



Fire Safety Report

January 2023

Bruce Grove Youth Centre

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1. Introduction

Haringey Youth Service delivers an open access provision at Bruce Grove Youth Space for young people aged 11 – 19 years old from Monday to Friday. The building was constructed in **2000**. and consists of two storeys, i.e., ground floor and a first-floor level.

The ground floor of the building is made up of gym area, plant and storerooms, open plan areas and WC facilities. The first floor contains a collection of meetings and recording rooms

The building is served by a single stair that discharges within 3m of the entrance lobby to the outside air at ground floor level.

1.1 Fire Safety Legislation

- Current legislation requires the fire strategy to comply with the relevant regulations regarding the design, construction, maintenance, and operation of the buildings. As the building is already designed and constructed the relevant legislation to the fire strategy is Regulatory Reform (Fire Safety) Order 2005 (RR(FS)O) and the fire safety Act 2021.
- The RR(FS)O does not advise on the design elements and limitations. Thus, the Building Regulations are used as a point of reference of guidelines not referenced in the RR(FS)O.

2.1 Policy Criteria for London Plan policy D12 A.

In the interests of fire safety and to ensure the safety of all building users, all development proposals must achieve the highest standards of fire safety and ensure that they:

- Identify suitably positioned unobstructed outside space for:
 - Fire appliances to be positioned on
 - Appropriate for use as an evacuation assembly point
- Designed to incorporate appropriate features which reduce the risk to life and the risk of serious injury in the event of a fire; including appropriate fire alarm systems and passive and active fire safety measures.
- Are constructed in an appropriate way to minimise the risk of fire spread.
- Provide suitable and convenient means of escape, and associated evacuation strategy for all building users.
- Develop a robust strategy for evacuation.
- Provide suitable access and equipment for firefighting which is appropriate for the size and use of the development.

2.2.1 The Building Regulations

- When designing a building, the fire strategy is to demonstrate compliance with the functional requirements of Part B of the Building Regulations. Although it is not necessary to upgrade the existing building to comply with the current Building Regulations, consideration has been given to the fire safety provisions that are required to achieve a reasonable standard of health and life safety for people in and about the completed building.
- The guidance used as a benchmark for the purpose of comparison in this report are the recommendations found in Approved Document B (ADB) 2006.
- Any new developments or alterations to existing premises are required to comply with the Building Regulations 2010 (incorporating 2022 amendments). The fire safety requirements of the Building Regulations are as follows:
 - B1: to ensure satisfactory provision of means of giving an alarm of fire and a satisfactory standard of means of escape for persons in the event of fire in a building.
 - B2: to ensure fire spread over the internal linings of buildings is inhibited
 - B3: to ensure the stability of buildings in the event of fire; to ensure that there is a sufficient degree of fire separation within buildings and between adjoining buildings; to provide automatic fire suppression where necessary; and to inhibit the unseen spread of fire and smoke in concealed spaces in buildings.
 - B4: to ensure external walls and roofs have adequate resistance to the spread of fire over the external envelope and that spread of fire from one building to another is restricted
 - B5: to ensure satisfactory access for fire appliances to buildings and the provision of facilities in buildings to assist firefighters in the saving of life of people in and around buildings.

2.2.2 Regulatory Reform (Fire Safety) Order 2005

- The Regulatory Reform (Fire Safety) Order 2005, herein referred to as RR(FS)O, places the general duty of fire safety care on employers, occupiers, and owners of almost all premises and requires them to take such fire precautions as may be reasonably required to ensure that premises are safe for the occupants and those in the immediate vicinity. Part 2 of the RR(FS)O states the Fire Safety Duties. The articles of this section of the Regulation are:
 - Article 8 – Duty to take general fire precautions – The responsible person must take general fire precautions to ensure, so far as is reasonably practicable, the safety of any of his employees and that the premises are safe to the occupants.
 - Article 9 – Risk assessment – The responsible person has a duty to carry out a fire risk assessment which must focus on the safety in case of fire of all ‘relevant persons’. The risk assessment should pay particular attention to those at special risk, such as the disabled and those with special needs, and must include consideration of any dangerous substance likely to be on the premises. The assessment must be reviewed to keep it up to date.
 - Article 10 – Principles of prevention to be applied – Any preventive and protective measures must be based on the principles specified in Part 3 of Schedule 1 “Principles of prevention”.

