2.1 General Requirements

Part 2 – Build-Zone Requirements

2.1 General Requirements

SCOPE

To satisfy the Requirements of this manual you must comply with:

- The applicable technical requirements of the Building Regulations. This will be dependent upon the location within the United Kingdom (i.e. England and Wales, Scotland, Northern Ireland) or Ireland.
- All other statutory technical requirements e.g. Water Regulations, Gas (Installation and Use) Regulations, etc.
- Relevant British or European Standards in respect of design, workmanship and materials
- Agrément certificates in respect of composite materials and building components
- Any additional requirements set by Build-Zone such as Insurance Backed Guarantees for flat roofs or tanking systems, together with the relevant testing of the underground drainage installation.
- The completion of a satisfactory Technical Audit Assessment undertaken by Build-Zone Survey Services Ltd

When interpreting these Requirements and Guidance the standards of construction achieved shall never fall below the minimum standard set by the applicable Building Regulations.

REQUIREMENTS

The Build-Zone Technical Manual is divided into several sections corresponding to the various areas of construction. The Build-Zone Requirements and other statutory constructional requirements are noted where applicable to aid the Developer. These Requirements are in addition to compliance with Building Regulations and for the avoidance of doubt compliance with the Requirements is mandatory.

All dwellings and commercial buildings covered by a Build-Zone Warranty, shall comply with the Requirements in force at the time that documents for the dwelling were deposited with the relevant Authority for the purposes of the Building Regulations. The pages following the Requirements provide guidance on showing compliance.

For the purpose of this Manual, the term Building Regulation refers to the equivalent or corresponding statute in the various countries covered by this manual, i.e. England & Wales, Scotland, Northern Ireland, and Ireland.

Building Regulation requirements are described in functional terms and reference is made to any corresponding regulation in England, Wales, Scotland, Northern Ireland and Ireland. Where a Building Regulation requirement is not currently applicable in a particular country then, where noted, it shall be treated as a Build-Zone requirement.

In determining whether compliance with the Requirements has been achieved:

- It is for the Building Control Body (BCB) ie the Local Authority or Approved Inspector to satisfy itself on the compliance of plans, specification and work with the Building Regulations. It should be noted that where a dispute arises, BZSS may delay the issuing of the Certificate of Approval until settled.
- For the avoidance of doubt, when several standards are referred to, the higher standard shall always apply.
- Whilst taking direction from other parties including the BCB, the decision of Build-Zone shall be final in determining these Requirements.

The Construction shall comply with the Building Regulations. Paths and drives shall be laid to falls and be adequately drained and should comply with Approved Document Part M.

Site fill and consolidation of subsoil under paths, drives, outbuildings etc. shall be carried out using non-organic materials and achieve an appropriate level of compaction, due account being taken of the final use of the filled area.

Where on-site sewage treatment and disposal systems are included in the warranty and/or soakaways are proposed, a porosity test shall be carried out to ensure that the ground conditions are suitable for that form of drainage discharge.

Subsoil drainage shall be provided within the vicinity of outbuildings, hardstandings, paths, drives and the like if the ground is liable to waterlogging or if the presence of a water table is likely to affect the stability of the ground.

Subsoil drainage shall be provided in garden areas if the ground is liable to constant waterlogging within 4 metres of the dwelling. Garden areas shall be laid to levels and gradients appropriate to the levels of the buildings, adjacent highways and services.

An adequate method of rainwater disposal shall be provided to all permanent outbuildings.
2.1 General Requirements

External doors and windows shall be designed and constructed so as to:

- Not allow moisture through frames
- Shed water from the building in an effective manner
- Be provided with a draught strip or other mechanism to resist draughts into the housing unit
- Provide adequate deterrents to prevent forced entry into a dwelling
- Allow appropriate access (depending on location) in the event of a fire
- Allow suitable access in accordance with AD Part M

The enveloping walls and floors of a dwelling, including jambs, sills and heads of door and window frames, shall be designed and constructed so as to:

- Prevent the build-up of excessive condensation within the fabric of the construction
- Prevent cold bridges causing local surface condensation to occur
- Prevent the excessive flow of air into a dwelling
- Allow suitable access in accordance with AD Part M including the provision of a drainage strip or gap within the paving

The width of internal stairways shall be such as to offer safe passage to users of the building.

The following accommodation and amenities shall be provided to a dwelling:

- Adequate whole house heating and domestic hot water supply
- Electrical installation with an adequate number of lighting points and socket outlets
- Gas supply to kitchen cooker position (where a mains supply passes adjacent to the dwelling)
- Adequate storage space at each floor level
- Adequate space with a 13 amp socket outlet for a refrigerator
- TV point in at least one room wired to an accessible connection point

Building service installations shall be designed and constructed so that they:

- Operate in a safe manner
- Are provided with adequate controls to allow their operation, isolation and drainage
- Are provided with adequate means of access where necessary for the purposes of inspection, maintenance and replacement
- Provide protection to the end user in respect of the health and safety of the occupants

All service installations requiring periodic attention by the user shall, where appropriate, be provided with adequate operating and maintenance instructions.

