Norman Disney & Young
A TETRA TECH COMPANY

REPORT

Change Consulting

DENVILLE HALL

Fire Engineering

CONFIDENTIAL | **Revision:** 1.1 – ISSUE | **Issued**: 17 November 2022

Table of Contents

1 EXECUTIVE SUMMARY

A fire engineering assessment has been undertaken to formulate the fire safety strategy for Stage 2 submission for the fire safety strategy of the residential development with ancillary areas situated at Denville Hall.

The Denville Hall is an existing Care home, and the proposal is for a development of three new blocks on its plot including: Block A (residential block), Block B (residential block) and Block C (Dining Room & Café).

Block A has a ground floor and partly a first floor with six residential units in total. The building height measured from firefighting access level to the first-floor level is 3.15m.

Block B has a basement, ground floor, first floor and second floor. The basement consists of the private cinema for residents only. The ground floor consists of the entrance, yoga / exercise studio and rehabilitation gym. The first floor and second floor consist of six residential units in total. The building height measured from firefighting access level to the second-floor level is 6.7m.

Block C consists of ground floor dining room & café only.

The three blocks are proposed to be interlinked via a corridor or linked bridge. Fire shutters / curtains will be provided to fire separate these three blocks in case of fire. The fire shutters / curtains will achieve 60 minutes fire rating in terms of integrity and insulation.

The fire strategy is designed in accordance with ADB Volume 2. The proposal design will fully achieve the prescriptive code requirement.

2 PROJECT SCOPE

2.1 General

This fire engineering assessment has been undertaken to formulate the fire safety strategy for the renovation of the residential development in Denville Hall and its compliance with the Functional Requirements of the Building Regulations.

The client / building users must familiarize themselves with the proposed fire strategy.

The goals of this fire safety design are to provide building's occupants with an acceptable level of safety against the effects of fire.

2.2 General Objectives

2.2.1 Introduction

The objectives of this performance assessment are to:

- Outline a fire safety strategy for the building;
- Assess the compliance of nominated design aspects with the Functional Requirements of the Building Regulations;
- Consider alternative design solutions to satisfy the relevant Functional Requirements of the Building Regulations.

The goals of the Building Regulations Part B are:

- To ensure satisfying provision of fire alarms and a satisfactory standard of means of escape for persons in the event of fire in a building (B1);
- That fire spread over the internal lining of a building is inhibited (B2);
- To ensure the stability of buildings in the event of fire; to ensure that there is 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 building (B3);
- That 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 (B4);
- To ensure satisfactory access for fire appliances to buildings and the provision of facilities in buildings to assist fire-fighters in the saving of life of people in and around buildings B5).

2.3 Information Sources

The main sources of information used in the compilation of this report are:

- Approved Document B (ADB) Volume 1
- Architectural drawings in Appendix A

2.4 Limitations

This report does not provide guidance in respect of areas which are used for bulk storage, processing of flammable liquids, explosive materials, multiple fire ignitions or for areas / fire safety systems which are subject to sabotage.

Norman Disney & Young have compiled this report based on the following activities:

- Review of available project information and drawings.

Apart from where noted in the specific sections of this report, NDY have not verified any written and / or verbal information provided by other parties. In addition, the following work has not been undertaken:

- Verification of the design;
- Checks of design calculations.

Any application of the content of this report should be made taking into full account the following items:

- Observations of the building's fire safety systems and fire hazards listed in this report have been based on examination of documentation made available by the design team;
- Any change in the above information to suit future re-organisation or planning will require further assessment to confirm compliance with the intent of the objectives of this report;
- The report does not consider property damage; e.g. building and contents damage caused by fire, potential increased insurance liability and / or, loss of business continuity;
- Property insurers have not been consulted in the preparation of this report. Any insurer requirements over and above the recommendations of this report should be addressed by the client / building user.

It is the responsibility of the design team to ensure the strategy outlined in this report is implemented in design documentation and the finished building accordingly.

The strategy requires the implementation of the measures outlined in this report and compliance with the relevant and remaining clauses of ADB Volume 1 not specifically mentioned in this report.

This strategy does not cover fire incidents arising from arson where fire is started in multiple locations or accelerant is used. Conventional building design only provides limited protection against malicious attack and large-scale incendiary and multiple ignition sources can potentially overwhelm any fire safety systems. Strategies such as security, housekeeping and other management practices may be more effective than additional fire protection in addressing arson.

2.5 Liability

This report is applicable to the proposed renovation at Denville Hall.

The fire engineering analysis contained in this report demonstrates that the level of life safety offered by the proposed fire safety strategy meets the performance required by the Functional Requirements of Building Regulations.

This report is prepared in good faith and with due care for information purposes only and should not be relied upon as providing any warranty or guarantee. Attention is drawn to the nature of the inspection and investigations undertaken and the limitations these impose in determining with accuracy the state of the building, its services, equipment and life safety.

Users of this report should not rely on any statements or representations contained within but should undertake further and more detailed investigations to satisfy themselves as to the correctness of any statement or representation contained in this report.

Norman Disney & Young will not be held liable for any loss or damage resulting from any defect of the building, services, equipment or for any non-compliance of the building, services or equipment with any legislative or operational requirement, whether or not such defect or non-compliance is referred to or reported upon in this report.

2.6 Revision History

REVISION	REF	DATE ISSUED	COMMENT
First Issue	1.0	10 October 2022	Stage 2 report
Second Issue	1.1	17 November 2022	Stage 2 update

3 BUILDING DESCRIPTION

3.1 General

The Denville Hall is an existing Care home, and the proposal is for a development of three new blocks on its plot including: Block A (residential block), Block B (residential block) and Block C (Dining Room & Café).

Block A has a ground floor and first floor with six residential units in total. The building height measured from firefighting access level to the first-floor level is 3.15m.

Block B has a basement, ground floor, first floor and second floor. The basement consists of the private cinema for residents only. The ground consists of the entrance, yoga / exercise studio and rehabilitation gym. The first floor and second floor consist of six residential units in total. The building height measured from firefighting access level to the second-floor level is 6.7m. The floor-to-floor height from Ground Floor to First Floor is 3.55m.

Block C consists of ground floor dining room & café only.

The three blocks are proposed to be interlinked via a corridor or linked bridge. Fire shutters / curtains will be provided to fire separate these three blocks in case of fire.

The site plan is shown below.

