MIDLOTHIAN COUNCIL NET ZERO HOUSING DESIGN GUIDE

VERSION 1 07 MARCH 2022

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A Great, Green Place to Grow

Buccleuch Street, Dalkeith, Passive House scheme by Smith Scott Mullan Associates

1. INTRODUCTION

AIMS OF MIDLOTHIAN COUNCIL

Midlothian Council is committed to providing affordable homes in a secure environment, for those least able to enter the housing market. Fulfilling this commitment will include a focus on sustainability as the Council aspires to become a net zero carbon Council by 2030 (Midlothian's Climate Change Strategy, (2020). This is to be achieved through, among other means, the design and delivery of net zero carbon housing that follows the Green Building Council UK Net Zero Carbon Buildings: A Framework Definition which considers an approach towards cradle-to-cradle carbon consumption, focusing on the sourcing materials, construction process, embodied energy of the building, operational energy, maintenance and alterations, end of life and re-use of the building and its components.

As set out in Midlothian Council's Local Housing Strategy, approved in 2021 Midlothian Council aims to meet the housing need and imbalances in the housing market through the provision of:

- general needs accommodation
- purpose built accommodation for older people
- housing for people with special needs including: single persons, homeless people, and people suffering from physical disabilities

In addition, Midlothian Council will seek to provide high quality amenity in the area associated with housing developments.

In providing housing solutions, Midlothian Council will be pragmatic, flexible and encourage innovation, whilst seeking sustainability and value for money.

PURPOSE OF THE DESIGN GUIDE

Midlothian Council, through the development and housing management process, has gained substantial experience and knowledge of housing provision. The Design Guide aims to convert this knowledge into principles and preferences for Designers and professional teams to follow. The end result should be the delivery of effective solutions which introduce an element of standardisation, enhance cost effectiveness and minimise maintenance.

The Net Zero Housing Design Guide has been developed in cooperation with Smith Scott Mullan Associates. The Design Guide is intended to give Designers, Consultants, Developers, Contractors, and others involved in the design and construction process a clear briefing on the preferences, requirements, and the general standards that Midlothian Council is seeking to achieve in new developments. Those requirements are in line with the wider national and local policy context, along with Midlothian Council's commitment to become a net zero carbon Council by 2030 (Midlothian's Climate Change Strategy, (2020)).

The Design Guide is a reference base and not intended to be a definitive statement of Midlothian Council requirements. Any additional requirements will be clarified separately by Midlothian Council on the project-by-project basis.

The Design Guide is one part of Midlothian Council's Performance Criteria to which Designers, Consultants, Developers and Contractors must comply.

CHECKLISTS – QUALITY CONTROL TOOL

The checklists forming part of this document are tools to help Midlothian Council control the quality of design and its compliance with the relevant policies and design objectives. They have been formed to allow easy review of the compliance with the Design Guide. This is helpful for the designers as a design development review tool. The checklists are also to facilitate efficient control of the compliance of the design and track non-compliant design components, justification for the non-compliance and approval/disapproval process.

Descriptive portions of the checklists have been formatted to allow the designer to provide evidence and clarify the thought process behind the non-technical, place-making aspects of design e.g. for social sustainability, safety, and ecology etc. It is paramount that all checklists are completed for each project and issued to the Project Manager for review at each key stage. Any changes to the design affecting the checklists should be covered in a revision of the checklist and then re-issued to the Project Manager for review.

2. POLICY GUIDANCE

Midlothian Council Guidance is informed by several National and Local policy and guidance documents listed below. A brief description and external links have been provided for reference of all parties involved in the design and delivery process. The list should be reviewed and updated as new guidance is published. The Midlothian Council Design Guidance will be updated accordingly.

NATIONAL POLICY AND GUIDANCE

a) Housing to 2040. A vision for future homes and communities (March 2021)

In the 2018-19 Programme for Government, the Scottish Government made a commitment to plan together with stakeholders for how our homes and communities should look and feel in 2040 and outlined the options and choices to get there. This new approach encompasses the whole housing system – the Scottish Government is aiming for Housing to 2040 to have a lasting legacy, not just regarding new homes, but that which takes into account the people, place, environment and communities where our homes, both new and old, are located.

The Housing to 2040 ambition is to bring forward the review of the Energy Efficiency Standard for Social Housing, with a view to strengthening and realigning the standard with net zero requirements so that social housing leads the transition towards zero emissions buildings.

It is understood that Housing to 2040 is an ambitious vision which requires commitment, action, and cooperation of many actors within the Midlothian Council and private sector. This design guidance aligns, as relevant, to the vision and principles included in the Housing to 2040 with special attention paid to the following aspects: High Quality, Sustainable Homes, Sustainable Communities, and Homes That Meet People's Needs.

Reduction of carbon consumption targets have been included in implementation stages.

Follow the link for more information

b) Place Principle

The Scottish Government and COSLA have agreed to adopt the Place Principle to help overcome organisational and sectoral boundaries, to encourage better collaboration and community involvement, and improve the impact of combined energy, resources, and investment.

The Place Principle recognises that:

- Place is where people, location and resources combine to create a sense of identity and purpose, and it is at the heart of addressing the needs and realising the full potential of communities. Places are shaped by the way resources, services and assets are directed and used by the people who live in and invest in them.

- A more joined-up, collaborative, and participative approach to services, land, and buildings, across all sectors within a place, enables better outcomes for everyone and increased opportunities for people and communities to shape their own lives.

The Place Principle requests that:

- All those responsible for providing services and looking after assets in a place need to work and plan together, and with local communities, to improve the lives of people, support inclusive and sustainable economic growth and create more successful places.
- All those who are responsible commit to taking a collaborative, place-based approach with a shared purpose to support a clear way forward for all services, assets and investments which will maximise the impact of their combined resources.

Midlothian Council will seek to ensure that investment in housing comprises investment in places. New housing developments should seek to support and enable the delivery of wider objectives and outcomes for the places they are being built in. This should be reflected in site selection, the scoping of a brief for a development and the delivery process for the housing itself.

Follow the link for more information.

This guidance does not directly refer to the Place Principle. It is understood that specific elements of the Place Principle e.g. public consultations might fall into the designers/developers responsibility as part of the planning process. In each case a collaborative, place-based approach is expected from the designers and developer.

To determine the site-specific requirements, designer should enquire Planning regarding a need for Pre-application Planning Services. It is strongly encouraged that the pre-application consultation takes place when recommended by Planning to facilitate successful delivery of the goals listed above.

c) 20-Minute Neighbourhoods

The principle of 20-Minute Neighbourhoods is a place-based approach to reduce inequality and meet net zero carbon emission targets. With a focus on giving people connected and walkable places to live, it supports a lifestyle where it is easier for everyone to choose to live, work and play more locally. Where people can access their essential daily needs within a walkable distance from their home and communities are supported to thrive. This includes access to shopping, recreation and leisure activities, along with schools and local services such as GP practices. People work more from home, in local hubs or in local businesses and access to work and services beyond their neighbourhood is through public transport connections. Housing is affordable with a mix of size and sectors to enable intergenerational communities and ageing in place.

The Improvement Service (with the Scottish Health and Inequalities Impact Assessment Network and the Spatial Planning for Health and Wellbeing Collaborative Group) has published a report comparing the application of policy to deliver a 20-Minute Neighbourhood approach to a more traditional spatial planning approach, to address the Scottish Government's ambition to deliver 20-Minute Neighbourhoods. The 20-Minute Neighbourhood scenario is defined as including "higher density, mixed use development that targets access to public green space, a range of affordable house types, public transport and active travel. The higher density provides the critical mass to support local services and amenities to achieve a mixed-use area that can help to reduce car usage."

20-Minute Neighbourhoods approach now forms part of The Scottish Government Infrastructure Investment Plan and Fourth National Planning Framework.

Any proposals should include the principles of 20-Minute Neighbourhoods in context of the site itself and in relation to adjacent areas and the already existing amenities.

Follow the link for more information:

Elected Member Briefing Note: 20 Minute Neighbourhoods, Improvement Service

d) Setting Housing Standards to Cut Climate Change Emissions 2020.

The Scottish Government has published a consultation asking for views on the proposed New Build Heat Standard. Housing Minister Kevin Stewart said: "The pace of decarbonising Scotland's domestic and non-domestic buildings has to increase significantly to achieve our targets on climate change. The New Build Heat Standard will be an important contribution to this to ensure emissions from heating and cooling our buildings fall close to zero."

The implementation stages of the guidance should be reviewed according to the result of this consultation and its impact on legislation and Technical Standards.

Follow the link for more information.

e) RIBA Sustainable Outcomes Guide

In June 2019, the RIBA Council declared a climate and ecological emergency and approved all key recommendations of its Ethics and Sustainability Commission, the independent advisory board set up to help the RIBA fulfil its commitment to the UN Global Compact and the 17 UN Sustainable Development Goals. To help implement these recommendations, this guide defines a concise measurable set of core sustainable outcomes and associated metrics that correspond to key UN SDGs. It complements the RIBA Plan of Work 2020 Sustainability Strategy and the RIBA Plan for Use Guide.

An outcomes-based design approach will help resolve the now well-known gaps between design intent and in-use performance across a range of metrics and deliver real and lasting reductions in carbon emissions by reinforcing the feedback loop between briefing and outcomes.

This guide is recommended as a useful tool for designers, clients and contractors helping to establish a structure of the process within the RIBA Work Stages.

Follow the link for more information.

f) Architecture and Design Scotland – Carbon Conscious Places

This report shares the learning from Architecture and Design Scotland's year-long exploration in to designing for a changing climate, where a whole place approach to the net zero carbon challenge has been considered. The report looks at different ways to address all scopes of carbon emissions, as well as adapting to the impacts of climate change through rethinking of how town centres are being used, supported and how they become more self-sufficient.

This guidance includes Carbon Conscious Places principles. Refer to the descriptive portion of the Place checklist.

Follow the link for more information.

g) UK Green Building Council (UKGBC). Net Zero Carbon Buildings: A Framework Definition (April 2019)

The framework has been developed by an industry task group of businesses, trade associations and non-profit organisations, undertaken in a spirit of collaboration and consensus-building. It provides guidance on the definition of net zero carbon buildings – both homes and non-domestic – and a way to demonstrate how a building has achieved net zero carbon status. It focuses on carbon impacts that can be readily measured and mitigated today – operational energy and embodied impacts of construction.

The current functioning definition of a Net Zero Carbon Building is formulated in UKGBC Net Zero Carbon Framework, and it includes Net Zero carbon – Construction, Operational and Offsetting. This definition of Net Zero is adopted in Midlothian Council Net Zero Housing Design Guide.

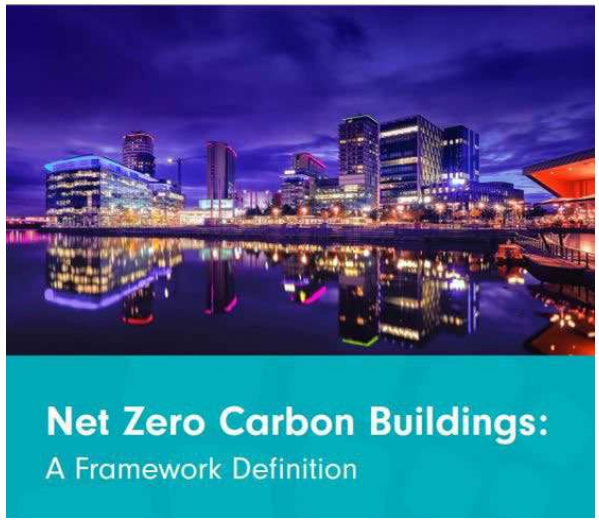
Net zero carbon – construction - When the amount of carbon emissions associated with a building's product and construction stages up to practical completion is zero or negative, through the use of offsets or the net export of on-site renewable energy.

Net zero carbon – operational energy - When the amount of carbon emissions associated with the building's operational energy on an annual basis is zero or negative. A net zero carbon building is highly energy efficient and powered from on-site and/or off-site renewable energy sources, with any remaining carbon balance offset.

Net Zero Carbon Buildings: A Framework Definition is used by Midlothian Council Design Guide to define net zero development.

Follow the link for more information.

Always look for the most up to date guidance produced by Green Building Council UK. Refer to Advancing Net Zero webpage.



h) Renewable Energy Procurement & Carbon Offsetting - Guidance for net zero carbon buildings (March 2021)

This guidance seeks to provide clarity on the procurement of high-quality renewable energy and carbon offsets for net zero buildings and organisations in the UK. It offers a consistent set of principles and metrics to help guide the built environment transition to a state of net zero that is aligned with limiting global warming to 1.5 degrees Celsius.

This resource has been made freely available for building developers, designers, owners, occupiers, and policy makers to inform their decarbonisation trajectories. Given the complexities of certain elements, it will be of most use to energy procurement, facility management and sustainability professionals within these organisations.

Follow the link for more information.

This guidance supersedes some of the information contained in Green Building Council UK. Net Zero Carbon Buildings: A Framework Definition (April 2019). Always look for most up to date guidance produced by Green Building Council UK. Refer to Advancing Net Zero webpage

i) RIBA Plan of Work and RIBA 2030 Climate Challenge

The 2020 RIBA Plan of Work specifies the tasks essential for the delivery of a sustainable design at each stage. The tasks are collated in the description of each stage separately and are also gathered in Section 7 - Sustainability Strategy – detailed tasks. It is recommended that designers and project managers use this guidance to guarantee smooth and cost efficient project delivery.

