Practical Foundations

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20/07/2024

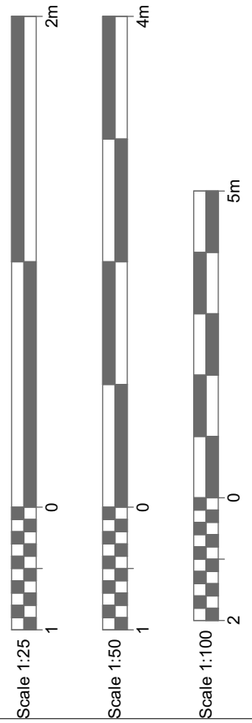
DRAWING SHEET SIZE:
A3

DRAWING NUMBER:
12

REVISION: B
24/07/2024
#Revision By

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All dims. are in milimeters unless otherwise stated.



General construction guidance notes

General construction notes for building in the United Kingdom include important considerations and guidelines that apply to various aspects of construction projects. Keep in mind that these notes are meant to provide a broad overview, and specific requirements can vary depending on the type of project, location, and any updates to regulations. It's essential to consult with local authorities, professionals, and relevant resources for comprehensive and up-to-date information. Practical Foundations takes no responsibilities for any changes made to the drawings by clients, builders or any contractors. Any work done on site prior to building regulation approval is entirely at the risk of the client/contractor/builder. Nothing in our appointment or provision of drawings shall be deemed to create any appointment as or obligations as a duty holder pursuant to the regulation 7 of the cdm regulations 2015.

Site preparation and structure:

Clear the site of any debris, vegetation, or obstacles to a minimum depth of 200mm below existing ground level. Ensure that the site is investigated properly and the results are accurate and presented to building regulations authority. Levels and factors like drainage and soil stability to be checked and where necessary actions to be taken:
* if any work over any protective/public drainage is needed, the relevant authorities to be informed by the contractor/builder
* all existing dwellings' relevant structural elements' sizes, positions and reliability to be checked and confirmed by the relevant contractor/builder
* any cracks on the existing walls to be checked by the contractor/builder and where necessary to be repaired
* any proposed steelwork to comply fully with BS5950 and to be calculated and approved by structural engineer
* any new timber to be minimum class C16; sizes to be in compliance with the building regulations and sizes to be checked and approved by structural engineer
* any new or existing structural timber to be pressure impregnated with an approved fungicide preservative in accordance with BS4978:1975 and BS5268
* any existing timber to be exposed and examined for any damp; to be repaired/ replaced where necessary
* concrete padstones to be grade C35 10mm maximum size aggregate with 300kg/m3 opc
* contractor/builder to carry out his own risk assesments for all aspects of the works
* where needed, the contractor/builder to proposed excavation below existing foundations levels when in close proximity to existing foundations, underpinning, installation of any steelwork adjecent to or over existing occupied buildings
* external walls build up to be in two skins of 7N solid dense concrete blocks using mortar mix
foundations to be grade C 2)P to BS5328:1981
* where needed, party wall act 1996 to be responsibility of the client and any neighbour agreements to be carried in the required period
* if foundations are to be within 5m of any trees, the foundations must be designed for root protection

All on site operations to be carried out in full accordance with current Health & Safety Regulations and CDM Regulations 1994 as applicable.

FIRE SAFETY: PART B

1.Fire detection and alarm systems

The building shall be designed and constructed so that there are appropriate provisions for the early warning of fire, and appropriate means of escape in case of fire from the building to a place of safety outside the building capable of being safely and effectively used at all material times. Fire detection and alarm systems must be properly designed, installed and maintained. A design, installation and commissioning certificate should be provided for fire detection and alarm systems. Third party certification schemes for fire protection products and related services are an effective means of providing assurances of quality, reliability and safety. Fire detection and alarm systems sometimes trigger other systems. The interface between systems must be reliable. Particular care should be taken if the interface is facilitated via another system. Where any part of BS 7273 applies to the triggering of other systems, the recommendations of that part of BS 7273 should be followed.

General Provisions
* All dwellings should have a fire detection and alarm system, minimum Grade D2 Category LD3
standard, in accordance with the relevant recommendations of BS 5839-6.
A higher standard of protection should be considered where occupants of a proposed dwelling
would be at special risk from fire. Further advice on this is also given in BS 5839-6.
* Smoke alarms should be mains operated and conform to BS EN 14604.
* Heat alarms should be mains operated and conform to BS 5446-2.
* Smoke and heat alarms should have a standby power supply, such as a battery (rechargeable or non-rechargeable) or capacitor. More information on power supplies is given in clause 15 of
BS 5839-6

Extensions and material alterations - A fire detection and alarm system should be installed where either of the following applies:
* A new habitable room is provided above or below the ground storey.
* A new habitable room is provided at the ground storey, without a final exit.
* Smoke alarms should be provided in the circulation spaces of the dwelling in accordance with
paragraphs 1.1 to 1.4

2.Means of escape

Escape from Ground Floors - All habitables rooms (excluding kitchens) should have either of the following: an opening directly onto a hall leading to a final exit or/and an emergency escape window or door.