Finishes to walls, floors, fixtures and ceilings in conjunction with levelling and supporting surfaces should provide adequate resistance to impact, wear, water, and light chemical attack, due account being taken of the location of the element. In addition, externally located finishes should have resistance to frost and ultra-violet radiation.

Decorative elements shall be completed to adequate basic levels of visual quality to meet any timescales set out in relevant industry maintenance regimes (higher standards which may be agreed between the Builder/Developer and the purchaser are not included in this Requirement).

Adequate vehicular and/or pedestrian access shall be provided:

- From an adjacent street, to an entrance of the dwelling and to any garage or other parking area within the curtilage of the site
- From the dwelling to any garage and outhouse
- Vehicular and pedestrian access to the property, where possible is to be provided in accordance with AD part M. Where this is not possible, any exclusion is to be sought from and confirmed in writing by the BCB.
Detached garages and outbuildings shall be:

- Structurally stable and able to withstand movement of the subsoil, due account being taken of the ground conditions and wind exposure of the site
- Reasonably resistant to rain and ground water
- Built to the same standard as the main housing structure inclusive of a DPC/DPM

Retaining walls and garden walls, whilst these may not be covered under the terms of the warranty (refer to the individual policy) shall be built in such a way as to be stable, withstand movement of the subsoil and be adequately protected from the adverse effects of ground moisture and freezing. In addition, retaining walls shall be constructed so as not to allow the build-up of ground water to the retained section of soil.

All external ramps and steps providing access to a dwelling shall be safe to use.

Garden areas shall be reasonably cleared of builders’ materials prior to handover.

Accuracy, quality of finish and protection:

- Any element covered up by another element shall be finished to adequate standards in order to properly receive the covering element and be adequately protected prior to being covered up.
- Any element not covered up by another element shall be provided with an adequate basic standard of visual finish and protection prior to handover to the end user.

(Higher standards which may be agreed between the builder/developer and the purchaser are not included in this Requirement).

Design and construction:

- The Developer as part of the design process, shall carry out adequate investigations to identify design data for the development site.
- Total and differential movement of an element or material shall be adequately limited or accommodated, such that damage does not occur to itself or to other elements or material.
- Methods of fixing, jointing, bonding, supporting, tying together, surface preparation and sealing of elements shall be adequate. Due account should also be taken of the location and anticipated life of the element or material.
- The design and construction of any element and choice of materials shall be such that a reasonable level of safety to persons is provided.
- The method of achieving compliance with any Requirement shall not result in the failure to comply with another Requirement.
- Any element which performs the role of more than one element shall comply with the Requirements applicable to each element.
- Every dwelling shall be cleared of builders’ materials and debris and adequately cleaned prior to handover.
- Attached garages shall be built to the same standard as the main house including but not limited to insulated cavity wall construction, integral DPC/DPM connected to the main house.

Durability – Materials and workmanship:

- All materials, with the exception of decorative materials, shall have a minimum life span of not less than 30 years for items affecting structural stability, 15 years for roof coverings (and flat roof coverings will be subject to the requirement for an Insurance Backed Guarantee for both materials and workmanship) and 10 years for non-structural items, due account being taken of their intended location and use.
- Materials shall be adequately treated to prevent their premature decay or decomposition and adjacent materials shall be compatible with each other. Where necessary, Agrément certificates will be required to satisfy Build-Zone in respect of the compatibility of building materials used in conjunction with each other such as a render and its backing board where they form the waterproof envelope.
- Materials shall be stored, protected and properly treated such as in accordance with the manufacturer’s instructions prior to being incorporated into the dwelling.
- The Requirements shall be met whilst the building is in service.
- If a product has an independent test certificate e.g BBA or BRE, DIN etc and is installed by an “approved installer” [e.g. approved under an industry scheme or by the manufacturer as in the case of Sika render systems], Build-Zone may not require additional insurance (if the guarantee provided is adequately insurance backed and is inclusive of workmanship).
2.1 General Requirements

BUILD-ZONE INSURANCE REQUIREMENTS FOR CONVERSIONS OF ALL TYPES OF STRUCTURES

Whilst it is recognised that this will be on a case by case basis, as part of the proposal process the Developer or builder should commission a comprehensive structural survey and report by an Expert with appropriate Professional Indemnity insurance for the structure of the building or elements of structure, to indicate the condition and lifespan of those elements, comment on any defects that are evident that will require rectification works as part of the conversion process and confirm if indeed the structure is suitable for conversion.

Whilst not an exhaustive list, the Developer is to provide details in relation to the following:

- The provision of an integral damp-proof course and damp-proof membrane to provide an effective barrier against rising damp will be required. DPC injection should include an insurance backed guarantee covering both workmanship and materials for each property or structure being converted.
- The independent inspection and treatment of all timbers against fungal and insect attack should be carried out where necessary, together with replacement of all rotting timbers and associated work necessary to remedy the cause of dampness. Timber treatment should include an insurance backed guarantee covering both workmanship and materials for each structure or property being converted.
- Converted property where possible and reasonable to do must obtain as reasonable as is practicable a level of sound insulation. Where this is not possible and special dispensation is provided, this should be provided to Build-Zone for review and approval.

