

This Design Guide MUST be read in conjunction with the Building Standards (Scotland) Regulations 2004 as amended and should be used by the Architect for the preparation and review of the proposed design PRIOR to submission of the Building Warrant Application to East Ayrshire Council.

Standard	Description	✓
Procedures Regulations	<p>The architectural/engineering drawings provided must be to a scale as detailed below with drawings to a larger scale as necessary to show the particulars needed to determine the application: -</p> <p>Location Plan: - 1:1250 Block Plan: - 1:500 Existing and proposed site levels Site Boundary Layout: - 1:500 Drainage layout: - 1:100 (1:50 preferable) Internal drainage layout: - 1:100 (1:50 preferable) Foundation Plan: - 1:50 Floor Joists Plan: - 1:50 Floor Plans: - 1:50 Roof truss Plan: - 1:50 Roof Plan: - 1:50 Front, Rear and Side Elevations: - 1:50 Sections through building: - 1:50 Construction and engineering details: - 1:20</p> <p>The drawings should have a unique reference number and the accompanying specification must illustrate and clarify the proposed building design and incorporate the design issues noted below: -</p>	
Appendix A Defined Terms	<p>DWELLING means a unit of residential accommodation occupied (whether or not as a sole or main residence)-</p> <p>a. by an individual or individuals living together as a family; or</p> <p>b. by not more than six individuals living together as a single household (including a household where care is provided for residents).</p> <p>HOUSE means a dwelling on one or more storeys, either detached or forming part of a building from all other parts of which it is divided only vertically.</p>	
	SECTION 0 - GENERAL	
0.8.4	The materials, fittings and components used must be suitably detailed, durable and fit for their intended use.	

	SECTION 1 - STRUCTURE	
1.1.1	<p>The structural information for the proposed dwelling</p> <p>1) Illustrating structural design in accordance with The Building Standards (Scotland) Regulations 2004 – Section 1: Annexes 1A – 1F for the designated building classifications and sizes;</p> <p>or</p> <p>2) Provide sufficient technical detail which illustrates the structural elements in compliance with the relevant British Standard and is supported by the following supplementary documentation as detailed below:-</p> <p>A Site and Ground Investigation Report to BS 5930 1999 which covers the proposed development site and also includes the following information and conclusions:</p> <p>a) a Mining Report provided from British Coal;</p> <p>b) a Mineral Report where the land being developed is within a mining/extraction area;</p> <p>d) a Contaminated land report where the land being developed is designated as a brownfield development;</p> <p>c) a Flood Report where the land being developed is within an area susceptible to flooding.</p>	
1.1.1	<p>Where the design of the proposed dwelling falls out with the scope of Section 1: Small Buildings Structural Guidance (SBSG) contained in Annexes 1.A – 1.F, a Structural Engineers Registration Ltd Certificate (SER Ltd Design Certificate), or alternatively structural calculations, are required to be submitted to cover the following structural design elements: -</p> <p>a) Foundations substructure including concrete and Masonry;</p> <p>b) Superstructure including Masonry, timber and steelwork;</p> <p>c) Roof structure including Masonry, timber and steelwork;</p> <p>Where a SER Ltd Design Certificate is submitted and items, while forming part of the structural design covered by the certificate, are subject to detailed design by a specialist contractor which has yet to be completed, a performance specification covering the design of these items should accompany the building warrant application and a Schedule 1 Form attached to the certificate.</p> <p>Structural design calculations, which are being submitted for the purpose of obtaining a Building Warrant, should be</p>	

	in the form of a report and be prepared by an individual experienced in the type of design proposed. The design should conform to the current and relevant British Standards and Building Regulations 1.1 (Structure) and 1.2 (Disproportionate Collapse).	
1.1.1	Where the Site Investigation report identifies that a specialist foundation is required, full design engineering drawings are required detailing the methods to support the proposed dwelling.	
1.1.1	Detail construction of the foundations including dimensions and design (strip, raft or specialist foundation), concrete grade, reinforcement (if required), stepped foundation design, frost cover, substructure walls including materials and wall thickness including cavity fill, weep holes.	
1.1.1	Detail the construction of floor slab including dimensions and design, reinforcement (if required) thermal insulation; substructure walls including materials and wall thickness.	
1.1.1	Detail ground/first floor joist dimensions/centers, suitability of span, strength class of timber, structural support of joist ends, intermediate lateral bracing and floor finish.	
1.1.1	<p>Construction specification for internal, external and separating walls including: -</p> <p>Masonry Construction</p> <ul style="list-style-type: none"> • Load bearing/non load bearing elements; • Wall thickness and materials adopted; • Mortar grade; • Expansion joint location; • Cavity wall ties, cavity width; • Weep hole positions; • Thermal insulation within cavity or linings; • Lintel/beam dimensions type design and bearing over the window and/or door openings; • Parapet wall design; • Chimney design; <p>Timber Frame Construction</p> <ul style="list-style-type: none"> • Load bearing/non load bearing elements; • Wall thickness and materials adopted; • Mortar grade; • Cavity wall ties, cavity width; • Structural Frame specification, grade of materials cripple stud positions and dimensions; • Nailing schedule; • Kit design brochure; • Breather paper specification; 	

