



An
Bord
Pleanála

Inspector's Report

FS05E.FS0533

DEVELOPMENT:

5 classroom extension, ancillary accommodation, car parking and hard standing play area with connection to the on-site sewage treatment plant. Glenswilly National School, Rashedoge, Newmills, Letterkenny, Co. Donegal

Building Control Authority:

Donegal County Council

Building Control Authority Reg. No:

FS/15/126

Applicant/Appellant:

Board of Management, Glenswilly School

Application Type:

Fire Safety Certificate

Building Control Authority Decision:

Grant

Type of Appeal:

First Party –v- Conditions.

Date of Site Inspection:

N/A

INSPECTOR:

Patricia Calleary

1.0 INTRODUCTION

FS05E.FS0533 relates to an appeal against Conditions No.s 1,3, 4 and 5 attached to a decision to grant a fire safety certificate for an extension and related works at Glenswilly National School, Rashedoge, Newmills, Letterkenny, Co. Donegal. It is noted that the appeal does not provide grounds in relation to conditions No.s 3 and 5.

2.0 SUBJECT MATTER OF APPEAL

An application for a fire safety certificate (Ref: FS/15/126) was lodged by Glenswilly National School for an extension consisting of 5 new classrooms, ancillary accommodation, car parking and hard standing play area with connection to the on-site sewage treatment plant. The application was received by Donegal County Council as the Building Control Authority (BCA) on 14th December 2015. Further information was subsequently received by the BCA on 4th March, 8th April and 19th April 2016. Donegal County Council issued a decision to grant a Fire Safety Certificate on 22nd April 2016 subject to 5 conditions.

Conditions nos. 1,3,4 and 5 which are the subject of this appeal are summarised as follows:

Condition No.1: Exit Doors direct to open air required to be provided from each of the 5 classrooms.

Condition No.3: requires the width of the final exit door adjacent to the library to be a minimum of 850mm clear width fitted with panic bolts complying with IS EN 1125.

Condition No.4: A final exit to open air with a clear openable width of 1050mm to be provided from the general purpose room.

Condition No.5: requires that each fire hydrant would be capable of simultaneously providing a fire fighting water supply of 1200 litres per minute (sustainable for 60 minutes in conjunction with peak daily demand) or the provision of a static water storage tank with the quantity and location to be agreed with the Chief Fire Officer.

A single generic reason was stated for all of the conditions as follows:

Reason: To ameliorate fire safety aspects.

3.0 DESCRIPTION OF WORKS

The works would comprise of the construction of 3 no. extensions as follows:

- Extension No.1 to the rear consisting of 3 no. classrooms, boiler house and toilets;
- Extension No.2 to the front and sides consisting of 2 classrooms, library and resource room, multi-purpose room, 2 special education tuition rooms, office, new entrance and link corridor, enlarge the general purpose room;
- Extension No.3 to side consisting of staff room and ESB room;
- Internal alterations to include a special education tuition room and toilets;
- Canopy and 3 no. external hardstanding play areas.

4.0 DOCUMENTS REVIEWED

The following documents were reviewed as part of my assessment of this appeal.

- Fire Safety Certificate application and supporting drawings and documents;
- Applicant's fire safety certificate compliance report;
- Further information request and responses;
- Letter to the BCA from Joe McHugh TD;
- Fire Safety Certificate decision and conditions;
- Grounds of appeal by First Party;
- BCA response to appeal;
- Further response by first party to BCA response.

5.0 FIRE SAFETY CERTIFICATION HISTORY

- **PL05G.FS0509** – Extension to primary school at Cashelcraw, Carndonagh, County Donegal.
- **FS05G.FS0484** - Extensions to Dronmore national school at Crossroads, Killygordon, County Donegal.