- Article 11 – Fire safety arrangements – The responsible person must make and give effect to such arrangement as are appropriate for the effective planning, organising, control, monitoring, and review of the preventative and protective measures.
- Article 12 – Elimination or reduction of risk from dangerous substances – The risk to relevant persons is either eliminated or reduced. So far as reasonably practicable, the dangerous substance needs to be replaced.
- Article 13 – Firefighting and fire detection – The responsible person must ensure that there is appropriate fire-fighting equipment, fire detectors and alarms, and that there are sufficient competent persons to implement the measures for fire- fighting in the premises.
- Article 14 – Emergency routes and exits – The responsible person must ensure that routes to emergency exit and the exits are always kept clear.
- Article 15 – Procedures for serious and imminent danger and for danger areas – The responsible person must establish appropriate procedures and safety drills to be followed in case of incident.
- Article 16 – Additional emergency measures in respect of dangerous substances – The responsible person must ensure that information regarding the dangerous substances and any additional emergency measure is available.
- Article 17 – Maintenance – The responsible person must ensure that the premises and any facilities, equipment and devices are maintained and in an efficient working order.
- Article 18 – Safety assistance – The responsible person must appoint a competent person to assist him in undertaking the preventive and protective measures.
- Article 19 – Provision of information to employees – The responsible person must provide his employees with comprehensive and relevant information on the risks to them and the preventive and protective measures.
- Article 20 – Provision of information to employers and self-employed from the outside undertakings – The responsible person must ensure that any external employee working in or on the premises is provided with comprehensible and relevant information.
- Article 21 – Training – The responsible person must ensure that his employees are provided with adequate safety training.
- Article 22 – Co-operation and co-ordination – When there are two or more responsible persons, they must co-operate with each other and communicate any concerns of the risks.
- Article 23 – General duties of employees at work – Every employee must take reasonable care for the safety of himself and others.

2. General

2.1 Purpose Group

The majority of the building is considered to be designed to facilitate the assembly and recreation of the young people in the area.

Building regulations classifies buildings into different purpose groups, which represent distinct levels of hazard. The purpose group can apply to the entire building or a compartment within the building, but the purpose group should relate to the main use of the building. Based in the information provided, the Youth centre is classified in the table below.

Bruce Grove Youth Centre	Occupancy Characteristic	Purpose group
Ground and 1 st Floor	Assembly and recreation	5

3. B1 Means of Warning and Escape

Requirement B1

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.

3.1 Means of Warning

In non-residential occupancies automatic fire detection is not normally required to satisfy the Building Regulations, and a manual alarm system will usually be sufficient. However, there are circumstances where an Automatic Fire Detection (AFD) system may be needed, for example:

- a) To compensate for some departure from the approved guidance;
- b) As part of the operating system for some fire protection systems (smoke vents etc.)
- c) Where a fire could break out in an unoccupied part of the premises and prejudice the means of escape.

Current Provision

It is assumed that this building is fitted with a system to the specification within BS 5839: Part 1(4) to a type **L3** specification.

The system will comprise automatic fire detection and a sounder system which will be installed throughout the building. It will incorporate combined heat and smoke detection and will be linked to a main control panel which will be located within the main entrance to the building.

In addition to the automatic detection, manual call points should also be provided at all storey or final exits.

Once the alarm has been sounded, all the persons within the building should evacuate simultaneously. It should also be noted that the provision of the automatic fire alarm system is a substantial enhancement over and above the minimum standards which would be considered as acceptable for Purpose Group 5 building. Following the ignition of a fire, the alarm would alert persons to the presence of the fire far sooner than in a building with a manual system (unless the building was entirely open plan). This enables the persons to main their escape within a shorter timescale.