The RIBA has developed the 2030 Climate Challenge to help architects meet net zero (or better) whole life carbon for new and retrofitted buildings by 2030. It sets a series of targets for practices to adopt to reduce operational energy, embodied carbon, and potable water.

This guidance includes the RIBA 2030 Climate Challenge recommendations.

One of the aims of the RIBA 2030 Climate Challenge is the collection and disclosure of building performance data to develop a full understanding of issues and challenges associated with a buildings' related energy. Information gathered in the design and Post Occupancy Evaluation process should be shared through RIBA 2030 Climate Challenge.

Follow the link for more information.

j) Public Practice - How can authorities target the highest standards in energy performance for new council-led homes?

This set of documents produced by Public Practice explores how officers embedded within the Council's planning and development service can improve the quality of development and ensure that climate emergency pledges are implemented on the ground. The paper sets out an approach for officers who wish to make the case to senior leadership for targeting the Passive House Standard and net zero approach across their direct delivery housing programmes. The documents include, amongst others, Sustainability Lead Job Description Template, Low Energy Design Proposal Template, Passive House FAQs.

These documents can be helpful in education, procurement and delivery aspects of a Passive House or net zero projects for all involved parties.

Follow the link for more information.

k) London Energy Transformation Initiative LETI

The London Energy Transformation Initiative has been established to support the transition of London's built environment to net zero carbon, providing guidance that can be applied to the rest of the UK. LETI generated a library of data and easy to use documents, references, and guidance helping to understand and deliver low energy or net zero ambitions. This includes Embodied Carbon Primer, specific building type data Architype Pagers, and Net-Zero one Pager. Information by LETI is commonly used in the industry and has also been used to inform Midlothian Council Design Guide. Embodied Carbon Primer provides guidance in the following fields: How to measure embodied carbon, Life cycle assessment tools, Procurement, Designing for manufacture and assembly, Material guides, Whole life carbon, Offsetting, and Baseline specifications.

Follow the link for more information.

l) Designing Streets – A Policy Statement for Scotland

Streets exert an immense influence upon our lifestyles and behaviour. Street design also has a direct influence on significant issues such as climate change, public health, social justice, inclusivity, and local and district economies. Designing Streets recognises these pressures and seeks to build a collective response through the design of new streets and the regeneration of existing streets that is informed by as wide a range of issues and stakeholders as possible. Through the introduction of this policy, the Scottish Government seeks to ensure that specific interests are no longer promoted without an appreciation of the wider context. Collaboration and awareness between what have often previously existed as singular processes is vital if the aims of Designing Streets are to be met.

This guidance includes Designing Streets principles. Refer to the descriptive portion of the Place checklist.

Follow the link for more information.

m) Cycling by Design 2010 (2020 revision) – A Policy Statement for Scotland

Cycling by Design is published by Transport Scotland for use by practitioners throughout Scotland. The primary focus of the document is the establishment of guidance to ensure consistent and appropriate design. Transport Scotland requires consultants and contractors working on trunk road projects to follow the guidance within Cycling by Design. It is commended to local authorities and others developing cycling infrastructure in Scotland

Follow the link for more information.

n) Circular Economy Guidance for Construction Clients - How to practically apply circular economy principles at the project brief stage

UKGBC has published implementation packs on reuse and Products as a Service to assist built environment projects in adopting circular economy principles. Employing circular economy principles is one of the essential aspects of the net zero projects. It minimises the cost of residual carbon emissions offsetting.

Follow the links for more information:

Circular Economy

Circular Economy Implementation Pack

RIBA Stirling Prize Goldsmith Street Passive House Social Housing scheme by Mikhail Riches, Norwich City Council

LOCAL POLICY AND GUIDANCE

a) Scotland's Changing Climate – Midlothian's Climate Change Strategy

Midlothian Council declared a climate emergency in December 2019 and stated its ambition to achieve net zero status by 2030.The strategy acknowledges the Councils intent, reinforces the urgency for action and emphasises the necessity for change to mitigate and adapt to the impacts of climate change.

The Strategy and accompanying Action Plan set out a clear vision and set of objectives, to highlight what we can, and must do to combat climate change and highlights some of the challenges to achieving this. It focuses on a number of themes including Energy Efficiency; Recycling & Waste; Sustainable Development; Sustainable Travel; Business Processes; Carbon Management; Governance & Management; and Risk.

This guidance is a practical implementation of the Strategy and Action Plan and reflects the relevant content of those documents.

Follow the link for more information.

b) Midlothian Council – Local Housing Strategy 2021-2026

The Housing (Scotland) Act 2001 requires local authorities to prepare a Local Housing Strategy (LHS) for their area, supported by an assessment of housing need and demand. This Local Housing Strategy 2021 – 2026 is the sole strategic document for housing in Midlothian and as such, sets out the key housing issues to be addressed across all tenures in Midlothian. This LHS will embed equality issues into addressing homelessness, procurement, housing advice, services, fuel poverty and energy efficiency/ climate change, housing management services, allocations and private sector housing. The Local Housing Strategy's strategic vision for housing in Midlothian is that:

> All households in Midlothian will be able to access housing that is affordable and of good quality in sustainable communities.

Requirements for operational energy - Passive House and EnerPhit - and embodied energy - RICS Whole Life Carbon Assessment for the Built Environment - reduction in this guidance reflect chapter 10 Fuel Poverty, Energy Efficiency and Climate Change and Midlothian Council's 2030 Zero Carbon Aspirations.

> Housing in all tenures will be more energy efficient and fewer households will live in, or be at risk of, fuel poverty.

Follow the link for more information.

c) 2017 Midlothian Local Development Plan and policies

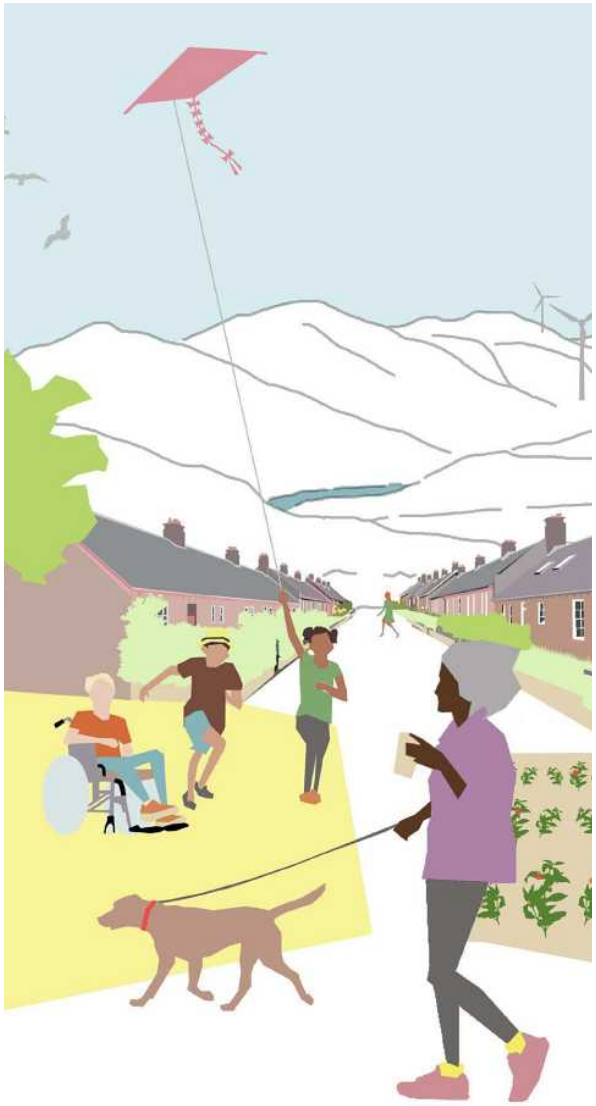
The 2017 Midlothian Local Development Plan sets out the development strategy for Midlothian for the next 10 years including the housing and economic land requirements identified in the The Strategic Development Plan (SDP). It also sets out the detailed policies used to determine planning applications in Midlothian. Sustainable economic growth, community and place-making, historical and natural environment protection, sustainable energy and waste management are embedded in the aims and objectives of the 2017 Midlothian Local Development Plan. This guidance is a practical implementation of the policies detailed is the Change to Local Development Plan (LDP) with a special attention on, but not limited to, the following policies:

- Sustainable Placemaking - DEV5, DEV6, DEV7
- Encouraging Sustainable Energy and Waste Management - NRG3, NRG 4, NRG 5, NRG 6
- The Council supports in principle the development of a wide variety of renewable energy and low carbon technologies to help meet and exceed national targets for developing energy and heat from such sources. It also encourages energy efficiency, heat recovery and efficient energy supply and storage in a manner appropriate to Midlothian. Accordingly, the MLDP provides a policy framework for the assessment of proposals which includes giving due regard to the relevant environmental, community and cumulative impact considerations.
- Compliance with all policies will be determined in the Planning Application Process. Full document is available here:
- The policies listed above are current at the time of writing this guidance. Pre-application consultations with Planning is required to secure compliance with all relevant policies current at the time of application.

All households in Midlothian will be able to access housing that is affordable and of good quality in sustainable communities

Burnbrae Road, Bonnyrigg, Passive House scheme by Smith Scott Mullan Associates

3. STAGED IMPLEMENTATION



UKGBC developed a Net Zero Whole Life Carbon Roadmap which has been published during COP26 in November 2021. The map clarifies the steps required to achieve full decarbonisation of the built environment in the UK by 2030. It includes developing complete Net Zero design solutions covering operational energy, construction, embodied energy, on site renewables and local offsetting. The Midlothian Council Net Zero Housing Design Guide roadmap overleaf is informed by the UKGBC's assumptions as well as RIBA 2030 Climate Challenge and LETI guidance.

It is recognised that the understanding of the challenges associated with transition to a Net Zero built environment is still not sufficient in many areas. Therefore the implementation of a full Net Zero approach has been staged up to 2030 to allow the design teams and contractors to develop required practical and theoretical skills, understand certification schemes and to form supply chains required to deliver the Net Zero projects.

It is also recognised that the understanding of some design aspects such as circular economy, are still at their infancy. At the same time heating and energy storage technologies and design strategies are changing and improving rapidly. It is expected that the design and construction industry will develop practical knowledge and best practice solutions to address these issues in the next couple of years.

As quickly as the technology changes so does the policy, legislation, and guidance change. Therefore, the Midlothian Council Net Zero Housing Design Guide will require regular review and update to reflect the latest available knowledge in order to facilitate a true transition to the Net Zero built environment.

All projects must meet the requirements specified on the roadmap on page 15 relevant in the year of starting the project.

New build project
Passive House Classic certification

Existing buildings
Deep energy efficiency retrofit
EnerPhit certification, AECB Retrofit Standard certification or use PAS 2035 process required*.

Silver Label (all levels) required
Gold levels 4 and 5 required
in understanding of current Technical Handbooks. Requirement for water butts to be excluded.

RICS Whole Life Carbon Assessment for the Built Environment
Target is Embodied Carbon <800kgCO2e/m2. Minimal Net Zero reporting required as per UKGBC guidance. Partial residual carbon emissions offsetting required to facilitate item below. Knowledge sharing within MLC and the design teams. Mandatory disclosure.

Means of delivering local carbon offsetting scheme determined

Elements of Circular Economy
incorporated in the life cycle design e.g. retrofit, re-purpose, re-use. Information shared with MLC and the design teams.

Post Occupancy Evaluation required
Residents satisfaction questionnaire, data collection, management and sharing system developed by MLC. Energy consumption data shared through RIBA 2030 challenge model.

Design of fossil fuel boiler based solutions not permitted

Projects starting from
2022

New build project
Passive House Plus certification

Existing buildings
Deep energy efficiency retrofit
EnerPhit certification or AECB Retrofit Standard certification required.

Gold Label (all levels) required
in understanding of current Technical Handbooks. Requirement for water butts to be excluded.

RICS Whole Life Carbon Assessment for the Built Environment
Whole life target is <600kgCO2e/m2 (<500kgCO2e/m2 including sequestration). Net zero carbon verified as per current UKGBC guidance. Knowledge sharing within MLC and the design teams. Mandatory disclosure.

Any residual carbon to be offset within MLC local carbon offsetting scheme

Additional elements of Circular Economy
incorporated in the life cycle design e.g. retrofit, re-purpose, re-use. Information shared with MLC and the design teams. Use of second-hand materials database.

Post Occupancy Evaluation required
Residents satisfaction questionnaire, data collection, management and sharing system fully used by MLC. Energy consumption data shared through RIBA 2030 challenge model or through Mandatory Energy Disclosure method, if present.

Review of available M&E systems
Heating, domestic hot water heating, ventilation, energy storage and electricity generation technologies.

Review/update of this guidance

2024

New build project
Passive House Premium certification

Existing buildings
Deep energy efficiency retrofit
EnerPhit Plus certification required.

Gold Label (all levels) required
in understanding of current Technical Handbooks. Requirement for water butts to be excluded.

RICS Whole Life Carbon Assessment for the Built Environment
Whole life target is <300kgCO2e/m2 (<200kgCO2e/m2 including sequestration).
Buildings seeking to achieve net zero in construction and in operation to ensure alignment with the available guidance (RIBA 2030, UKGBC, LETI) and their requirements at the time of their claims and to be independently verified as per current UKGBC guidance. Knowledge sharing within MLC and the design teams. Mandatory disclosure.