6.0 GROUNDS OF APPEAL

The principal grounds of the appeal lodged by the first party are summarised as follows:

Condition No.1

- This condition requires direct exits from each of the proposed new classrooms where B1 of part B of the second schedule to the Building Regulations is referenced, cross referencing Clauses 2.1.4, 4.1.3.2 and 4.3.2.1 of 'Building Bulletin 100: Design for safety in schools' as the basis for this condition;
- Clause 2.1.4 of BB100 is contained as background information and does not make any explicit recommendation for design requirements;
- Clause 4.1.3.2 of BB100 acknowledges the conditions of initial single direction means of escape and is not deemed to infer that there should always be alternative means of escape;
- Clause 4.3.2.1 of BB100 references provision of direct exits from classrooms for infant and nursery school age children only and as a measure which should be 'considered' and not as a strict requirement for compliance;
- Clause 4.2 acknowledges that the provision of manual detection of fire is sufficient (Type M) and automatic detection is not required. However, the scheme proposes L2/L3 as an automatic detection which would prompt early evacuation;
- Protected corridors are proposed throughout the school as a means of negating any perceived risk by the Fire Authority, i.e. as an alternative to providing direct exits even though no direct exits are required;
- Requests An Bord Pleanála to direct the BCA to accept a revised layout with unprotected corridors in accordance with Clause 4.3.2.15 of BB100 where cross corridor subdivision is provided in accordance with Clause 4.3.2.16;
- Requests **condition No.1** to be removed.

Condition No.4

- This condition seeks to impose the provision of an additional exit from the GP room, to have a clear width of 1050mm;
- GP Hall has an occupant load of 410 persons. The minimum number of exits required for this loading under Table 3 of BB100 is 2 exit routes with a width of 2000mm (in accordance with Table 4 of BB100);
- Both proposed exits are separated from each other by a FD30s cross corridor doorset, ensuring that both exit doors would not be unavailable simultaneously in the event of a fire occurrence;

- Requests **condition No.4** to be removed.

There are no grounds put forward in respect of conditions No.s 3 and 5.

7.0 APPEAL RESPONSES

7.1 Building Control Authority (BCA) Response

The following provides a summary of the key relevant points in the response to the appeal by the BCA. It deals with B1 – Means of Escape, predominately addressing the grounds of appeal against condition No.1.

- Research has identified significant deviation between movement of children and adults in emergency evacuation;
- The inclusivity of pupils with particular needs in mainstream schools has not been considered explicitly under prescriptive guidance;
- Clause 2.1.4 of Section 2 of BB100 indicates that vulnerable pupils must be considered at design stage;
- The proposed design did not reference relevant data and did not consider the needs of a heterogeneous occupant population;
- Travel speeds are highly age dependent which is not accounted for in prescriptive guidance. Travel distance limitations in schools and offices are given the same value;
- References various academic studies conducted on movement parameters of children in evacuation including horizontal, vertical travel speeds and pre-movement times;
- Puts forward matters in relation to behaviours, familiarity, training and fire drills;
- Clause 2.1.4 requires that right measures need to be in place to allow safe egress; It comments that designers need to consider the younger, smaller and shorter pupils;
- Consideration of variation between adult and children capabilities is important;
- Clause 4.1.3.2 provides criteria for means of escape. It also indicates conditions 'where direct escape to a place of safety is not possible'. Provision of direct exits should be incorporated into the design;
- Section 4.3.2 makes reference to direct escape for very young children (infants/nursery school age);
- Onus on designers and Fire Authorities to ensure design meet the performance requirement of Part B of the Second Schedule to the Building Regulations;
- Up to date research must be taken into account by designers;

7.2 Response by the First party to the BCA response

The following provides a summary of the new relevant points raised by the first party in their response to the BCA response.

- Empirical researched referenced is not relevant to the appeal;
- Clause 1.3 of BB100 sets out the scope of the document (applies to a broad range of schools from nursery schools, primary schools and up to city technology colleges etc.);
- Direct exits need only be provided for nursery schools and not primary schools (reference to Clause 4.3.2.1 of BB100 is made);
- Reference made to a decision on an appeal – PL05G.FS0509 which found in favour of the appellant in overturning a decision for direct exits also in County Donegal, acknowledges that it was a different case as it relates to existing accommodation but nonetheless commentary is considered relevant;
- Department of Education and Skills and Chief Fire Officers Association produced a document, 'Supplementary Guide for Design Team: Fire Safety in schools' in 2014 wherein no concern was raised in relation to the non-provision of direct exits to outside from individual classrooms;
- Requirement of direct exits is based solely on internal policy decision by Donegal BCA which is unsupported by evidence that safety standards applied in lieu of provision of direct exits would not be adequate.

8.0 BUILDING REGULATIONS and TECHNICAL GUIDANCE

The following are considered relevant in my assessment of the appeal.

