

# IBCI News

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## Revisions to Part D

Readers are reminded that during the year the Minister for the Environment and Local Government issued an amendment to Part D: Materials and Workmanship and TGD D has been revised.

The revision applies to letter plate apertures and comes into effect on January 1, 2001. Unlike the previous more complicated amendments to other parts of the regulations, no transitional arrangements apply in this case.

TGD D recommends that letter plate apertures be no lower than 760mm and no higher than 1450mm above the standing level of the approach to the letter plate.

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## Is 12% still enough?

When the Building Control Act was introduced, staff shortages and the prevailing economic climate meant that local authorities adopted inspection targets of 12% to 15% of commencement notices received. It has taken a long time for many local authorities to meet these targets, but the question now must be whether 12% is enough to adequately police and control today's building industry.

The now famous "Celtic tiger" has brought an increase in all kinds of development and led to difficulties in securing the services of qualified tradesmen. As a consequence, less skilled people have been employed, resulting in lower standards of building and workmanship.

This problem is especially evident in smaller developments where the own-



ers can't afford professional supervision for their work.

While building control inspectors do not exist solely to act as clerks of works for the general public, Part D does set requirements regarding standards of workmanship which also need to be enforced.

If the building control sys-

tem is to maintain standards, or seek to improve them, building control authorities need to increase their presence where they can do most good - out on site.

## IBCI Annual Conference 2001

The Council of the Institute have decided that next year's annual conference will be held in Co. Donegal. The venue will be the Holiday Inn, Letterkenny.

While the exact dates are still to be finalised, it is expected to be held

during April, 2001.

The conference committee are in touch with the Department of the Environment and Local Government to develop a theme and secure the services of speakers.

The conference has be-

come the premier event for people involved in building control in Ireland and all local authority staff are encouraged to attend.

More details will be published in the spring issue of the IBCI News.

# Foundations

## Getting it right from the bottom up

Cracks appearing in a house can cause its owners some anxiety. In most cases, cracking results from the drying out process and/or minor settlement. Occasionally, however, they are a sign of a more serious problem - foundation failure.

Foundations should support the structure and transmit the load to the ground without deformation or deflection, thereby ensuring the stability of the building. The guidance discussed here refers to traditional strip foundations for low-rise dwellings in normal soil conditions. For other foundation types or where extremely poor ground conditions are encountered, an engineer should be consulted.

Local knowledge can be useful in determining the history of a site and may highlight possible problems associated with land filling, quarries or mining activities. To be sure of the ground conditions, however, a full site investigation should be carried out.

The cost of a professional site investigation will be small compared to the cost of remedial works should a foundation failure occur. A site investigation will detail the prevailing ground conditions such as:

- soil types and allowable bearing pressures,
- the presence of vegetable/compressible matter,
- the presence of contaminants, and
- the water table level.

This information may reveal unforeseen difficulties and allow the builder to better plan the works and to estimate its cost more accurately.

For small developments, the excavation of two well-spaced trial pits is recommended at a minimum. These should be located outside the likely foundation areas to avoid creating soft spots.

Excavators can easily dig trial pits to a depth of three or four metres. This will

reveal the various layers of material present and whether weaker layers exist at or below the level of the proposed foundation. Test holes for proposed percolation areas may also provide useful information.

Some obvious points to watch out for include:

- Reeds and rushes on site
- Rock outcrops
- Loose saturated sand and loose silty/clayey sand
- Soft sand and soft sandy/silty clays
- Peat
- Fill material
- Alluvial deposits

Different soil types vary greatly in their ability to support foundation loads. The greater the allowable bearing pressure, the greater the load a soil can carry. The load from the party wall of a traditional two-storey house is in the order of 75 kN/m<sup>2</sup>. Soils that have an allowable bearing capacity less than that figure may not be capable of providing adequate support.

### Foundation dimensions

Where very good ground conditions exist, the absolute minimum width of a strip foundation should be the width of the wall plus 150mm. Generally, how-

ever, foundations should have a minimum width of at least three times the thickness of the wall. The minimum thickness of concrete should be 300mm with the minimum depth of foundation excavation below finished ground level being 600mm.