It is recognised that some historic buildings or other buildings which are subject to legislation such as formal listing under the Planning (Listed Buildings and Conservation Areas) Act 1990 may not achieve the full requirements of the Building Regulations. Where this does occur, the Developer is to supply all relevant papers to Build-Zone for review.

OTHER STATUTORY CONSTRUCTIONAL REQUIREMENTS

All elements of construction covered by this Manual shall comply with any relevant statutory requirements for the country in which the development is being built.

Services passing through the building envelope shall comply with the requirements of the relevant Gas, Water, Electricity and Drainage Authorities.

The protection of building services, supplies and installations in waterlogged ground shall satisfy the requirements of the Supply Authority. Where necessary, evidence is to be supplied to Build-Zone

The method of on-site sewage treatment and disposal shall comply with the requirements of the relevant Sewage / Water Authority or Environment Agency.

The method of discharge of a private drain or sewer into a public sewer shall comply with the requirements of the Sewage / Water Authority or Environment Agency.

The ventilation of voids under ground floor slabs shall be to the satisfaction of the BCB, Technical Auditor and relevant Authority. Where necessary, radon protection measures are to be checked prior to the start of the project and the build is to include all necessary building works as required inclusive of relevant barriers and venting systems.

Every dwelling shall be provided with a wholesome supply of drinking water to the satisfaction of the Water Authority.

Heating appliances shall comply with the requirements of the Local Authority with regard to the Clean Air Acts (smokeless zone requirements).

The location of services within the finishes shall comply with the requirements of the Gas, Water, Electricity and Drainage Authorities.
2.2 Low and Zero Carbon Housing

With the introduction of the Building Regulations Approved Documents Part F & L for England and Wales regarding ventilation and energy performance of dwellings, designers and builders have to ensure that new dwellings minimise uncontrolled air leakage and provide proper ventilation. Reduced air permeability is recognised as having significant impact on reducing energy consumption and carbon emissions. Therefore all new dwellings are required to be pressure tested to ensure that their air permeability does not exceed the standards in Approved Document L with all certification being provided to Build-Zone. All forced air extracts are to be independently tested.

Minimizing air leakage is critical to the performance of the building. It not only saves energy but also improves comfort by eliminating draughts. Equally importantly, reducing uncontrolled air leakage enhances durability by allowing rain screen walls to function effectively and prevents moist air from leaking outward and condensing within the building fabric. The "breathability" of some hermetically sealed timber framed buildings will be reviewed on a case by case basis.

All combustion equipment shall be independently vented and have either sealed direct-vent, induced-draft or forced draft venting systems with electronic ignition. Both induced draft and forced draft venting systems shall be capable of positive shutdown in the case of venting system blockage. A carbon monoxide detector shall be installed in flats/houses either containing combustion appliances or where garage/s are attached to the main structure.

Low or zero carbon housing should incorporate the principles of occupant health and comfort, affordability, resource conservation and reduced environmental impact.

These homes reduce greenhouse gas emissions and minimize the detrimental impacts of housing. The design of these dwellings should be undertaken in the following order and include:

1. Climate specific design
2. Energy and resource-efficient construction
3. Passive solar heating and cooling
4. Natural daylighting
5. Energy-efficient appliances and lighting
6. Renewable energy systems (e.g. photovoltaics, solar thermal and ground source heat pumps, etc.)
7. Water conservation and re-use
8. Land and natural conservation
9. Sustainable community design and green infrastructure practices

The benefits of good design include:

- Lower energy bills
- Less concern about disruption to the energy supply or cost escalations
- Healthier living
- Greater comfort
- Reduced carbon emissions and other pollutants
- Improved affordability from a life-cycle cost basis
- Increased opportunities for sustainable redevelopment

RENEWABLE ENERGY SYSTEMS

The following renewable energy systems should be considered when designing low or zero carbon dwellings:

a. Combined heat and power
b. Bio-mass heating
c. Solar thermal for space and domestic water heating
d. Solar electricity
e. Solar ventilation air preheat
f. Ground source heat pump
g. Wind
2.3 Security and Finishes

DESIGN – GENERAL

With the introduction of AD Part Q, there is more of an emphasis on designing elements into dwellings to resist unauthorised access from the outside and in the case of flats, from the common parts or other areas.

Comprehensive security can be provided to the dwelling and site by following the guidance and objectives of Secured by Design to encourage the building industry to adopt recommended crime prevention guidelines, in both house and estate design, thus gaining approval to use an official Police approved logo in marketing of new houses.

To gain approval under the Secured by Design initiative, it is important for the designer to consult with the Architectural Liaison Officer of the relevant Police Authority at an early stage of the design. Security provisions apply to houses, flats and maisonettes and cover the following matters:

- Passive security measures such as estate layout, landscaping and the design of doors and windows
- Active security measures such as intruder alarms and security lighting (Refer to Section 10 External Works)

With the introduction of AD Part Q, the minimum requirement is to comply with BS PAS 24. Where applicable doors and windows are to comply with PAS 24.

