstations should also be provided.	■	■	■	■	■	

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