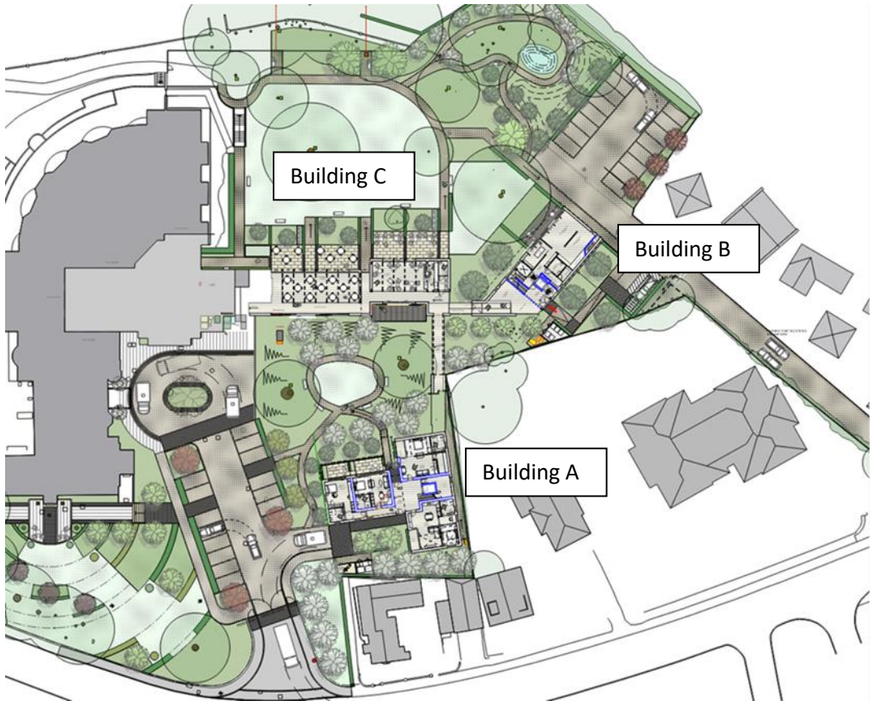


Figure 3-1 –Site Plan

The firefighting access point will be within 18m of the dry riser inlets on the ground floor and the entrance of the blocks.

The expected occupancy load factor for each residential unit is two in maximum for a flat.

The design of the residential blocks A and B will comply with Approved Document B Volume 1. The evacuation strategy for Block A and Block B will follow defend in place strategy where only the occupants in the fire unit will receive automatic warning of fire. The communal areas will adopt simultaneous evacuation in case of any fire alarm in the community area of Block B. The residential units in the Block B will remain defend-in-place.

The design of Block C will comply with Approved Document B Volume 2. The evacuation strategy for Block C is simultaneous evacuation.

It is proposed that some of the units of the upper levels are suitable for disabled users. Hence, it is proposed to provide disabled evacuation lift for Block A and Block B as per BS EN 81-76.

4 OCCUPANT CHARACTERISTICS

Following consultation with the design team, the characteristics of the building population are as described below.

4.1 Distribution

The expected occupancies for each area are captured in Table 4-1.

Table 4-1 – Population within the Proposed Building

Level	Floor Area (m^2)	Floor Space Factor (m^2 / person)	Maximum Expected Occupancy
Block A			
Ground Floor			
Resident apartments (three units)	59 (in max.)	2 occupants per apartment	6
First Floor			
Resident apartments (three units)	59 (in max.)	2 occupants per apartment	6
Block B			
Basement Floor			
Cinema / Bar	80	-	60 seats + 2 staff
Ground Floor			
Yoga / Gym / Massage	60	2	30
Nurse station	76	-	2
First Floor			
Resident apartments (three units)	58 (in max.)	2 occupants per apartment	6
Second Floor			
Resident apartments (three units)	58 (in max.)	2 occupants per apartment	6
Block C			
Ground Floor			
Café seating area	85	-	44 (by seating no.)
Bar	13	2	6
Conference room	37	-	12 (by seating no.)
Kitchen and store	69	10	7

4.2 Physical and Mental Attributes

The residential floor will be mainly occupied by occupants who may be awake or asleep.

The occupants in the café and the cinema are assumed to be familiar with the building.

5 B1 - MEANS OF WARNING AND ESCAPE

5.1 Evacuation Strategy

The evacuation strategy for the residential building is for defend in place. Only the fire unit will receive automatic warning of fire and the remaining of the building will be able to defend in place within the fire compartment.

The evacuation strategy for the ancillary area is simultaneous evacuation.

5.2 Fire Alarm and Fire Detection Systems

A Category LD1 automatic fire detection and alarm system will be provided in the building through all areas as additional enhancement as per 5839-6. The Category L1 automatic fire detection and alarm will be provided in the communal area in Block B and in the Dining Room & Café in Block C.

Manual call points will be installed along the escape routes at all storey exits and final exits from the Building C restaurant and Building B amenity area. Manual call point is not required for escape routes that only serves flats.

Alarm sounders will be installed throughout the building to sound an evacuation signal on activation of the system achieving the minimum required sound pressure levels in accordance with BS 5839-1. For the defend in place fire strategy for residential towers, the alarm sounder is not required in the common access routes serving residential units.

Visual alarm devices will be provided to supplement audible alarm signals in areas in which the latter are likely to be ineffective. These include open air plant rooms and plant areas with high ambient sound levels or sanitary facilities where occupants with hearing impairment may be alone in the building.

Where electronic locking devices and/or door holders are provided along common escape routes these will be interfaced with the fire alarm system to ensure they release on activation of the alarm.

5.3 Means of Escape Provisions

5.3.1 General

Three main components of the evacuation strategy need to be considered:

- Escape from the flat to final exit or protected corridor;
- Horizontal Escape via the protected corridor to the stair or final exit;
- Vertical Escape via the stairs to a place of safety outside the building.

5.3.2 Escape from flat on the ground storey and first storey (less than 4.5m above ground level)

For escape from upper storeys with a maximum of 4.5m above ground level (e.g., ground floor and first floor), one of the following approaches should be adopted with observing the inner room restrictions.

a. Plan the flat to meet the conditions shown in the figure below, so that both of the following apply.
   i. The travel distance from the flat entrance door to any point in any habitable room is a maximum of 9m.
   ii. Cooking facilities are remote from the main entrance door (with at least 1.8m separation and 0.75m escape route) and do not impede the escape route from anywhere in the flat.

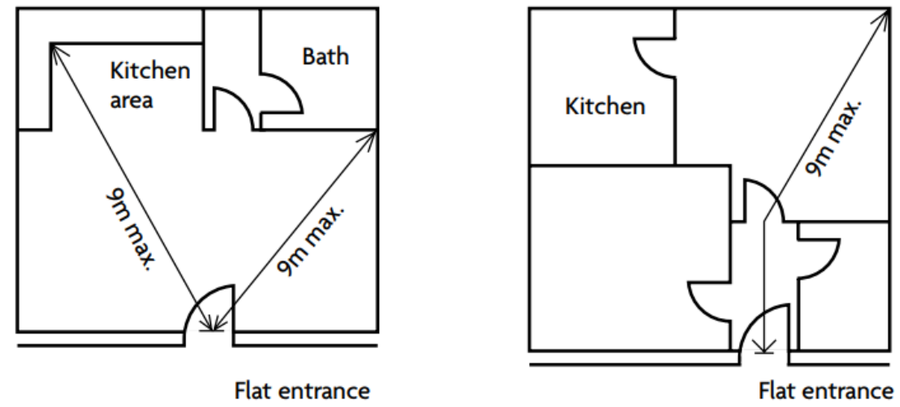


Figure 5-1 – Flat with restricted travel distance from furthest point to entrance

b. Provide emergency escape window or external door as follows (not applicable for residential unit with disabled)
   i. It should be remote from the main entrance door to the flat.
   ii. Window or external door providing emergency escape should have a minimum of 0.33m^2 unobstructed openable area, a minimum height of 450mm and a minimum width of 450mm, and the bottom of the openable area with maximum 1100mm above the floor. Lock (with or without removable keys) and opening stays (with child-resistant release catches) may be fitted to escape windows. Window should be capable of remaining open without being held. People escaping should be able to reach a place free from danger from fire. Courtyards or inaccessible back gardens should comply with the following figure.

