Virtus Data Centre

London Plan Fire Statement

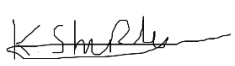
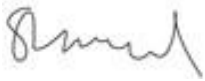
VIRTUS Data Centres

Project number: 60749800

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Quality information

Prepared by	Checked by	Verified by	Approved by
			
Keelan Shipley Graduate Fire Engineer	Sean Litherland Fire Engineer	Parina Patel Regional Director – Fire Engineering	Kach Theeprawat Technical Design Lead – Data Centres

Revision History

Revision	Revision date	Details	Authorized	Name	Position
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Prepared for:

VIRTUS Data Centres

Prepared by:

Keelan Shipley
Graduate Fire Engineer
T: 07345423347
E: keelan.shipley@aecom.com

AECOM Limited
100 Embankment
Cathedral Approach
Manchester M3 7FB
United Kingdom

T: +44 161 601 1700
aecom.com

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1. Introduction

AECOM has been commissioned by VIRTUS Data Centres to provide fire engineering support during the design and planning application of a new data centre facility.

The proposed site is located at the former Sipson Garden Centre and associated land located in Heathrow, within the London Borough of Hillingdon, UK. The completed development will consist of a new data centre as well as ancillary buildings to support the operation of the data centre.

The proposed development consists of two-storey facility comprising two technical blocks located to the north and south of the site, together with an admin block positioned along the western side of the development. The proposed development consists of 54,000 m^2 of gross internal floorspace, including data halls, administration block, plant, and associated ancillary infrastructure.

All buildings in England and Wales are required to comply with the Building Regulations 2010, Schedule 1, Part B (Fire Safety), as amended. Building Regulations compliance is decided by a Building Control Authority via a Building Regulations submission. The proposed development has been designed in line with the recommendations of BS 9999:2017 to demonstrate compliance with the performance requirements of the Building Regulations 2010, Schedule 1, Part B (Fire Safety), as amended. Additional requirements specified by the client within VIRTUS Design Principles V2.8 have also been adopted in the design.

A separate RIBA Stage 2 fire strategy has been prepared for the development[1].

Developments within London are also required to comply with the London Plan 2021, which is over and above the requirements of the Building Regulations. The London Plan was published and has been officially enforced from 02 March 2021. AECOM understands that London Plan compliance is determined by the Planning Authority.

Policy D12 (Fire Safety) of the London Plan requires major developments in London (i.e., developments including 10 or more dwellings or with the site area of 0.5 hectares or more) to be submitted with a Fire Statement, which is an independent fire strategy, produced by a third party, suitably qualified assessor. This Fire Statement has been prepared to fulfil this requirement.

The London Plan mandates that buildings should be designed and built to accommodate robust emergency evacuation procedures for all building users, including those who require level access. All building users should be able to evacuate from a building with dignity and by as independent means as possible. Policy D5(B5) of the London Plan 2021 states "In all developments where lifts are installed, as a minimum at least one lift per core (or more subject to capacity assessments) should be a suitably sized fire evacuation lift suitable to be used to evacuate people who require level egress from the building,". The proposed design of the data centre deviates from the specific wording of Policy D5(B5), as evacuation lifts are proposed to only be provided within the stair enclosures in the admin block. However, AECOM consider that the proposed approach to not provide evacuation lifts within the technical blocks still satisfied the intent of Policy D5(B5) of the London Plan on the basis that:

- The technical blocks will be transiently occupied spaces with no wheelchair user access; therefore, it is expected that the stairs should provide safe and dignified emergency evacuation for all able-bodied occupants expected to need to use them in the event of a fire;
- Occupants that might require assistance in escaping are not expected to be present within the technical blocks. However, should they find themselves in need of help escaping, refuges and associated emergency voice communication systems will be provided within all stair cores. These refuges will be designed and installed in accordance with relevant British Standards, offering a suitable area for occupants within the technical blocks to await assistance during evacuation, if necessary;
- Within the admin block, each stair core has been provided with an associated evacuation lift. If necessary, occupants in the technical block can access the evacuation lifts in the admin block; and
- All corridors are designed as protected corridors. Therefore, any occupants with restricted mobility in the technical blocks that need to use the evacuation lifts in the admin block have a protected route to the nearest evacuation lift.

[1] AECOM, *RIBA Stage 2 Fire Strategy Report – PGF-ACM-XX-RP-GI-002000-Rev01,* September 2026

Applying the intent of Policy D5 and the relevant guidance to the specifics of the scheme, AECOM consider that this approach is appropriate and maintains the required standards of life safety and the spirit of inclusive design for the development.

However, approval of the proposed solution is subject to agreement with the relevant stakeholders, as part of the planning submission, for which this document provides support.

This Fire Statement has been prepared using information included in a number of documents that are submitted with the planning application for the proposed development. The fire safety measures described herein have been developed in consultation with members of the design team and Approving Authorities.

This statement outlines the fire safety strategy principles that have been developed for the proposed development. Some elements of the fire strategy will require further, detailed development and agreement with the 'Stakeholders' which includes the Building Control Authority, who will in turn consult with the London Fire Brigade.

AECOM has prepared all elements of this London Plan Fire Statetement (inclusive of text, figures, tables etc.).

This document is not intended to function as a design document. This Fire Statement identifies the provisions to be made for the safety of occupants, the provision of suitable access and equipment for firefighting, and the justification for these measures. How the proposed development will meet the intent of Policy D12 is detailed within Section 3.1 of this report. A signed declaration of compliance with Policy D12 of the London Plan can be found within Section 4 of this report. This excludes a signed declaration of compliance with Policy D5(B5).

2. Fire Safety Goals and Objectives

The fire engineering design process involves the development of fire safety solutions during the RIBA design stages to meet the appropriate fire safety goals within the project constraints.

The overall objective is to develop a fire safety solution which could, ultimately once further design progression has occurred, comply with relevant Legislation and planning guidance in England such as:

- The Building Regulations 2010, Schedule 1, Part B (Fire Safety) as amended;
- Construction Design and Management Regulations 2015 (CDM);
- The Regulatory Reform (Fire Safety) Order 2005 (RR(FS)O); and
- The London Plan 2021 (namely Policy D12 (Fire Safety) and Policy D5 (Inclusive Design)).

To this end, this Fire Statement is based on the recommendations and guidance of BS 9999: 2017, Fire Safety in the design, management, and use of buildings – Code of Practice (hereafter referred to as BS 9999) and the VIRTUS Design Principles V2.8. Furthermore, as the project is based in London, the building should comply with the London Plan 2021 (namely Policy D12 – Fire Safety, and Policy D5(B5) – Evacuation Lifts).

The London Plan is supported by guidance, which provides further information about how the London Plan should be implemented. The design of the proposed development and this planning statement has utilised the London Plan supplementary guidance notes:

- London Plan Guidance Fire Safety Policy D12(A) Pre-consultation draft (March 2021);
- London Plan Guidance Sheet Policy D12(B) Fire Statements (February 2022); and
- London Plan Guidance Sheet Policy D5(B5) Evacuation Lifts (February 2022).

3. London Plan

London Plan 2021 covers fire safety in Policy D12 (Parts A and B) and Inclusive Design in Policy D5; both are relevant to fire safety of the building and have been addressed in this Fire Statement.

3.1 Policy D12

Policy D12 A states: "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:

1. Identify suitably positioned unobstructed outside space:
    a. For fire appliances to be positioned on; and
    b. Appropriate for use as an evacuation assembly point.
2. Are 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.
3. Are constructed in an appropriate way to minimise the risk of fire spread.
4. Provide suitable and convenient means of escape and associated evacuation strategy for all building users.
5. Develop a robust strategy for evacuation which can be periodically updated and published, and which all building users can have confidence in.
6. Provide suitable access and equipment for firefighting which is appropriate for the size and use of the development."

Policy D12(B) states: "All major development proposals should be submitted with a Fire Statement, which is an independent fire strategy, produced by a third party, suitably qualified assessor." The statement should detail how the development proposal will function in terms of fire safety under a number of headings.

The London Plan refers to terms such as the "highest standards of fire safety", "suitably positioned unobstructed outside space", "appropriate features". In the absence of quantified guidance establishing performance requirements to demonstrate compliance with these terms, it is our intention to demonstrate meeting the life safety requirements by generally complying with the guidance provided by BS 9999. The Fire Statement details areas where alternative solutions have been proposed to meet the functional requirements of the Part B of the Building Regulations and where variation to the standard guidance is proposed due to architectural intent. The Fire Statement also identifies areas where provisions over and above the minimum guidance from BS 9999 have been provided to follow the intent of the London Plan.

3.2 Policy D5

Policy D5(B5) states that a development should "be designed to incorporate safe and dignified emergency evacuation for all building users. In all developments where lifts are installed, as a minimum at least one lift per core (or more subject to capacity assessments) should be a suitably sized fire evacuation lift suitable to be used to evacuate people who require level access from the building".