CUSTOMER SERVICES FOR HOME BUILDERS

In purchasing a new build through the open housing market or direct from a Developer or builder, the new homeowner has an expectation as to the quality of the build. The presentation of the Build–Zone warranty on completion of the project will enhance the expectation that no defects exist. Where there are issues and these are not effectively dealt with, this will impact on the reputation not only of the Developer but also of Build Zone in allowing their warranty to be issued. It will also affect the rating of the Developer with Build-Zone for future developments. Some Warranties that Build-Zone offer are subject to the Build-Zone Code of Conduct for Home Builders which require an enhanced standard of Customer Service in respect of the Development.

At completion the following should be quality checked:

- Finishes – check that there is no damage, drips, chips or faults in the appearance of any decorated surface. Ensure that all aspects of the finished home are of a reasonable standard of visual finish.
- Services – check that all services, boilers, fires etc. are installed in accordance with the manufacturer’s instructions and comply with the legislation associated with that appliance. Please note that all operating manuals should be retained and handed over with other relevant information to the purchaser as part of a Home Information Pack.
- Superstructure – ensure that all finishes are to a reasonable visual standard, the brickwork/rendering and roof covering is of a consistent nature in quality of finish and workmanship. All windows and door frames must be sealed where abutting the external envelope to prevent weather penetration. All rainwater goods must be correctly placed and connected to the drainage system and all timber products suitably treated / decorated to give a reasonable finish and protection against the elements.
- Roof space – the roof space should be accessible, with all insulation in place and, where fitted (in a cold roof) the loft hatch must be insulated, draught stripped and secured with a catch. Access must be provided to and around the water storage tanks within the loft space. Access to the roof void will be required by the Technical Auditor at completion.
- Ground works and drainage – generally all external decorations should be complete, boundary walls built, drainage connected and the whole system flushed through and tested (evidence must be supplied to the Technical Auditor). Paths and drives must be complete / serviceable and in compliance with AD Part M, and the plot free from any builders’ debris.
- Miscellaneous – provide evidence of insurance backed guarantees where applicable (see list of required certificates detailed below). The whole house should be clean, free from builders’ material/rubble and be complete prior to handover/conveyance.
2.3 Security and Finishes

The following certification should be forwarded to the Technical Auditor on completion of the build. Failure to supply the information or certification may result in a delay in the issue of the Warranty certificate which could delay possible sales. Please note that this list is not exhaustive and other certification may be required by the Technical Auditor. The certificates required will also be dependent on the type of build.

- Gas Safe certificate
- Oil or other gas (LPG) certification
- HETAS certification
- Electrical (AD Part P) certificate
- EPC certificate
- SAP rating
- AD Part L documents (extract fan testing)
- Building Control Final Certificate
- Timber treatment Insurance Backed Guarantee
- Injected DPC Insurance Backed Guarantee
- Flat Roof Insurance Backed Guarantee
- Slate conformity Certificate
- Basement tanking Insurance Backed Guarantee
- Remedial wall tie replacement, materials and workmanship Guarantee

For more detailed guidance on completion inspections see the aide-memoire ‘Completion – Warranty Key Stage’ in Part 3: Build-Zone on Site.
2.4 Establishing Fitness of Materials and Workmanship

The following methods exist for establishing the fitness and assuring the quality of materials and workmanship:

- Past experience may show that a material is suitable for its intended use or that a method of workmanship is adequate for a particular type of construction.
- Compliance with a British Standard or an equivalent European Standard generally assures the adequacy of a design, method of construction or product where appropriate for a specific use.
- Build-Zone will require proof of compliance of building materials where several materials are used, for instance to form a waterproof envelope.

PRODUCT CERTIFICATION SCHEMES

Product certification schemes operated by independent assessment organisations exist to assure the conformity of a product to a specific standard, e.g. the Kitemark Scheme operated by the British Standards Institution.

QUALITY ASSURANCE SCHEMES

Various quality assurance certification schemes exist for design, construction and product manufacture. Firms registered under such schemes are considered to have the capability to produce or perform to a consistent level of quality within a defined scope of registration. Quality Assurance schemes registered by the National Accreditation Council for Certification Bodies (NACB) provide assurance as to the integrity of such schemes.

Quality Assurance schemes do not, however, certify conformity with a particular product or service standard, or that the standard is adequate for a specific application.

AGRÉMENT CERTIFICATES

Agrément Certificates issued by the British Board of Agrément (BBA) provide independent certification of the adequacy of a particular product, for a specific use, in cases where a British Standard does not currently exist.

CONSTRUCTION PRODUCTS DIRECTIVE

The CE mark is a claim that a product, when properly used, enables the construction works in which it is incorporated to meet the relevant essential Requirements of the EC Construction Products Directive. The claim is normally based on compliance with a harmonised European Standard or European Technical Approval.