Disabled persons should not use window or balcony as an alternative escape route. Hence, the residential units serving for the disabled will comply with the 9m travel distance and 1.8m away from the kitchen hood as mentioned above.

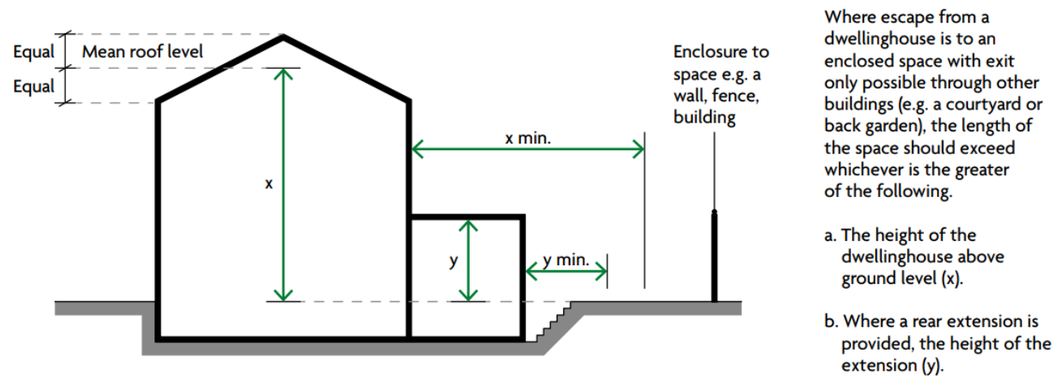


Figure 5-2 – Ground or basement storey exit into an enclosed space

The escape from flat will comply with the ADB recommendations in terms of travel distance and alternative exit.

5.3.3 Escape from flat on the second storey (more than 4.5m above ground level)

The flats should meet the conditions shown in the Figure 3-1, so that both of the following apply.

iii. The travel distance from the flat entrance door to any point in any habitable room is a maximum of 9m.
iv. Cooking facilities are remote from the main entrance door (with at least 1.8m separation and 0.75m escape route) and do not impede the escape route from anywhere in the flat.

5.3.4 Means of escape in the common parts of flat

From the flat entrance door, a single escape route is acceptable as described below.

The flat is on a storey served by a single common stair and both of the following apply.

i. Every flat is separated from the common stair by a protected lobby.
ii. The maximum travel distance is 7.5m for escape in one direction only (with ventilated lobby)

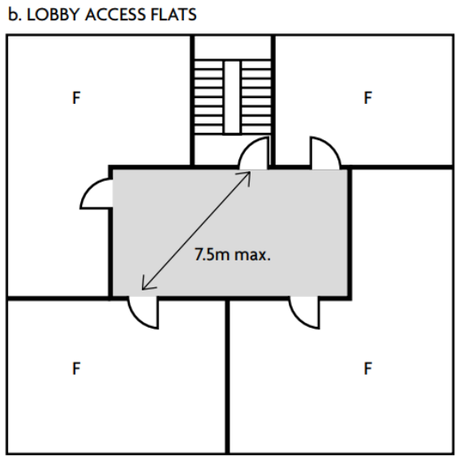


Figure 5-3 – Flats served by one common stair

The lobby next to each stair should have a smoke vent. The location of the vent should comply with both of the following.

a. Be as high as practicable.

b. Be position so the top edge is at least as high as the top of the door to the stair.

Smoke vents should be located on an external wall with minimum free area of 1.5m^2.

A vent to the outside with a minimum free area of 1 m^2 should be provided from the top storey of the stair. In single stair building, smoke vents on the storey where the fire is initiated, and the vent at the head of the stair, should be activated by smoke detectors in the common parts.

The travel distance and ventilation provision for the stairs and lobbies will comply with the code requirement.

5.3.5 Vertical escape stair

According to Clause 3.60 of ADB Volume 1, a stair of acceptable width for everyday use will be sufficient for escape purposes. Consideration may need to be given to Approved Document M typically required for 1200mm for the disabled subject to the review by the design team.

5.3.6 Merging Flow / Final Exit

There is no merging flow in the final exit. It recommends that final exits from escape stair should discharge to outside or to outside via a protected corridor and that the final exit from an escape stair should be at least as wide as the stair it serves.

5.4 Disabled evacuation

New Disable refuge area at least 900mm x 1400mm will be located on each residential floors, except Ground Floor with direct horizontal escape.

Emergency Voice Communication (EVC) system will be provided adjacent to the disabled refuge area.

Each disabled refuge area will be provided with an emergency voice communication outstation which will be networked to a master panel in fire control centre.

Disabled evacuation lift will be provided as per London Policy Plan 2021 with staff management for disabled evacuation.

5.5 Signage

Exit signage will be provided throughout the building in accordance with BS 9999 and ISO 7010.

Directional, action and identification signage will be provided throughout the building as follows:

- Illuminated exit signage to show the location of storey exits
- Outline the action to be taken in a fire alarm situation, or if a fire is discovered
- Show the location of fire safety measures
- Fire doors will be marked “FIRE DOOR KEEP SHUT” or “FIRE DOOR – DO NOT OBSTRUCT” where hold open devices are provided

5.6 Escape Lighting

Emergency lighting will be installed throughout the building in accordance with the requirements of BS 9999 and BS 5266. The provision of emergency lighting will cover the following areas:

- All plant rooms
- Common escape routes
- Windowless accommodation
- Open plan areas of more than 60m^2
- All toilet accommodation with a floor area over 8m^2

The emergency lighting must also be provided on sub-circuits to illuminate fire exits, exit routes (internal and external), exit signage, fire equipment, electrical panels and fire alarm panels.

6 B2 - INTERNAL FIRE SPREAD (LININGS)

The surface linings of walls and ceilings should meet the following classifications.

Table 6-1 – Classification of Linings

Location	Classification
Small rooms of maximum internal floor area of 4m²	D-s3, d2
Garages (as part of a dwellinghouse) of maximum internal floor area of 40m²	
Other rooms (including garages)	C-s3, d2
Circulation spaces within a dwelling	
Other circulation spaces (including the common areas of blocks of flats)	B-s3, d2[1]

NOTE:

1. Wallcoverings which conform to **BS EN 15102**, achieving at least class C-s3, d2 and bonded to a class A2-s3, d2 substrate, will also be acceptable.

7 B3 - INTERNAL FIRE SPREAD (STRUCTURE)

7.1 Elements of Structure and Compartmentation

Elements such as structural frames, beams, columns, loadbearing walls (internal and external), floor structures and gallery structures should have, as a minimum, the fire resistance below.

Block A – elements of structure should be 30 minutes (height of the top floor above ground up to 5m)

Block B – elements of structure should be 60 minutes (height of the top floor above ground up to 11m and Basement storey including floor over depth of the lowest basement up to 10m)

Block C – elements of structure should be 60 minutes (height of the top floor above ground up to 5m)

The roof and a structure that supports only a roof is not defined as element of structure unless:

i. The roof performs the function of a floor, such as for parking vehicles, or as a means of escape

ii. The structure is essential for the stability of an external wall that needs to be fire resisting (e.g., to achieve compartmentation or for the purpose of preventing fire spread between buildings).