All stair cores accessing the admin block are provided with an associated evacuation lift. However, all stair cores accessing the technical block are not provided with an associated evacuation lift. Whilst this is a deviation from the prescriptive wording of Policy D5(B5) of the London Plan, AECOM consider that this arrangement satisfies the minimum life safety requirements for the building and as no mobility impaired persons (MIPs) will be present within the technical blocks, it is expected that the stairs can provide safe and dignified emergency evacuation for all occupants expected to need to use them in the event of a fire and the spirit and intent of inclusive design is fulfilled.

Therefore, based on the above, AECOM believe that the proposed arrangement meets the intent of Policy D5, but does not explicitly meet the recommendations of the Policy. This is discussed further as part of this document.

4. Declaration of Compliance

This Fire Statement evidences the provisions made for the safety of all occupants and suitable access and equipment for firefighting, including the justification for these measures. This report will meet the checklist for a planning Fire Statement as outlined within the London Plan Guidance Fire Safety, Policy D12(A) (February 2022). The checklist is detailed below:

1. Does the author have appropriate qualifications and expertise?
2. Has the applicant included a declaration of compliance that the fire safety of the proposed development and the fire safety information satisfy the requirements of London Plan Policy D12 and D5(B5), where applicable?
3. Has information been provided under each criterion of the policy relevant to the development (London Plan Policy D12 (A1-A6 for non-major development and for major development B1-B6))?
4. Is the fire safety information specific and relevant to the development, including through the use of site and floor plans?
5. Where lifts are proposed:
   a) have details of the evacuation lifts, and supporting infrastructure such as lobbies been provided?
   b) has an outline evacuation strategy been provided?
   c) has an outline management plan been provided, including how the evacuation lift will be operated?
6. Is it clear which fire safety regulations, standards, design codes and best practice the development has been designed to?
7. Has a Planning Gateway One Fire Statement also been submitted (where required)?

Guidance 3.12.9 within Policy D12 requires that the Fire Statement be produced by a suitably qualified assessor, such as a Chartered Engineer registered with the Engineering Council by the Institution of Fire Engineers. The development of the Fire Safety Statement for this project has been overseen by Parina Patel BSc (Hons) PhD CEng, CEng (HRB), MIFireE. It should be noted the signed declaration below excludes declaring compliance with the explicit wording of Policy D5(B5); however, AECOM consider that the spirit and intent of the policy is satisfied within the proposed design.

Name	Signature	Date
Parina Patel BSc (Hons) PhD CEng CEng HRB MIFireE		02/10/2026

5. Building Description

The proposed development is located within the London Borough of Hillingdon, UK. The completed development will consist of a new data centre as well as ancillary buildings to support the operation of the data centre. The site will be accessible from the main entrance to the northwest of the site. The Data Centre will feature two technical blocks connected by a central admin block. Figure 1 illustrates the proposed site layout.

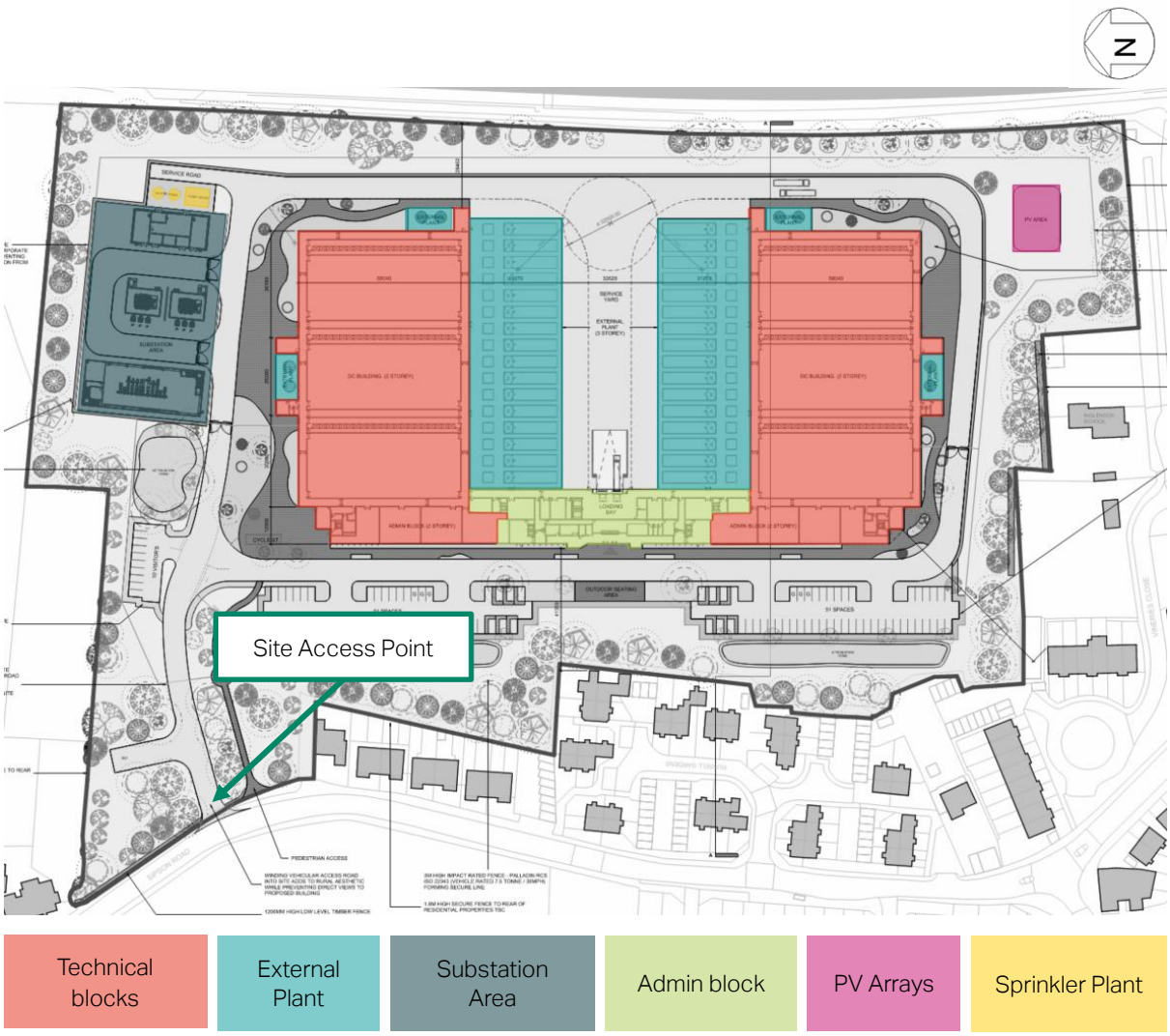


Figure 1: Site Masterplan

The Data Centre will be a two-storey facility comprising two technical blocks located to the north and south of the site, together with an admin block positioned along the western side of the development. The proposed development consists of 54,000 m^2 of gross internal floorspace, including data halls, administration block, plant, and associated ancillary infrastructure.

The data halls within the technical block have higher ceilings, therefore, the finish floor levels of the data centre blocks and the admin block differ. The height of the topmost occupied storey within the technical block (DC Level 01) above the firefighting access level (Level 00) is 6.25 m and the height of first-floor level within the admin block is 4.0 m above ground-floor level.

The Data Centre comprises three data halls in each technical block per floor (six data halls total per floor) and an admin block connecting the two wings of the technical blocks. The admin block comprises the main entrance, offices, storage, welfare facilities and other amenities to support the operation of the wider Data Centre. Level 00 and Level 01 have largely corresponding layouts. Figure 2 indicates the layout of Level 00, and Figure 3 and Figure 4 indicate the Admin Level 01 and DC Level 01 layouts, respectively.