The essential Requirements encompass:

- Mechanical resistance and stability
- Hygiene, health and environment
- Protection against noise
- Safety in case of fire
- Safety in use
- Energy economy and heat retention
2.5 Guidance for Innovative Designs and Construction Methods

As with national standards, different classes of performance may be permitted in order to suit varying situations such as climate and required levels of protection.

Therefore, products should be carefully selected to ensure that they are fit for their intended purpose.

TESTS AND CALCULATIONS

Calculations and destructive or non-destructive tests can show that a design, construction and/or product is adequate for a specific purpose. The NAMAS Accreditation Scheme for Testing Laboratories provides a means of ensuring that tests are conducted in accordance with nationally accepted criteria.

TESTS FOR RECLAIMED MATERIALS

Reclaimed materials must where possible be subject to a Third Party test to show suitability (unless specifically seen and accepted on site by the Technical Auditor prior to incorporation of the particular material in the construction).

EXPERT

Where the appointment of an Expert is recommended, the person to be appointed should possess the qualifications, experience and Professional Indemnity insurance appropriate for the type and complexity of work to be undertaken.

Suitable Experts normally include:

- Registered Architect (MRIBA, FRIBA)
- Chartered Civil or Structural Engineer
- Fellow or Member of the Chartered Institute of Building
- Fellow or Member of the Royal Institute of Chartered Surveyors (Chartered Building Surveyor)
- Fellow or Member of the Architects and Surveyors Institute
- Fellow or member of the British Institute of Architectural Technologists
- Fellow or Member of the Association of Building Engineers
- Fellow or Member of the Incorporated Association of Architects and Surveyors
- An Inspector registered with the Construction Industry Council (CIC) which is designated by government as a body for approving Inspectors in accordance with Section 49 of the Building Act 1984 and regulation 4 of the Building (Approved Inspectors etc.) Regulations 2010 but who has no financial interest in the build of the project

In general, designs and construction methods which cannot be shown to meet the Requirements by any of the methods set out in this manual must be approved in advance by Build-Zone in writing, generally before commencement on site. An additional administration fee may be applicable to undertake any pre plan checking before a project progresses.

All structural elements should be designed by an Expert when not in accordance with either:

- Approved Document A (England and Wales)
- Technical Guidance Document A (Ireland)
- Technical Standards Part C (Scotland)
- Small Buildings Guide (Scotland)
- BS 8103-3-3:2009
- This technical manual

Where the structural elements of a building are designed by more than one Expert, then one Expert should be nominated to be responsible for certifying the overall stability of the structure.

To ensure durability, materials should generally be selected as follows to suit the exposure of a particular location:

- BS EN 1996-1-2:2005 – masonry units and mortar
- TRADA Floor Span Tables
- BS EN 1992-1-1:2004 – concrete
- BS EN 1090-2:2008 – structural steel
The findings and recommendations of any site investigation report should be taken into account when selecting masonry, mortar and concrete for below ground use.

Structural elements should not be cut, drilled or notched on site, except in accordance with the recommendations set out in this manual and manufactured structural components should not be modified without the express permission of the designer and manufacturer.

If a structural element supports heavy service loads, e.g. a cold water tank, it should be specifically designed for this purpose.

The dimensional accuracy of the completed structure should be within the permissible tolerances specified by the manufacturer of elements to be supported by, or accommodated within, the structure.

Where prefabricated structural components rely on additional site fixed elements or fixings for their own stability, or provide stability to other elements, then a nominated person should be responsible for ensuring that all necessary assembly information is supplied to site and that the completed work complies with the design.

Prefabricated structural components should not be altered on site or any major repair carried out without the specific approval of the Expert responsible for the design.

Prefabricated structural components should be clearly identified by indelible marking.

The rigidity of a framed structure should be sufficient to prevent damage or visual defects occurring to all elements within or supported by the structure.

Workmanship on building sites should comply with BS 8000 and Regulation 7 to the Building Regulations.
2.6 Modern Methods of Construction (MMC)

As a general rule, Build-Zone is able to accept new builds built with the use of MMC’s under their Warranty. As with the normal build process, a number of Technical Audits will be carried out during the course of construction either independently or as part of the combined Building Control process.

Whilst a plan check is undertaken at the start of the project in the normal way, if multiple units are to be constructed over a number of development sites, it is possible that a limited type approval could be given. Whilst an administration fee is charged for this, it may be a cost effective option if a number of units are built across various Developments.

MMC is a process carried out in a pre-defined logical sequence, using precise components made under controlled conditions such as a factory or workshop environment. The result is a building with enhanced performance characteristics in terms of quality, time, waste, value and delivery certainty.

Build-Zone defines an MMC as:

- Panelised – Closed timber, steel framed or concrete panels factory produced and assembled on site, including structurally insulated panels (SIPS) and laminated panel systems.
- Volumetric – Lightweight steel, concrete or timber modules and PODs, including services and finishes, factory applied.

The assessment process is not just a desktop overview of your proposals and specification of the project, but it can also include factory audits. Site visits are also undertaken during the course of the construction in order to ensure that the build meets the requirements of the Warranty but are guided to the construction method.

Build-Zone understands that you need to make quick progress on site. In order to help you do this we set out below how we can help each other to streamline the assessment process.