Compartment floor should be provided for all residential buildings as the fire rating of the element of structure.

Fire resisting construction enclosing the places of special fire hazard should achieve minimum REI 30. In ADB Volume 1, the place of special fire hazard is defined as a room such as any of the following.

- Oil-filled transformer room.
- Switch gear room.
- Boiler room.
- Storage space for fuel or other highly flammable substances(s).
- Room that houses a fixed internal combustion engine.

There are some interlinks between buildings that will have EI 60 fire curtain for fire separation to be activated by common fire alarm or local smoke detection system. Fire sterilizing zone on each side of the fire curtain will be provided to ensure its proper operation. The fire and smoke curtain products should be tested in accordance with BS 8524 Parts 1 and 2. The fire curtains should meet the maximum leakage rate set down in BS 8524 Part 2 Table 1 – smoke containment performance criterion for barrier assemblies forming part of protected route for means of escape purposes.

Table 7-1 – Fire Resistance Rating

Elements	Required fire resistance (minutes)	Application of fire resistance rating	Fire doorsets
Compartment floors for Block A	REI 30	From the underside	N/A
Compartment walls separating a flat from any other part of the building for Block A	REI 30	Each side separately	FD 30S
Protected stair for Block A	REI 30	Each side separately	FD 30S
Lift shaft or vertical risers for Block A	REI 30	Each side separately	FD 30
Protected lobby or corridor for Block A	REI 30	Each side separately	
Compartment floors for Block B	REI 60	From the underside	N/A
Compartment walls separating a flat from any other part of the building for Block B	REI 60	Each side separately	FD 30S
Protected stair for Block B	REI 60	Each side separately	FD 30S
Lift shaft or vertical risers for Block B	REI 60	Each side separately	FD 30
Protected lobby or corridor for Block B	REI 60	Each side separately	FD 30S
Construction separating rooms housing life safety equipment for Block A, Block B or Block C	REI 120	Each side separately	FD 60
Kitchen for Block C	REI 30	Each side separately	FD 30
Refuse store	REI 60	Each side separately	No fire rating for door to open air directly
Store room	REI 60	Each side separately	FD 30
Note: ‘R’ is load bearing capacity, ‘E’ is integrity, and ‘I’ is thermal insulation			

7.2 Cavity Barriers and Fire Stopping

Cavity barriers should be provided at all of the following locations.

a. At the edge of cavities, including around openings (such as windows, doors and exit/entry points for services).

b. At the junction between an external cavity wall and every compartment floor and compartment wall.

c. At the junction between internal cavity wall and every compartment floor, compartment wall or other wall or door assembly forming a fire resisting barrier.

Cavity barriers should be placed in concealed voids at 20m centres. The class of surface/product exposed in the cavity (excluding the surface of any pipe, cable or conduit, or any insulation to any pipe) should be Class C-s3, d2 or better, except that a cavity between the roof and ceiling can be any classification.

All cavity barriers should have at least 30 minutes integrity and 15 minutes insulation for fire resistance.

Automatic fire and smoke dampers should be provided on lines of fire resistance. These dampers should be classified to BS EN 13501:2018 and be tested to BS EN 1366:2014.

Careful consideration should be given to the location of ductwork and the provision of fire dampers and/or motorised fire and smoke dampers. Each protected escape route must be protected by either motorised type ES fire and smoke dampers activated on fire alarm, or the duct should be fire resisting on its transit through the protected route.

The schematic locations of required cavity barriers in the development in shown in the figure below.

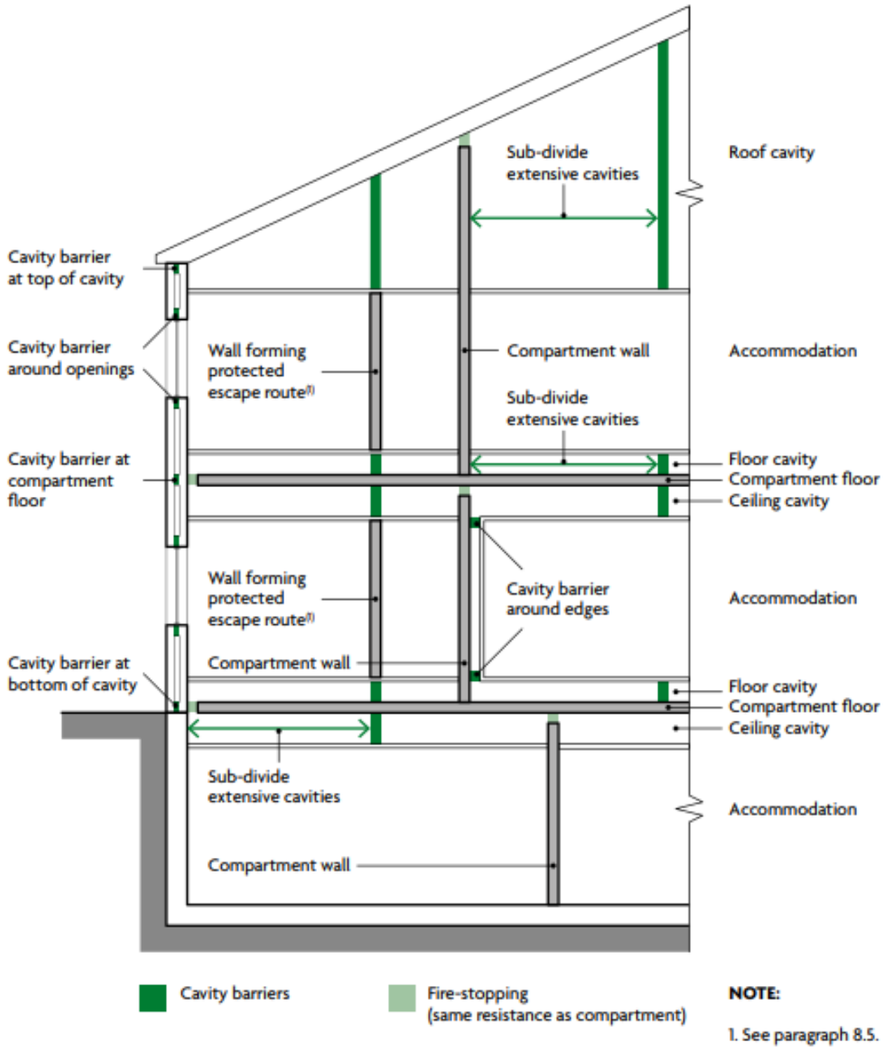


Figure 7-1 – Provision of Fire stopping and Cavity Barrier

7.3 Use of Cross Laminated Timber (CLT)

This section introduces the statutory Building Regulation requirements with respect to the use of cross laminated timber (CLT).