3.2 Means of Escape – Travel distance

In relation to the purpose groups expressed in Building regulations, the maximum travel distance on the Ground and 1st floors are as follows:

Purpose Group	Use of the premises	Maximum travel distance where travel is possible in	
		One direction only	More than one direction
5	Educational premises – Assembly and recreation - Ground and 1 st Floor.	18	45

1. The travel distance on the 1st floor, in a single direction exceeds the recommended 18m as follows - route 1 from rm 22 is 18.1m / route 2 = 20.7m.
2. However, due to the risk profile of this building the alarm system required is a manual system. Due to automatic system being installed, then this would allow for a 15% increase in travel distances in accordance with using BS 9999.
3. This would then mean that the travel distances were acceptable for this building.

3.3 Occupancies

Based on the floor space factors within Approved Document B the following design occupancies can be calculated:

Current Provision

3.3.1 Ground Floor

Room	Room Number	Area (m ²)	Floor Space Factor	Design Occupancy
GYM	17	175	0.5	350
Break out Area	02	108	Actual Layout	28
Locker Area	N/A	5.4	1	5

Bruce Grove Youth Centre

Kitchen	06	30	7	3
Store	04	2	6	1
Store	05	2	6	1
Store	18	1	6	1
Staff Office	03	13	6	2
			Total	391

3.3.2 First Floor

Room	Room Number	Area (m2)	Floor Space Factor	Design Occupancy
Recording Podcast	22	9	Actual Layout	2
Control Room	23	14	Actual layout	4
Recording Podcast	27		Actual layout	2
Meeting Room	25	14	Actual layout	8
Breakout Space	N/A	14	1	14
Meeting Room	21	29	Actual layout	10
Staff Office	20	18	Actual layout	4
Computer Room	19	44	1	13
			Total	57

3.4 Horizontal and Vertical Escape

The Youth Centre has a single escape stair, the width is **990 mm**.

A single escape route from a storey is acceptable provided that the occupancy of that storey does not exceed 60 persons and the travel distances are within permitted limits.

The number of people occupying the first floor does not exceed 60.

The ground floor still remains compliant as the number of exits from this storey is capable of adequately evacuating the calculated 391 persons from that storey as should in table 2.2 of Approved Document B shown below.

The ground floor has 3 exits that lead directly to fresh air with the largest of these discounted would still leave sufficient capacity for the safe evacuation of the remaining 391 people

Table 2.2 Minimum number of escape routes and exits from a room, tier or storey

Maximum number of people	Minimum number of escape routes/exits
60	1
600	2
More than 600	3

3.5 Mobility Impaired Persons

Generally, a disabled refuge would be required either within the protected stair or within a lobby, if it was protected, at the upper level. This would enable a wheelchair user to wait for assistance. Refuges should have the minimum dimensions 900mm by 1400mm and there should be an emergency voice communication system (EVC) so that the occupant of the refuge can alert other people that they need assistance and for them to be reassured that assistance will be forthcoming. The EVC system should comply with BS 5839-9 or it is also acceptable to use wireless technology.

However, a lift is provided which is near the entrance to the building but accessed from within the stair enclosure.

All disabled occupant from the first floor will be evacuated using a evacuation chair situated near the staircase on the first floor. Personal and generic emergency evacuation plans will be developed and kept revised onsite at all times.

Lifts should not be used for general evacuation, but it is acceptable for them to be used for the evacuation of disabled people even though they are not designed as evacuation lifts provided that a suitable fire risk assessment is undertaken to evaluate whether the lift meets the functional requirements of an evacuation lift, i.e., it has the appropriate structural, electrical and fire protection and is capable of being taken under control by an authorised person.

The risk assessment should ensure that:

- The interface between the lift control system and the fire alarm system will support the evacuation management strategy.
- Controlled operation of the lift is possible during an evacuation.
- The power supply to the lift is to remain usable throughout the time required for evacuation.
- The lift enclosure and associated escape routes should free from the effects of fire, heat, and smoke during the evacuation.
- There is a suitable communications system available to ensure that staff can use the lifts safely to evacuate mobility impaired people.
- There is an alternative escape route available for situations when the use of the lift is not viable.

It should be noted that an alternative escape route is not available as the building contains a single stair, however this is acceptable due to its size and the anticipated occupancy on the upper floor.