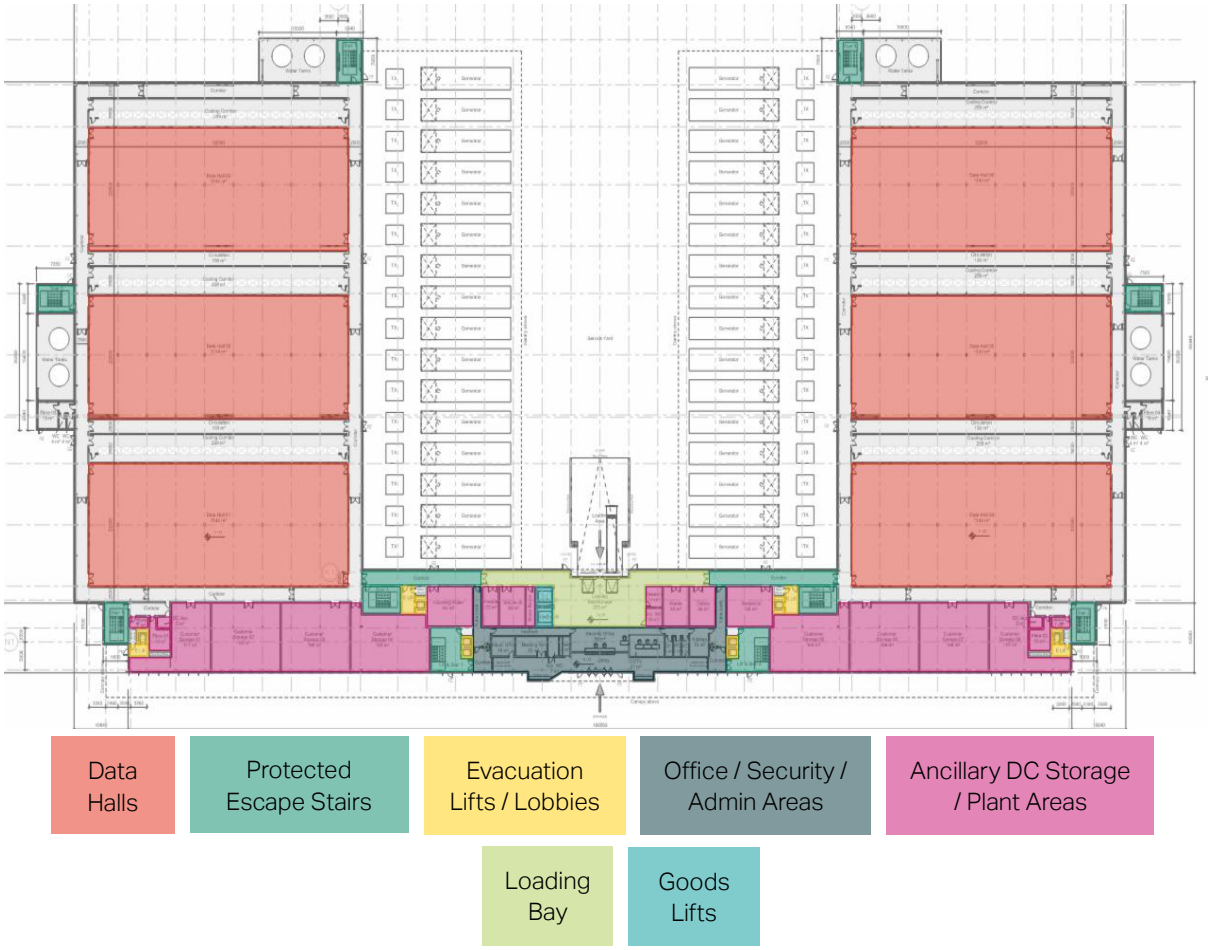


Figure 2: Level 00 Layout

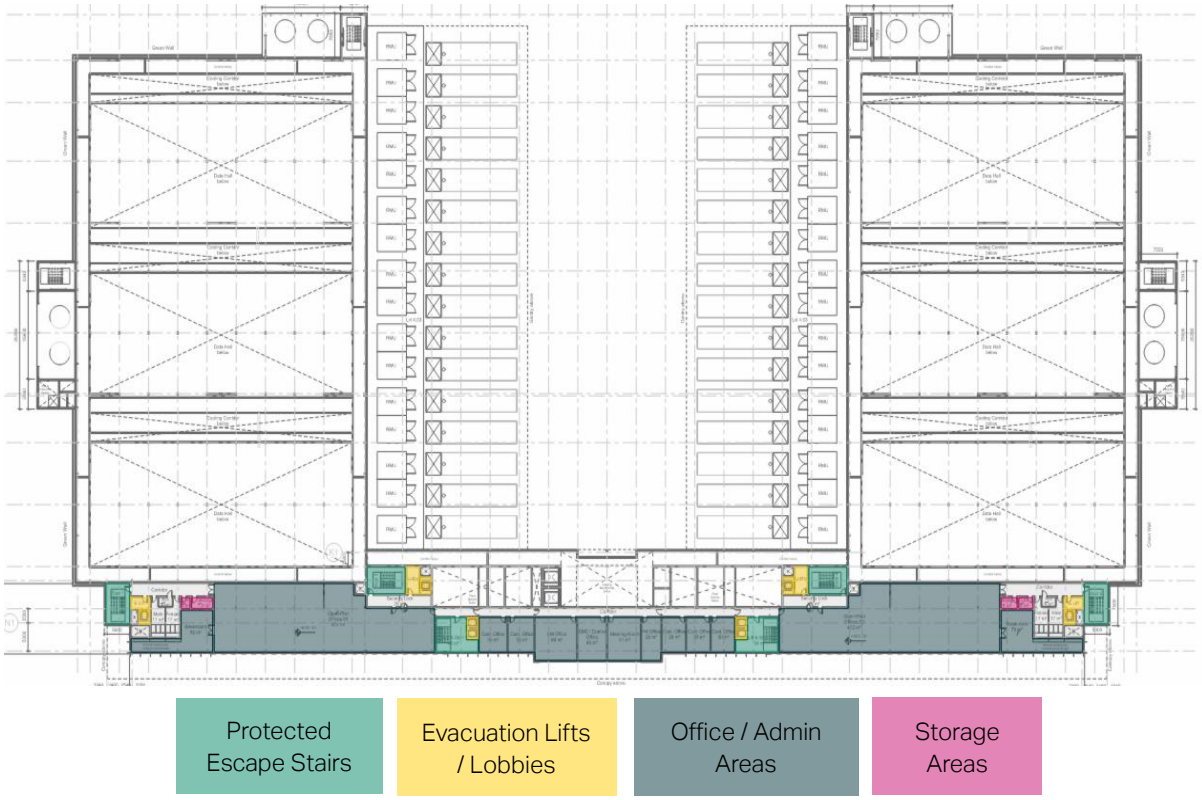


Figure 3: Admin Level 01 Layout

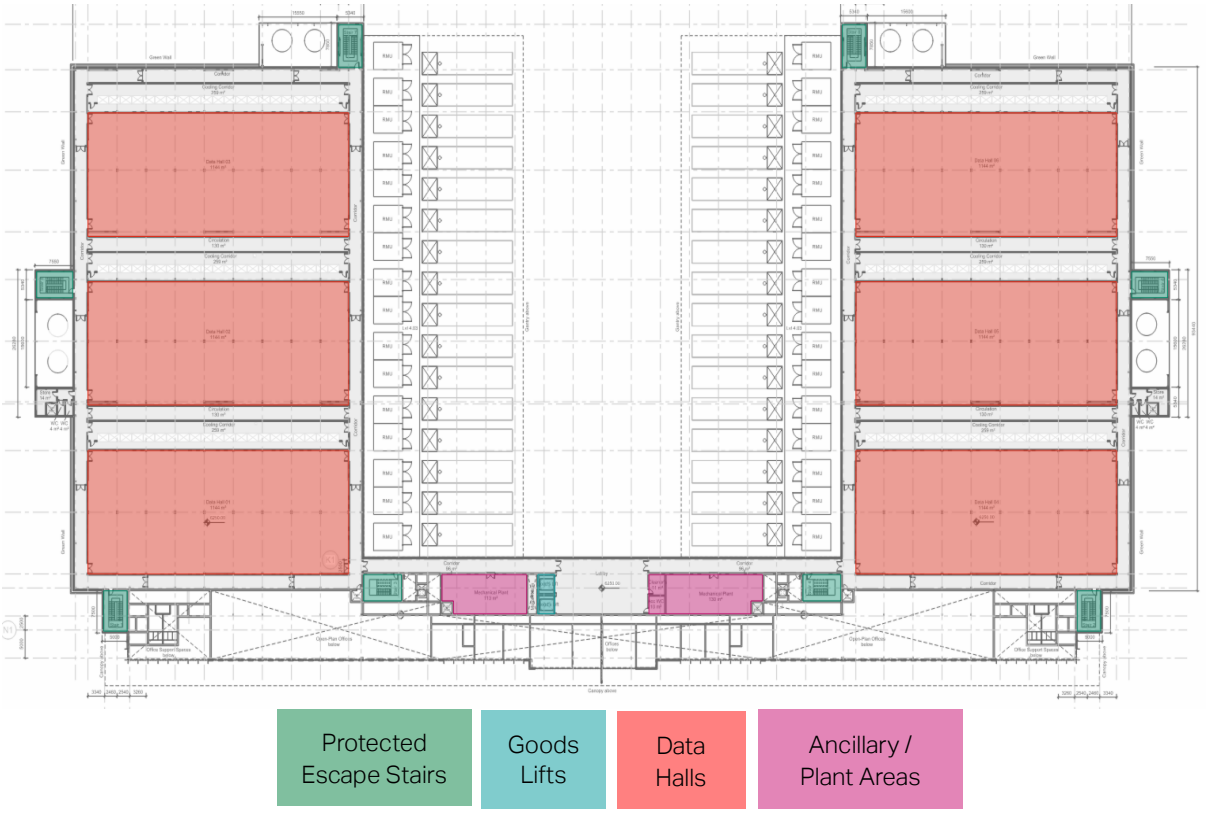


Figure 4: DC Level 01 Layout

The Data Centre also features accessible roofs above both the admin and technical blocks. Above the admin block, it is proposed there will be an extensive green roof, and the roofs of the technical blocks will feature plant and a gantry level to support air handling units and other plant.