Any residual carbon to be offset within MLC local carbon offsetting scheme

Full Circular Economy Model developed
and incorporated in the life cycle design, information shared with MLC and the design teams.

Post Occupancy Evaluation required
Residents satisfaction questionnaire, data collection/management/sharing system fully used by MLC. Energy consumption data shared through RIBA 2030 challenge model.

Review of available M&E systems
Heating, domestic hot water heating, ventilation, energy storage and electricity generation technologies.

Review/update of this guidance

2028

2030
Operational and Construction energy
NET ZERO

*Properties retrofitted directly by Midlothian Council Maintenance Team to achieve minimum EPC rating B

4. PROCUREMENT, QS AND PROJECT MANAGEMENT

PROCUREMENT

Procurement processes are to align with the Procurement Strategy 2018 – 2023 - Sustainable Procurement Duty. Consideration should be given to the impact of purchases on climate change, waste production or scarce materials. Improvement of air quality is to be considered through reducing carbon, nitrogen, and particle emissions; increasing energy efficiency; using sustainable energy sources; encouraging sustainable waste management; and through aiming towards maximising recycling within the supply chain.

Follow the link for more information.

RICS WHOLE LIFE CARBON ASSESSMENT FOR THE BUILT ENVIRONMENT.

The Quantity Surveyor is to provide whole life carbon analysis as per RICS Whole Life Carbon Assessment for the Built Environment. Refer to 3. Staged Implementation of this guidance section for the current targets.

Refer to 3. Staged implementation of this guidance for current maximum Embodied Carbon target. For efficiency and in order to minimise the cost (financial and carbon), the process should commence at the RIBA stages 1-2.

Follow the link for more information.

COST AND RISK

In calculating cost, the QS should consider the whole life savings and benefits (operational, marketing/sales, resilience, re-use), the commercial costs (rising energy prices, penalties, rent issues, requirement for future improvements), and the environmental risks (requirement for future improvements required to mitigate environmental disasters) associated with not meeting Zero Carbon requirements.

PRODUCT NAMING

The design team is to use the term “equal and approved” for the components/products critical for the design. Designers should determine whether the alternative proposal is “equal” and advise Midlothian Council. Change needs to be “approved” by Midlothian Council.

PASSIVE HOUSE PROCESS

A Passive House designer and certifier needs to be involved as early as RIBA stage 2 to facilitate efficient design development and to avoid hidden costs. Involvement of the contractor during RIBA stage 3 is also required for a successful Passive House procurement process. This facilitates realistic cost assessment and guarantees the contractors commitment to the design. It also mitigates the need for a costly VE process, and unexpected post-tender design changes affecting the quality of the design.

The following need to be considered in the procurement, design and programme process:

a) In order to provide suitable information for the PHPP model, a fully detailed design will be expected from consultants earlier than in a traditional design process. Additional information e.g. windows and doors specifics, DHW distribution, HVHR ducts etc. will also be required. Consultants should be advised about this at the time of appointment.

b) Sufficient time will be needed to generate PHPP models at each relevant stage. These periods need to follow a completed stage/activity. This is to avoid inefficiencies associated with overlapping of some of the processes e.g. PHPP modelling, liaison with certifier parallel to costing or market testing.

c) Sufficient time should be allocated for Passive House certifier assessments at each stage.

d) Sufficient time should be allowed for design review following Passive House certifier assessments.

e) Timber kit design should be included in the Structural Engineers scope. Introduction of a separate timber kit designer leads to blurring responsibility and adds an unnecessary level of complication when developing Passive House specific detailing.

f) Responsibilities for items falling between usual disciplines scope e.g. load bearing insulation needs to be clearly defined.

g) MVHR needs to be designed, constructed and commissioned by a Passive House experienced organisation.

h) MVHR design should be within the M&E consultant's scope. Specialist design services may need to be subcontracted.

i) Passive House designer's scope of service, relationship with Passive House certifier and relationship with contractor needs to be clearly defined for each stage.

j) Responsibility for thermal bridges modelling needs to be defined.

k) Site inspection responsibility, commissioning, managing certification process, relationship with Passive House certifier and Passive House design advice services during construction period need to be clearly defined.

l) The procurement method along with the goal, roles and responsibilities (e.g. who is responsible for naming the products) of each party, with additional attention to the contractor's role in context of Passive House design, needs to be clearly defined.

m) Full consideration of additional time, additional consultants and associated fees is essential to produce the correct programme.

n) Considering the complication of the process and the large number of parties affected it is recommended that cost and design change decisions are thoroughly considered e.g. value engineering process should take place only once to avoid programme and fee challenges.

o) Passive House experienced/trained design team members and contractors lead to lower final fees and shorter programmes.

p) It is advisable that key technical design information decisions are recorded and a change control process is put in place after the submission of the planning application.

q) It is strongly recommended that the architect, in liaison with the Passive House designer, provides advice on the Passive House design and certification process and its impact on statutory approval processes. Refer also to diagram on page 18.

ADDITIONAL CONTRACTOR'S RESPONSIBILITIES

a) Commissioning of the M&E systems to Passive House standard by a suitably trained team to be included in the contract.

b) Sound testing between flats/houses - designers/ contractors must be RDL registered and have paid their registration fee. TBC if required

c) All PV and solar collector installers to be MCS accredited. All solar or PVs to be MCS approved. TBC if required

d) The contractor must ensure prevention of squeaking floors. Particular attention to be paid to buildings with anticipated high internal temperatures such as care housing. Floor creaking or undue flex of boards is not acceptable and will be deemed a defect.

e) The contractor is to test and confirm that hot water output temperature is achieved as designed.

f) Pipework routes below floors to be clearly marked to assist in future maintenance repairs.

g) The contractor is to provide a Tenant's Handbook/Quick start guide, Health and Safety file and Operation and Maintenance Manuals for each house. Where there is any partial possession or partial completion the contractor must provide relevant H&S information suitable for the safe occupation of the properties.

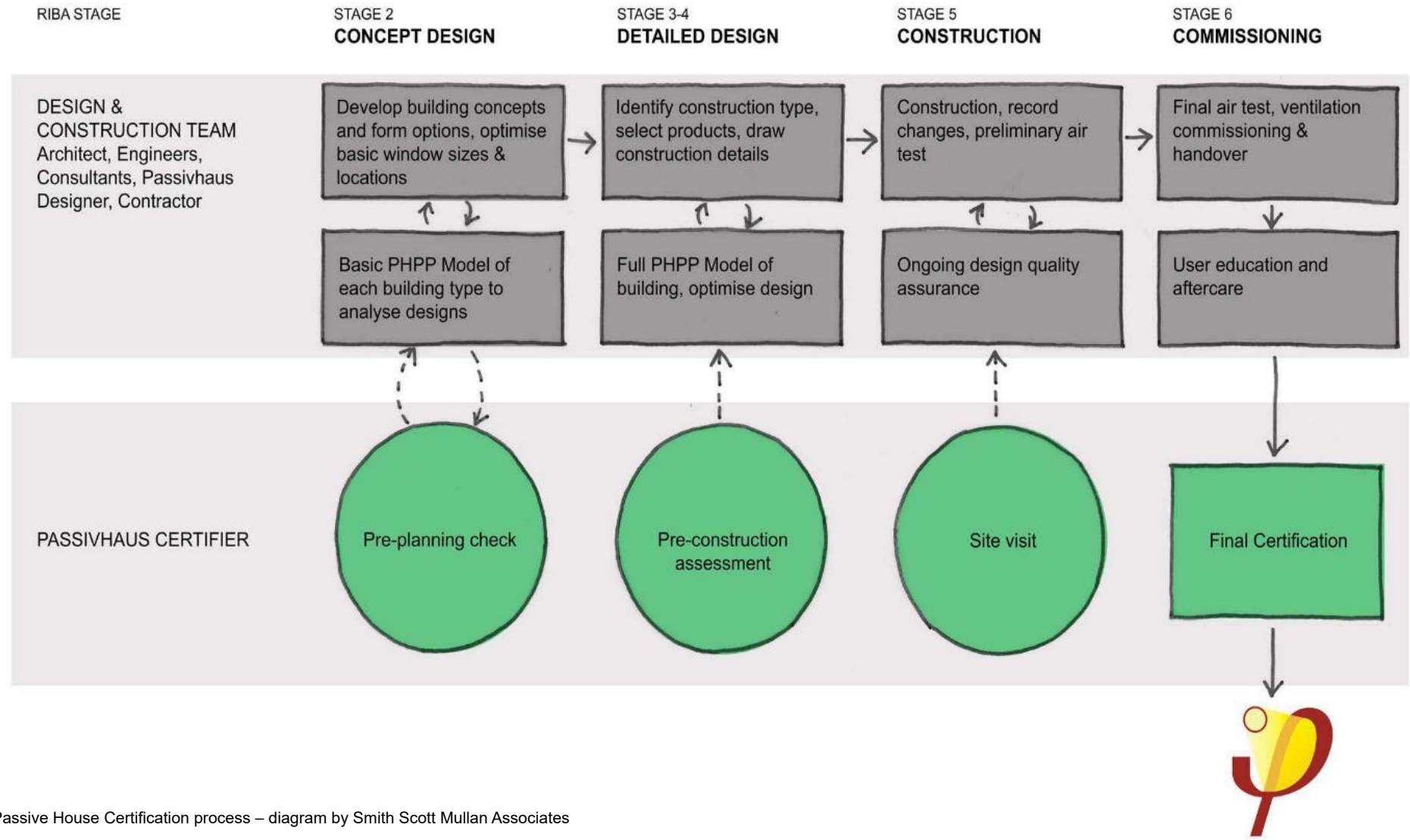
h) The contractor is to provide Environmental Product Declarations (EPD) for all products for architect's and QS's review, and to facilitate Embodied and Whole Life Carbon assessment.

i) All timbers used throughout the scheme are to be FSC & PEFC certified. No tropical hardwoods are to be used. Documentary evidence required.

j) All MDF used throughout the scheme is to be formaldehyde-free. Documentary evidence required.

k) Hard and soft landscape handover and maintenance for public and private spaces, number of inspection visits, on site meetings, defects liability period etc. to be as per typical Midlothian Council Landscaping NBS. Relevant references to be included in the contract.

For avoidance of doubts, including the above list in the contract should be considered.



Passive House Certification process – diagram by Smith Scott Mullan Associates

5. POST OCCUPANCY EVALUATION

Many buildings do not perform as planned - in some cases this can impact on running costs, residents and client satisfaction, and performance, health, safety and comfort. Midlothian Council is committed to learn from the past project to improve future ones. A Post Occupancy Evalutation (POE) system covering aspects listed below is currently being developed within Midlothian Council.

Liaise with project manager regarding current requirements for POE.

- Collecting, collating, and analysing building performance data and environmental data,
- Sharing relevant data within 2030 RIBA challenge process,
- Review of M&E services use, their practicalities, and challenges (MVHR, heat pumps etc.),
- Residents' satisfaction survey,
- Quick Start Guide for new residents.

Follow the link for more information.

6. DESIGN PRINCIPLES

The design objectives are the main principles which are considered as essential factors in the overall approach to design.

These principles are not intended to discourage innovative design or product development but provide a reference point from which the design and specification of each development can be brought forward.

It is recognised that at times design objectives may conflict and, in such cases, Midlothian Council will seek to adopt the best overall and most suitable solution in the context of the building's use and lifetime.

Cognisance to be taken of design principles contained within the Local Development Plan.

SUSTAINABILITY

The construction and the use of buildings are responsible for around 40% of all energy used in the UK. Considerate building design is therefore critical to fight the climate emergency. The following aspects of sustainability needs to be at the heart of the design of each housing project:

- Social sustainability - which includes health and wellbeing - this incorporates placemaking, biodiversity, the economy, walking communities, 20-Minute Neighbourhoods, sustainable transport, internal air quality, day lighting, play, heritage, inclusivity, accessibility, services, ageing population and local economy etc.

  Proposed designs to be inclusive and sensitive to social and physical challenges e.g. ageing population, learning difficulties, autism, physical disabilities etc.

- Energy efficiency - this includes minimising the operational energy demand (through Passive Housing, EnerPhit, PAS 2035 etc.), Post Occupancy Evaluation, recording and sharing data, and addressing fuel poverty.

- Minimising embodied energy – This includes avoiding demolition where possible, energy-efficient retrofits, retention of buildings for placemaking and heritage purposes, mass use of environmentally friendly materials with low embodied energy, avoiding overdesigning and overspecification, designing for easy maintenance and conversion, designing for durability and long-life spans, designs incorporating circular economy principles.

BEST VALUE

This principle is inherent in the Council's policies and is integral to the project. Opportunities to achieve best value should be a constant throughout the design and construction period with emphasis placed on quality and life cycle cost/value engineering. Sustainability principles should not be compromised by VE process.

EFFICIENCY AND CLARITY OF DESIGN

Design only what is necessary and required. Designing out all unnecessary elements, areas, components, and process to reduce cost, maintenance, and carbon footprint. Promote clear boundaries, private entrances, allocated external spaces, minimise shared circulation etc.

Aesthetic values are considered essential in a high-quality place design.