1. **Part B (Fire Safety) of the 1997-2014 Building Regulations.** Specifically, **B1** (Means of escape in case of fire) which requires:

'A building shall be so designed and constructed that there are adequate 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'.

and **B5** (Access and facilities for the fire service) which requires:

A building shall be so designed and constructed that there is adequate provision for access for fire appliances and such

other facilities as may be reasonably required to assist the fire service in the protection of life and property.

2. **Technical Guidance Document (TGD) B: Fire Safety (2006)** is relevant, specifically B1- Means of escape in case of Fire and B5 – Access and facilities for the fire service.
3. **Building Bulletin 100 (design for fire safety in schools) 2007** (Department for Children, Schools and Families¹) is relevant particularly clauses 2.1.4, 4.1.3.2 and 4.3.2.1 which are referenced as a basis for the attachment of Condition 1. The guide applies to nursery schools and to primary and secondary schools.
4. **Department of Education and Skills - Technical Guidance Document TGD – 022 (as revised 2013)**. Specifically, TGD 022-D01 (Typical Classroom Plan Drawing).
5. **Department of Education and Skills ‘Supplementary Guide for Design Team: Fire Safety in schools’ 2004**.

I have included extracts of the aforementioned documents referred to throughout my appeal assessment within the appendix to this report.

9.0 ASSESSMENT

I have read and considered the contents of the Fire Safety Certificate application, decision, grounds of appeal and responses as well as relevant legislative provisions and technical guidance. I have not carried out an inspection of the school premises in this instance.

Having reviewed all relevant documentation and drawings on file, I am satisfied that the determination by the Board of this application as it had been made to it in the first instance would not be warranted. Accordingly, I consider that it would be appropriate to use the provisions of Article 40(2) of the Building Control Regulations 1997-2015 in this case. My assessment considers the conditions appealed in order of 1, 4, 3 and 5 as set out below.

9.1 Consideration of Condition No.1

The effect of Condition No.1 is to require exit doors leading direct to open air to be provided in the 5 new classrooms. The BCA consider this is necessary to provide safe means of escape for young pupils and pupils who have varying educational needs. Reference is made to Building

¹ The Department for Children, Schools and Families (DCSC) was a department of the UK government between 2007-2010 which was replaced by the Department of Education in 2010.

Bulletin 100 (BB100) and various international research which it is stated has found that safe emergency evacuation is age dependant. The first party considers that there is no basis for the requirement of the direct exits to open air as BB100 does not in fact require this provision and state that the BCA's requirement in this instance is therefore unsupported.

In my assessment, I must objectively consider whether or not Condition No.1 is reasonable having regard to the legislative provision and the applicable technical guidance, mainly TGD: B 2006 and supporting guidance, Building Bulletin 100 (Design for fire safety in schools) 2007. Compliance with TGD: B is considered *prima facie* evidence of compliance with the requirements of Part B of the second schedule to the Building Regulations 1997-2014. BB100 is a UK guidance document which provides technical guidance for school development projects and it is considered applicable to the design of Irish schools. It replaces/supersedes Building Bulletin 7 (Fire and the design of educational buildings) 1998 which is cited in TGD:B 2006. Donegal County Council makes reference to Clauses 2.1.4, 4.1.3.2 and 4.3.2.1 of BB100 to support their case, each which I have considered under.

Clause 2.1.4 of BB100 is contained within Section 2 (Background information) of the guidance document. The clause provides general commentary and background information on smoke movement and its impact on escape. It includes reference to younger pupils who would feel the effects of smoke inhalation more rapidly. It emphasises that *'escape routes must be protected against smoke penetration and the storey or final exit must be reached before they become untenable.'*

I am satisfied that the escape routes proposed throughout the school, including the protected corridor arrangement proposed at further information stage, would offer additional protection for the occupants to exit before the smoke (or fire) would reach the classrooms. Clause 2.1.4 does not have any requirement to provide exits opening directly to open air from classrooms.

Clause 4.1.3.2 sets out criteria for means of escape. It advocates for alternative means of escape in most situations. It also provides that where direct escape to **a place of safety** is not possible, that a place of safety should be possible within a reasonable travel distance. Section 1.0.3 of TGD: B also provides that where an alternative means is not possible, a protected route (or limited unprotected route leading to a protected route) should be provided as a means of escape leading to a place of safety.