3.6 Emergency Lighting and Escape Signage

The building should be provided with emergency escape lighting to open plan areas of more than 60m² and windowless accommodation, installed in accordance with BS 5266-1.

Every escape route other than those in ordinary use should be marked by emergency exit signs in accordance with BS 5499-1.

3.7 First Aid Fire Fighting Equipment

The provision of manual firefighting equipment is not a requirement of the Building Regulations however it is required to satisfy the requirements of the Regulatory Reform (Fire Safety) Order. For this type of building and purpose group the most common type of fire would be one involving solid materials such as wood, paper, or textiles (Class A fire).

It is recommended that one water-based extinguisher is provided for every 200m² of floor space with a minimum of two extinguishers per floor.

If there are other additional classes of fire risk, then the appropriate extinguishers should be provided. The extinguishers should be provided in accordance with BS 5306-3 and BS 5306-8.

4. B2 – Internal Fire Spread (Linings)

4.1 Requirement of B2

To inhibit the spread of fire within the building, the internal linings shall:

- a) Adequately resist the spread of flame over their surfaces; and
- b) Have, if ignited, either a rate of heat release or rate of fire growth, with is reasonable in the circumstances.

In this paragraph “internal linings” means the materials or products used in lining any partition, wall, ceiling or other internal structure.

The interior wall and ceiling surfaces in a building may have a significant influence on how face a fire may develop. It is particularly important that in circulation spaces, where the rapid spread of fire is most likely to prevent occupants from escaping, the surface linings are restricted by making provision for them to have low rates of heat release and surface spread of flame.

Therefore, all surface finishes in the areas of the building should satisfy the classifications given in the ADB, shown in Table 1, when tested under either the national classifications, in accordance with BS 476- 7 or under the European Classifications in accordance with BS EN 1350:1 Part 1.

Surface finishes on walls and ceiling linings need to be in accordance with the table below.

Location	Class of Lining	European Class
Small rooms of area not more than 30m ² in a non-residential accommodation 4m ² in residential accommodation	3	D-s3,d2
In escape routes	0	B-s3,d2
Other rooms	1	C-s3,d2

Internal walls are lined with plaster board backed by a vapour control layer on a SFS steel frame, which would be compliant with the requirements laid out above.

5. B3 – Internal Fire Spread (Structure)

5.1 Requirement of B3

1. The building shall be designed and constructed so that, in the event of a fire, its stability will be maintained for a reasonable period.
2. A wall common to two or more buildings shall be designed and constructed so that it adequately resists the spread of fire between those buildings.
3. To inhibit the spread of fire within the building, it shall be sub-divided with fire-resisting construction to an extent appropriate to the size and intended use of the building.
4. The building shall be designed and constructed so that the unseen spread of fire and smoke within concealed spaces in its structure and fabric is inhibited.

5.2 Elements of Structure

The drawings for the building indicate that the building is mainly used in accordance with (purpose group 5) assembly and recreation.

The height of the top floor above ground, of the building is up to 5m therefore in accordance with Table B4 of Approved Document B for this purpose group the elements of structure should be provided with 60 minutes fire resistance.

All elements of Fire resistance will be brought up to the required standard by ensuring that all Existing steel structure that is exposed would need be suitably protected.

5.3 Compartmentation

The spread of fire can be restricted by sub-dividing it into compartments which are separated from one another by fire resisting walls and/or floors. The maximum dimensions of building or compartment is dependent on the use of the building, the height of the top storey and the availability of a sprinkler system. In accordance with Table 8.1 of Approved Document B for a building used as Assembly and Recreation there is no limit to the size of a compartment therefore compartment walls and floors are not required within the building.

5.4 Places of Special Fire Hazard

In accordance with ADB places of special fire hazard should be enclosed in construction to provide 30 minutes fire resistance. These places are defined as oil-filled transformer and switch gear rooms, boiler rooms, storage space for fuel or other highly flammable substances and rooms housing a fixed internal combustion engine.

The Youth Centre building does not contain any places of special fire hazard as defined above, however, it may be beneficial to enclose the ground floor plant room, service risers any storerooms, and or cleaner's cupboard with construction to provide 30 minutes (REI) fire resistance.