The flow chart shows you the stages, from notification of the project to our decision to accept, or unfortunately on some occasions to decline.

WHAT ARE WE LOOKING FOR?

In order to understand your project, we need to know as soon as possible details of the products and methods you are proposing. If possible this information should be provided at quotation stage. In particular we need the following:

- Single point of responsibility for project design co-ordination. The project co-ordinator to be responsible for ensuring compatibility of all individual construction elements.
- Project drawings, plans, elevations and specifications.
- Project method statements.
- Erection manuals and confirmation of erection by trained/approved contractors.
- Maintenance requirements.
- Structural Engineer’s load calculations for all elements of the system including cladding and fixing details.
- Report commenting on structural adequacy of elements and confirming life expectancy of building.
- Experts’ reports – these will be in addition to the Structural Engineer’s report and should include specialist reports and test data from manufacturers. Independent assessment of components or system from BBA, BM TRADA, BRE, WIMLAS, European Technical Approval (ETA) or conformity to International, European and British Standards. Best practice guidance from industry bodies, BRE, BM TRADA, CIRIA, ETA, BS etc. Past performance of similar systems. Third Party Manufacturer’s Warranties. Factory audits may be required if the systems are not already approved by Build-Zone.

WHAT WE EXPECT

- The project must achieve compliance with Build-Zone Technical Requirements and the Building Regulations within the country where the Development is based.
- The fabric of the building must prevent moisture penetration to the inside of the building and where applicable be supplied with an Agrément Certificate.
- Any habitable areas either below or partially below ground level must always be provided with a minimum grade 3 tanking system or equivalent and a ten year insurance backed guarantee covering both materials and workmanship provided to Build-Zone.
- Specialist roofing systems and proprietary externally applied weather proofing/insulation systems should have a contractor’s guarantee and/or ten years insurance backed guarantee covering both materials and workmanship.
- Windows, doors and internal services should comply with current standards.
- Life of building to be a minimum of 60 years in accordance with the Council of Mortgage Lender’s (CML) requirements.
2.6 Modern Methods of Construction (MMC)

FLOW CHART – MMC PROJECTS

Application received from Build-Zone Registered developer/Builder

Application registered, details forwarded to Technical Department. Request for any additional plans, reports etc, sent to applicant

Any further details received

Desk top appraisal undertaken

Build-Zone arrange factory site visits where required

Is Build-Zone able to fully accept proposal

Yes

MMC building considered satisfactory for insurance under scheme

Yes

Quotation sent to Developer (Possibly with Conditions)

Quotation accepted

No

Further information sent to Technical Department

Letter sent detailing where failed to meet requirements

Application Rejected

Or

Late registration increase of Premium fees

No

Existing Approved System. Is registration at least 14 days prior to commencement on site or build in the factory?

Yes

Payment made by Developer

Project works commence
ASSESSMENT OF MMC SYSTEMS – ADDITIONAL INFORMATION

The following provides guidance on the assessment procedure undertaken by the technical department during both the desktop and factory/site inspection stage.

Verification by Desk Study

The durability assessment shall involve a review of the following information supplied by the applicant:

- All materials used in their system shall include specification of any coating finishes for the purpose of corrosion protection, UV protection (i.e. zinc, paint etc).
- The life expectancy of all materials.
- Assessment of long-term performance of materials where relevant.
- Protection from weather during delivery and installation of the various building systems, elements or components.

Achievement of the weather-tightness of the building shall be assessed by consideration of the following aspects:

- Type of roof covering and method of installation.
- Where relevant, use of drainage cavities in walls.
- Adequate use of damp proof courses.
- Sealing around windows and doors.
- Roof and ground drainage.
- Assessment of the hydrothermal performance of the building system, element or component including thermal transmittance and any associated risk of condensation.
- Effect of different materials in contact (e.g. examination of chemical and physical compatibility).
- Where relevant, provision of movement joints in the system to allow thermal expansion of components without detriment to the weather tightness of the building.
- A schedule, clearly detailing the maintenance requirements including cleaning, re-sealing and replacement of any component or element having a life expectancy of less than 60 years.

Product Specification

The manufacturer/supplier shall provide the following:

- Clear identification of the scope of the building system e.g. number of storeys.
- All engineering drawings showing construction details, junction details and connections, with manufacturing tolerances.
- Test reports/calculations relating to performance of the building system/element or component.
- Competency and/or training requirement of installers.
- Full detailed site installation/assembly instructions including any diagrams.
- Critical site assembly checklist for use by on-site inspectors.
- Risk assessments for the installation and construction process.
- Procedures for the adaptation/change of use of the building system, elements or components in response to the following scenarios:
  - Insertion of a 2m x 2m opening for a new patio door
  - Fixing of heavy items to external walls, ceiling and stairs – e.g. stair lift, ceiling hoist for disabled
  - Adding a conservatory or other structure
  - Removal of internal load bearing walls
  - Accessibility for modifications to plumbing and electrical services
  - Cutting or drilling holes through elements to accommodate modifications to service requirements