Having reviewed the drawings and documents on file, I note that each of the five new classrooms are shown opening directly onto a protected

corridor which though not a final exit, is a comparative place of safety (Ref: 4.1.3.4 of BB100), from which point there is a choice of 2 escape routes in respect of Classrooms 2,3,4 and 5 or an adjacent final exit door from the corridor in respect of Classroom 1.

Accordingly, I am satisfied that the requirement of clause 4.1.3.2 is satisfied in respect of each of the 5 new classrooms proposed.

Clause 4.3.2.1 provides guidance on the number of escape routes and exits to be provided in a school. It recognises the situation where there is only one exit from a room to a corridor from which point escape is possible in 2 directions. This is considered acceptable provided the travel distance limits are complied with. The same clause states that consideration should be given to direct escape from classrooms but only in the case of infants/nursery school age. I note that it is stated in correspondence from the first party that the classrooms are not intended to be occupied by infants (Ref: Section 6.1 of the applicant's letter received by the BCA on 4th March 2016).

Having reviewed the drawings and documents, I note that the travel distances do not exceed the limits set out in Table 1 (Guidance to suitable travel distance) of BB100 or Table 1.2 of TGD: B. This includes the situation where the exit route requires a single travel distance initially. I consider Classroom 5 is the most critical. It has a single travel distance of 17m from the furthest point of the room to a point in the protected corridor where 2 directions of escape are possible. Both of those escape routes (including the single escape portion) are less than the travel distance limits (18m for one direction and 45m for two directions) and they also comply with diagram 2(c) of TGD: B. Therefore, I am satisfied that this clause is met in respect of each of the 5 no. proposed classrooms.

I note what appears to be an anomaly in Section B1 - 1.2.2.4 of the first party/appellant's FSC application compliance report (as updated) which was received by the BCA on 8 April 2016 and which makes reference to providing a direct exit to the outside in respect of Classroom 5. However, this direct exit door is not shown on the latest drawing (G059-01-02FC) also received by the BCA on 8 April 2016 where instead a new corridor and exit route has been added. It is evident that this new added corridor and exit arrangement are intended to supersede the earlier drawings which showed a direct exit from Classroom 5 before a corridor and exit route were introduced. It is most probable that the aforementioned section likely includes an unintended carryover of text from the earlier updated FSC application compliance report received by the BCA on the 4 March 2016, where the new corridor and exit route were not proposed. I consider this is so also having regard to the accompanying cover letter of the same date (8

April 2016) where it is stated under point no. 6 that protected corridors are provided instead of direct external escape from each classroom.

It is also worth noting that the number of escape routes from the classrooms complies with the standards set out in Table 3 of BB100 (Minimum number of escape routes and exits from a room, tier or storey) which is one escape for up to 60 persons, whereas the maximum number intended in any of the 5 classrooms is stated as 31 in this case which I am satisfied reflects a typical classroom occupancy.

9.2 Technical Requirement Discussion – Condition 1

There is no stated requirement for direct exits from classrooms in primary schools or extensions under each of the aforementioned clauses or elsewhere under Bulletin BB100 2007. Neither is there any such requirement set out under TGD: B 2006. Having reviewed the drawings and documents submitted with the Fire Safety Certificate application, noting in particular the design and layout of the classrooms and the provision of a protected corridor, it is evident that the number and position of exits from classrooms meet the relevant requirements of both TGD-B and Building Bulletin 100. It is also noted that the classrooms follow the primary school guidance (Technical Guidance Document TGD – 022), particularly TGD 022-D001 (Typical Classroom plan drawing). While I acknowledge the desire of the BCA to require direct exits as an additional fire safety measure having particular regard to infant children and children with special educational needs, the requirement has not been justified by reference to relevant technical guidance. I also note that in a primary school situation, infant children and children with special educational needs would be supervised at all times, including during emergency evacuation.

Condition 1 Conclusion

Having regard to the foregoing, I do not consider that the attachment of condition No.1 is necessary to achieve compliance with the requirements of Part B1 (Means of Escape in Case of Fire) of the second schedule to the Building Regulations 1997-2014. I recommend that the appeal against the attachment of Condition No.1 should be upheld and that the BCA be directed **to delete condition No.1** from the schedule of conditions.

9.3 Consideration of Condition No.4

Condition No.4 seeks to impose the provision of an additional exit from the General Purpose (GP) room, to have a clear width of 1050mm.