6. B4 – External Fire Spread

6.1 Requirement of B4

1. The external walls of the building shall adequately resist the spread of fire over the walls and from one building to another, having regard to the height, use and position of the building.
2. The roof of the building shall adequately resist the spread of fire over the roof and from one building to another, having regard to the use and position of the building.

6.2 B4 External Fire Spread

The programme of work does not allow for any alteration to the external façade of the building. It is therefore assumed that project will not negatively impact the external wall system currently in place.

The building is used as Assembly and Recreation, and it is assumed that the distance to the boundary is greater than 1m therefore in accordance with table 12.1 of Approved Document B the following requirements are as follows:

Building type	Building height	Less than 1000mm from the relevant boundary	1000mm or more from the relevant boundary
Assembly and recreation	More than 18m	Class B-s3, d2(2) or better	From ground level to 18m: class C-s3, d2(3) or better
			From 18m in height and above: class B-s3, d2(2) or better
	18m or less	Class B-s3, d2(2) or better	Up to 10m above ground level: class C-s3, d2(3) or better
			Up to 10m above a roof or any part of the building to which the public have access: class C-s3, d2(3) or better
			From 10m in height and above: no minimum performance

Existing build-ups assumed to be steel frame with insulated metal panel externally on SFS framing, VCL & plasterboard lining internally. Kalwall & Curtain walling also present to front elevations.

7.3 Space Separation

As the building is existing it is assumed that the requirements for space separation have been satisfied. The programme of work does not include any alterations to the exiting access provisions.

7. B5 – Access & Facilities For The Fire & Rescue Service

7.1 Requirement of B5

1. The building shall be designed and constructed to provide reasonable facilities to assist firefighters in the protection of life.
2. Reasonable provision shall be made within the site of the building to enable fire appliances to gain access to the building.

7.2 Vehicle Access

No changes to the current access arrangements are going to be made as part of this scheme. All existing arrangements will remain in effect and will not be made worse by the implementation of the project and therefore in accordance with regulation 4(3) of The Building Regulations 2010.

The Bruce Grove Youth Centre has total floor area between 2000-8000m² and the height of the top storey is less than 11m above ground. In accordance with Approved Document B vehicle access is required for a pump appliance to 15% of the perimeter or within 45m of every point on the building footprint.

Existing gates to the front of No. 10 Bruce Grove measure 3500mm wide which is compliant with requirements. The side gate between No. 10 & the Youth Space measures 2300mm wide so a fire engine would not get through this gate. The distance from the side gate to the front door of the Youth Space is 29m.

Access is available to which is more than the required 15% therefore the design meets the requirement for vehicle access.

Access for firefighting personnel is through the existing front gate of the No. 10 Bruce Grove which satisfies the requirements of both the London Plan and Building regulations.

The building does not require firefighting shafts or dry rising mains. Given that the building is existing it is assumed that a hydrant is available within 90m of the entry point of the building.

8. Conclusion

The requirements of the Building Regulations and the Regulatory Reform (Fire Safety) Order have been reviewed with respect to the existing Bruce Grove Youth's centre. It is considered that provided that the recommendations within this report are incorporated into the building design, an adequate level of fire safety should be provided within the building and the requirements of the; - London Plan D12, Building Regulations and the RRFSO will be satisfied once the building is refurbished as proposed.