DESIGN FOR LONGEVITY AND FUTURE PROOFING, FLEXIBILITY AND ADAPTABILITY

It is crucial that housing provides lifelong comfortable living conditions by futureproofing through designing to current Housing for Varying Needs guidance.

Buildings to be designed and specified for expectancy of at least 60 years with flexibility allowing future adaptations. The sustainability of proposed methods of construction, systems and materials should consider long life cycles and where reasonable have local, long term sources of availability.

Design proposals should consider flexibility in layouts, including, for example, regularity of superstructure with opportunities to allow for different entrance arrangements, location and orientation within a similar format.

Building techniques and materials should allow for future adaptability. Fixed and unchangeable solutions, often leading to forced demolition, are considered a design error (e.g. shower pods that do not allow for future alterations).

INNOVATION

Innovation techniques leading to carbon use reductions that increase efficiency, inclusivity, affordability, and accessibility are encouraged. This includes the use of off-site construction methods, the introduction of new business models to ensure affordable homes based on the use of new lifelong accessibility solutions, and the use of innovative circular, recycled, and locally manufactured products. Any innovations should not compromise other requirements of this guidance.

Refer to Edinburgh Homes Demonstrator for possible solutions based on collaborative procurement, whole-life costings, pipeline coordination and greater use of modern methods of construction. Edinburgh Homes Demonstrator aims to transform the productivity and performance of affordable housing and to enable the move towards homes built to net zero carbon standards.

Follow the link for more information.

STANDARDISATION AND MODULAR APPROACH

The intention is to develop consistency of built areas, components, layouts, window and door openings etc., in order to enhance cost efficiencies and advantages to construction and maintenance and to unlock the circular economy potential.

7. GENERAL REQUIREMENTS

Note: This section to be revised periodically as per 3. Staged Implementation of This Guidance. Always obtain current information from Midlothian Council.

a) If there is a discrepancy between any of the documents, seek agreement from Midlothian Council.

b) Midlothian Council Stakeholders – each project to be consulted with relevant Midlothian Council stakeholders. Consultees should be determined by project manager on project-by-project basis.

c) Note that all requirements covered by Technical Standard have been removed from this version of the guidance. Any requirements stated in this document are above the Technical Standards. All requirements of Technical Standards are to be adhered to as required by Building Warrant process.

d) All new buildings are to be designed and delivered as required to achieve Passive House Classic certification. All conversion and retrofit projects are to be designed and delivered to EnerPhit certification. Certification is required.

Passive House and EnerPhit certification minimises running cost, operational energy demand, requires high quality workmanship positively affecting the quality of the building, and minimises defects, lowers maintenance costs, reduces external noise pollution, and improves the internal microclimate/wellbeing.

e) Sustainability Labels - all units to achieve all levels of Silver Sustainability Label and levels 4 and 5 of Gold Sustainability Label (requirement for water butts to be excluded), as per current building standards. The designer must provide Midlothian Council with checklists clarifying design solution for all required aspects. It is the designer's responsibility to produce Sustainability Labels. In case of any methodology conflicts between SBEM and Passive House Certification, Passive House certification should take precedence.

f) Secured by Design accreditation is required for the entire scheme – site and buildings.

Secured by Design requirements should not compromise the quality of place e.g. by creation of a maze of fenced paths. Tailored solutions to be discussed with the SbD officer to achieve suitable high-quality, people friendly design.

g) Housing for Varying Needs (HfVN) compliance

- Base level: general needs – all units
- Older/Ambulant - all ground floor flats
- Wheelchair/Special Needs - as defined by Midlothian Council on project-by-project basis.

h) BIM

All Midlothian Council housing projects are required to meet Level 2 BIM in accordance with BS EN ISO 19650-1 and BS EN ISO 19650-2. This design guide must therefore be read in conjunction with other relevant Midlothian Council BIM documents, including in particular Midlothian Council's BIM Implementation Plan Design Team document, a copy of which will be provided to the design team at the outset of all projects.

It should be assumed that on a Design and Build project the design team will be responsible for managing BIM on the project until such time as a main contractor is appointed. On a traditionally-procured project the design team will remain responsible for BIM management for the entire duration of the project, although the main contractor will be responsible for delivering certain aspects of the BIM deliverables as appropriate to the individual project.

The development of a detailed approach is critical to the successful delivery of Level 2 BIM, relevant and appropriate to each individual project, through which Midlothian Council's project-specific requirements are identified and addressed. The design team will therefore be required to produce at the outset of each project a BIM Execution Plan (BEP) which responds to:

- the client's standard organisation-wide technical requirements as outlined in the BIM Implementation Plan Design Team document,
- the project specific requirements (including but not limited to, modelling standards, deliverables, asset data requirements (i.e. COBie) and clash detection standards) to be discussed and agreed with the client's project team. Specific consideration must be given to

asset data requirements for M&E aspects of each project, particularly on projects with enhanced sustainability or where renewable requirements are specified (i.e. Passive House).

Once approved by the client, the design team will be required to adopt the BEP, developing and updating it as required throughout the lifetime of the project.

All projects will be delivered from inception utilising Midlothian Council's Autodesk BIM 360 Docs portal as the Common Data Environment (CDE). Midlothian Council will be responsible for initially creating each new project within the BIM 360 Docs portal, but it will then be the design team's responsibility to set up the required filing structure appropriate to that project before maintaining and managing the project CDE. An identified member of the design team will be provided by Midlothian Council with administrator rights to the project CDE for this purpose.

8. CHECKLIST

Following checklists to be completed by each discipline consultant at RIBA stages 2 - 5. Completed check lists to be issued formally in PDF format to the Project Manager's for sign off.

i. Architect/design lead
Place Checklist - P clauses

ii. Architect/design lead
Building Design Checklist - B clauses

iii. Structural and Civil Engineer Checklist
S clauses

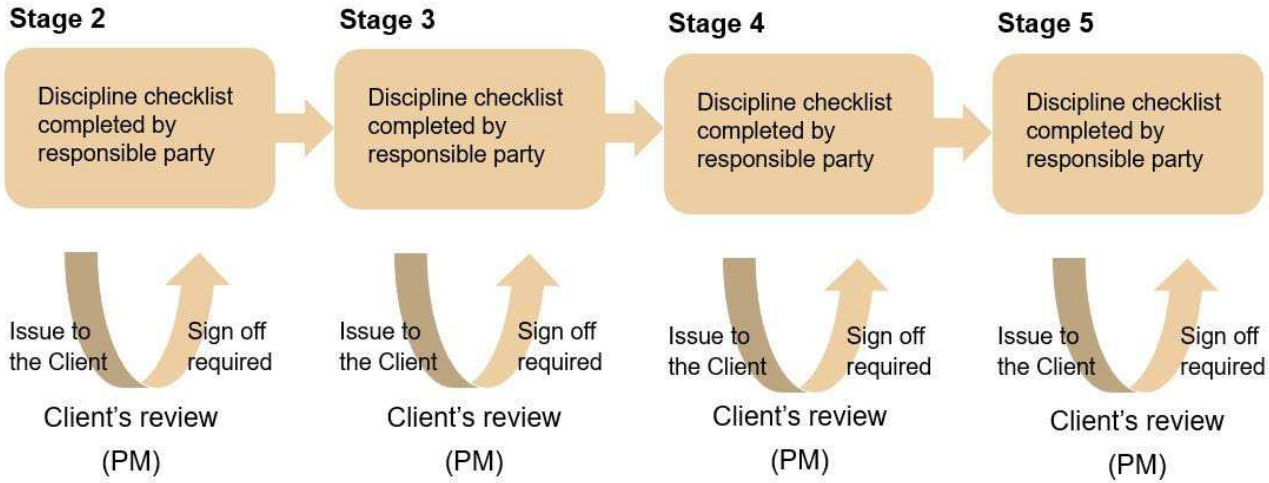
iv. Mechanical and Electrical Engineer Checklist
E clauses

Any non-compliance requires to be highlighted and clarified by the designer. The project manager will review the responses to all non-compliant items and advise on acceptance or otherwise.

The responses to clauses in the check lists are of two types:

Tick the box response.
Designer to confirm if the current design complies or not. In case of non-compliance the text box in the clarification column should be filled to provide justification for Project Manager's/Midlothian Council's approval.

Descriptive response.
There is no tick box against those clauses. Designer to briefly clarify how the compliance is achieved by filling the text box in the clarification column for Project Manager's/ Midlothian Council's approval.



ARCHITECT / DESIGN LEAD - PLACE CHECKLIST

Project Name:

Project Stage:

Issued by:

Issued to:

Date of Issue:

Ref.	Requirement	Compliance	Clarification if required
P.1	**General Requirements**		
P.1.1	Enquire with planning regarding their pre-application Planning Service. It is strongly recommended pre-application consultation with Planning takes place to facilitate successful delivery of the goals listed below.	☐	
P.1.2	Site analysis, tree survey, site investigation, ecological survey (Japanese knotweed, bats), asbestos, archaeological review should be carried our prior commencing site plan design to avoid abortive work.	☐	
P.1.3	Clarify which elements of circular economy have been incorporated in the design.	☐	
P.1.4	In understanding of and reference to Designing Street, A Policy Statement for Scotland, the following 6 qualities need to be incorporated in the design to achieve desired high quality of place and positively affect health, wellbeing, social and environmental sustainability.	☐	

Ref.	Requirement	Compliance	Clarification if required
P.1.4.1	**Distinctive - Street design should respond to the local context to deliver places that are distinctive.**		
	Block structure The urban form should be distinctive with landmarks and vistas that provide good orientation and navigation of an area.	Clarification Required	
	Context and character The requirements and impact of pedestrians, cycles and vehicles should be reconciled with local context to create streets with distinctive character. Opportunities should be taken to respond to, and to derive value from, relevant elements of the historic environment in creating places of distinctive character.	Clarification Required	
P.1.4.2	**Safe & pleasant Streets should be designed to be safe and attractive places.**		
	Pedestrians and cyclists Street user hierarchy should consider pedestrians first and private motor vehicles last. Street design should be inclusive, providing for all people regardless of age or ability.	Clarification Required	
	Achieving appropriate traffic speed Design should be used to influence driver behaviour to reduce vehicle speed to levels that are appropriate for the local context and deliver safe streets for all.	Clarification Required	
	Reducing clutter Signs and street markings should be kept to a minimum and considered early in the design process.	Clarification Required	

Ref.	Requirement	Compliance	Clarification if required
P.1.4.3	**Easy to move around. Streets should be easy to move around for all users and connect well to existing movement networks.**		
	Connections within a place Street design should providen good connectivity for all modes of movement and for all groups of street users respecting diversity and inclusion.	Clarification Required	
	Public transport Public transport planning should be considered at an early stage in the design process.	Clarification Required	
	Junction types and arrangements Junctions should be designed with the considerations of the needs of pedestrians first. Junctions should be designed to suit context form – standardised forms should not dictate the street pattern.	Clarification Required	
P.1.4.4	**Welcoming - Street layout and detail should encourage positive interaction for all members of the community.**		
	Walkable neighbourhoods Street layouts should be configured to allow walkable access to local amenities for all street users.	Clarification Required	
	Streets for people Streets should allow for and encourage social interaction.	Clarification Required	

Ref.	Requirement	Compliance	Clarification if required
P.1.4.5	**Adaptable - Street networks should be designed to accommodate future adaptation.**		
	Connections to wider networks Street patterns should be fully integrated with surrounding networks to provide flexibility and accommodate changes in built and social environments.	Clarification Required	
	Integrating parking Parking (including cycle parking) should be accommodated by a variety of means to provide flexibility and lessen visual impact.	Clarification Required	
	Service and emergency vehicles Street layouts should accommodate emergency and service vehicles without compromising a positive sense of place.	Clarification Required	
P.1.4.6	**6. Resource efficient - Street design should consider orientation, the integration of sustainable drainage and use attractive, durable materials that can be easily maintained**.		
	Orientation Orientation of buildings, streets and open space should maximise environmental benefits.	Clarification Required	
	Drainage Streets should use appropriate SUDS techniques as relevant to the context in order to minimise environmental impacts.	Clarification Required	

Ref.	Requirement	Compliance	Clarification if required
	Utilities The accommodation of services should not determine the layout of streets or footways. **Planting** Street design should aim to integrate natural landscape features and foster positive biodiversity. **Materials** Materials should be distinctive, easily maintained, provide durability and be of a standard and quality to appeal visually within the specific context.	Clarification Required Clarification Required Clarification Required	
P.1.5 P.1.5.1	In understanding of and reference to AD+S Carbon Conscious Place following 8 qualities need to be incorporated in the design to improve the quality of place and positively affect health, wellbeing, social and environmental sustainability. **A Place-Led Approach** Understanding, appreciating, and working with existing assets, the surrounding landscape, and the place identity. Using the right type of intervention, at the right stage, scale and location. Achieved by: Gathering and mapping baseline information. Engaging with community, local authority, developers, agencies, relevant local businesses, and service providers. Ensuring place quality is prioritised in all decisions and investments.	Clarification Required	