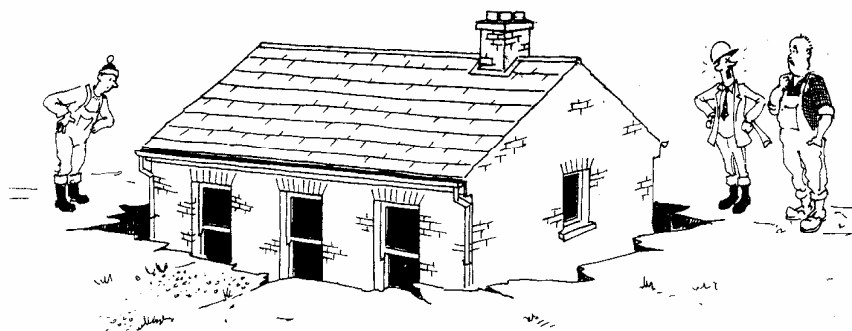
Problems encountered include:

- Foundations not taken down to solid ground
- Foundations not deep enough below ground level
- Foundations not reinforced where necessary
- Concrete not the required thickness
- Foundations too narrow
- Walls not centred on the foundations

### Digging for and pouring concrete foundations

When digging for foundations:

- The location of all underground services should be established
- Set out accurately
- Provide for drains near foundations to avoid settlement
- Avoid trees and the problems of their extended roots
- All vegetable material should



"Didn't you read the site investigation report?"

## Fire safety in single family dwelling houses

With Christmas approaching, this is as good a time as any to discuss fire safety in dwellings. The holiday season has had its share of tragic house fires, often with fatal results. While nobody can guarantee against the occurrence of fire in a dwelling, good design and building practice can greatly contribute to the safety of its occupants.

Guidance on fire safety in dwellings is given in sub-section 1.5 of Technical Guidance Document B. Dwellings are divided into categories depending on the heights of upper floors above ground level and basic guidance is given for each type.

The most important factor in the event of a fire is that the occupants be able to escape from the dwelling. To ensure early warning of the danger, a proper fire detection and alarm system should be installed. One or more mains powered smoke alarms should be provided, preferably with a standby battery power supply.

In Section 1.5.8, the TGD lists some general provisions for dwelling houses. One provision is that every bedroom be provided with a window capable of being used for escape or rescue in the event of fire.

Suitable windows will have clear opening dimensions of 850mm high by 500mm wide and must be readily openable from the inside. The bottom of the opening section should be between 800mm (600mm in the case of a roof light) and 1100mm above the level of the floor of the room. In the case of a roof light or dormer window, the distance from the eaves to the cill or the vertical plane of the window should not exceed 1.7m measured along the slope of the roof.

Important fire safety points to bear in mind are:

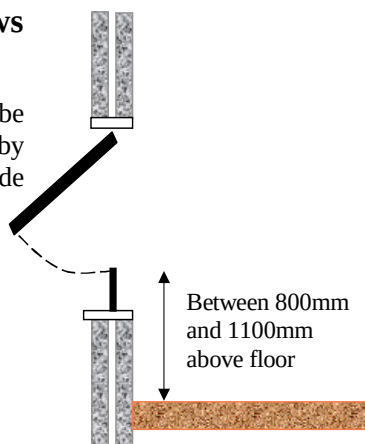
- A habitable room should not be an inner room unless it is provided

with a window or door as an alternative route for escape or rescue.