Mechanical Resistance and Stability

Evaluation of the structural configuration to identify:

- Clearly defined paths through which the actions are transmitted to the ground
- Adequate strength, stiffness and stability to resist the applied loads to which the system will be subjected
- Structural members, the stability of which relies on the assumption that they are restrained in position and their connections to a bracing member are of sufficient strength and stiffness to provide the required restraint
- Robustness to disproportionate collapse
The building must comply with the following:

**THE BUILDING REGULATIONS (ENGLAND & WALES)**
- Part A Structure
- Regulation 7 – Materials & Workmanship

**THE BUILDING (SCOTLAND) REGULATIONS**
- Section 0 General - Regulation 8 (1) – Fitness and durability of materials and workmanship.
- Section 1 Structure - Regulation 9

**THE BUILDING REGULATIONS (NORTHERN IRELAND)**
- Part B Materials & Workmanship
- Part D Structure

**THE BUILDING CONTROL (AMENDMENT) REGULATIONS (IRELAND)**
- Technical Guidance Document A - Structure
- Technical Guidance Document D – Materials and Workmanship

**Safety in Case of Fire**

The minimum fire resistance for compartment walls shall be 60 minutes for low and medium rise buildings.

Cavity Barriers/fire stopping shall be fitted at all junctions between individual dwellings, communal areas, and the exterior envelope. For larger buildings follow the guidance in Approved Document B3 (England & Wales), the Technical Handbooks 2.4 (Scotland) and the Technical Standards (N.I.).

The building must comply with the following:

**THE BUILDING REGULATIONS (ENGLAND & WALES)**
- Part B Fire Safety
- Regulation 7 – Materials & Workmanship

**THE BUILDING (SCOTLAND) REGULATIONS**
- Section 0 General - Regulation 8 (1) – Fitness and durability of materials and workmanship.
- Section 2: Fire - Regulation 9
  1. 2.1 Compartmentation
  2. 2.2 Separation
  3. 2.3 Structural protection
  4. 2.4 Cavities
  5. 2.5 Internal linings
  6. 2.6 Spread to neighbouring buildings
  7. 2.7 Spread on external walls
  8. 2.8 Spread from neighbouring buildings
  9. 2.9 Escape
  10. 2.10 Escape lighting
  11. 2.11 Communication
  12. 2.12 Fire service access
  13. 2.13 Fire service water supply
  14. 2.14 Fire service facilities
  15. 2.15 Automatic life safety fire suppression systems

**THE BUILDING REGULATIONS (NORTHERN IRELAND)**
- Part B Materials & Workmanship
- Part E Fire Safety

**THE BUILDING CONTROL (AMENDMENT) REGULATIONS (IRELAND)**
- Technical Guidance Document A - Structure
- Technical Guidance Document D – Materials and Workmanship
Hygiene, Health and Environment

The building shall resist the penetration of the building envelope, including driving rain on facades and potential snow penetration.

Basement construction should comply with the provisions of BS 8102-:2009.

The risk of interstitial condensation should have been addressed in accordance with EN ISO 13788 and BS 5250:2002.

Approaches, door widths, corridors, circulation and sanitary conveniences should comply with recommendations given in BS 8300:2009+A1:2010.

The building must comply with the following:

THE BUILDING REGULATIONS (ENGLAND & WALES)

- Part K Protection from falling, collision and impact
- Part M Facilities for disabled people
- Regulation 7 – Materials & Workmanship

THE BUILDING (SCOTLAND) REGULATIONS

- Section 0 General - Regulation 8 (1) – Fitness and durability of materials and workmanship.
- Section 4: Safety - Regulation 9
  1. 4.1 Access to buildings
  2. 4.2 Access within buildings
  3. 4.3 Stairs and ramps
  4. 4.4 Pedestrian protective barriers
  5. 4.7 Aids to communication
  6. 4.8 Dangers from accidents

THE BUILDING REGULATIONS (NORTHERN IRELAND)

- Part B Materials & Workmanship
- Part H Stairs, ramps, guarding and protection from impact
- Part R Access and facilities for disabled people.

THE BUILDING CONTROL (AMENDMENT) REGULATIONS (IRELAND)

- Technical Guidance Document D – Materials and Workmanship
- Technical Guidance Document F – Ventilation
- Technical Guidance Document G – Hygiene
- Technical Guidance Document K – Stairways, Ladders, Ramps & Guards
- Technical Guidance Document M – Parts 1, 2, 3 & 4

Sound Insulation

For England & Wales, sound insulation performance may be demonstrated by using appropriate construction techniques. On completion of the build, Pre-Completion Testing will be required.

The building must comply with the following:

THE BUILDING REGULATIONS (ENGLAND & WALES)

- Part E Resistance to passage of sound
- Regulation 7 – Materials & Workmanship

THE BUILDING (SCOTLAND) REGULATIONS

- Section 0 General - Regulation 8 (1) – Fitness and durability of materials and workmanship.
- Section 5 Noise - Regulation 9
  - 5.1 Resisting sound transmission to dwellings using appropriate constructions
2.6 Modern Methods of Construction (MMC)

THE BUILDING REGULATIONS (NORTHERN IRELAND)

- Part B Materials & Workmanship
- Part G Sound insulation of dwellings.