Ref.	Requirement	Compliance	Clarification if required
P.1.5.2	**A Place of Small Distances** Creating complete and self-sufficient neighbourhoods with everyday/night services and facilities within a short walking or cycling distance (e.g. 15 minute place concept). Achieved by: Locating services within local Town Centres. Co-locating services together in Town Centres. Improving the connectivity and quality of active travel infrastructure. Enhancing digital connectivity. Improving the accessibility to services and public space. Supporting densification and mixed-use developments.	Clarification Required	
P.1.5.3.	**A Network of Small Distance Places** Connecting complete neighbourhoods to provide a network of places that support greater self-sufficiency and low carbon living. Enabling people to live, work and play without generating unnecessary carbon emissions. Achieved by: Prioritising the investment in sustainable public transport networks. Taking an active and landscape infrastructure first approach. Using mapping to analyse the quality, quantity and accessibility of connections between places.	Clarification Required	
P.1.5.4	**A Place Designed for and with Local People** Placing people's needs at the centre of decision-making, service provision and investment in our places and ensuring they are actively involved in key stages of the design process. Achieved by: Championing people-centred designed. Using co-design and collaborative engagement tools to involve local people and stakeholders from the beginning and throughout the project.	Clarification Required	

Ref.	Requirement	Compliance	Clarification if required
P.1.5.5	**A Place that Reuses, Repurposes and Considers Whole Life Costs** Retrofitting existing structures and brownfield sites first, giving consideration to embodied carbon in place. Adding planting to existing hard infrastructure to support climate adaptation and carbon absorption. View structures as 'material banks' with components which are demountable, rebuildable, reusable and resaleable. Consider the cost of the entire lifecycle of a structure rather than only its initial capital costs. Achieved by: Undertaking an audit of existing land and structure to identify the existing structures, land and material which can be utilised.	Clarification Required	
P.1.5.6	**A Place with Whole and Circular Systems** Enhancing, repairing, and joining up the different systems which support a healthy, carbon conscious place. This includes local food, heat, energy, water, green, habitat, transport, waste, housing and social systems. Using the landscape as a productive resource. Ensuring the place planning and delivery process understands and supports a whole and circular systems approach. Achieved by: Mapping systems to identify deficiencies and apply a co-ordinated approach that creates co-benefits, multiple outcomes and added value to address them.	Clarification Required	

Ref.	Requirement	Compliance	Clarification if required
P.1.5.7	**A Place that Supports Sharing** Supporting the sharing of assets and services in places to enable lower carbon living and connect people to their neighbourhoods. From the micro to the macro - this can include sharing tools, bikes, electric vehicles to accommodation, and education facilities. Achieved by: Engaging with community, local authority, developers, agencies, relevant local businesses and service providers to identify opportunities for a sharing economy.	Clarification Required	
P.1.5.8	**8. A Place Designed in Time** Ensuring the place planning and delivery process considers the dimension of time. This includes creating long term visions as well as using short-term approaches to test out interventions. Achieved by: Considering the timeline of a place and future evolution. Creating a long-term vision and building in review periods through the deliver to allow the plan to respond to and adapted to wider changes. Establishing long term place partnerships. Considering the phasing of delivery and developing meanwhile strategies to support both quick and long-term actions.	Clarification Required	
P.1.6	**Public realm and green spaces considerations** As per Midlothian Council Local Plan and any Planning Conditions. Requirements to be determined in the pre-planning consultation process. Refer to Planning advice. Opportunity for community congregation, accessibility and suitability for all ages are integral elements of the design.		

Ref.	Requirement	Compliance	Clarification if required
P.1.7	**Public Consultations**, community engagement and codesign. This should be as per project specific Planning requirements, preferably determined in the pre-planning consultation process. Refer to Planning advice.	☐	
P.1.8	**Open space requirement** This should be as per project specific Planning requirements, preferably determined in the pre-planning consultation process. Refer to Planning advice.	☐	
P.1.9	**Play areas** Play areas provision should be as per project specific Planning requirements, preferably determined in the pre-planning consultation process. Refer to Planning advice. Play area design and equipment choice to be agreed in consultation with the Midlothian Council Land and Countryside department with consideration with the life spanof the equiptment and includsive play. Wheelchair access to play area to be provided.	☐	
P.1.10	**Public art** Public Art is encouraged and should be as per Planning requirements, preferably determined in the pre-planning consultation process. Refer to Planning advice.	☐	

Ref.	Requirement	Compliance	Clarification if required
P.1.11	**Ageing population, accessibility** Seating opportunities to be provided in public realm areas and along key pedestrian links towards local amenities. Seating not to be within 10 m of a property where possible (social quality of life reasons) Emerging best practice solutions like suitable surfacing, sensory places, passive exercising etc. to be included in the design Refer also to street furniture clause P.5.5.	☐	
P.1.12	**Heritage and identity** All existing buildings/structures within the site should be considered for retention for carbon budgeting, heritage, sense of identity and placemaking purposes. All retained buildings to be converted as required to maximise their potential within the scheme. There is a strong preference against any demolitions. In the event of that demolition is proposed, justification needs to be provided. Use of the materials from the demolition within the site to be maximised.	☐	
P.1.13	**Density** Planning to advise on density suitable to achieve a critical mass requirement do maintain the local economy, social sustainability, public and active transport schemes. Requirements to be determined in the pre-planning consultation process.	☐	

Ref.	Requirement	Compliance	Clarification if required
P.1.14	**Mixed use** (that blends residential, commercial, cultural, institutional, or entertainment uses into one space, where those functions are to some degree physically and functionally integrated, and that provides pedestrian connections) Proposals to be truly mixed use with a suitable variety of housing types and services provision including work from home opportunities. Existing uses in adjacent areas to be considered. Requirements to be determined in the pre-planning consultation process. Refer to Planning advice.	☐	
P.1.15	**Tenure** In the case of mixed tenure sites, different tenures should be integrated. The development should be tenure blind – the same design and quality should be provided for all tenures. A potential for an individual plot for a self-built project should be considered to improve the tenure mix, add to architectural interest, and to simplify navigation around the area.	☐	
P.2	**Building, Orientation and Site Layout**		
P.2.1	Midlothian Council places prime importance on the improvement of safety and security. Layout designs must incorporate the principles of defensible space, visual surveillance and control of spaces around buildings. Site layout, soft and hard landscaping to comply with 'Secured by Design'. Secured by Design requirements should not compromise quality of place e.g. by creation of a maze of fenced paths. Tailored solutions to be discussed with the SbD officer to achieve suitable high-quality, people friendly design.	☐	

Ref.	Requirement	Compliance	Clarification if required
P.2.2	All units to have access to external spaces i.e. private gardens, shared gardens, balconies, roof terraces etc. Detached, semi-detached and terraced dwellings should each be provided with a private outdoor space that is free from direct overlooking from public areas and neighbouring property as far as possible. Permanent overshadowing of these areas should be avoided and, wherever possible, such spaces should enjoy good access to sunlight. Where flats are proposed amenity open space should be provided. These external spaces should should have good sunlight and be designed for residnets to enjoy.	☐	
P.2.3	The site plan should be developed considering existing levels and topography to minimise cut and fill and removal of material from site. Landscaping to be co-ordinated to avoid drainage towards entrance areas.	☐	
P.2.4	The positioning and type of buildings proposed for a site must be considered in conjunction with the external environment (presence of existing trees, site topography, sun path, existing buildings/structures, adjacent buildings, pedestrian links, local services).	☐	
P.2.5	Maximum consideration is given to orientation and outlook to ensure all dwellings receive natural sunlight. Living rooms should ideally face south, but subject to site wide context considerations (topography, access, trees and other site constraints).	☐	

Ref.	Requirement	Compliance	Clarification if required
P.2.6	Buildings to be orientated in a manner that maximises solar gain to improve energy efficiency and reduce the thermal envelope performance required to meet the Passive House criteria. Usually best orientation of the building is along the east-west axis. Potential for overheating to be considered and addressed as part of the Passive House process. Existing tree retention may be an efficient way of resolving any overheating issues.	☐	
P.2.7	Full advantage is to be taken of views through considered window positioning. An open outlook from the living room is desirable and where possible views onto communal drying areas should be avoided – although sight lines to washing lines are important.	☐	
P.2.8	In Wheelchair/Special Needs or Older/Ambulant housing an outlook from the bedroom is to be provided where possible.	☐	
P.2.9	Due to significantly higher energy efficiency (form factor) and lower economic and carbon cost, terraced housing is preferable over semi-detached or detached housing. There is a strong preference against arrangement in which a number of semi-detached or detached houses are located close to each other with minimal distance between the buildings.	☐	
P.2.10	There is a preference for higher density house types to maximise use of infrastructure, its cost and carbon weight. This also should support local services by increasing footfall.	☐	

Ref.	Requirement	Compliance	Clarification if required
P.2.11	The effect of overshadowing is minimised. Any overshadowing to be considered in the Passive House process. Minimum distance to existing buildings should be as agreed with the planning department. Generally, the following distances should be considered as standard: - back-to-back distance, whether between single storey or two storey houses, of 25 metres; - between gable and rear of such property 16 metres; and - between the front elevations 22 metres. Refer to DP2 for exceptions. Refer to Planning advice.	☐	
P.2.12	Privacy is recognised as an important factor. Living rooms and rear private garden areas should not be immediately overlooked from public areas.	☐	
P.2.13	Effective barriers and screening arrangements are provided where private garden and similar areas are adjacent to heavily used public areas.	☐	
P.2.14	Private Gardens to Ground Floor Flats. Min 2.5-3m deep private garden space is required to the front and rear of all ground floor flats for privacy purposes.	☐	

Ref.	Requirement	Compliance	Clarification if required
P.2.15	**Private Gardens** • to be usable and easily accessible • to be turfed in line with the specification for public grassed areas. • have reliable ground drainage. • to be designed to be maintained by tenant. • be predominantly flat, or at least capable of practicably being mown by any type of lawn-mower. • max slope 1 in 8 (12.5%) unless specific site circumstances dictate otherwise in which case consult client for approval. • in cases where the gradient would have to be exceeded, retaining structures and appropriate balustrading should be used. • Minimum garden sizes – Refer to DP1 for detail - 3 apartment houses – min 110m2 - 4 apartment houses – min 130m2 - 3 apartment terraced houses - min 100m2 – compensation possible in case of narrow gardens.	☐	
P.2.16	**Car Parking** Provision to be as per Midlothian Council Planning requirements. Design should take cognisance of surveillance by car owners. Large car park solutions should be avoided. Parking along the street should be broken every 5 parking spaces with a landscaped area, preferably with trees. Small parking courtyards are encouraged. Parking in front of the houses is not encouraged. Car parking provision should be designed to deter parking on roads where this restricts access for other vehicles. Pre-application discussion with the Road Services Department may be required to determine parking provision.	☐	

Ref.	Requirement	Compliance	Clarification if required
P.2.17	Provision for rapid electric vehicle charging points and car club parking allowance as per Planning Department requirements. Ducts facilitating installation of EV charging point for each unit should be assumed as starting point. Pre-application discussion with the Roads Department is required to determine current requirements.	☐	
P.3	**Soft Landscaping**		
P.3.1	Existing biodiversity of the local area is to be maintained or enhanced by the landscape and building design of each individual site. Proposals must integrate natural landscape features and foster positive biodiversity by, but not limited to, introduction of new trees, green screens, living walls, biodiverse seed/planting mixes, rain gardens, above ground SUDS and swales. Tree canopy cover to be 21% of the site area. Design Lead to request/arrange a site specific biodiversity survey at design stage 1. Soft Landscaping design and maintenance strategy to align with Midlothian Local Biodiversity Action Plan 2019 or current equivalent or any other biodiversity design guidance provided by Midlothian Council. The design, including green and blue features, should be considered in the context of Midlothian Green Network.	☐	

Ref.	Requirement	Compliance	Clarification if required
P.3.2	New tree planting will be used to define the edge of development areas within sites. The Forest Habitat Network (Forestry Commission Scotland) provides guidance in planning greenspace within new developments.	☐	
P.3.3	Provision of micro woodlands or allotments should be as per Planning requirements, preferably determined in the pre-planning consultation process. Refer to Planning advice.	☐	
P.3.4	There is strong preference to retain all mature and semi-matured trees for quality place and environmental resilience purposes - health, wellbeing and placemaking. Existing natural features should be considered as assets in the site layout. Should a tree deemed to be essential to be removed, all necessary permissions must be obtained prior to the removal. Tree replacement to be provided as per Planning department request. New canopy to be provided to match area removed. Semi-mature trees to be use in soft landscaping landscape design. Retained trees to be protected. Existing trees will be subject to Structural Engineer/ Specialist Arborist Reports with all works and recommendations included.	☐	
P.3.5	The layout should incorporate a low maintenance communal feature garden area accessible by all flats.	☐	

Ref.	Requirement	Compliance	Clarification if required
P.3.6	All areas of soft and hard landscape design should be used to reinforce security and privacy to dwellings and support footpath links by preventing short-cutting and erosion of edges.	☐	
P.3.7	Soft landscaping and planting should be designed to ensure suitable cover and with low maintenance in mind.	☐	
P.3.8	All private and public lawns/grassed areas to be a biodiverse mix.	☐	
P.3.9	Some early flowering (feb/march) bulb areas within grass areas to be incorporated. These areas could also be sown as wild flower areas.	☐	
P.3.10	All house gables in public areas should have features or planting to discourage ball games.	☐	
P.3.11	Shared amenity spaces should be designed to be used by small groups of households. Large grassed areas should be designed to deter ball games where there is a risk of disturbance to adjacent properties, whether council or private.	☐	