	<ul style="list-style-type: none"> • Hold down strap centres and position; • Lintel/beam dimensions type design and bearing over the window and/or door openings; • Thermal insulation within cavity, frame or linings • Vapour barrier specification; • Perpend ventilators centres and location • Horizontal and vertical cavity barriers positions and specification. 	
1.1.1	<p>Construction specification for traditional and prefabricated roof structure including: -</p> <ul style="list-style-type: none"> • Roof pitch • Prefabricated roof truss details • Roof timber dimensions, span, centres; • Provision of timber/steel beams; • Horizontal and diagonal roof bracing; • Lateral restraint to gable walls; • Vertical restraint (tie down) to roof truss; • Thermal insulation within roof void; • Roof ventilation; • Roof cladding materials, structural supports, fixings and weather proof membrane. 	
1.1.1	Detail the design and construction of all boundary walls retaining walls/structures within the proposed site.	
	SECTION 2 - FIRE	
2.2.1	A separating wall with medium fire resistance duration (60 minutes) should be provided between adjoining dwellings.	
2.2.5	A separating wall between the dwelling and the garage requires short duration (30 minutes) fire resistance on both faces of wall.	
2.2.5	Where ceiling above the garage is part of the dwelling, the ceiling requires short duration (30 minutes) fire resistance on the underside of ceiling.	
2.2.9	A separating wall must have no openings and must provide a barrier to fire between the parts of a building to be separated, including any roof space.	
2.2.10	Where a separating wall meets an external wall or a separating wall, the junction must maintain the required level of fire safety performance of the separating wall.	
2.2.10	Detail the fire resistance to the junction between the separating wall and the roof.	
2.3.1	An external wall within 1.0m, or on a boundary requires medium duration (60 minutes) fire resistance on both faces of the external wall.	
2.3.2	Where a storey in a building is at a height of not more than 7.5 m, any structural frame, column or beam requires short	

	duration (30 minutes) fire resistance.	
2.3.4	Services proposed within a short/medium duration wall must be protected to achieve the fire resistance of the wall.	
2.4.1	Detail the type and position of 30 minute fire resistant cavity barriers within the cavity of timber frame construction.	
2.5.1	Detail the fire classification of the wall and ceiling finishes.	
2.5.4	Detail any thermoplastic materials in ceilings and roof lights.	
2.6.1	External walls more than 1.0 m from boundary require short duration (30 minutes) fire resistance on the inner face of external walls.	
2.6.1	Separating wall on the boundary requires medium duration (60 minutes) fire resistance on both faces of wall.	
2.7.1	Detail the fire resistance to any external wall claddings.	
2.7.1	The external wall within 1.0m from a boundary should have a structural frame including insulation, which is clad with a non-combustible external cladding.	
2.8.1	Detail the fire rating classification to roof claddings.	
2.9.4	Illustrate the position, size and design of an emergency escape window serving every upper storey apartment of a dwelling.	
2.9.28	Illustrate the position, size and design of an emergency escape window serving an inner room within a basement storey.	
2.9.29	An apartment in a storey at a height of more than 4.5 m should not be an inner room.	
2.9.30	An escape window should be provided in every apartment which is an inner room in a storey at a height of not more than 4.5m.	
2.11.1	Detail the position and design of the mains wired smoke alarm detection system in accordance with BS5446 Part 1; 2000 for a dwelling with a storey area not exceeding 200m ² .	
2.11.3	Detail the position and design of the mains wired smoke alarm detection system in accordance with BS5839 Part 6; 2004 for a Grade C Type LD2 installation for a dwelling with a storey area exceeding 200m ² .	
2.12.2	Clearly illustrate the access route for fire service vehicles, including minimum road width, minimum clearance height, turning circle and axle loading.	
	SECTION 3 - ENVIRONMENT	
3.1.1	The area of the ground over the proposed dwelling must be cleared of any surface soil and vegetable matter (including wood) to prevent any harmful effect on the dwelling and the solum.	