Building Regulation B3(1) in England states that:

"*The building shall be designed and constructed so that, in the event of fire, its stability will be maintained for a reasonable period.*"

In general, the building is proposed to be built using Cross Laminated Timber (CLT) for the building. It should be fully encapsulated to follow the best practice route to compliance except the followings as per the architectural design:

- Exposed CLT roof of Block A
- Exposed CLT of Block B
- Exposed CLT two feature walls in Block B
- Exposed CLT timber soffits in Block C and in lobby and Nurse Station in Block B on Ground Floor.
- Exposed CLT timber elements (Glulam) in Block C

According to Structural Timber Association (STA) 'Structural timber buildings fire safety in use guidance, Volume 6 – mass timber structures; Building Regulation compliance B3(1)' version v1.1 issued in October 2020, the residential flat building not exceeding four storeys is Class 2A with low to medium consequence of failure. Besides fully encapsulated the CLT, it can follow the guidance-based approach documented in Appendix Document B which specifies the recommended fire resistance rating for the elements of structure. Elements are then demonstrated as having adequate fire resistance through appropriate testing and/or calculation methods, e.g., BS EN 1995-1-2 to be provided by structural engineers with the details in structural joints connection and the charring zone.

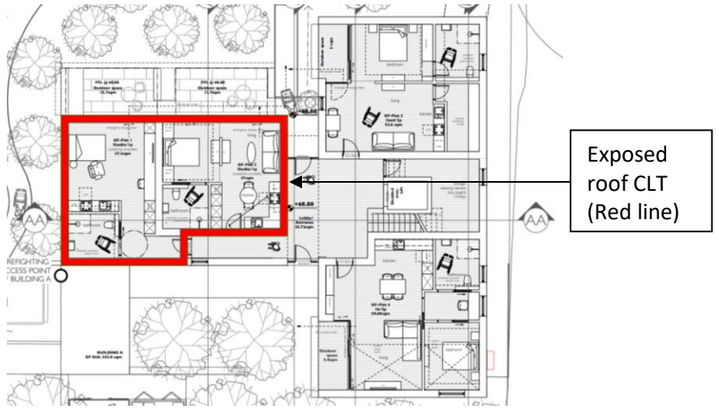


Figure 7-2 – Exposed CLT for Block A (Ground Floor)

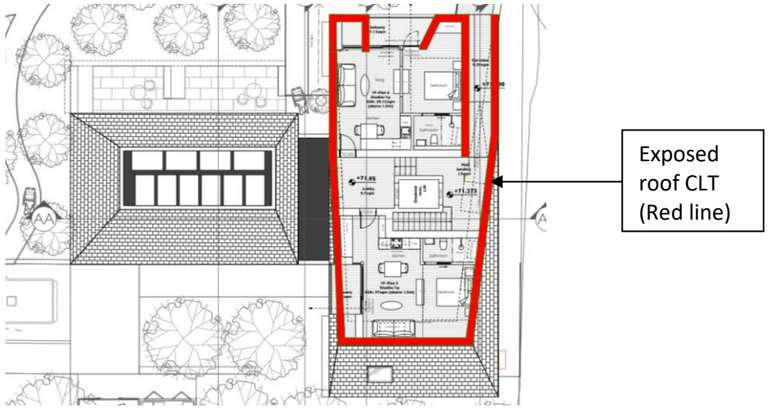


Figure 7-3 – Exposed CLT for Block A (First Floor)

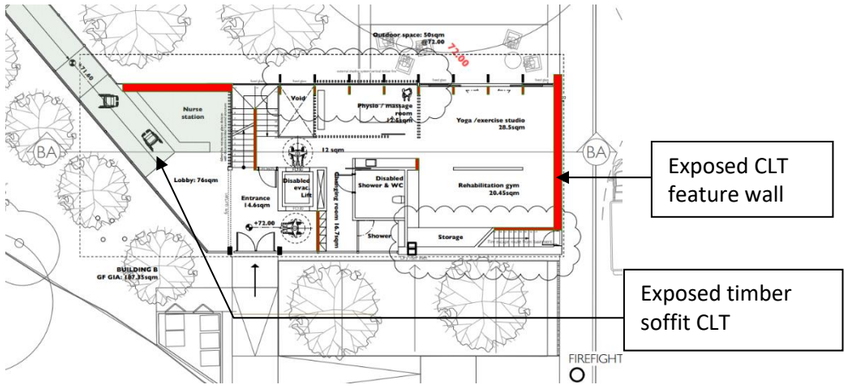


Figure 7-4 – Exposed CLT for Block B

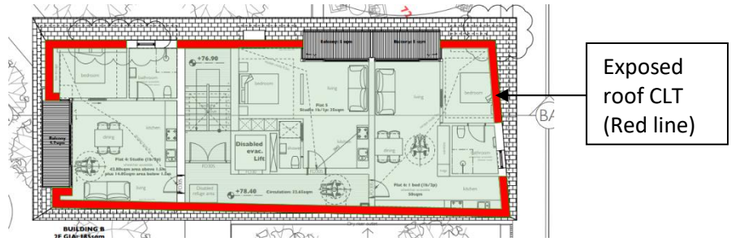


Figure 7-5 – Exposed CLT for Block B

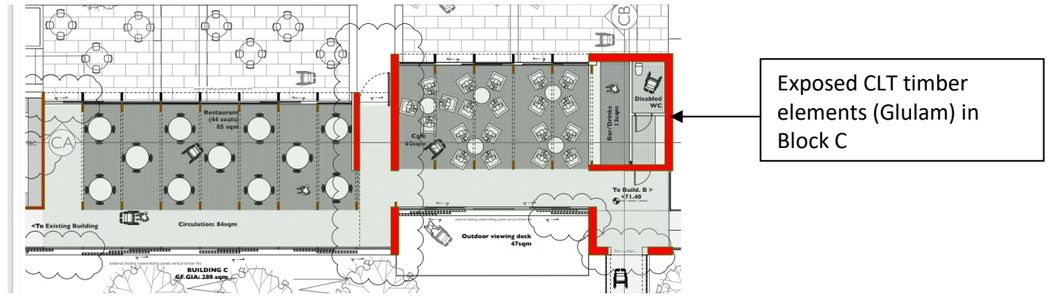


Figure 7-6 – Exposed CLT for Block C

8 B4 – EXTERNAL FIRE SPREAD

The external fire spread analysis is carried out based on BR 187.

The new external wall or curtain wall should achieve Class B-S3, d2 or better.

The roof should comply with Broof(t4)