Ref.	Requirement	Compliance	Clarification if required
P.3.12	Local food production opportunities, vegetable patches/gardens, community gardens should be considered and discussed with the client on a project-by-project basis. This has significant impact on built environment resilience, social sustainability, and biodiversity.	☐	
P.3.13	**SUDS/Swales** Compliance with SUDS requirements should favour above ground water storage in preference to below ground tanks to provide a solution with biodiversity advantages and to increase resilience and flood protection. Take cognisance of a full range of surface water drainage management approaches when designing site layouts, allowing for easy maintenance. Avoiding deciduous planting to be considered to reduce future maintenance. All proposals must be to adoptable standards with a letter from Scottish Water to state the adoptable date and maintenance schedule. This may include CCTV evidence of fully working systems at the end of the Defects Liability Period.	☐	
P.4	**Hard Landscaping**		
P4.1	All ramps that are part of the access to a dwelling or within the curtilage must be designed to the DDA Regulations, HFVN, barrier free best practice and the Building Standards (Scotland) Regulations. Unprotected drops must be avoided. Upstands or protective barriers should be included where necessary to avoid trip hazard.	☐	

Ref.	Requirement	Compliance	Clarification if required
P.4.2	**Path finishes - general** Unless required for placemaking or Planning reasons, there is a preference for asphalt wearing course paths to reduce use of weed killer and prepare for a possible future weed killer ban. Adoptable footpaths to be finished in an asphalt wearing course to Local Authority requirements. Use of differing chip colour to distinguish different uses should be considered.	☐	
P.4.3	**Paths within the Curtilage of Buildings** Paths within the curtilage of buildings to comply with HfVN guidance. Access paths to all dwellings must: • be step free and suitable for wheelchair users. • must not be gravel or chipped. • have a gradient of less than 1:20 or otherwise be treated as a ramp • be at least 900mm wide but preferably 1000mm wide where serving one or two dwellings • be at least 1200mm wide where serving more than two dwellings • be at least 1200mm wide for dwellings for wheelchair users.	☐	
P.4.4	**Paths to refuse storage must:** • be clear 900mm wide and be step free • be clear 1200mm wide at any sharp turn for wheelchair standard dwellings. • Meet the requirements for crossfall and edgings, as for public pavements and paths	☐	

Ref.	Requirement	Compliance	Clarification if required
P.4.5	**Public paths design principles.** Public paths design to meet following requirements: • Access paths should be designed in accordance with the requirements of Midlothian Council Roads Section and be constructed to an adoptable standard. • Paths should avoid through routes but maintain direct links to main roads. • The footpath network should reinforce the separate identity of dwelling groups and limiting their use to residents in that particular area. • Secluded footpaths should be avoided. • Public footpaths should not be located to the rear of dwellings. • Paths should be given interest and character. • Right angle turns should be avoided. • Paths should not intrude into private dwelling space. • Shared access paths for large numbers of flats should be avoided. • Locating footpaths close to ground floor level windows should be avoided to ensure reasonable privacy for ground floor tenants. • Pends are not acceptable. May be permitted where rear paths are not viable e.g. sloping ground levels. Confirm with Midlothian Council.	☐	

Ref.	Requirement	Compliance	Clarification if required
P.4.6	**Public Paths technical requirements.** Public paths and ramps should: • provide step free routes around the entire site; • have a continuous slope where the gradient is not greater than 1:30; • for gradients between 1:20 and 1:30 there should be rest intervals not greater than 18 metres apart; • be classified as ramps if steeper than 1:20; • generally, to have a minimum width of 2000mm • shared pedestrian/cycle paths to have a minimum width of 3000mm • have a minimum width of 1200mm for short lengths or paths leading to more than 4 dwellings; • have a crossfall gradient not greater than 1:100 and deal effectively with water runoff; • have hard, firm and slip resistant surface; • avoid unprotected drops and have upstands of 100mm where appropriate; • have dropped kerbs and road crossing points; • require handrail facilities at all steps and ramps which constitute part of the slope. • all spaces should have robust ground drainage systems and ensure that there are no large puddles or water lying three hours after heavy downpour. • drop pavement crossings must be provided in both directions at all road crossing points. • road crossing points should have a camber not greater than 1:20 and a crossfall at right angles not greater than 1:40. The area in front of the dropped kerb should be free from channels or gulleys.	☐	

Ref.	Requirement	Compliance	Clarification if required
P.4.7	**Hardstanding Areas** Hardstanding areas for grit/salt bins must be provided on an individual basis. Location(s) should be agreed with Midlothian Council.	☐	
P.4.8	**Roadways** Access roadways should generally be designed in accordance with the requirements of the Midlothian Councoil Road Service department and be constructed to an adoptable standard. Road surfaces should be kept to a minimum. Drop kerbs to be provided at all entrances and at road crossing points. Roadways to be finished in an Asphalt wearing course to Local Authority requirements. Use of different chip colour for different uses should be considered. Non-adoptable roads and footways only: other finishes, like block paving, are encouraged for placemaking and pedestrian friendly design purposes as described in Designing Streets – A Policy Statement for Scotland. This to be agreed with Midlothian Council on case-by-case basis.	☐	
P.4.9	**Parking Bays** Parking bays to be brown asphalt wearing course and painted with bay markings. Use of different chip colour for different uses should be considered. 450mm hard surfacing required beyond kerb line for car overhang and access egress from vehicles. Non-adoptable roads and footways only - other finishes, like block paving, are encouraged for placemaking and pedestrian friendly design purposes as described in Designing Streets – A Policy Statement for Scotland. This to be agreed with Midlothian Council on case-by-case basis.	☐	

Ref.	Requirement	Compliance	Clarification if required
P.4.10	Mowing strip at house wall - 50mm concrete heel kerb laid on side or gravel strip. This should be coordinated with level access to provide smooth transitions and avoid telescopic gas vents being covered.	☐	
P.4.11	Small landscape areas which are too small for effective grass seeding are to be designed out. If un-avoidable, a suitable planting solution is to be proposed.	☐	
P.4.12	Use of recycled plastic surface materials for the repair and resurfacing of roads or other innovative sustainable/circular economy solution is encouraged in suitable locations. Each case to be discussed/agreed on a case by case basis with Midlothian Council Roads department.	☐	
P.5	**Other Components**		
P.5.1	**Fencing and boundary treatment** All fencing to be as per Secured by Design requirements. All non-essential fencing should be deleted. Fencing to be designed to provide high quality space. Reducing fencing requirements to be discussed with SbD officer. • Between private gardens and common areas - 1.8m timber fence with timber gates. • Boundaries between private gardens - 0.9m high post and wire • Front gardens - evergreen hedges are preferable over trip rails • Edging details should allow for grass cutting/boundary definition and clearance at low level vents etc. • Hedgehog gaps in fencing required	☐	

Ref.	Requirement	Compliance	Clarification if required
P.5.2	**Gates** • Gates must be minimum of 1000mm for individual gardens. • Gates must be minimum of 1200mm for communal areas. • Gates should open beyond 90º. • The gate latch should be reachable and openable from a wheelchair on either side of the gate. • Where gates give access to rear gardens and are lockable, locks should be located at a height of 900 - 1050mm above ground level. • Gates for access to shared gardens to be fitted with heavy duty galvanised hinges and catches. • Ensure opening widths are coordinated to allow access for gardening equipment.	☐	
P.5.3	**Bin Stores** • Designer is responsible for consulting Midlothian Council Waste Team to determine bin size and type expected to be in use at time of handover. • Individual dwellings require space provision for three plastic bins: grey, blue and brown, subject to agreement with Midlothian Council Waste Services. • If individual bin enclosures in front of terraced housing are proposed, they should be constructed of a robust material complementing the building's architecture. Timber enclosures are not acceptable. • Common Bin Stores should be of brick construction for robustness. • Communal bin stores should have clearly defined areas for each dwelling. • Stores to be located to encourage ease of use by tenants, close to entrances but taking cognisance of surveillance. • Drainage/gulley required	☐	

Ref.	Requirement	Compliance	Clarification if required
P.5.4	**Drying areas** All dwellings must have convenient access to drying areas with good surveillance. In blocks of flats there must be access from the communal entrance area to a communal drying area. Ground floor flats to have drying area within own gardens. Access to drying areas must: • not be stepped, • be paved by level pathways (gravel or chipped surfaces not accepted), • have level threshold at wheelchair user housing, • avoid gates to communal drying areas (unless increased security is required, refer to Secured by Design process), • be accessible from public road/parking for maintenance • have rotary dryers to be provided for houses and poles for flats. Pole height (rope) at 1.8m. Drying areas to be a minimum of 1.8m away from shrubs/plants/ walls and fences and so designed as to ensure clothes/objects being dried are not fouled by shrubs/plants/walls and fences.	☐	
P.5.5	**Street Furniture** Street furniture such as lamp posts, signs, benches etc. should be positioned so as not to cause an obstruction or a hazard to people with impaired sight. All furniture should be out of the line of travel but adjacent to the path or pavement. Refer also to P.1.11 Ageing Population, accessibility clause. Bollards may be used where required to improve road safety and reduce issues of inconsiderate / illegal parking or vehicle encroachment into pedestrian / landscaped areas. Each case to be discussed/agreed on a case by case basis with Midlothian Council Roads department. Seating and other street furniture is required to be durable. Example materials: steel, recycled plastic or hard wood	☐	

Ref.	Requirement	Compliance	Clarification if required
P.5.6	**Bicycle Storage** To be as per Planning requirements. Where single metal containers are proposed these should be the vertical type to discourage climbing. Green/blue roofs are encouraged.	☐	
P.5.7	**Garden Sheds** Garden sheds are not to be provided unless instructed by Midlothian Council.	☐	

ARCHITECT / DESIGN LEAD - BUILDING DESIGN CHECKLIST

Project Name:

Project Stage:

Issued by:

Issued to:

Date of Issue:

Ref.	Requirement	Compliance	Clarification if required
B.1	**General Requirements**		
B.1.1	Clarify which elements of circular economy and low embodied carbon/natural materials have been incorporated in the design.	☐	
B.1.1	Building to be designed to obtain Passive House or to EnerPhit certification as specified in General Requirements.	☐	
B.1.2	HfVN Base level: general needs – Provide HfVN checklist. Client to be clearly advised about any non-compliance.	☐	
B.1.3	HfVN Older/Ambulant - all ground floor flats – Provide HfVN checklist. Client to be clearly advised about any non-compliance.	☐	

Ref.	Requirement	Compliance	Clarification if required
B.1.4	HfVN Wheelchair/Special Needs – Provide HfVN checklist. Client to be clearly advised about any non-compliance.	☐	
B.1.5	Any non-compliance with HfVN requirements to be clarified with Midlothian Council and approved.	☐	
B.1.6	All double bedrooms should allow for a twin bed layout – twin room arrangement to be shown in dashed line on GA plans in addition to double room arrangement.	☐	
B.1.7	Double bedrooms area to be no less than 11.5m2. Area should include built-in wardrobe if present	☐	
B.1.8	Single bedrooms area to be no less than 7m2.	☐	
B.1.9	Silver Label – all aspects as specified in General Notes. Requirement for water butts to be excluded. Refer to Section 7 of current Technical Handbook – Domestic. All additional elements (e.g. sockets, compliant desk and recycling space, sanitary fittings specification requirements) to be shown on the drawings. Provide check list to Project Manager. Client to be clearly advised about any non-compliance.	☐	

Ref.	Requirement	Compliance	Clarification if required
B.1.10	Gold Label – aspect 4 and 5 as specified in General Notes. Refer to Section 7 of current Technical Handbook – Domestic. All additional elements (e.g. sockets, compliant desk and recycling space, sanitary fittings specification requirements) to be shown on the drawings. Provide check list to Project Manager. Client to be clearly advised about any non-compliance.	☐	
B.1.11	The Design Proposals should allow for future Designing for Dementia adaptations: merging kitchen and living room in an open space arrangement, access to bathroom directly from one of the bedrooms.	☐	
B.1.12	Internal bathrooms should be avoided where possible.	☐	
B.1.13	Min 200mm distance between the edge of WC pan and any other sanitaryware should be maintained.	☐	
B.1.14	Superstructure should incorporate repetetive window/door openings sizes where possible. The principle of repetetive dimensions is intended to allow for future flexibility and potentail for nterchangeability.	☐	
B.2	**Access to dwellings, stairs**		
B.2.1	Private stairs to cottage flats must be enclosed and hall areas heated.	☐	

Ref.	Requirement	Compliance	Clarification if required
B.2.2	Two storey flats should have a private stair.	☐	
B.2.3	Three storey flats require a communal stair.	☐	
B.2.4	There should not be more than six flats related to one block with a maximum of four flats accessed off one stair, unless specifically approved by the client as a result of specific planning and urban design requirements.	☐	
B.2.5	Ground floor flats should preferably be accessed from a private entrance – not a shared stairwell and provide easy access to private garden areas.	☐	
B.2.6	Avoid high ceilings in private stairwells which are difficult to decorate. Consideration should be given to changing light fittings. This also applies to two storey flats/cottage flats design. Ceiling to be sloped and to follow the line of stair. The space above stair should be considered for additional storage.	☐	
B.2.7	Handrails for older persons/ambulant flats should be designed but not installed unless requested by an Occupational Therapist.	☐	