Escape from upper storeys maximum of 4.5m above ground level - All habitables rooms (excluding kitchens) should have either of the following: an emergency escape window or external door or/and direct access to a protected stairway. Two rooms may be served by a single window. A door between the rooms should provide access to the window without passing through the stair enclosure. Both rooms should have their own access to the internal stair.

General Provisions
Windows or external doors providing emergency escape should comply with all of the following:
* Windows should have an unobstructed openable area that complies with all of the following.
- A minimum area of 0.33m2
- A minimum height of 450mm and a minimum width of 450mm (the route through the
window may be at an angle rather than straight through).
- The bottom of the openable area is a maximum of 1100mm above the floor.
* People escaping should be able to reach a place free from danger from fire.
* Locks (with or without removable keys) and opening stays (with child-resistant release catches)
may be fitted to escape windows.
* Windows should be capable of remaining open without being held

A room accessed only via an inner room (an inner inner room) is acceptable when all of the
following apply:
* It is one of the following rooms:
- kitchen.
- A laundry or utility room.
- A dressing room.
- A bathroom, WC or shower room
* The access rooms each have a smoke alarm
* None of the access rooms is a kitchen.

Replacement windows - Work should comply with Parts K and L of Schedule 1 to the Building Regulations. When complete, the building should comply with other applicable parts of Schedule 1 to at least the same level as before.
Where an existing window would be an escape window in a new dwellinghouse, and is big enough to be used for escape purposes, then the replacement should comply with one of the following:
* The replacement window should be sized to provide at least the same potential for escape.
* If the existing window was larger than required for escape purposes, the opening can be
reduced to the minimum 0.33m2
* If windows are replaced, it may be necessary to provide cavity barriers around the opening

Loft Conversions - Where a new storey is added through conversion to create a storey above 4.5m, both of the following should apply:
* The full extent of the escape route should be addressed.
* Fire resisting doors (minimum E 20) and partitions (minimum REI 30) should be provided, including upgrading the existing doors where necessary.
NOTE: Where the layout is open plan, new partitions should be provided to enclose the escape
route
An alternative approach to that described-above would be to comply with all of the following:
* Provide sprinkler protection to the open-plan areas.
* Provide a fire resisting partition (minimum REI 30) and door (minimum E 20) to separate the
ground storey from the upper storeys. The door should allow occupants of the loft room access to a first storey escape window.
* Separate cooking facilities from the open-plan area with fire resisting construction (minimum
REI 30)

Where it is undesirable to replace existing doors because of historical or architectural merit, the
possibility of retaining, and where necessary upgrading, them should be investigated.

VENTILATION: PART F

Background Ventilation: Part F specifies the minimum rate of background ventilation that should be provided in habitable rooms, including bedrooms, living rooms, and dining rooms. The purpose of background ventilation is to ensure a continuous supply of fresh air. The ventilation rates vary based on the room size and function.
* Rooms to have 8000 sq.mm trickle ventilation and an openable window or door which is equqal to 1/20 of the floor area.
* Kitchens to have trickle ventilation that covers 4000 sq.mm and an opneable window
* Utility rooms to have background trickle ventilation of 4000 sq.mm
* Toilets to have opening of a window equal to 1/20 of floor area
* Bathrooms to have background trickle ventilation of 4000 sq.mm

Purge Ventilation: Part F also addresses purge ventilation, which involves rapid air exchange to remove pollutants and odors. Windows that can be opened are often used to fulfill the requirement for purge ventilation.

Mechanical Ventilation: In some cases, mechanical ventilation systems are required to ensure adequate indoor air quality. These systems can include extract fans, positive input ventilation (PIV) systems, or mechanical heat recovery ventilation (MVHR) systems.
* Kitchens to have mechanical extract fan capable of extracting 30l/s if cooker hood is extracting to the outside or 60l/s if no cooker hood is extracting to outside
* Utility rooms to have extractor fan which provides extracting of 30l/s
* Toilets to have extractor fans which provide extracting of 15 l/s if no opening window is provided
* Bathrooms to have an extractor fan which provides extracting 15l/s
All extractor fans to be connected via duct and to lead outside.

Kitchens and Bathrooms: Special attention is given to kitchens and bathrooms due to the higher levels of moisture and pollutants generated in these areas. Adequate ventilation, usually in the form of extractor fans or mechanical systems, is required to remove moisture and odors.

Heat Recovery: When mechanical ventilation systems are used, heat recovery mechanisms may be required to minimize heat loss while exchanging indoor and outdoor air.

Noise Considerations: Ventilation systems should be designed to minimize noise transmission between dwellings and to mitigate noise from external sources.

Maintenance and Testing: Proper maintenance and testing of ventilation systems are emphasized to ensure they continue to function effectively.

It's important to note that the specific requirements for ventilation rates, types of ventilation systems, and design considerations can vary based on factors such as the size and layout of the dwelling, local climate conditions, and specific room functions. Therefore, it's recommended to consult the latest edition of Part F of the Building Regulations for England and Wales, as well as relevant regulations in Scotland and Northern Ireland, for detailed and up-to-date information on minimum ventilation requirements for dwellings.