In considering the appeal against this condition, I accept the stated maximum occupancy of 410 persons based on Table 2 of BB100

(Occupant capacity in rooms or areas) which informs the occupancy capacity for rooms and areas. Table 3 of BB100 (Minimum number of escape routes and exits from a room, tier or storey) infers a requirement of two exits for the GP room with an occupancy loading of 410 persons. Two exits would be provided in this instance shown separated from each other by a FD30s cross corridor doorset which would ensure that one or other exit doors would be available for emergency evacuation should one or other become impassable. Based on an occupancy of 410 persons, and by reference to the calculation methodology set out in Table 4 (Escape route width and exit capacity), the width of the 2 proposed exit doors at 2000mm are acceptable.

Condition 4 Conclusion

Having regard to the foregoing, I do not consider it necessary to provide an additional door from the general purpose room to achieve compliance with the requirements of Part B1 (Means of Escape in Case of Fire) of the second schedule to the Building Regulations 1997-2014. Accordingly, I recommend that the appeal against the attachment of Condition No.4 should be upheld and that the BCA be directed **to delete condition No.4** from the schedule of conditions.

9.4 Other – Condition No.1 and 4.

I have arrived at my findings in respect of the appeal against conditions No.s 1 and 4 based on the provision of a protected corridor throughout the school which I consider is warranted to serve as a place of relative safety and which is advocated under Clause 4.1.3.2 of BB100 (Criteria for means of escape) and a similar clause 1.0.3 of TGD:B 2006. I have also taken into account the proposal for automatic fire detection which is a stated requirement under the Section 1.4.14 of Department of Education and Skills 'Fire Strategy in schools' 2004 document. The protected corridor would serve to reduce the fire risk in emergency evacuation from the rooms which are the subject of this appeal against conditions no.s 1 and 4, particularly in offering a comparative place of safety. Therefore, notwithstanding the first party's request in their appeal, I do not intend to recommend that the BCA be directed to set aside the Floor Plan layout received by the BCA on 8 April 2016 with protected corridors shown and to accept an alternative layout with unprotected corridors.

9.5 Consideration of Condition No.3

At the outset, I note that no arguments have been put forward by the first party in relation to condition no.3 and accordingly there was no response by the BCA.

Condition No.3 requires the width of the final exit door adjacent to the library to be a minimum of 850mm clear width and to be fitted with panic bolts complying with IS EN 1125 1997.

Under Table 4 of BB100, a minimum width of 850mm is specified for an escape route width for up to 110 persons. Based on correspondence received by the BCA on 19 April 2016, the exit referred to is intended to serve classrooms no.s 4 & 5 and the resource library / resource room, therefore providing escape for a maximum of 93 occupants which can be derived from the occupancy analysis under Section 4 of the first party's fire safety compliance report. Accordingly, the BCA's requirement under condition No.3 for a clear width of 850mm is considered reasonable.

In relation to the requirement to fit the exit door with a panic bolt, Section 4.5.3 of BB100 requires doors on escape routes from rooms with an occupant capacity of more than 60 *'should either not be fitted with lock, latch or bolt fastenings, or be fitted with panic fastenings in accordance with BS EN 1125:1997'*. The requirement is mirrored in TGD:B 2006 Section 1.4.3.2 (a) which requires that *'Exit doors from areas holding more than 50 people should either be free from fastenings or be fitted with panic bolts complying with I.S. EN1125 1997.'*

Section 1.4.3.2 of TGD: 2006 itself provides that *'where security on final exit doors is an important consideration, such as some assembly or commercial uses, panic bolts should be used to secure doors'*. It is considered that security would be an important consideration in the case of a school and accordingly the requirement for panic bolts on the final exit door adjacent to the library / resource room is considered reasonable in this instance.

Condition 3 conclusion

Having regard to the foregoing, it is considered that **Condition 3 would not be removed or amended** as it is required to comply with B1 (Means of Escape in case of fire) of the second schedule to the building regulations 1997-2014.

9.6 Consideration of Condition No.5

No arguments have been put forward by the first party in relation to condition no.5 and accordingly there was no response by the BCA.