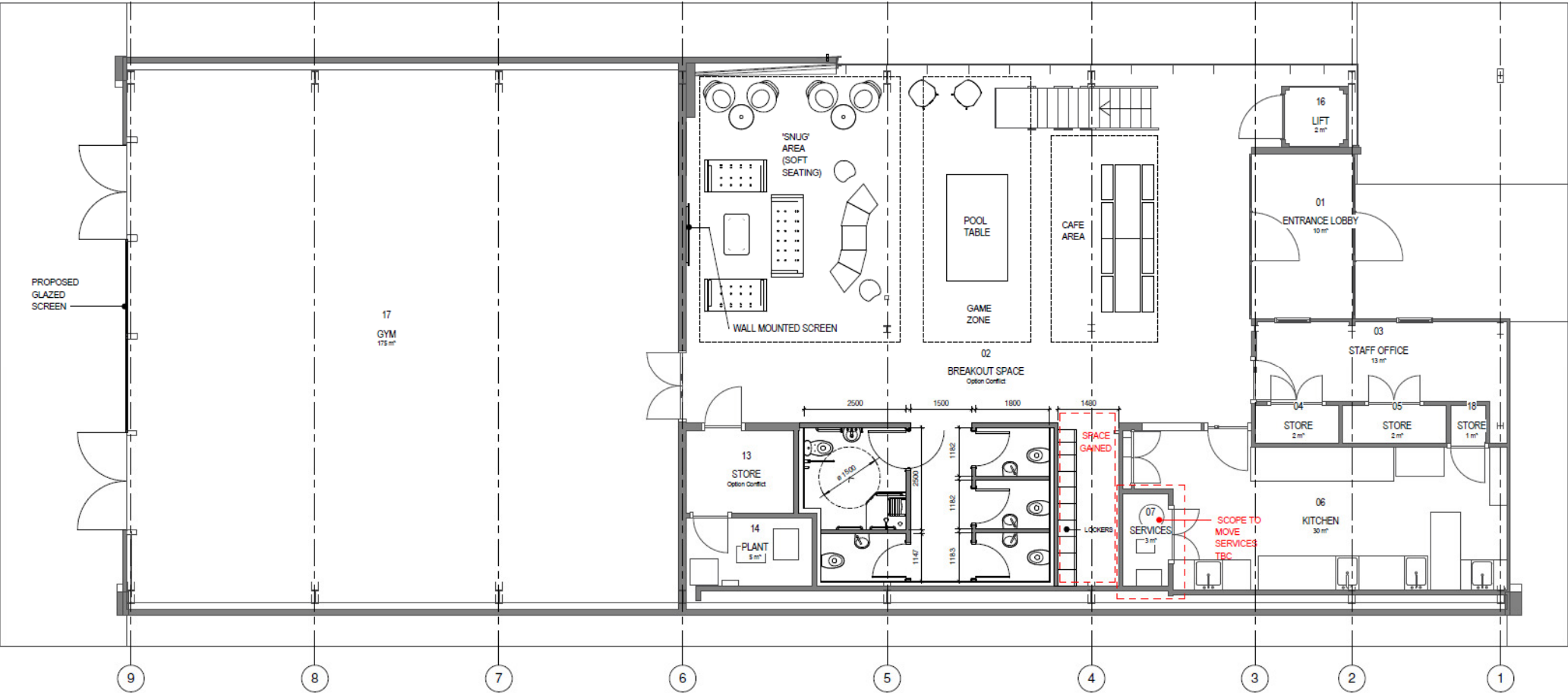
9. Appendices

10. Appendix A – Building layout drawings

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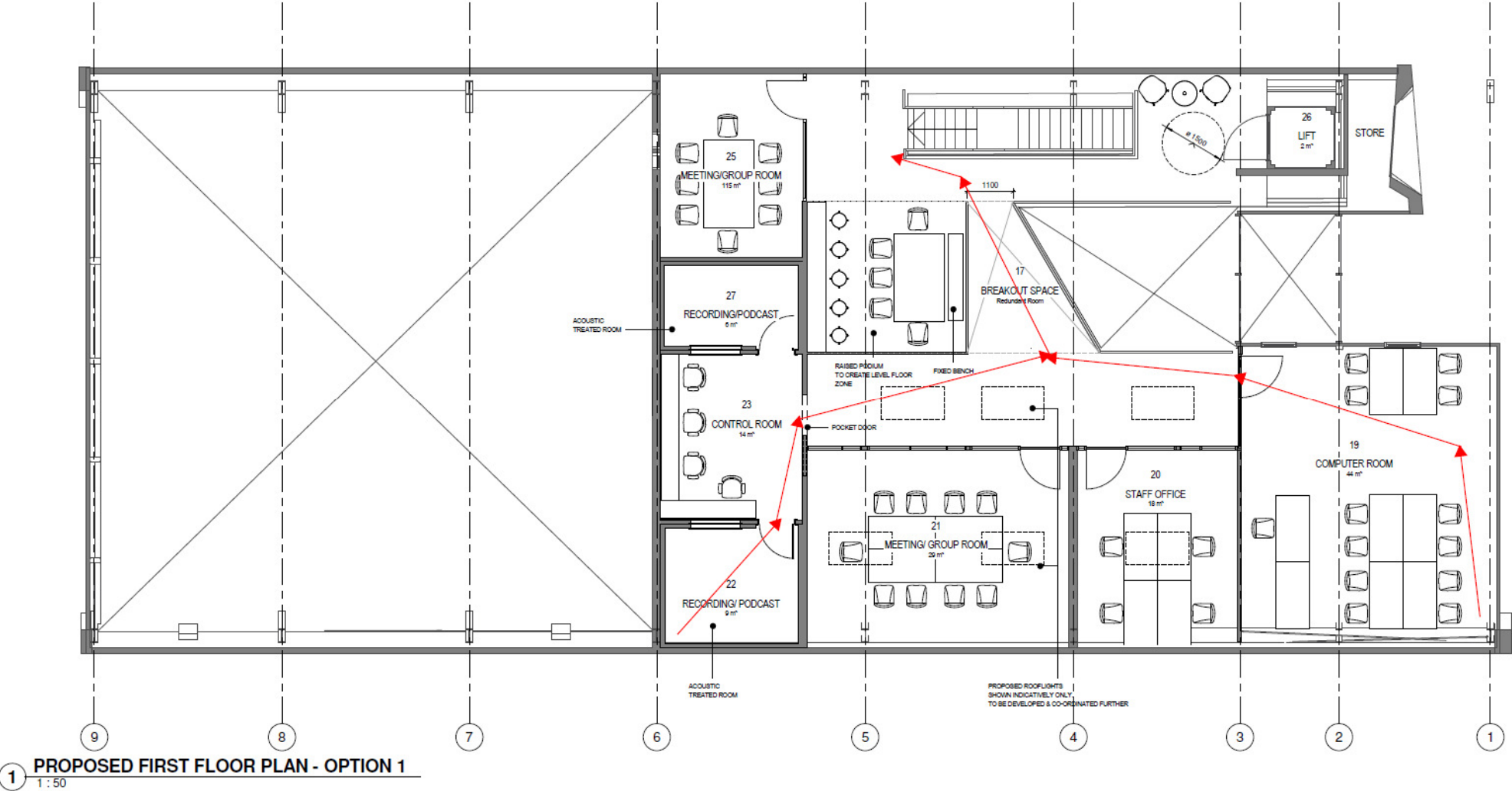
ADP: Please update with latest plans when shared later this week



PROPOSED GROUND FLOOR PLAN

1:50

Bruce Grove Youth Centre



11. Bibliography

Fire Safety Policy D12(A)

The Building Regulations, 1991 HMSO.

Approved Document B (1992 edition) to the Building Regulations, HMSO.

Regulatory Reform (Fire Safety) Order 2005.

BS 5839-1: 1988. Fire detection and alarm systems for buildings. Part 1: Code of practice for system design, installation and servicing.

BS 5839-9: 2003. Fire detection and fire alarm systems for buildings – Part 9: Code of practice for the design, installation, commissioning and maintenance of emergency voice communication systems.

BS 5266-1: 1988. Emergency lighting. Code of practice for the emergency lighting of premises other than cinemas and certain other specified premises used for entertainment.

BS 5499-1: 1990. Fire safety signs, notices and graphic symbols. Specification for fire safety signs.

BS 5306-3: 2000. Fire extinguishing installations and equipment on premises: Part 3: Code of practice for the inspection and maintenance of portable fire extinguishers.

BS 5306-8: 2000. Fire extinguishing installations and equipment on premises: Part 8: Selection and Installation of Portable Fire Extinguishers. Code of Practice.

BS 476-7: 1997. Fire tests on building materials and structures. Method of test to determine the classification of the surface spread of flame of products.

BS EN 13501-1: 2002. Fire classification of construction products and building elements. Classification using test data from reaction to fire tests.