3.1.2 / 3.1.4	Detail proposals to have harmful or dangerous substances removed or made safe from the site and the ground immediately adjoining a site.	
3.1.5	Where site remediation is necessary full design details are necessary illustrating the proposed remediation methods such as a gas membrane, capping layer etc.	
3.3.1	Ground below and immediately adjoining a dwelling that is liable to accumulate floodwater or ground water requires treatment to be provided against the harmful effects of such water.	
3.4.2	Detail the ground supported concrete floor construction including material thickness, insulation, dpm, substrate build-up, tanking arrangements (where necessary) and relationship between dpm and horizontal dpc's	
3.4.3 / 3.4.4	Detail the suspended timber or concrete floor construction including insulation, dpc positions, FAI positions, ventilation airspace, tanking arrangements (where necessary) solum build up including dpm protection and substrate.	
3.5.2	Where the dwelling is erected over an existing drain, including a field drain, which is to remain active, the drain must be re-routed if reasonably practicable or re-constructed in a manner appropriate to the conditions of the site.	
3.6.1 / 3.7.1 / 3.8.1 / 3.9.1	Refer to Drainage Design Guide DG6	
3.10.1	Illustrate the location of external wall horizontal/vertical dpc's to proposed window/door openings.	
3.10.1	Construction of parapet walls require to have a suitable water resistant coping on a DPC.	
3.10.5	External walls of a timber frame design require a vapour control layer to be added to the inner face of the thermal insulation.	
3.10.6	External walls constructed of timber frame design require the cavity to be suitably ventilated.	
3.10.6 / 3.10.7	Detail external wall and roof construction and methods to limit moisture penetration to inner face of dwelling including materials, design criteria and method of construction to all wall and roof junctions used within the design.	
3.11.1	Detail the internal apartment activity spaces.	
3.11.2	One apartment on the principal living level should be designed as an enhanced apartment.	
3.11.3/4	Detail the kitchen cooker position, activity spaces and storage accommodation and headroom within this area.	
3.11.6	Clearly illustrate internal and external drying spaces.	

3.12.1	Illustrate the position of all sanitary facilities within the dwelling.	
3.12.3	Clearly illustrate maneuvering space and all activity spaces to accessible sanitary accommodation.	
3.12.3	Indicate provision for future shower installation (if required by the design layout).	
3.14.2	Openable areas of windows serving apartments should be illustrated and be capable of ventilating at least 1/30 th of the total floor area.	
3.14.2	An 8000mm ² Trickle vent at least 1.75m above floor level is required to each apartment window.	
3.14.2	A kitchen will require mechanical ventilation to be provided to the kitchen achieving a rating of 60 l/s (30l/s above a hob or passive stack system can be adopted) along with a 4000mm ² trickle vent.	
3.14.2	A utility room will require mechanical ventilation to be provided to the kitchen achieving a rating of 30 l/s (or passive stack system can be adopted) along with a 4000mm ² trickle vent.	
3.14.2	A bathroom/shower room will require mechanical ventilation to be provided to the kitchen achieving a rating of 15 l/s (passive stack system can be adopted) along with a 4000mm ² trickle vent.	
3.14.2	A toilet can be ventilated either by natural means to 1/30 th of the floor area or via a mechanical extract fan providing 3 Air Changes per Hour.	
3.14.4	Specify provision for ventilating internal drying space.	
3.14.6	Detail any passive stack ventilation system.	
3.14.8	Detail all mechanical extract systems within the dwelling including the type, location of duct and inlets/outlets positions etc.	
3.14.11	Detail ventilation to garage.	
3.15.3	Roof ventilation to be designed to accommodate appropriate roof pitch and insulation adopted in accordance with BS5250: 2002	
3.15.4	Openings and junctions in or between the floor, walls and roofs require to be designed to limit surface condensation with a U Value which does not exceed 1.2 W/m ² K at any point.	
3.16.1	Detail the apartment window size to provide an aggregate glazed area equal to at least 1/15 th of the floor area of the apartment.	
3.17.1	Details required of any new boiler, chimney/flue etc being installed within the dwelling including fuel type, boiler capacity, location, distance to combustible materials, the need for combustion and cooling air, labelling requirements, hearth design, interface with extract fans,	