- Smoke alarms for new houses to be operated by mains electricity, preferably with battery backup. No battery only smoke alarms allowed.
- There should be a smoke alarm located on each level.
- All bedroom windows to be openable and of a size that can be used as a secondary means of escape in the event of fire.
- The door between a garage and a dwelling should be a fire door of FD30 rating, permanently identified as such and supported by a test certificate from an accredited testing laboratory.
- There should be a 100mm difference in floor level at the threshold of a door between a garage and the dwelling.
- Fire stopping must be provided in the roof and

### Escape Windows

Clear opening to be 850mm high by 500mm wide

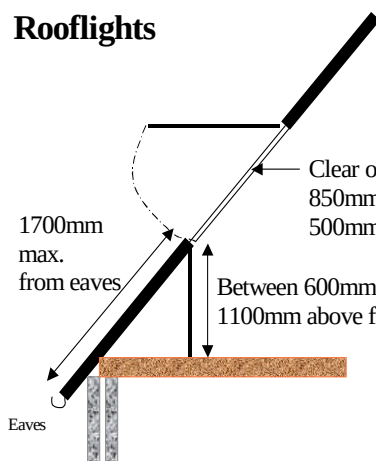


### Rooflights

Clear opening to be 850mm high by 500mm wide

1700mm max. from eaves

Between 600mm and 1100mm above floor



## The Irish Building Control Institute

If you would like to comment on anything contained in this issue or contribute an article to the IBCI News, please write to:

**IBCI NEWS,  
P.O. Box 3667,  
Ballsbridge,  
Dublin 4.**

**The Council of the Institute  
would like to wish you  
a Merry Christmas**

## Membership Survey

At a recent meeting, the Council were discussing how the Institute could better serve the interests of its members. During the course of the discussion, it became obvious that in order to do that, we need more information about our membership.

The membership of the IBCI is drawn from a variety of disciplines, employments and experience. To ensure that the service given is relevant to the largest number of members, we must first determine what our members needs are. To this end, it was decided to circulate a questionnaire to all members asking for details of their qualifications, employment, experience, etc. The forms will be circulated early in the new year.

We would ask for your cooperation in helping us determine the profile of our membership by taking a few moments to fill in the form and return it to the address given.

Members can rest assured that the information sought is for our records only and will not be given to third parties.

## On site...

Radon is a naturally occurring radioactive gas that can enter a building and accumulate to such a concentration that it is deemed to be a potential health hazard. The Radiological Protection Institute of Ireland (RPII) has conducted a study to determine radon levels in dwellings throughout the country and have produced a map of its results.

Part C3 of the building regulations require that precautions be taken to help avoid the dangers to health associated with radon. Technical Guidance Document C recommends that all dwellings and other long stay residential buildings be provided with a sump or sumps as a means of extracting radon should a problem arise.

In areas where the RPII map indicates that 10% or more of dwellings in that area have measured levels greater than 200Bq/m<sup>3</sup>, TGD C also recommends that a fully sealed radon resisting membrane be installed across the entire footprint of the house.

Recent site visits have revealed just how difficult it is for some builders to achieve adequate results when providing measures to deal with radon. Not surprisingly, most of the problems encountered on site are associated with the placing of radon resisting membranes.

Problems encountered include:

- Inadequate or no sealing of the membrane at laps.
- Insufficient length of membrane provided to reach the outer face of the external walls.
- Poor detailing/placing around corners resulting in the membrane being stretched causing insufficient depth of concrete or poor support for slabs at corners and possible stretching/tearing of the membrane.
- Poor detailing at rising wall junctions exposing membranes to damage when screeding or power floating concrete.
- Poor sealing around penetrations by service pipes, etc.
- The use of unsuitable hardcore.

Radon membranes also act as damp proof membranes, but are more difficult to handle and place. They are not easily folded and need to be properly cut, jointed and sealed. There are a number of good placing details available to help overcome the above problems, not least of all the advice and diagrams contained in the relevant Irish Agrément Board Certificates.

It is also vitally important that a suitable gas permeable hardcore be placed so that radon can pass through it to the extraction sump when activated. Clean, single sized broken stone (75mm) will have sufficient voids to allow the gas to be drawn to the sump when depressurised by an extract fan.

A single sump can serve a footprint of about 250m<sup>2</sup>, but no part of the dwelling should be more than 15m from the sump. The internal rising walls must be vented or honeycombed at hardcore level to facilitate the move-