5.1 Risk Profile

Table 4 of BS 9999 gives recommendations for the Risk Profile of the space under consideration. The risk profile considers the occupancy characteristics as well as the potential fire growth rate for the areas of the building. Since the sprinkler system will not be designed as a life safety system in accordance with BS EN 12845, the fire strategy has not considered any benefit regarding reducing the fire growth rate and associated risk profile of the building.

Based on the occupancy and the likely fire growth rate, in line with the recommendations of Tables 3 and 4 of BS 9999, the risk profiles outlined in Table 1 have been considered.

Table 1: Risk Profiles

Area	Risk Profile
Office areas (i.e. office rooms, boardroom, breakrooms, kitchenette meeting rooms, control rooms, boardroom)	A2
Low risk storage and plant areas (i.e. Telco / Fibre / Intake / Watermist rooms, customer storage, general storerooms, cleaner storerooms, shredder room, secure store)	A2
High hazard plant / storage areas (loading bay, mechanical plant)	A3
Data halls / cooling corridors	A3
Roof level (plant) / Gantry	A2

5.2 Occupancy

Based on the information provided by the Architect (AECOM), the total anticipated occupancy of the building is not expected to exceed 102 persons at any one time. It has been considered that this full occupancy will be expected

within the rooms in the admin block. The technical blocks have been considered to be transiently occupied spaces with no permanent occupancy.

It is understood that MIPs are not expected to be present within the data halls but could be present within the admin block to the west of the building.

5.3 Referenced Drawings and Information

This report is based on the information made available at the time of writing the report. Table 2 details the documents referenced in the writing of the report. The figures in this report are overmarked versions of the proposed floor plan drawings outlined in Table 2.

Table 2: Referenced Documents

Document Number	Document Name	Revision	Dated
PGF-ACM-XX-RP-GI-002000-Rev01	Virtus Data Centre RIBA Stage 2 Fire Strategy Report	01	11/09/2026
PGF-ACM-00-XX-DR-AR-100000	Site Location Plan	P2	19/08/2026
PGF-ACM-00-XX-DR-AR-100100	Proposed Masterplan	P4	11/09/2026
PGF-ACM-00-00-DR-AR-200100	Proposed Floor Plans - Level 00	P4	11/09/2026
PGF-ACM-00-M1-DR-AR-200200	Proposed Floor Plan - Admin Level 01	P4	11/09/2026
PGF-ACM-00-01-DR-AR-200300	Proposed Floor Plan - DC Level 01	P3	11/09/2026
PGF-ACM-00-RF-DR-AR-200400	Proposed Floor Plan - Admin Roof Plan	P3	11/09/2026
PGF-ACM-00-RF-DR-AR-200500	Proposed Floor Plan - DC Roof Plan	P3	11/09/2026
PGF-ACM-00-RF-DR-AR-200600	Proposed Floor Plan - Gantry Floor Plan	P3	11/09/2026
PGF-ACM-00-XX-DR-AR-400100	Proposed Building Elevations	P4	11/09/2026
PGF-ACM-00-XX-DR-AR-500100	Proposed Building Sections	P2	19/08/2026
PGF-ACM-DC-00-00-DR-CE-100300	VEHICLE SWEPT PATH ANALYSIS	P01	22/07/2026
PGF-ACM-DC-XX-DR-F-065001	SITE WIDE HYDRANT AND SPRINKLER LAYOUT	P1	17/07/2026

6. Fire Safety Statement – VIRTUS Data Centre

6.1 Buildings Construction (D12)

London Plan Policy which will be discussed in this section:

> *Policy D12 A (3)*
>
> *All development proposals must achieve the highest standards of fire safety and ensure that they are constructed in an appropriate way to minimise the risk of fire spread.*
>
> *Policy D12 B (1)*
>
> *The fire statement should detail how the development proposal will function in terms of the building's construction: methods, products and materials used, including manufacturers' details.*

London Plan Guidance Requirement:

> *"Under this heading, the Fire Statement should specify the construction method of the development and the measures that will be taken to limit any impact on the surrounding area. Construction methods that may impact on the fire safety provisions for neighbouring sites, buildings, occupants etc. must be identified and the risk reduced using suitable control measures.*
>
> *Building methodologies that pose a high risk of fire must also be identified within the Fire Statement with suitable control measures detailed.*
>
> *Where possible, a prescriptive list of the products and materials planned for use during the construction of the asset/ development should be provided. As much information as possible should be provided e.g. planned use of timber for structural framework."*

The fire strategy for the building will follow the design guidance of BS 9999 and the VIRTUS Design Principles V2.8, supplemented where necessary by the guidance of BR 187: 2nd Edition for the consideration of external fire spread requirements.

All construction methods will be subject to the requirements of the Construction, Design, and Management Regulations (CDM).

It is not expected that the construction methods will impact on the fire safety provisions for neighbouring sites, buildings, or occupants.

Further details of the materials to be used in the construction are detailed in the wider architecture planning proposal. It is not proposed to use combustible materials as part of the primary building construction.

At the time of development of this fire statement, no building methodologies other than traditional construction methods are proposed for the development.

6.1.1 Combustibility of External Walls

In accordance with Figure 47 of BS 9999, as all elevations of the building are more than 1 m from all relevant boundaries and the building has a topmost occupied storey height less than 18 m above ground level, there are no restrictions on the combustibility of the external walls.

Irrespective of the height and use of the building, AECOM recommend that all materials used in the external wall construction achieve Class A1 or A2-s1, d0 when classified in accordance with BS EN 13501-1.

6.1.2 Building Separation

To prevent the spread of fire from one building to another, limitations are placed upon the amount of unprotected area permissible upon a building's façade. These limits are prescribed as a function of the distance to the boundary. In accordance with Clause 35.1 of BS 9999, separation between buildings on the same site that are operated / manged by the same organisation can usually be ignored. As such, the external fire spread needs only be considered to the site boundary.

AECOM has carried out an initial assessment for external fire spread and building separation in line with the enclosing rectangles method, as described and outlined in BR 187 (2nd Edition, 2014) for the most onerous compartment along an elevation. The results of this assessment indicate that all external walls of the Data Centre can be fully unprotected.

6.1.3 Roof Coverings

In accordance with Table 36 of BS 9999, as all elevations are greater than 20 m from the site boundary, and the building has a volume greater than 1500 m^3, roof coverings should achieve a classification of E_{ROOF}(t4) or better, when classified in accordance with BS EN 13501-5.

6.2 Means of Escape for all Building Users and Evacuation Strategy (D12)

London Plan policies which will be discussed in this section:

> *Policy D12 A (4)*
>
> *Provide suitable and convenient means of escape, and associated evacuation strategy for all building users.*
>
> *Policy D12 A (5)*
>
> *Development of a robust strategy for evacuation which can be periodically updated and published, and which all building users can have confidence in.*
>
> *Policy D12 B (2)*
>
> *The means of escape for all building users including suitably designed stair cores, escape for building users who are disabled or require level access, and associated evacuation strategy approach.*
>
> *Policy D12 A(1b)*
>
> *Identification of suitably positioned unobstructed outside space: (b) appropriate for use as an evacuation assembly point.*

London Plan Guidance Requirements:

> *"Applicants must demonstrate within the Fire Statement that the means of escape for all building users has been considered and planned into the scheme from the outset. Applicants should identify the code/s that the means of escape has been designed to and detail how they have not only been applied/ adhered to, but also how the proposals have sought to exceed those minimum standards. It is essential that all building users have been considered and planned for within the design of the means of escape and evacuation strategy.*
>
> *There are a number of evacuation strategies/ approaches applicants could incorporate/ design around. Whichever strategy is incorporated, the applicant must ensure that the Fire Statement contains reasonable justification supporting the decision and reference the relevant code/standard that has led to that outcome. The strategy must make provision for everyone, including people who require level access, disabled people with a range of impairments (including mobility, sensory and cognitive impairments), and people who do not have a good understanding of English".*

6.2.1 Evacuation Regime

In accordance with Section 8.3 of the VIRTUS Design Principles V2.8, the building will adopt a simultaneous evacuation following a single fire alarm activation and the lapse of an investigation period; or following receipt or confirmed fire alarm activation e.g. two detectors in one zone, a single heat detector or call point.

Occupants in all areas, including MIPs, should evacuate immediately upon activation of the fire alarm.

6.2.2 Means of Escape

The minimum clear width of doors should not be less than 800 mm regardless of Risk Profile and not less than 850 mm where unassisted wheelchair access is necessary, in line with the recommendations of Clause 16.6.1 of BS 9999.

The location of the storey exits and final exits for Level 00, and Level 01 for the admin block and the technical block are illustrated in Figure 5, Figure 6, and Figure 7 respectively.