Condition No.5 relates to the provision of water supply for firefighting. The condition requires that each fire hydrant would be capable of simultaneously providing a fire fighting water supply of 1200 litres per

minute (sustainable for 60 minutes in conjunction with peak daily demand) or alternatively the provision of a static water storage tank with the quantity and location to be agreed with the Chief Fire Officer.

Section 5.1.6 of TGD:B 2006 sets out the sources of water fighting and section 5.1.7 sets out the requirement for the provision of hydrants. Specifically one or more hydrants complying with the requirements of BS 750:1984 – (Specification for underground fire hydrants and surface box frames and covers) and with any specific requirements of the relevant fire authority are required. It is clear that the wording *'requirement of the relevant fire authority'* is intended to relate to the provision of hydrants.

Section 5.1.7 of the appellant's fire compliance report clearly states the intention to comply with Section 5.1.7 of TGD:B and Diagram 30 of TGD:B. There are 2 no. hydrants indicated on the site layout drawing, shown located proximate to the building within the school site. In relation to the volumetric flow rate stipulated by the BCA (1200 litres per minute) or a static water storage tank, there is no stated requirement under the Building Regulations or TGD:B 2006 for the school development to provide such a volumetric flow rate or an alternative static supply where the stated volumetric flow rate cannot be achieved. Whether or not adequate flow rate can be achieved is unknown based on the information on file. However, I also note, having regard to Section 5.1.6 (c) that the provision of a static storage tank for firefighting is not precluded as a source of water for firefighting. It is evident that the source of water for firefighting (Section 5.1.6) and provision of hydrants (Section 5.1.7) has not been resolved to the satisfaction of the BCA/Fire Authority.

Condition 5 conclusion

Having regard to the above, I consider that it would be appropriate to **amend condition No.5** to read as follows:

Condition No.5

Full details of proposal(s) demonstrating how compliance is proposed to be achieved with Section 5.1.6 (sources of water fighting) and 5.1.7 (provision of hydrants) of TGD:B 2006 or an alternative approach in order to meet the technical requirements of B5 of the second schedule to the Building Regulations 1997-2014, shall be submitted and agreed with the Building Control Authority prior to commencement of the development. In default of such agreement, the matter shall be referred to An Bord Pleanála to determine the appropriate method to achieve compliance.

Reason: To comply with B5 (Access and facilities for the fire service) of the second schedule to the building regulations 1997-2014.

10.0 CONCLUSIONS AND RECOMMENDATION

Arising out of my assessment above, I recommend that the Building Control Authority should be directed to remove Conditions No.s 1 and 4 from the fire safety certificate and to amend Condition No. 5 in accordance with the following draft order.

REASONS AND CONSIDERATIONS

Having regard to the design and layout of the proposed works, to the guidance given in Technical Guidance Document B: Fire Safety (2006) to the supporting guidance given in Building Bulletin 100: Design for fires safety in schools (2007) and to the submissions made in connection with the Fire Safety Certificate application and appeal, it is considered that, further to the deletion of conditions No.s 1 and 4 and the amendment of condition No. 5, the proposed development would achieve an adequate level of fire safety that would ensure compliance with Parts B1 (Means of Escape in case of fire) and B5 (Access and facilities for the fire service) of the Second Schedule to the Building Regulations 1997-2014.

Amended Condition No. 5

5. Full details of proposal(s) demonstrating how compliance is proposed to be achieved with Section 5.1.6 (sources of water fighting) and 5.1.7 (provision of hydrants) of TGD:B 2006 or an alternative approach in order to meet the technical requirements of B5 of the second schedule to the Building Regulations 1997-2014, shall be submitted and agreed with the Building Control Authority prior to commencement of the development. In default of such agreement, the matter shall be referred to An Bord Pleanála to determine the appropriate method to achieve compliance.

Reason: To comply with B5 (Access and facilities for the fire service) of the second schedule to the Building Regulations 1997-2014.

Patricia Calleary
Senior Planning Inspector
20 August 2016

Appendix:

1. Extract from TGD: B: 2006.
2. Extracts from Building Bulletin 100 (BB100): Design for fire safety in schools. (Department for Children, Schools and Families) 2007.
3. Extract from Department of Education and Skills - Technical Guidance Document TGD – 022 (as revised 2013). Specifically, TGD 022-D01 (Typical Classroom Plan Drawing).
4. Extract from Department of Education and Skills – Fire Strategy in Schools (2014), supplementary guide for design teams.