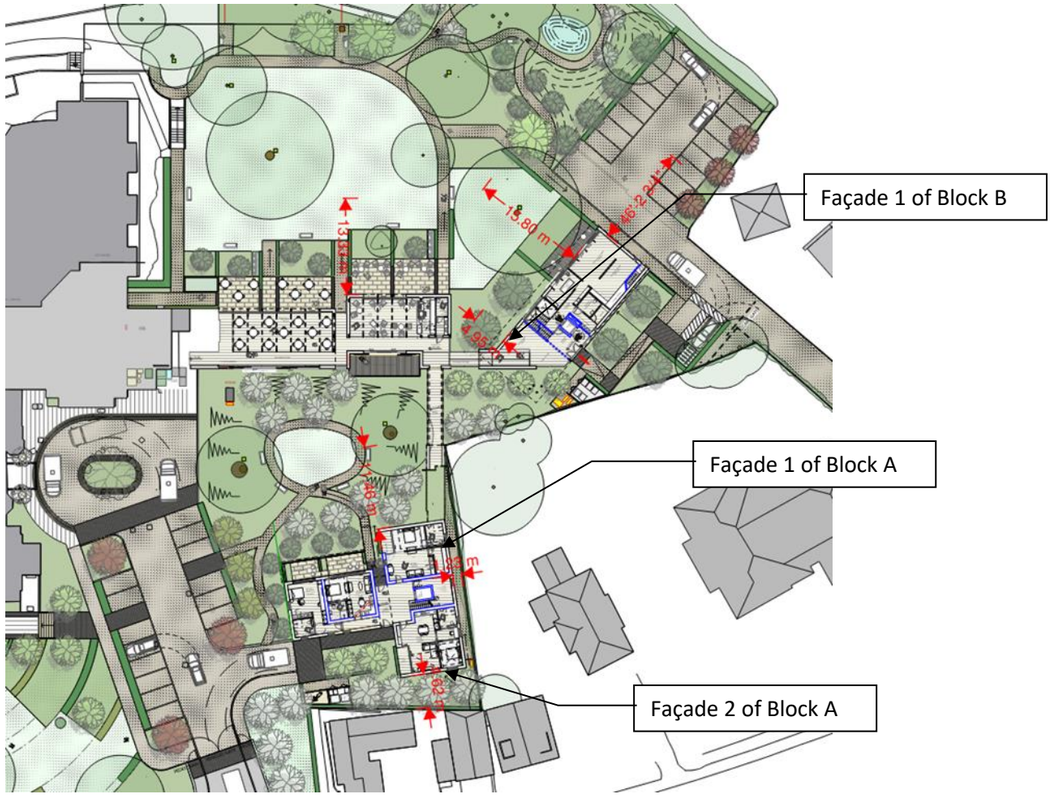


Figure 8-1 – External Fire Spread Analysis on Site Plan

The worst-case scenarios on external fire spread are studied in this report. In general, the building façades are over 10m away from the relevant boundary.

For the Façade 1 of Block A, the relevant boundary is taken as site boundary that is 1.2m. For the unprotected opening of the floor height is less than 3m and the longest length of the facade 1 is 8m, it can allow for 30% unprotected façade areas for 1.2m separation to relevant boundary line as per BR 187.

For the Façade 2 of Block A, the relevant boundary is taken as site boundary that is 4.6m. For the unprotected opening of the floor height is less than 3m and the longest length of the facade 2 is 9m, it can allow for 100% unprotected façade areas for 4.6m separation to relevant boundary line as per BR 187.

For the Façade 1 of Block B, the relevant boundary is taken as site boundary that is 4.9m. For the unprotected opening of the floor height is less than 3m and the longest length of the facade 1 is 5m, it can allow for 100% unprotected façade areas for 4.9m separation to relevant boundary line as per BR 187.

For the use of the CLT, it may expose higher fire severity in the heat flux and fire density. As most of the CLT are encapsulated. It is unlikely to contribute any additional fire load to the external fire spread. The charring zone of the CLT is calculated as per BR 1995-1-2 to prevent the further combustion of the exposed CLT. For Building A, only the roof will be exposed CLT internally.

The external roof should comply with Broof (t4) to prevent external fire spread for Building A, Building B and Building C.

9 B5 – ACCESS AND FACILITIES FOR FIRE SERVICE

9.1 Fire Hydrants

The development has access to new fire hydrants that will be preserved within 90m of each firefighting access point for the proposed developments. The location of the fire hydrant will be indicated in the architectural layout.

9.2 Access to Building for Firefighting Purposes

Driveways to the site will serve as the primary firefighting vehicle access with less than 18m distance from the firefighting access point to the dry riser inlet as shown below.

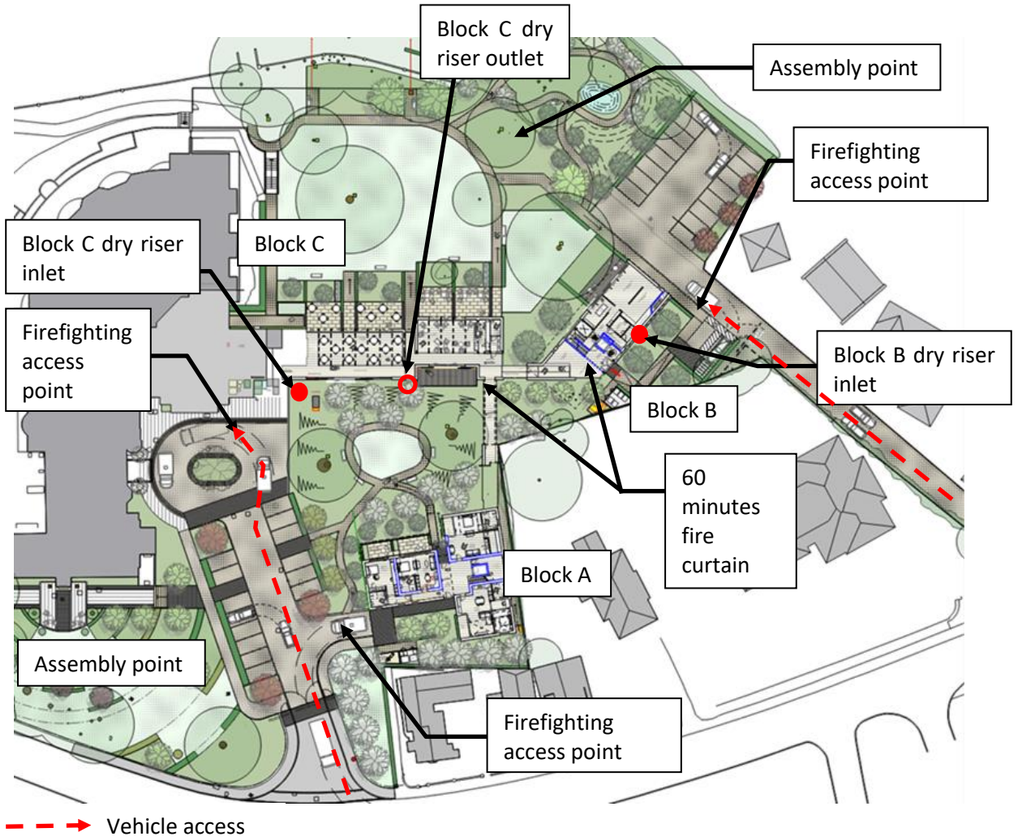


Figure 9-1 – Firefighting Access

Dead-end access routes longer than 20m require turning facilities as shown below.

Fire and rescue service vehicles should not have to reverse more than 20m from the end of an access road.

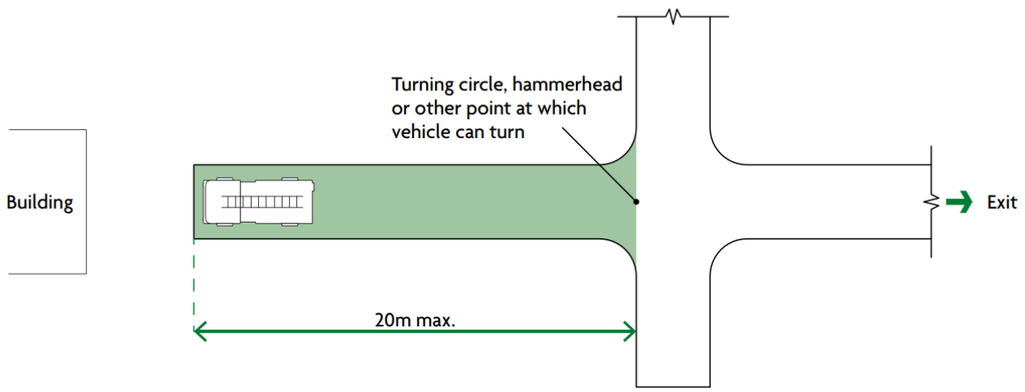


Figure 9-2 – Turning Facilities

Access route and hard standings should comply with the table below.