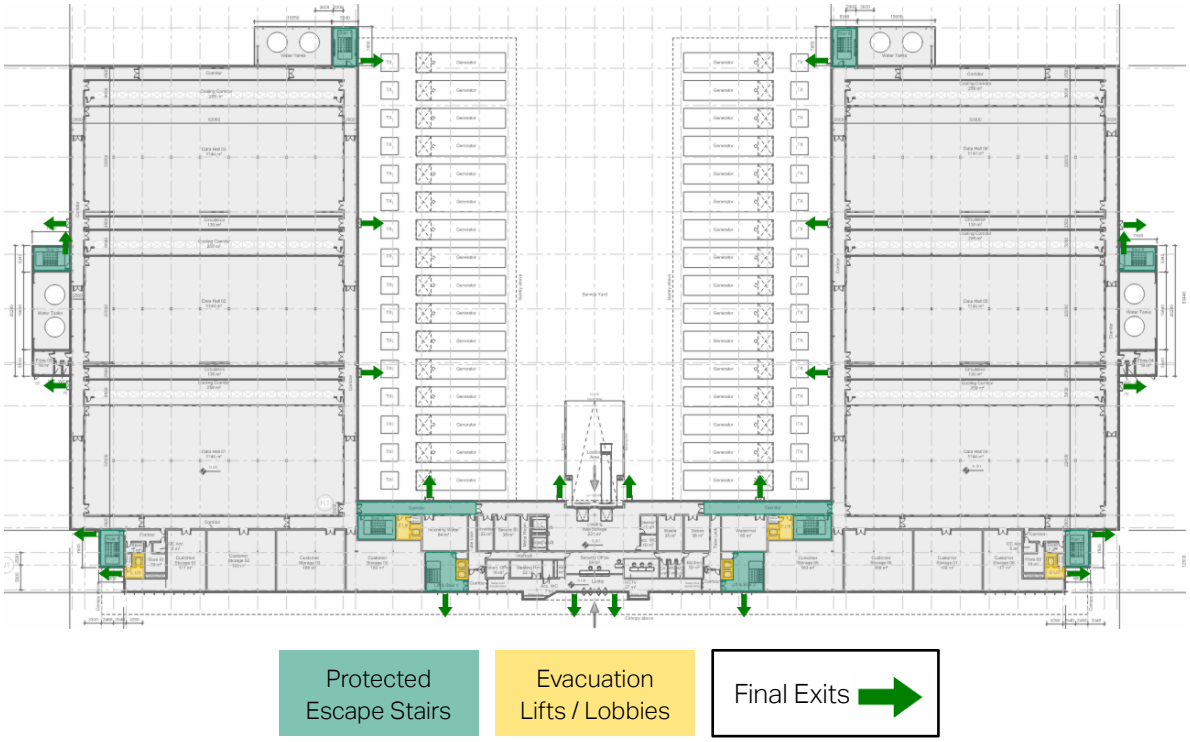


Figure 5: Means of Escape – Level 00

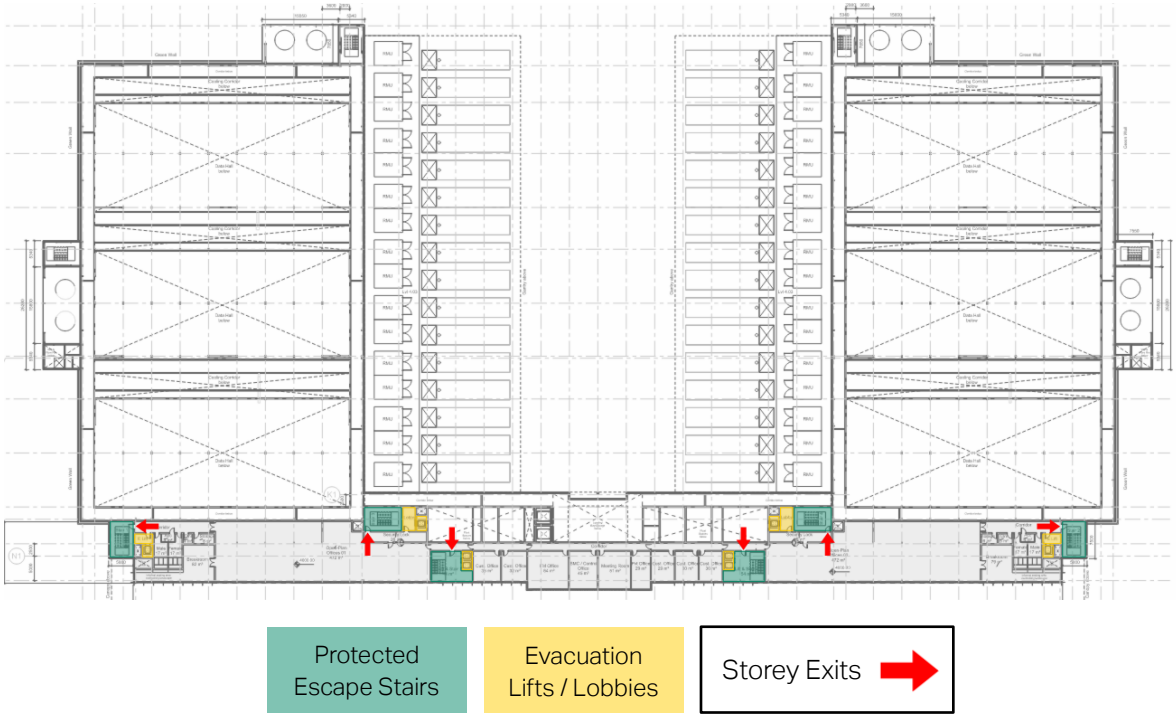


Figure 6: Means of Escape – Level 01 Admin Block



Figure 7: Means of Escape – Level 01 Technical Block

As highlighted in Section 5.2 of this report, the total expected occupancy of the proposed development is 102 persons. AECOM has reviewed the escape capacity of each of the floors based on the horizontal means of escape provisions and concluded that the escape provisions available are sufficient and provide a greater escape capacity than the maximum expected occupancy of the building.

6.2.3 Travel Distances

Table 11 of BS 9999 recommends the following travel distances limits:

- A2 Risk Profile – 22 m for one-way escape and 55 m for two-way escape; and
- A3 Risk Profile – 18 m for one-way escape and 45 m for two-way escape.

However, Clause 18.2 of BS 9999 permits a 15% increase in travel distance provided that a clear benefit resulting from the addition of an automatic fire detection and alarm system is demonstrated and is appropriate to the circumstances. As highlighted in Section 6.3.1 of this report, all areas of the building, including all floor and ceiling voids, should be provided with a Category L1 fire detection and alarm system. Therefore, this enhancement has been applied throughout the building.

Additionally, Table 14 of BS 9999 permits an extension of travel distances due to the provision of increased ceiling heights. It has been confirmed that the data halls will have an approximate ceiling height of 6 m, therefore an additional 15% enhancement to the maximum permissible travel distances has been applied.

Table F.1 of BS 9999 recommends travel distance limits for the gantry the external rooftop plant.

Table 3 outlines the travel distance limits in all areas of the Data Centre. Where the internal layouts are not yet designed, means of escape should be assessed to the direct travel distance limits, which are taken as two thirds of the actual travel distance.

Table 3: Travel Distances

Area	Risk Profile	Travel Distance Limit (Direct)		Travel Distance Limit (Actual)	
		One-way escape (m)	Two-way escape (m)	One-way escape (m)	Two-way escape (m)
Admin block	A2	16.8	42.1	25.3	63.2
Technical block	A3	15.6	39.0	23.4	58.5
Roof level (plant) / Gantry	A2	40.0	133.3	60.0	200.0

Travel distances measured to the nearest storey and / or final exits are within the limits outlined in Table 3 throughout the building.

6.2.4 Stairs and Final Exits

The building is served by ten stairs, two dedicated stairs in each technical block and six stairs serving the admin block (the six stairs in the admin block can also be accessed from the technical block). The locations of the stairs are illustrated above in Figure 2.

In accordance with Clause 17.4.1 of BS 9999, the width of escape stairs should not be less than 1,000 mm for downward travel. Where handrails intrude no more than 100 mm into the width of the stair, their impact on stair width may be ignored. Each of the stairs measure a clear width of 1,200 mm so the above recommendations are achieved.

As highlighted in Section 5.2 of this report, the total expected occupancy of the Data Centre is 102 persons. AECOM has reviewed the escape capacity of the building as a whole based on the vertical means of escape provisions and concluded that the escape provisions available are sufficient and provide a greater escape capacity than the maximum expected occupancy of the building.

In accordance with Clause 17.2.7 of BS 9999, final exits from stairs should be at least as wide as the width of the stair they serve. Each protected stair should discharge directly to outside, either via a dedicated final exit or a protected exit passageway to a final exit.