Ref.	Requirement	Compliance	Clarification if required
B.2.8	Common Stair and Landings The design of all common internal areas should ensure the benefit from a good level of natural light. Stairs and landings are to be finished in proprietary safety non-slip flooring with coved skirtings. The balustrading and handrails should be safe and easily maintained. Stair nosing should be clearly seen, permanent, non-split and mechanically fixed. Stairwell wall finish needs to be robust min up to 1300mm to withhold traffic abuse (e.g. cement plaster on hard, two layers of durable plasterboard on SFS).	☐	
B.3	**Floors**		
B.3.1	It is a designer's responsibility to ensure that proposed floor construction meets: • Current Technical Standards and associated guidance e.g. , • Robust detailing guidance, • Latest version of the Scottish Government document Example construction and generic internal constructions: For use with Section 5: Noise of the Technical Handbooks. • Sustainability Label requirements as per current Technical Handbook - Domestic • Passive House certification requirements in understanding of airtightness, fire, acoustic and thermal performance.	☐	

Ref.	Requirement	Compliance	Clarification if required
B.3.2	Ground floor general example: • 22mm flooring grade tongue and groove glued joints moisture resistant chipboard on • vapour barrier on • battens forming services void and allowing future level access shower tray installation. • on concrete slab • on slip membrane if required • on insulation • on DPM/Gas protecting membrane on • blinding and compacted hardcore. Refer to Structural Check list for gas defence measures requirements.	☐	
B.3.3	A gulley is to be provided in the bathroom to accommodate future installation of a wet floor shower. Future shower area, associated gulley and drainage connection to be located in a manner allowing Technical Handbook compliant activity spaces.	☐	
B.3.4	All floorboards to be moisture resistant 22mm flooring grade tongue and groove moisture resistant chipboard.	☐	
B.3.5	Airtightness line needs to be determined and shown on all GA and detail drawings for construction and maintenance purposes.	☐	

Ref.	Requirement	Compliance	Clarification if required
B.4	**Roofs**		
B.4.1	It is a designer's responsibility to ensure that proposed roof construction meets current Technical Standards and associated guidance, Current Sustainability Label and Passive House certification requirements in understanding of airtightness, fire, acoustic and thermal performance requirements.	☐	
B.4.2	The airtightness line needs to be determined and shown on all GA and detail drawings for construction and maintenance purposes.	☐	
B.4.3	Flat roofs are not a preferred option unless as a result of planning, landscape or biodiversity considerations. Use of roof type should be considered on a site by site basis. Flat roofs could be considered if utilised as rain gardens, green or blue roofs to enhance biodiversity and assist with storm water management.	☐	
B.4.4	Attic space. There is a strong preference that all roof voids are designed as non-accessible. If a roof space does require to be accessible it needs to be provided with an insulated, airtight, and suitably fire rated lockable access hatch in line with Passive House certification requirements. Crawl boards to be provided where required. Installation to not affect the insulated envelope.	☐	

Ref.	Requirement	Compliance	Clarification if required
B.4.5	Fascias and soffits to be recycled PVC. They should be detailed and installed to withstand severe weather conditions, avoid disfiguration and be suitable for long term use and low maintenance.	☐	
B.4.6	Downpipes Internal downpipes are not acceptable. All gutters and downpipes shall be of a standard low maintenance uPVC. uPVC to be recycled. The number of downpipes shall be kept to a minimum and positioned to hide any movement joints.	☐	
B.4.7	Barrels for rainwater storage/use are not to be provided. Use of rain gardens is encouraged.	☐	
B.4.8	Weather protection/Entrance canopy Min 750mm deep sheltered area to the external front entrance doors should be provided to entrance doors to flats and houses.	☐	
B.5	**External Walls**		
B.5.1	It is a designer's responsibility to ensure that proposed external wall construction meets current Technical Standards and associated guidance, current Sustainability Label and Passive House certification requirements in understanding of airtightness, fire, acoustic and thermal performance requirements.	☐	

Ref.	Requirement	Compliance	Clarification if required
B.5.2	The airtightness line needs to be determined and shown on all GA and detail drawings for construction and maintenance purposes.	☐	
B.5.3	Use of feature green walls/vertical gardens is encouraged in appropriate locations.	☐	
B.6	**External door and windows - general**		
B.6.1	Level access to be provided to all external doors (communal, main doors, and garden door)	☐	
B.6.2	Windows/External Doors thermal performance/detailing and installation to reflect Passive House Certification requirements.	☐	
B.6.3	Doors to be detailed/coordinated/installed with a robust weather sealing system/rain deflector to prevent wind and rain penetration.	☐	
B.6.4	External doors and Windows must be Secured by Design certified.	☐	

Ref.	Requirement	Compliance	Clarification if required
B.6.5	Flat/House external entry door ironmongery. Security chains and peep holes, door numbers, thumb turn required. Thumb turn to be installed at 1400mm height to deter a child to exit unsupervised.	☐	
B.6.6	Landscaping to be co-ordinated to avoid drainage towards entrance area. Suitable drainage at the door to be provided as required.	☐	
B.7	**Communual entrance doors**		
B.7.1	Main Communal Entrance Door - should open inwards and have adequate vision panels.	☐	
B.7.2	Secondary Communal Entrance Door - should open outwards and have adequate vision panels.	☐	
B.7.3	All ironmongery should be robust enough to withstand frequent long- term use.	☐	
B.7.4	Door closure time should be 60 seconds.	☐	

Ref.	Requirement	Compliance	Clarification if required
B.7.5	Doors to be detailed/installed with a robust weather sealing system/rain deflector to prevent wind and rain penetration.	☐	
B.7.6	**Access strategy – intercom and ironmongery** Access to be controlled by an electronic key fob at the door. Key fob be capable of mastering arrangements to suit Midlothian Council requirements, including being suited with a pre-existing master fob and fobs for other properties within Midlothian Council. Remote activation in each flat via an audio installation with quality handset suitable for long term use. Wiring to allow for future video/audio installation. Vandal proof specification to be agreed with Midlothian Council. Rear access doors should be controlled by the electronic fob without any remote activation on the outside.	☐	
B.7.7	A turn button should be provided on the inside face of front and back communal door.	☐	
B.8	**Windows/Patio Doors**		
B.8.1	Windows to be tilt and turn or fully reversible and allow safe cleaning from the inside.	☐	

Ref.	Requirement	Compliance	Clarification if required
B.8.2	Windows to be uPVC Timber may be preferred in certain instances if required in specific planning or conservation context.	☐	
B.8.3	Handle type and operation to be robust and be easily operated. Additional attention to be given to lower location of a handle above kitchen worktop. Refer to HfVN guidance.	☐	
B.8.4	Locks to be provided to all windows and French doors/juliet doors/ patio doors except where window is an escape window. These locks should deter use by a child but be able to be overridden to allow full opening. Window restrictors with an override option required. Use of door as the only means of openable natural ventilation in bedrooms or living rooms not acceptable.	☐	
B.8.5	**Bathroom Glazing** All bathrooms / wc's should have 'reed' type glazing.	☐	
B.8.6	French doors/juliet doors/patio doors should not have any fixed central mullion between the leaves	☐	

Ref.	Requirement	Compliance	Clarification if required
B.8.7	Glazed panel next to flat/house doors is not permitted.	☐	
B.9	**Internal doors**		
B.9.1	**Fire Doors, door closers** Delayed action Perko style door closers required within the dwellings. Delayed action overhead door closers to be used in the communal areas.	☐	
B.9.2	**Door widths** Min 926mm doors allowing 800mm clear width required. Refer to HfVN for overwriting requirements.	☐	
B.9.3	Fire doors to be certified as entire doorsets. Any adjustments should not compromise certification.	☐	
B.10	**Finishes and linings**		
B.10.1	**Shower Enclosures** All shower enclosures to be lined with impervious, hygienic sheeting/panels min up to 2m. Tiling is not accepted.	☐	
B.10.2	**Bath surrounds** All bath surrounds to be lined with impervious, hygienic sheeting/ panels/wet wall up to 2m. Tiling is not accepted	☐	

Ref.	Requirement	Compliance	Clarification if required
B.10.3	**Bathroom/shower room floor finish** Slip resistance floor finishes to be provided to bathrooms and shower rooms. Linoleum preferred over vinyl due to the linoleum's low environmental impact	☐	
B.10.4	Robust construction/plywood lining/pattressing to be provided as per HfVN and technical standards	☐	
B.10.5	Refer to Stair section for stair finishes ref. B.2.8	☐	

STRUCTURAL AND CIVIL ENGINEER CHECKLIST

Project Name:

Project Stage:

Issued by:

Issued to:

Date of Issue:

Ref.	Requirement	Compliance	Clarification if required
S.1	Clarify which elements of circular economy and low embodied carbon/natural materials have been incorporated in the design.	☐	
S.2	It is recognised that overdesigning and over-specification adds significantly to the mass of structure and therefore its cost and its carbon footprint. The design of the structure should be developed to minimise the embodied energy and environmental impact of the materials used.	☐	
S.3	Structural Engineer to propose solutions that are suitable for Passive House e.g. considering thermal envelope penetrations, thermal bridging etc.	☐	
S.4	Design for climate resilience – designer to undertake a climate change assessment to understand current local climate impacts and future risks. Proposal to incorporate the conclusions.	☐	

Ref.	Requirement	Compliance	Clarification if required
S.5	Recycled steel reinforcement required	☐	
S.6	Sulphate resisting mortar (must contain lime) required	☐	
S.7	**Low Carbon Concrete Specification** Structural Engineer should refer to MPS The Concrete Centre Specify Sustainable Concrete Low carbon concrete as outlined below to be specified for each project and presented to the Project Manager as on option for costing comparison with standard concrete specification. Structural Engineer to specify low embodied carbon concrete mix where possible (refer to BS EN 206) with maximised use of locally available SCMs (supplementary cementing materials) like Fly Ash or GGBS without increasing the thickness of the concrete. Concrete mixes to be designed as location specific to avoid over-specifying by use of generic specification everywhere. Structural Engineer to specify concrete mix with water/cement use reducing additives. Structural engineer to consider designing to 56 days strength conformity rather than to conventional 26. Structural Engineer to use RiCS or LETI baseline specification as a starting point for developing the specification. Example specification (For reference only. The specification to be provided by Structural Engineer) Concrete shall be rc35 designated mix containing ground granulated blast furnace slag (ggbs) in accordance with the project specification bs 8110-1, bs 8500-1 and bs 8500-2. Structural Engineer to advise the lead designer/architect and the Client on the actions associated with the above.	☐	

Ref.	Requirement	Compliance	Clarification if required
S.8	**Ground floor general** Refer to Architectural Check List for layers above the concrete slab. Concrete on blinding on compacted hardcore to structural engineer design and specification. It is recognised that concrete over specification is one of the important reasons for high embodied energy carbon footprint. The designer is obliged to make an effort to reduce thickness of concrete slabs whilst maintaining compliance with relevant standards. Stepped concrete slabs (e.g. for shower tray) are not acceptable due to difficulties with insulation installation to expected Passive House standard.	☐	
S.9	**Ground Floor Bathrooms** Refer to Architectural Checklist item B.3.3 for ground floor bathroom additional gulley requirements.	☐	
S.10	Refer to P.3 and P.4 Soft and Hard Landscaping for SUDS requirements	☐	
S.11	Refer to P.3 and P.4 Soft and Hard Landscaping sections for footpaths requirements. All spaces should have robust ground drainage systems to ensure that there are no large puddles or water lying three hours after heavy downpour.	☐	

Ref.	Requirement	Compliance	Clarification if required
S.12	**Gas defence** Any new building or new extension requires gas protection measured as per SI requirements/Structural Engineer Design and Specification but no less CS2 level protection.	☐	
S.13	**Street Lighting** Street lighting must be designed in accordance with the requirements of Midlothian Council Street lighting Department and be constructed to adoptable standard. All access routes should be well lit for reasons of safety and security. Street lighting should be located to give maximum benefit to the areas surrounding dwellings, but should not impose excess or intrusive levels of illumination for occupants.	☐	

MECHANICAL AND ELECTRICAL ENGINEER CHECKLIST

Project Name:

Project Stage:

Issued by:

Issued to:

Date of Issue:

Ref.	Requirement	Compliance	Clarification if required
E.1	**General Requirements**		
E.1.1	Clarify which elements of circular economy and low embodied carbon/natural materials have been incorporated in the design.	☐	
E.1.2	M&E designer to design all installations as required by relevant standards/codes. It is recognised that overdesigning and over-specification adds significantly to the carbon footprint of the systems. An attempt to be made to design out installations where possible.	☐	
E.1.3	M&E designer to design and specify products and system with maximum efficiency to minimise operational energy use and maintenance costs. Preference should be given to systems produced nearest to Scotland with transparent supply chain to minimise production/ transportation carbon use.	☐	

Ref.	Requirement	Compliance	Clarification if required
E.1.4	Design to comply with current Sustainability Label requirements – refer to section 3 Stage Implementation for requirements. SAP calculations to reflect this.	☐	
E.1.5	Heating, MVHR ventilation system, energy storage and energy generation should be compliant with current Technical Standards and should be designed to achieve Passive House certification and current Sustainability Label requirements - refer to section 3 Stage Implementation for details. It is understood that there is a number of ways and potential technologies available to meet these criteria. Design team to propose a suitable, compliant solution considering energy efficiency, embodied energy, maintenance and lifetime cost. There is a strong preference to invest in envelope first approach in order to keep M&E systems as simple and a minimal as it is possible.	☐	
E.1.6	**Community Heating and Decentralised Heat** Where technically feasible and financially viable the Community Heating scheme is preferable in context of high energy demand developments and Passive House low heating demand. If necessary, further references to be made to policies NRG 5, NRG 6 of 2017 Midlothian Local Development Plan.	☐	
E.1.7	**General Design Co-ordination** Designers should ensure that services are effectively co-ordinated to ensure that construction, operation, and maintenance of the delivered solution can be achieved in the most efficient manner. Ceiling mounted fittings drawings to be provided. Previous poor examples include: • Excessive/over provision of stair lighting. • Minimum socket provision not compliant with HfVN.	☐	