SANITATION, HOT WATER SAFETY AND WATER EFFICIENCY: PART G

Sanitation and Hot Water Safety:

Bathroom Facilities: Building regulations specify the minimum number of bathroom facilities (toilets, baths/showers, sinks) required based on the size and occupancy of the dwelling.

Hot Water Safety: The regulations include measures to prevent scalding from hot water. This often involves the use of thermostatic mixing valves (TMVs) on bath and shower outlets to control water temperature.

Drainage and Waste Disposal: Proper drainage systems and waste disposal mechanisms must be in place to ensure the safe and effective removal of wastewater and sewage.

Water Efficiency:

Water Use Standards: Building regulations set standards for water efficiency in dwellings, including requirements for the maximum consumption of water by appliances like toilets, showers, and taps. This is aimed at reducing water wastage and promoting sustainable water use.

Appliances and Fittings: Regulations may include guidelines for the selection and installation of water-efficient appliances and fittings, such as low-flow taps, dual-flush toilets, and efficient washing machines.

Rainwater Harvesting: In some cases, building regulations may encourage or require rainwater harvesting systems to collect and reuse rainwater for non-potable purposes like flushing toilets or watering gardens.

Graywater Recycling: Some building projects may consider incorporating graywater recycling systems, which treat and reuse relatively clean wastewater (e.g., from showers and sinks) for non-potable uses.

It's important to note that the specific requirements and standards for sanitation, hot water safety, and water efficiency can vary based on factors such as the type of dwelling, location, and local regulations. Therefore, it's recommended to consult the latest editions of the Building Regulations for England and Wales, as well as their equivalents in Scotland and Northern Ireland, for detailed and up-to-date information on these aspects.

If you're planning a construction or renovation project, working closely with qualified professionals, such as architects, plumbers, and building services engineers, is essential to ensure that your project meets the current building regulations and standards for sanitation, hot water safety, and water efficiency in dwellings.

DRAINAGE AND PLUMBING

Regulations outline the design and installation of internal and external drainage systems. This includes gravity drainage systems, foul water drainage (wastewater from toilets, sinks, etc.), and surface water drainage (rainwater runoff from roofs, surfaces, etc.).
Drains to be protected with min 75mm concrete slab which is to be laid over the full width of the trench and to be 150mm above the pipe where there is less than 600mm coverage . Where needed, concrete lintels to be provided to both leaves of the walls. All drainage to comply with BS8301. All rainwater gutters to discharge via trapped access gullies to a suitably sizes soakways. Foul and surface water drawings to be laid at 1:60 unless specified otherwise. New drains to be linked to main existing sewerage system where needed and permission to be obtained by the necessary authority. All connections to be inspected and approved by the building control prior to backfilling of development's trenches.

All new soil and vent pipes to be 100mm dia. Upvc fixed with wall brackets at 2.0M centres.
All bends in SVP to be so constructed as to have the largest possible radius of curvature and no change in cross section of the pipe throughout the bend.
New & Existing SVP to discharge to outside air via tile vent or similar approved terminal
Internal S & VP to be boxed in using 50 x 50 s.w. timber framing and 12.5mm plasterboard and skim.
All waste connections to S and VP's to be separated from the 100mm dia. WC. connection by 200mm measured vertically.

Where any new manholes and inspector chambers are needed, they are to be constructed in accordance to the building regulations. If deeper more than 900mm they are to be constructed in class B engineering brickwork and a min wall thickness of 225mm. Base slab to be concrete and thickness of 150mm with bencing channel of 30 degrees.

Hot water & heating systems Hot water & heating system to be sealed gas fired condensing combi boiler with automatic ignition with balanced flue - outlet to terminate externally through the external wall 300mm from any opening light. To be installed by registered contractor. Existing boiler to remain in existing position. If needed new boilers to have a SEDBUK rating of 90. If boiler is relocated a gas certificate needs to be obtained by the client after done in accordance to the regulations.

SECURITY IN DWELLINGS: PART Q

Doors and Windows:
External doors should be secure and fitted with appropriate locks.
Windows on the ground floor and accessible upper floors should be secure and fitted with locks or other security devices.
Doors and windows to meet PAS24:2012 or deisgned and manufactured in compliance with Appendix B of approved document Q.

Lighting:
Adequate external lighting should be provided to ensure visibility and deter intruders during the night. This may include lighting at entrances, pathways, and other vulnerable areas.

ELECTRICAL SAFETY: PART

Electrical work in dwellings must be carried out by competent persons who are registered with a government-approved Competent Person Scheme (CPS) or are notified to the local building control authority. New cables to be concealed. Any switches and sockets to be positioned at a height between 450mm to 1200mm above finished floor level. All of the work to comply with IEE code and to meet the requirements of part P. Local authority to be provided with an electrical installation certificcate issued under a competent person or an electrical installation certificate as per BS7671 upon finalising, Any positioning of sockets and lights to be discussed and approved by the contractor

Dimensions to be checked on site by builder.