All protected escape stairs lead directly to open air, either via a dedicated final exit or protected passageway, with unrestricted dispersal away from the building. Any assembly areas developed through the design will need to select an appropriately located area with sufficient capacity. Assembly areas will be sufficiently remote from the building and not obstruct the Fire Brigade attendance points and their operation.

Based on measurements from the scaled drawings, all final exits from protected escape stairs are narrower than the stair they serve.

Whilst the recommendations of guidance are not achieved, AECOM propose that the current arrangement may be supported on the basis that: the occupancy of the building is low and the final exit widths are sufficient to accommodate the maximum number of persons expected to use them at any one time. Therefore, it is not expected that the narrower final exit doors will act as a pinch point nor inhibit the flow of escaping occupants.

However, as this is a deviation from guidance, the above proposal requires discussion and agreement with the relevant stakeholders and the Approving Authorities.

6.2.5 Refuges and Evacuation Lifts

Clause 16.6.1 of BS 9999 recommends that the minimum clear width of escape routes should be not less than 850 mm where unassisted wheelchair access is required. This recommendation should be satisfied throughout the admin block as it is understood that MIPs will be present.

Refuge areas should be provided in accordance with Annex G of BS 9999. Refuges are provided as a waiting area in a place of relative safety where MIPs can wait until their evacuation can be further facilitated under their Personal Emergency Evacuation Plans (PEEPs). Refuges should be provided in proximity to all evacuation lifts either within the stair enclosures or in the protected lobbies and will be provided with an emergency voice communication (EVC) system conforming to BS 5839-9. Refuges should have dimensions not less than 900 mm x 1400 mm and should

be positioned as to not obstruct the ability of other occupants to evacuate via the escape stairs. The door which leads to a refuge should have a clear width not less than 850 mm.

The proposed development should be managed, and the staff should be appropriately trained to assist with evacuation when needed. Personal emergency plans/general emergency plans should be provided as part of the management plan for the site.

Furthermore, evacuation lifts should be provided in accordance with BS 9999. Evacuation lifts, where provided, should always be available for evacuation, and should be designed in accordance with the relevant provisions of BS EN 81-20, BS EN 81-70 and BS EN 81-76. An evacuation lift should be situated within a protected enclosure consisting of the lift well itself, and a protected lobby at each storey served by the lift. A protected escape route should be provided from the evacuation lift to the final exit on the exit level. BS 9999 notes that where possible, an evacuation lift should be used as a passenger lift.

It is proposed that the stairs within the admin block will each be provided with a dedicated evacuation lift that may be used for means of escape from the admin block. Within the technical block, it is proposed that the stairs will not feature evacuation lifts, which is a deviation from the recommendations of Policy D5(B5).

However, AECOM propose that this arrangement is acceptable, based on the following considerations:

- The technical blocks will be transiently occupied spaces with no wheelchair user access; therefore, it is expected that the stairs should provide safe and dignified emergency evacuation for all occupants expected to need to use them in the event of a fire;
- Occupants that might require assistance in escaping are not expected to be present within the technical blocks. However, should they find themselves in need of help escaping, refuges and associated emergency voice communication systems will be provided within all stair cores. These refuges will be designed and installed in accordance with relevant British standards, offering a suitable area for occupants within the technical blocks to await assistance during evacuation if necessary;
- Within the admin block, each stair core has been provided with an associated evacuation lift. If necessary, occupants in the technical block can access the evacuation lifts in the admin block; and
- All corridors are designed as protected corridors. Therefore, any occupants with restricted mobility in the technical blocks that need to use the evacuation lifts in the admin block have a protected route to the nearest evacuation lift.

The above is subject to approval from the relevant stakeholders as part of the application. However, it is AECOM's opinion that the solution satisfies the intent of the London Plan recommendations.

6.2.6 Locked Doors on Escape Routes

Given the nature and contents of the buildings, some rooms may have additional security measures.

In accordance with Clause 15.6.2 of BS 9999, where a door on an escape route is required to be secured against entry when the building or part of the building is occupied, it should only be fitted with a lock or fastening which is readily operated, without a key, from the side approached during escape.

Similarly, where a secure door is operated by a code, combination, swipe or proximity card, biometric data or similar means, it should also be capable of being overridden from the side approached by people making their escape. Electrically powered locks should return to the unlocked position on operation of the fire alarm, on loss of power and on activation of a manual door release.

6.3 Passive and Active Fire Safety Measures (D12)

London Plan policies which will be discussed in this section:

> *Policy D12 A (2)*
>
> *Design of development proposals 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.*
>
> *Policy D12 B (3)*
>
> *Features which reduce the risk to life: fire alarm systems, passive and active fire safety measures and associated management and maintenance plans*

London Plan Guidance Requirement:

> *"Applicants must demonstrate within the Fire Statement that provisions for passive and active fire safety measures have been considered at the earliest design stage. Again, applicants should identify the code/s that these measures have been designed to and demonstrate how the proposals have sought to exceed those minimum standards."*

6.3.1 Fire Detection and Alarm System

To meet the minimum life safety recommendations outlined in Table 7 of BS 9999 and Table A.1 of BS 5839-1, as the Data Centre is an A3 Risk Profile, a minimum Category L2 fire detection and alarm system should be provided throughout the building. However, Section 8.4 of the VIRTUS Design Principles V2.8 requires that the building should be provided with a Category L1 fire detection and alarm system installed in line with BS 5839-1 and BS 6266, for the protection of the building and its assets including all floor and ceiling voids. Therefore, the Data Centre will be provided with a Category L1 fire detection and alarm system; this is a clear benefit over the minimum category fire detection and alarm system to satisfy the recommendations of BS 9999.

The fire alarm and detection system should be addressable with the master fire alarm panel, which should be located within the security office at ground floor.

6.3.2 Emergency Signage and Lighting

In accordance with Clause 15.4 of BS 9999, suitable lighting should be provided to all premises to enable the safe movement of persons along escape routes to a place of relative or ultimate safety. Emergency lighting should be provided in accordance with Table 8 of BS 9999, BS 5266-1 and BS EN 1838.

In accordance with Clause 15.5 of BS 9999, every doorway or other exit providing access to a means of escape, other than exits in ordinary use (e.g. main entrances), should be distinctively and conspicuously marked by an exit sign in accordance with BS ISO 3864-1 and BS 5499-4.

6.3.3 Internal Fire Spread (Linings)

The material linings of any partition, ceiling, wall, or internal structure must be able to adequately resist the spread of flame over the surface and if ignited have a reasonable rate of heat release.

All internal linings for walls and ceilings should meet the following classifications outlined in Table 4, as defined in Table 33 of BS 9999.

Table 4: Classification of Internal Linings

Location	Minimum Classification when Tested to BS EN 13501-1
Small rooms not exceeding 30 m^2 in area	D-s3, d2
Other rooms	C-s3, d2
Circulation spaces including protected escape stairs	B-s3, d2

6.3.4 Structural Fire Resistance

Table 23 of BS 9999 provides recommendations for the fire resistance period for elements of structure, based on the Risk Profile associated with the building and the height of the topmost occupied storey. As the building is not provided with a life safety sprinkler system, primarily falls under an A3 Risk Profile and has a topmost occupied storey height of 6.25 m, elements of structure should achieve a minimum fire resistance period of 90 minutes (R).

As the roof above the admin and technical blocks both perform the function of a floor, any elements of structure supporting the roof structures should be considered an element of structure, achieving the recommended fire resistance period of 90 minutes (R).

6.3.5 Compartmentation and Fire Doors

To meet the requirements of Section 8.2 of the VIRTUS Design Principles V2.8, the following areas are required to be treated as separate compartments and should be enclosed in construction achieving a fire resistance period of REI 60 minutes, including but not limited to:

- Data halls;
- Internal and external mechanical and electrical plant rooms;
- Storerooms;
- Corridors; and
- The loading bay.

All compartmentation and fire doors within the building should in accordance with the recommendations of Tables 22, 23, 29 and 30 of BS 9999 and Section 8.2 of the VIRTUS Design Principles V2.8. The following list summarises the compartmentation and fire door recommendations for the building:

- The admin block and the technical block should be separated by compartment walls achieving a fire resistance period of 90 minutes (REI). Any door within the compartment wall or floor should be an E90S_a rated fire door;
- Stairs, lifts and service riser shafts should have a minimum fire resistance period of 60 minutes (REI). Any door providing access to these shafts should be an E60S_a rated fire door;
- All floors (including the admin block and technical block roofs and excluding the ground floor) should achieve a minimum fire resistance period of 90 minutes (REI) when tested from the underside.
- All protected lobbies should have a minimum fire-resisting performance of 30 minutes (REI). Any door accessing the lobby should be an E30S_a rated fire door;
- Any sub-dividing corridor partition should have a minimum fire-resisting performance of 30 minutes (REI). Any door within the sub-diving corridor partition should be an E30S_a rated fire door;
- Rooms containing life safety plant equipment should be enclosed in construction achieving a minimum fire resistance period of 120 minutes (REI). Any door accessing the rooms should be an E120 rated fire door.