Table 9-1 – Typical fire and rescue service vehicle access route specification

Appliance type	Minimum width of road between kerbs (m)	Minimum width of gateways (m)	Minimum turning circle between kerbs (m)	Minimum turning circle between walls (m)	Minimum clearance height (m)	Minimum carrying capacity (tonnes)
Pump	3.7	3.1	16.8	19.2	3.7	12.5
High reach	3.7	3.1	26.0	29.0	4.0	17.0

NOTES:

1. Fire appliances are not standardised. The building control body may, in consultation with the local fire and rescue service, use other dimensions.
2. The roadbase can be designed to 12.5 tonne capacity. Structures such as bridges should have the full 17-tonne capacity. The weight of high reach appliances is distributed over a number of axles, so infrequent use of a route designed to accommodate 12.5 tonnes should not cause damage.

9.3 Facilities for firefighting

It is not required to have firefighting shafts for the proposed developments less than 18m.

The coverage of the dry fire main outlet on each floor will be less than 45m hose laying distance covering the footprint of the entire development (for Block B and Block C) or the hose laying distance from the firefighting access point to the entire development to be less than 45m (For Block A).

9.4 Sprinklers

For the proposed developments less than 11m in building height, it is not required to have sprinkler system.

Commercial kitchen hood suppression system will be provided in Block C detailed in MEP design report.

9.5 Basement Ventilation

Smoke outlet connecting directly to open air should be provided from basement storey except for the basement storey that has both of the following:

a. A maximum floor area of 200 m^2

b. A floor a maximum of 3m below the adjacent ground level

As the basement depth for Building B is 3.35m floor-to-floor height, hence, it is required to have the smoke outlet for the basement in Building B.

The smoke outlet should be both of the following.

a. Sited at high level in either the ceiling or wall of the space they serve.

b. Evenly distributed around the perimeter, to discharge to the open air.

The combined clear cross-sectional area of all smoke outlets should be a minimum of 2.5% of the area of the floor of the storey they serve.

Separate outlets should be provided from places of special fire hazard.

10 APPENDIX A: FIRE STRATEGY DRAWINGS

This drawing shall be read in conjunction with all other drawings forming part of the contract including architectural, structural and other services installation drawings, with the relevant specifications and technical schedules forming part of the contract. **DO NOT SCALE** this drawing and verify all dimensions on site and report any discrepancies to the project architect. This drawing is issued confidentially and must not be disclosed to any third parties without the prior written consent of Kalli- architecture and design ltd.

KEY

- 60min fire rated walls
- 30min fire rated walls
- FD30 — 30min fire rated door
- FD30S — 30min fire rated door with smoke seals
- FD60 — 60min fire rated door
- FD60S — 60min fire rated door with smoke seals
- fire escape route/fire egress
- kitchen hob critical distances
- H — Hydrant location
- Firefighting access point
- Distance of hydrant from firefighting access point
- Fire hose distance
- Poured resin flooring
- Carpet
- Decking
- Clay tiles

Scale Bar 0 5 10 15 20 25 M

Note:
For detailed landscape design refer to drawigns by LGD-London Garden Designer

No.	Date	Revision Notes

Project Title
DENVILLE HALL

Project Client
DENVILLE HALL 2012 LTD

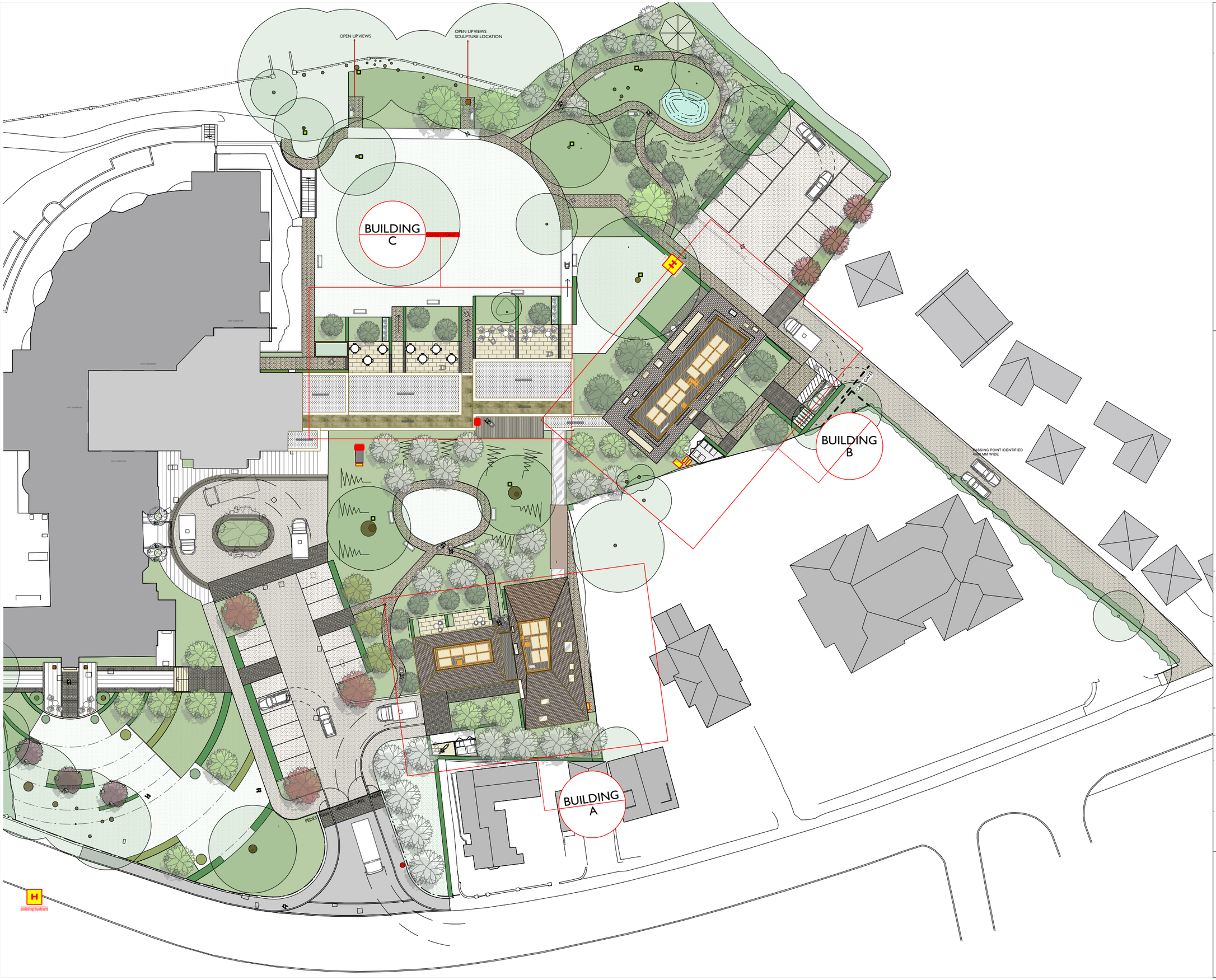
Design Firm
Kalli- architecture & design ltd
www.kalli-a-d.co.uk info@kalli-a-d.co.uk