	etc.	
3.19.0	The elevation should illustrate the position of all proposed chimney/flue outlets and the position to any roof, openings, corners of building etc.	
3.24.1 / 3.24.2/ 4.11.1	Details required of any LPG or oil tank including capacity, base, catchpit (where necessary) location and proximity to buildings and boundaries and fire precautions necessary in designated locations.	
3.25.1 / 3.25.6	A refuge hard standing capable of taking 3 wheelie bins is required and consultation should be undertaken with East Ayrshire Council Cleansing Service to verify the final waste refuge collection point.	
	SECTION 4 - SAFETY	
4.1.1 / 4.3.3	Detail the road access to the dwelling(s).	
	An entrance to the dwelling should be designed from a car parking area which is level or ramped to accommodate wheelchair access and illustrate the following: - <ul style="list-style-type: none"> a) Level or ramped firm surface suitable for pedestrian and wheelchair traffic which is 900mm wide; and b) Has a platt, level except for any necessary slope for drainage, at least 1.2m x 1.2m; and c) The threshold design must permit unassisted wheelchair access and the clear opening width of the entrance door must be at least 800 mm with 300mm minimum dimension next to the leading edge; and d) The widths of any internal corridor and all doors. 	
4.1.7	Indicate position of automatic illumination to accessible entrance.	
4.2.8	Detail proposals for installation of future stairlift.	
4.3.1 / 4.3.2 / 4.3.3	Detail the maximum rise, number of risers, minimum going, tapered tread dimensions, pitch, widths and construction materials proposed for the access steps and internal stair(s).	
4.3.5 / 4.4.2	Any opening between adjacent treads in a flight or on a balustrade must be small enough to prevent the passage of a 100mm sphere.	
4.3.6	A landing, level except for any necessary slope for drainage, should be provided at the top and bottom of the access steps except where the door slides or opens in a direction away from the flight and the aggregate rise is not more than 600mm.	
4.3.6	Where a landing is necessary the length of a landing may reduce to at least 900 mm; and <ul style="list-style-type: none"> a) A door may open onto a landing between <i>flights</i> such that at any angle of swing does not diminish 	

	<p>the effective width of the landing to less than the width of the stair or ramp; and</p> <p>b) A door may open onto the bottom landing of a <i>flight</i> such that at any angle of swing a clear length of at least 400 mm is left across the full width of the landing.</p>	
4.3.11 / 4.3.12 / 4.3.13	Detail the ramp design and gradient.	
4.3.14	Where the access steps/stair or ramp has a change in level of more than 600mm, or a ramp is longer than 2.0m, a handrail is required on both sides of the flight. However, no handrail is required on a ramp serving a single dwelling where the change of level is no more than 600mm.	
4.3.15	A handrail must be fixed at a height of at least 840mm and not more than 1.0m, measured vertically above the pitch line of the <i>flight</i> or surface of the landing.	
4.3.16	The clear headroom over the stair or ramp must be at least 2.0m extending over the whole of the width of the stair or ramp.	
4.4.1/ 4.4.2	A protective barrier 840mm minimum height is required at the edge of the stair, ramp or landing where there is a difference in level of 600mm or more with no opening greater than 100mm.	
4.4.2	Detail window design and floor to cill heights	
4.4.3	Where a continuous pedestrian protective barrier is not provided to the edge of a ramp flight, a kerb upstand of at least 100 mm high should be provided to any open side of the flight where there is a drop of any height.	
4.5.1	All electrical work is required to be designed and installed in accordance with BS 7671: 2001.	
4.6.1	Detail all electrical lighting points	
4.6.4	Detail all electrical socket outlets.	
4.8.1	Any projection and any part of a dwelling capable of being projected must be positioned and secured so that it does not cause a dangerous obstruction to people outside, or inside, the dwelling.	
4.8.2	Low level glazing should be laminated or toughened safety glass in accordance with BS6262: Part 4: 2005.	
4.8.3	Detail upper floor window design so that its external and internal glazed surfaces can be safely cleaned from inside the dwelling.	
4.9.0	The discharge vent pipe from a hot water system must be positioned so that any discharge will not endanger anyone inside or outside the dwelling.	
4.9.3	Detail the design proposals of any unvented hot water storage system proposed.	

4.12.1	Detail the design of barriers located adjacent to vehicular access adjacent to the dwelling.	
	SECTION 5 – NOISE	
5.1.4 / 5.1.5 / 5.1.6	Detail the separating wall construction to limit airborne sound, the materials, wall thickness and densities adopted along with the design specification to limit flanking transmission.	
	SECTION 6 - ENERGY	
6.1.1	A carbon emissions calculation in accordance with SAP 2005 is required to establish the energy performance of the dwelling. Alternatively, the dwelling can be designed by an elemental type approach using a set of values for the 'notional dwelling'. The values for the notional dwelling can be found in the table to Standard 6.1.2.	
6.2.1	U-value calculations are required (which include bridging elements) for each floor, door, wall, glazed opening and roof type.	
6.2.3	The dwelling fabric including junctions, edges etc should be constructed to limit thermal bridges and gaps in the insulation layer(s).	
6.2.4	All gaps and junctions should be sealed to limit infiltration of air.	
6.3.8	The design of the space heating system should be detailed along with thermostatic radiator control valves, automatic timer and boiler interlock.	
6.4.1	Detail insulation for heating pipes to limit heat loss.	
6.5.1	A minimum of 50% of light fittings and lamps installed in a dwelling should be low energy type.	