Doors with an 'S_a' designation are recommended to be provided with a smoke seal.

AECOM recommend that all fire doors installed are classified and tested in accordance with the European Classifications, in line with the ongoing updates to ADB.

Fire doorsets should be classified in accordance with BS EN 13501-2.

Fire doorsets should be marked with fire safety signs complying with BS 5499-5 and should be certified and confirm to the manufacture's specification for the appropriate fire resistance test.

6.3.6 Cavity Barriers

Cavity barriers will be implemented where necessary. They should be certified and installed in accordance with Clauses 31.3 – 33.3 of BS 9999 and in line with the manufacturers' details, tolerances, and limitations.

All cavity barriers should have a fire resisting performance of 30 minutes (E) and 15 minutes (I) when tested from each side separately.

6.3.7 Ductwork and Dampers

All ductwork passing through fire resisting construction should be certified and installed in accordance with Clause 32.5.2 of BS 9999 and in line with the manufacturers' details, tolerance, and limitations.

All dampers should meet the recommendations of Clause 32.5.2 of BS 9999 and should be securely fixed and provided with breakaway joints. Fire dampers should conform to BS EN 15650:2010 and they should have a fire resisting (E) classification equal to, or greater than, 60 minutes. Fire and smoke dampers should also conform to BS EN 15650:2010 and they should have a fire resisting and smoke retarding (ES) classification equal to, or greater than, 60 minutes.

6.3.8 Fire-Stopping

Penetrations through lines of fire resisting construction, for example for services, should be appropriately fire-stopped to maintain the fire resistance of the construction through which they pass. Junctions between external walls with compartment floors and walls should have appropriate detailing to maintain fire separation at these interfaces. Fire-stopping should be provided in accordance with Clauses 32.5 and 32.6 of BS 9999.

All joints between elements that serve as a barrier to the passage of fire should be fire stopped in line with the recommendations of Clause 32.6 of BS 9999.

6.3.9 Emergency Power Supply

Clause 37.2.3.3 of BS 9999 recommends that a secondary power supply independent of the primary power supply to the buildings, such as an automatically started generator or supply from a separate substation, should be provided. This should be of sufficient capacity to maintain the following systems for at least three hours:

- Fire detection and alarm systems;
- Any Fire and Rescue service communication systems (if provided);
- Emergency lighting;
- Evacuation lift;
- Maintained emergency signage; and
- Fire and smoke dampers.

The secondary power supply should be capable of providing power for the above systems within 15 seconds of the failure of the primary power supply.

6.3.10 Management Plans

A fire safety management plan will be developed by the Responsible Person to incorporate the fire safety requirements to demonstrate compliance with the RR(FS)O.

As the design progresses, the fire strategy will identify the items where management is required, and this information will be handed over as part of the information required under Regulation 38 of the Building Regulations.

6.3.10.1 System Maintenance

All maintenance should be in accordance with manufacturers recommendations. The following fire safety systems will require maintenance (it is noted that this list is not exhaustive):

- Fire detection and alarm system;
- Emergency lighting and maintained exit signage;
- Emergency power systems;
- Temporary waiting spaces;
- Emergency voice communication systems;
- Evacuation lifts;
- Secondary power supplies;
- Ductwork and fire dampers;

- Water mist system;
- Fire extinguishers; and
- Fire hydrants.

Passive fire precautions, such as fire doors and their smoke seals, passive fire stopping and signage will also require routine inspection and maintenance.

The fire safety manager for the building will have the responsibility for ensuring a maintenance regime is implemented.

6.4 Access for Fire Service Personnel and Equipment & Fire Suppression Systems (D12)

London Plan Policy which will be discussed in this section:

> *Policy D12 B (4)*
>
> *Access for fire service personnel and equipment: how this will be achieved in an evacuation situation, water supplies, provision and positioning of equipment, firefighting lifts stairs and lobbies, any fire suppression and smoke ventilation systems proposed, and the ongoing maintenance and monitoring of these.*

London Plan Guidance Requirement:

> *"Any and all provisions for active measures that have been designed into the development proposal for use by the fire and rescue service must be clearly identified within the Fire Statement. Requirement B5 of Approved Document B (volumes 1 and 2) provides a means of compliance against the functional requirements of the Building Regulations 2010 for such measures.*
>
> *Development proposals may readily opt to defer to the provisions made within Approved Document B as a minimum standard, however excerpts taken from Approved Document B without specific context and references to the development proposal do not demonstrate compliance with this policy.*
>
> *Contained within the Fire Statement should also be an outline management plan for the ongoing maintenance of these provisions."*

6.4.1 Suppression Systems

As the top occupied story of the building does not exceed 30 m in height, Clause 30.2.2 of BS 9999 recognises that the Data Centre does not require a life safety sprinkler system to be installed. However, Section 8.8 of the VIRTUS Design Principles requires that the building is provided with a high-pressure misting system designed in accordance with BS 8489-1 or FM 5560 and the manufacturers requirements. The system should cover and protect all areas within the building, including the gantry and all supporting buildings on site.

6.4.2 Firefighting Shafts

In accordance with Table 17 of BS 9999, as the building has no storey more than 18 m above the fire and rescue service access level and no basement levels, there is no requirement for a firefighting shaft to be installed.

6.4.3 Fire Mains

In accordance with Clause 22.1 of BS 9999, as the building has no floor higher than 11 m above firefighting level and is not provided with any firefighting shafts, fire mains are not required to be provided.

6.4.4 Fire Hydrants

In accordance with Clause 22.2 of BS 9999, as the building is not fitted with fire mains, hydrants should be provided within 90 m of an entry point to the building and not more than 90 m apart.

As per the Site Wide Hydrant and Sprinkler Layout (PGF-ACM-DC-XX-DR-F-065001), the proposed hydrant locations satisfy the above recommendations.

Hydrants should be capable of delivering a sufficient flow of water to enable effective firefighting operations to be undertaken.

Newly installed fire hydrants should be designed, sited and installed in accordance with BS 9990.

6.5 Provisions to Enable Fire Appliance Access to the Building (D12)

London Plan policies which will be discussed in this section:

Policy D12 A(1a)

Identification of suitably positioned unobstructed outside space:
(b) for fire appliances to be positioned on.

Policy D12 A (6)

Provision of suitable access and equipment for firefighting which is appropriate for the size and use of the development.

Policy D12 B (5)

How provision will be made within the curtilage of the site to enable fire appliances to gain access to the building

London Plan Guidance Requirement:

"Any and all provisions for active measures that have been designed into the development proposal for use by the fire and rescue service must be clearly identified within the Fire Statement. Requirement B5 of Approved Document B (Volumes 1 and 2) provides a means of compliance against the functional requirements of the Building Regulations 2010 for such measures.

Development proposals may readily opt to defer to the provisions made within Approved Document B as a minimum standard; however, they should be specific and relevant to the development in question.

The Fire Statement should clearly demonstrate how the above provisions do not adversely impact on neighbouring sites and access to the surrounding areas."

6.5.1 Building Access

The site will be accessed via the main site access point to the northwest of the site, as illustrated in Figure 8.

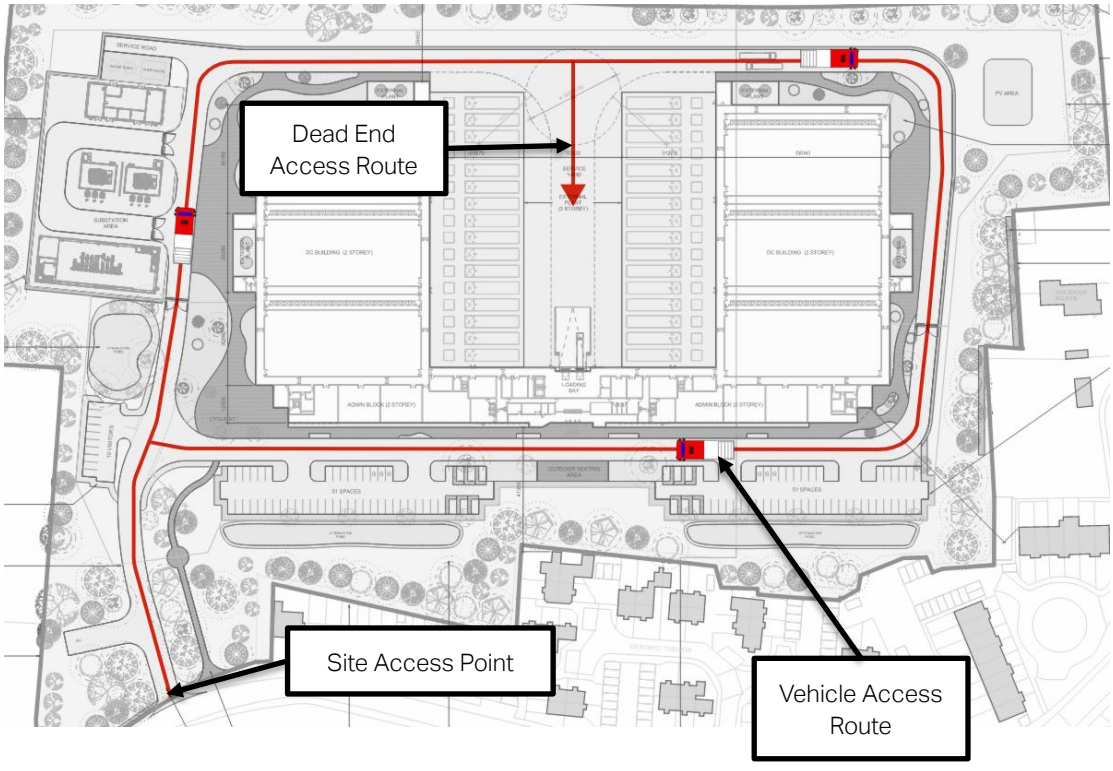


Figure 8: Fire and Rescue Service Access to the Site

In accordance with Table 19 of BS 9999, as the building has a top occupied storey height below 11 m, is not fitted with fire mains, and has a total floor area greater than 24,000 m^2, vehicle access should be provided to 100% of the

building perimeter. Additionally, parking positions for the fire service should be provided to within 18 m of each door providing access into the building.