THE BUILDING CONTROL (AMENDMENT) REGULATIONS (IRELAND)

- Technical Guidance Document D – Materials and Workmanship
- Technical Guidance Document E – Sound

Energy Economy and Heat Retention

The manufacturer should provide details of the thermal performance and air leakage of the building system.

The building must comply with the following:

THE BUILDING REGULATIONS (ENGLAND & WALES)

- Part L Conservation of fuel and power
- Regulation 7 – Materials & Workmanship

THE BUILDING (SCOTLAND) REGULATIONS

- Section 0 General - Regulation 8 (1) – Fitness and durability of materials and workmanship.
- Section 6 Energy - Regulation 9
  1. 6.2 Building insulation envelope
  2. 6.3 Heating systems
  3. 6.4 Insulation of pipes, ducts and vessels
  4. 6.5 Artificial and display lighting
  5. 6.6 Mechanical ventilation and air conditioning

THE BUILDING REGULATIONS (NORTHERN IRELAND)

- Part B Materials & Workmanship
- Part F Conservation of fuel and power

THE BUILDING CONTROL (AMENDMENT) REGULATIONS (IRELAND)

- Technical Guidance Document D – Materials and Workmanship

Durability, Resilience, Materials and Workmanship

The life expectancy of the structure shall be not less than 60 years.

The durability, resilience, repairability and maintenance of the building shall be similar to that expected from residential construction using more established methods of construction.

The building must comply with the following:

THE BUILDING REGULATIONS (ENGLAND & WALES)

- Regulation 7 – Materials & Workmanship

THE BUILDING (SCOTLAND) REGULATIONS

- Section 0 General - Regulation 8 (1) – Fitness and durability of materials and workmanship.

THE BUILDING REGULATIONS (NORTHERN IRELAND)

- Part B Materials & Workmanship

THE BUILDING CONTROL (AMENDMENT) REGULATIONS (IRELAND)

- Technical Guidance Document D – Materials and Workmanship
References

- Loss Prevention Standard LPS 2020
- Approved Documents Building Regulations, England & Wales, Scotland and Northern Ireland
- Building Control (Amendment) Regulations (Ireland)
- Barker 33 Cross-Industry Group - Modern Methods of Construction
2.7 Guidance on the Party Wall Etc Act 1996

The guidance presented here is for information only and the Developer should satisfy himself as to the Act. Build-Zone cannot be held responsible for any inaccuracies given.

The guidance given here refers to the Party Wall Etc Act 1996. The Act purely covers works in England, Wales and Northern Ireland and the Developer should refer to the following Acts for works in the following countries:

- Ireland - Land and Conveyancing Law Reform Act 2009
- Scotland - Planning etc (Scotland) Act 2006

It is important to understand the essential elements although the Act’s relevance to a particular site or development will vary according to circumstances.

In any situation it is possible that a number of adjoining owners may be affected, e.g. Freeholder, Head Lessee, Sub Lessees, even a person or organisation under contract to purchase.

PARTY WALLS AND PARTY STRUCTURES

Should you be working in a building which remains part lease hold, the dividing Structural element being the floor or ceiling between your work and the other leaseholders will almost certainly be defined as a party structure and most works of a significant nature on this element will require notice.

The Act gives owners of property, separated by a Party Wall, rights over the whole of that wall and thus beyond title boundary, which is normally, but not always, in the centre of the wall. These rights can be pursued following the service of an appropriate notice. This sometimes produces consent from the adjoining owner but often dissent. Assuming the latter the Act demands that each owner appoints a surveyor (they can agree on the same surveyor but this is rare) which leads to the delivery of an Award to each owner, signed by the surveyors.

Examples of the rights gained over the Party Wall are:

- Raising or, where appropriate, reducing the height
- Underpinning
- Cutting into
- Removing corbels or footings etc.
- Strengthening/rebuilding

SIMPLE FENCE OR OPEN BOUNDARY

In these circumstances a notice can be served which gives the right to place a wall immediately adjacent to the boundary with foundations extending on to the adjoining owner’s land. By agreement with the adjoining owner it is possible to place the wall astride the boundary.

EXCAVATION AND BELOW GROUND WORKS

Notice also has to be served when carrying out excavation within 3 metres of an adjoining building or structure and to a lower level than the existing foundation. In other circumstances, usually piling, it is necessary to serve notice within 6 metres of the adjoining building or structure.

SUMMARY

Unless you have “in house” expertise in the workings of this Act, you should gain professional advice. Failure to serve appropriate notice, which in most cases is two months prior to the commencement of work, could lead to the delay of a relevant part of the works, or at worst the whole contract.

There are many positive aspects to the Act. In many circumstances you are no longer limited by the laws of property and trespass. The Act lays down a simple timetable for the response to notices and other matters and a procedure for resolving disputes between the appointed surveyors.

The intention of the Act is to give certainty in your dealings with the adjoining owner.