Ref.	Requirement	Compliance	Clarification if required
E.1.8	Specifications generally should promote low or no maintenance. Unless specifically requested, where possible avoid battery operated systems to reduce future replacement/maintenance.	☐	
E.1.9	All systems must be designed and installed as required to secure Passive House certification	☐	
E.1.10	Gas No installation should be provided. This is a result of a shift toward green economy, avoidance of soon to be obsolete technology and use of fossil fuels.	☐	
E.1.13	Careful consideration is required to avoid crossover of pipes to allow neat placement of white goods or sanitaryware and to minimise boxing out.	☐	
E.2	**Water Supply**		
E.2.1	Water meters are not required.	☐	
E.2.2	**Sprinklers Systems/Suppression** Fire suppression system to be provided as per current Technical Standard. As a minimum Midlothian Council requirement is fire suppression to be provided to flats including cottage flats. Mist systems are preferable to minimise infrastructure, cost, and impact on ceiling heights.	☐	

Ref.	Requirement	Compliance	Clarification if required
E.2.3	**Water Storage** Water storage is not generally required, designers should consult with Scottish Water on a site specific basis and include suitable storage.	☐	
E.2.4	**Bath Water Temperature** The water temperature output from the thermostatic control valves for the baths should be set to provide 46°C to ensure that maximum temperature of 48°C is not exceeded. The contractor is to test this and confirm that this temperature is achieved.	☐	
E.3	**Heating and Ventilation and energy storage**		
E.3.1	**HMVHR Mechanical Ventilation Heat Recovery** System to be fully designed and installed by a specialist as required to secure Passive House certification. It is preferred for the system to be design, installed, and commissioned by one organisation with Passive House MVHR experience. In flatted developments, HVHR units to be accessible without entering the property to allow easy maintenance/filter changing. In houses, the HVHR should be located in a store close to the external door to allow to allow easy maintenance/filter changing	☐	
E.3.2	**Controls** Simple and inclusive controls and programmes are to be legible and accessible for the ageing population for all systems to facilitate convenient and efficient use of the equipment. Wheelchair user dwellings - separate controls are to be provided at wheelchair height in hallways.	☐	

Ref.	Requirement	Compliance	Clarification if required
E.3.3	**Radiators** Low level temperature regulation valves are acceptable. Radiators should not be positioned in such a manner as to adversely affect door swings or flexibility of furniture layouts. TRV's to be located in free space for good sensitivity to air temperatures. Refer to HfVN for Low surface temperature radiators if required for special / wheelchair user dwellings.	☐	
E.3.4	**Tumble Dryers** No tumble dryers are allowed. There are minimal benefits of using tumble dryers in presence of HVHR while they have an impact on energy consumption and the PHPP model.	☐	
E.3.5	**Showers** All showers to be fitted with anti-scald devices. Mains showers to have safe out valves. Electrical services should be designed considering the additional future shower location.	☐	
E.3.6	**Plumbing** All hot and cold water pipes beyond the main stopcock to be copper. Heating pipes to be copper. Micro-bore is not acceptable. Water filters to be designed/fitted. Suitable insulation to be designed and installed as required to achieve Passive House certification.	☐	
E.3.7	**Pipework insulation** All pipework to be insulated to BS EN 5422 and in accordance with Standard Section 6.4.1 as minimum. Insulation to match Passive House certification requirements.	☐	

Ref.	Requirement	Compliance	Clarification if required
E.3.8	**Internal Design Temperature** Heating system should be sized to enable the following internal design temperatures, to be achieved and maintained based on an external design temperature of -4°C. Bathroom : 22°C Lounge/Living Room : 21°C Hall/Landing : 18°C Bedroom : 18°C Kitchen : 21°C	☐	
E.3.9	**Services maintenance and marking** Pipework routes below floors to be clearly marked sufficient to assist future maintenance repairs. All valves, manifolds etc. within floors to be accessible through floor hatches. Suitable notes to be added to M&E specification.	☐	
E.3.10	**Photovoltaic panels and Solar Panels (if present)** They should not be the integrated flashing type. All installers and products to be accredited/approved by a suitable third-party organisation as specified by the M&E engineer. Suitable notes to be added to M&E specification.	☐	
E.4	**Electrical**		
E.4.1	All electrical installations to comply with the current building and IEE Regulations and BS EN 7671:1992 and current Building Regulations Technical Standards	☐	

Ref.	Requirement	Compliance	Clarification if required
E.4.2	**Electric Meters** Refer to E.1.11 for smart meters requirements. Electric meters should be located within the property they serve and adequately enclosed either in a cupboard or store. Meters should not be positioned within common areas. Allowance to be made for future prepaid meters if required by tenant. Pre-paid meters are not required but future installation should not be compromised. **Smart Meters** All systems are to be equipped with Smart Meters with wiring flexibility for interchangeability by different energy providers. Smart meters are to be suitable for Midlothian Council remote data collection for Post Occupancy Evaluation purposes. **Landlords Meters** Landlord meters should be located below the stairs in the common area to suit access by the Council representatives or energy supplier of landlord services to allow for meter readings. A 'T' handle key arrangement is preferred. No meters should be behind fixed panels. Should any meters be located in a locked cabinet this would dictate remote reading. Smart meters are to be suitable for Midlothian Council remote data collection for Post Occupancy Evaluation purposes.	☐	
E.4.3	**Distribution Boards** Distribution boards should be located within the property they serve and adequately enclosed either in a cupboard or store. If located outside of store, they should be neatly boxed in and suitable for required visible access.	☐	

Ref.	Requirement	Compliance	Clarification if required
E.4.4	**Assistive Technology** For older/ambulant flats containment is required to allow for future alarm installation in bathroom ceiling. A spare RCB is required at the meter.	☐	
E.4.5	**Doorbells** Doorbells are required for all dwellings. These should be positioned on brickwork, not on doorframe. These should be hardwired.	☐	
E.4.6	**Electric fobs** Refer to B.7.6 of Architectural Checklist item Access strategy – intercom and ironmongery.	☐	
E.4.7	**Low smoke electricity cable** Low smoke electricity cable is not required.	☐	
E.4.8	**Television Aerial and Satellite Dish** Each property should have a television aerial in the loft space cabled to a TV point in the living room and main bedroom. Each property should allow for two co-axial entry points in each living room. Allow for multi-room facility for future purchase by tenant of a satellite system. Common access flats (not Cottage Flats) above 2 storeys should have an installation providing an integrated, structured system restricted to only one satellite dish per block but to accommodate individual connections for each flat.	☐	

Ref.	Requirement	Compliance	Clarification if required
E.4.9	**Internet Access** All units to have hight speed internet. A coordinated approach to provision should be verified with Midlothian Council and not purely depend on Wi-Fi installation.	☐	
E.4.10	**Electrical sockets** No wiring to be surface mounted. Sound and Fire integrity must be maintained in party walls. Wall lining required - consult architect.	☐	
E.4.11	**Electrical Sockets provision** TV Points are required in living rooms and each bedroom. Living Room - 4 doubles, 1 telephone Main Bedroom - 3 doubles, 1 telephone Twin Bedroom - 3 doubles Single Bedroom - 2 doubles Hallway (ground/upper) - 1 double each Bathroom - none, no shaver socket Kitchen - 3 doubles plus white goods and cooker Dining Area - 1 double No dedicated living room fire socket is required. Cooker control unit to have switch, indicator light and 13 amp switched socket. Shower isolation switches to be outwith the reach of any person in the bath or shower. The above is to be treated as a minimum. All provision should comply with Building Regulations and with HFVN unless otherwise agreed with the Client. In dwellings for wheelchair houses or older or disabled people, sockets should be located as clarified in HfVN guidance. For amenity housing / elderly care housing additional sockets may be required – check with Midlothian Council.	☐	

Ref.	Requirement	Compliance	Clarification if required
E.4.12	Residual circuit breaker protection required to all sockets, but not to fixed appliances.	☐	
E.4.13	**Lights to walk in cupboards** Ceiling pendant only in walk in cupboard ≥ 1m2; Switch to be located within cupboard.	☐	
E.4.14	Bathroom light fittings to be shrouded.	☐	
E.4.15	**External Lights** A+ rated light fittings to be provided externally over front and rear doors.	☐	
E.4.16	**Communal Stair lighting** Common areas should be well illuminated and be designed for economic power usage to an adoptable standard. A+ rated LED fittings are to be used. Emergency escape light fittings should be 3-hour non maintained, with integral battery.	☐	

Ref.	Requirement	Compliance	Clarification if required
E.4.17	**Fire, smoke and CO2 detectors** Proposed system to comply with current Technical Standards and associated relevant British Standards. All smoke detectors within the dwelling are to be interconnected, connected to main circuit and protected at the consumer unit; and to which no other equipment is connected other than a regularly used local lighting circuit. CO2 detector to be installed in each double bedroom – this requirement is more generous than technical standards.	☐	
E.4.18	**Landlords Lighting** Landlords lighting is required for areas which are not served by street lighting and in which Midlothian Council considers there may be security and safety issues. The requirement for landlords lighting should be considered and discussed with the Midlothian Council for: • external communal areas and external communal bin stores. • communal or large car parking areas which are private and not adopted by the Local Authority. Switchgear and controls for landlords lighting should not be located within dwellings but within communal areas as required.	☐	

AMENITY HOUSING CHECKLIST

Project Name:

Project Stage:

Issued by:

Issued to:

Date of Issue:

Ref.	Requirement	Compliance	Clarification if required
A.1	Unless specified otherwise, occupants are mostly elderly with varying degrees of frailty but not necessarily wheelchair users or requiring extra care standard. Generally, the residents are no younger than 55 years old.	☐	
A.2	Unless specified otherwise, the design should meet requirements of HfVN Older and Ambulant Disabled People	☐	
A.3	Location and layout of amenity blocks to avoid areas of noisy disturbance and provide a safe secure approach for occupants.	☐	
A.4	Accommodation cannot be higher than two storey.	☐	

Ref.	Requirement	Compliance	Clarification if required
A.5	A block of 20 with one lift and at least one stair is considered as a suitable maximum.	☐	
A.6	Drying - communal drying area to be fully paved and easily accessible.	☐	
A.7	Wheelchair user parking to be provided for to be provided for 20% of residents. Spaces for wheelchair users to be located close to entrance.	☐	
A.8	Internal mobility scooter store with charging points to be provided for 25% of residents. Access should be secure and sheltered. Access to avoid main corridors where safety could be compromised, or floor finishes would be vulnerable.	☐	
A.9	Main access doors to the building to be automatic (button operated)	☐	
A.10	A small, seated area should be included near to main entrances.	☐	
A.11	Corridor lengths should be kept to minimum.	☐	

Ref.	Requirement	Compliance	Clarification if required
A.12	Any doors within communal circulation to be equipped with magnetic hold open devices. It is preferable for these to be designed out at the concept stage e.g. by reducing corridor lengths.	☐	
A.13	Stairwells/corridors to have a better than average level of natural daylight – utilising windows/sunpipes/rooflights. Remote opening should be facilitated if at high level.	☐	
A.14	Handrail support to be included at shared hallways and entrances.	☐	
A.15	Lift required. • Specification to include detail on future maintenance and be agreed with Midlothian Council Maintenance Section for approval. • Operating panels for lifts must be visually able for use by those with some impaired or weak vision/ arthritic hands etc. ensure no glare problem for panel. • Minimum capacity is for 8 persons.	☐	
A.16	Level access shower to be provided to all bathrooms on all floors.	☐	
A.17	Shower areas in bathrooms should allow for future assisted bathing with clear access for assistance.	☐	

Ref.	Requirement	Compliance	Clarification if required
A.18	Consideration to be given in bathroom areas for wall fixing handrails or future proofing for closomat provision.	☐	
A.19	All ground floor units to have wet floor shower rooms.	☐	
A.20	If timber frame is proposed, upper floors to have shallow tray to avoid of risk of flooding.	☐	
A.21	Bedrooms accommodate 2 no single beds with activity space around sides of both bedrooms.	☐	
A.22	Unless requested otherwise, there is no requirement for special fittings above HfVN Older and Ambulant Disabled People e.g. handles for elderly users.	☐	
A.23	Door access from ground floor flats direct to garden may be included if sufficient privacy is included in layout e.g patio area clearly designated to the flat.	☐	
A.24	Flats to have 30% more sockets than standard to allow for localised lighting options to suit dementia sufferers / elderly with impaired vision. Consideration to be given to task lighting.	☐	
A.25	Lighting to be added in full height storage cupboards.	☐	

Midlothian

mail@smith-scott-mullan.co.uk
0131 555 1414

378 Leith Walk
Edinburgh EH7 4PF

SMITH SCOTT MULLAN ASSOCIATES