As per the Vehicle Swept Path Analysis (PGF-ACM-DC-00-00-DR-CE-100300), vehicle access is provided to the north, south and east elevations of the building, as well as the west elevations of the data halls. However, due to the arrangement of the generator yards, which are provided adjacent to the data halls, fire service vehicle access is not afforded to 100% of the perimeter. The generator yards are necessary to support the operation of the Data Centre. Therefore, AECOM propose that there is rationale to support this arrangement on the basis that this portion of the road is on the opposite side of the site to the access point so it is expected that the fire service will park in a road closer to the site access point for faster firefighting action. Additionally, the data centre is provided with a water mist system which will control the growth and spread of fire in the early stages prior to the arrival of the London Fire Brigade (LFB). Nonetheless, this arrangement remains an approvals risk until it is discussed and agreed with the Approving Authorities.

The vehicle access roads should meet the recommendations of Table 20 of BS 9999, as outlined in Table 5. As the proposed development is located within Greater London, the recommendations of London Fire Brigade (LFB) Guidance Note 29 should also be considered.

Table 5: Typical Vehicle Access Route Dimensions

Appliance Type	Min. Road Widths Between Kerbs (m)	Min. Road Width of Gateways (m)	Min. Turning Circle Between Kerbs (m)	Min. Turning Circle Between Walls (m)	Min. Clearance Height (m)	Min Carrying Capacity (t)
Pump	3.7	3.1	16.8	19.2	3.7	12.5

In accordance with Clause 21.3 of BS 9999, turning facilities should be provided in any dead-end access route that is more than 20 m long. This can be by a hammerhead or turning circle.

The proposed vehicle access road between the generators yards exceeds 20 m and is not provided with turning facilities. AECOM propose that there is rationale to support this arrangement on the basis that the road between the generator yards does not provide access into the building and is approximately 14.5 m wide so fire service vehicles should be able to turn around. The Vehicle Swept Path Analysis (PGF-ACM-DC-00-00-DR-CE-100300) indicates that there is sufficient width for a fire tender to turn around in this dead-end. Additionally, the data centre is provided with a water mist system which will control the growth and spread of fire in the early stages prior to the arrival of the London Fire Brigade (LFB). However, as this is a deviation from guidance, this should be discussed and agreed with the relevant stakeholders and the Approving Authorities – including the LFB.

Additionally, in accordance with Clause 21.2 of BS 9999, every elevation to which firefighting vehicle access is provided will have a suitable door(s) with a minimum clear width not less than 750 mm giving access to the interior of the building. Doors will be provided so that there is no more than 60 m between each door and/or the end of the elevation.

6.6 Future Modifications (D12)

London Plan policy which is discussed in this section:

> *Policy D12 B (6)*
>
> *Future modifications will take into account and not compromise the base build fire safety/protection measures.*

London Plan Guidance Requirement:

> *"To ensure the highest standards of fire safety are considered throughout the lifecycle of the proposed asset, London Plan Policy D12(B) part 6 requires applicants to consider how, if the proposed asset was to be redeveloped in the future, the fire strategy and the protective measures within the asset would not be compromised. This may be presented in the form of a professional statement from the author identifying the constituent elements of the building that, if modified, may adversely affect the original fire safety strategy.*
>
> *The fire safety information produced within the Fire Statement should be presented and managed in such a way as to consider the evolution of the development and the principles of the golden thread concept It is anticipated that the information from the Fire Statement will be used to inform the overall fire strategy for the development. When adopting information from the Fire Statement into the fire strategy consideration should be given to the accuracy and relevance of the information to ensure the build is as per the design. A handover process for the passing of all relevant fire safety information contained within the fire strategy to the building owner should be planned and, where possible, outlined within the Fire Statement."*

This Fire Statement has been drafted to demonstrate compliance with the London Plan in terms of providing appropriate level of fire safety given the characteristics of this building (i.e. use, height, anticipated number of occupants, evacuation strategy, etc). Therefore, the fire safety approach provided in this report cannot be relied upon should changes to these (and other pertinent) characteristics be made in the future. As required by Regulation 38(2) of the Building Regulations, evidence of suitable provision to maintain the fire precautions, regimes, and systems in support of the fire strategy is required. A Regulation 38 file is to be prepared for the proposed development and issued to the responsible person at handover. It is expected that appropriately competent individuals follow the operational and maintenance requirements set out in the documents in the file.

The impact of a proposed change to any of the building's characteristics will need to be assessed in terms of the impact it might have on life safety prior to implementation. The person carrying out such an assessment should be appropriately competent for the change proposed and may require consultation with other parties, including Planning, Building Control, Fire Brigade and/or others. Typical changes which will require professional input include, but are not limited to:

- Further extensions to the building or surrounding buildings;
- Changes in internal partition layouts which may impact means of egress and compartmentation;
- Changes in proposed occupancy levels and occupancy profiles;
- Changes in use of the proposed accommodation;
- Changes to firefighting access;
- Changes to building height; and
- Connections with neighbouring buildings.

Fire Safety information for the development should be handed over to the owner of the development once completed, and it is expected that competent individuals will review this inform when making future amendments.

6.7 Dignified Emergency Evacuation D5(B5)

London Plan policy which is discussed in this section:

> *Policy D5(B5)*
>
> *In all developments where lifts are installed, as a minimum at least one lift per core (or more subject to capacity assessments) should be a suitably sized fire evacuation lift suitable to be used to evacuate people who require level access from the building.*

6.7.1 Evacuation Lifts

Policy D5(B5) of the London Plan mandates that in all developments where lifts are installed, at least one evacuation lift should be provided in every core to facilitate the dignified and safe evacuation of all types of occupants including MIPs.

Evacuation lifts, where provided, should be designed in accordance with the relevant provisions in BS EN 81-20, BS EN 81-70 and BS EN 81-76.

It is proposed that the stairs within the admin block will each be provided with a dedicated evacuation lift that may be used for means of escape from the admin block. Within the technical block, it is proposed that the stairs will not feature evacuation lifts, which is a deviation from the recommendations of Policy D5(B5).

However, AECOM propose that this arrangement is acceptable, on the basis of the following considerations:

- The technical blocks will be transiently occupied spaces with no wheelchair user access; therefore, it is expected that the stairs should provide safe and dignified emergency evacuation for all occupants expected to need to use them in the event of a fire;
- Occupants that might require assistance in escaping are not expected to be present within the technical blocks. However, should they find themselves in need of help escaping, refuges and associated emergency voice communication systems will be provided within all stair cores. These refuges will be designed and installed in accordance with relevant British standards, offering a suitable area for occupants within the technical blocks to await assistance during evacuation if necessary;
- Within the admin block, each stair core has been provided with an associated evacuation lift. If necessary, occupants in the technical block can access the evacuation lifts in the admin block; and
- All corridors are designed as protected corridors. Therefore, any occupants with restricted mobility in the technical blocks that need to use the evacuation lifts in the admin block have a protected route to the nearest evacuation lift.

The above is subject to approval from the relevant stakeholders as part of the application. However, it is AECOM's opinion that the solution satisfies the intent of the London Plan recommendations.

7. Conclusion

This statement outlines the fire safety strategy principles for the proposed development.

This statement outlines how the proposed development meets the spirit and intent of the requirements of the London Plan either through prescriptively following the recommendations or offering an alternative approach of equivalent performance.

Within the technical block, it is proposed that the stairs will not feature evacuation lifts, however, with the proposal discussed under Section 6.7.1 of this report, it is considered that the intent of Policy D5 of the London Plan is achieved in the proposed design.

Elements of the fire safety design are subject to further development and agreement with the stakeholders as the design progresses. This will include consultations with the Building Control Authority, who in turn will consult with the London Fire Brigade and the Fire Officer.