Project Architect	Project ID
MK	1918
Drawn By	Scale
	1:500
Reviewed By	Sheet No.
	P_GA (-2) 301.1
	of 66
Date	Sheet Title
	Stage2_Proposed Master Plan

kalli-

arb Architects Registration Board

RIBA Chartered Practice



This drawing shall be read in conjunction with all other drawings forming part of the contract including architectural, structural and other services installation drawings, with the relevant specifications and technical schedules forming part of the contract. **DO NOT SCALE** this drawing and verify all dimensions on site and report any discrepancies to the project architect. This drawing is issued confidentially and must not be disclosed to any third parties without the prior written consent of Kalli- architecture and design ltd.

KEY

- 60min fire rated walls
- 30min fire rated walls
- FD30 30min fire rated door
- FD30S 30min fire rated door with smoke seals
- FD60 60min fire rated door
- FD60S 60min fire rated door with smoke seals
- fire escape route/fire egress
- kitchen hob critical distances
- H Hydrant location
- Firefighting access point
- Distance of hydrant from firefighting access point
- Fire hose distance
- Poured resin flooring
- Carpet
- Decking
- Clay tiles

Scale Bar 0 5 10 15 20 25 M

Note:
For detailed landscape design refer to drawings by LGD-London Garden Designer

No.	Date	Revision Notes

Project Title
DENVILLE HALL

Project Client
DENVILLE HALL 2012 LTD

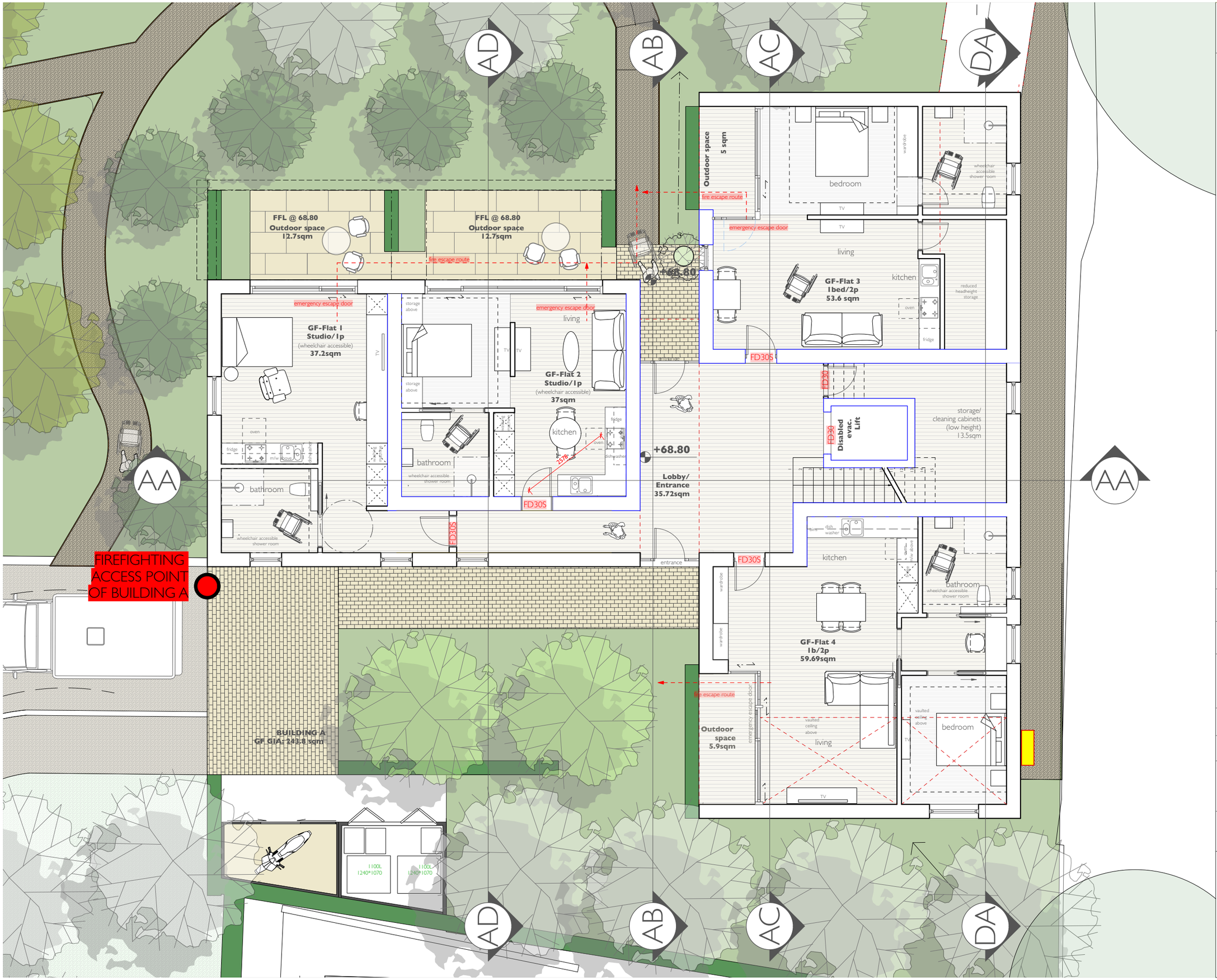
Design Firm
Kalli- architecture & design ltd
www.kalli-a-d.co.uk info@kalli-a-d.co.uk

Project Architect	Project ID
MK	1918
Drawn By	Scale
	1:500
Reviewed By	Sheet No.
	P_GA (-2) 301.5
	of 66
Date	Sheet Title
	Stage2_Proposed Master Roof Pl.

kalli-

arb Architects Registration Board

RIBA Chartered Practice



This drawing shall be read in conjunction with all other drawings forming part of the contract including architectural, structural and other services installation drawings, with the relevant specifications and technical schedules forming part of the contract. **DO NOT SCALE** this drawing and verify all dimensions on site and report any discrepancies to the project architect. This drawing is issued confidentially and must not be disclosed to any third parties without the prior written consent of Kalli- architecture and design ltd.

Scale Bar 0 1 2 3 4 5 M

KEY

- 60min fire rated walls
- 30min fire rated walls
- FD30 30min fire rated door
- FD30S 30min fire rated door with smoke seals
- FD60 60min fire rated door
- FD60S 60min fire rated door with smoke seals
- fire escape route/fire egress
- kitchen hob critical distances
- H Hydrant location
- Firefighting access point
- Distance of hydrant from firefighting access point
- Fire hose distance
- Poured resin flooring
- Carpet
- Decking
- Clay tiles

Note:
For detailed landscape design refer to drawings by LGD-London Garden Designer

No.	Date	Revision Notes

Project Title
DENVILLE HALL

Project Client
DENVILLE HALL 2012 LTD

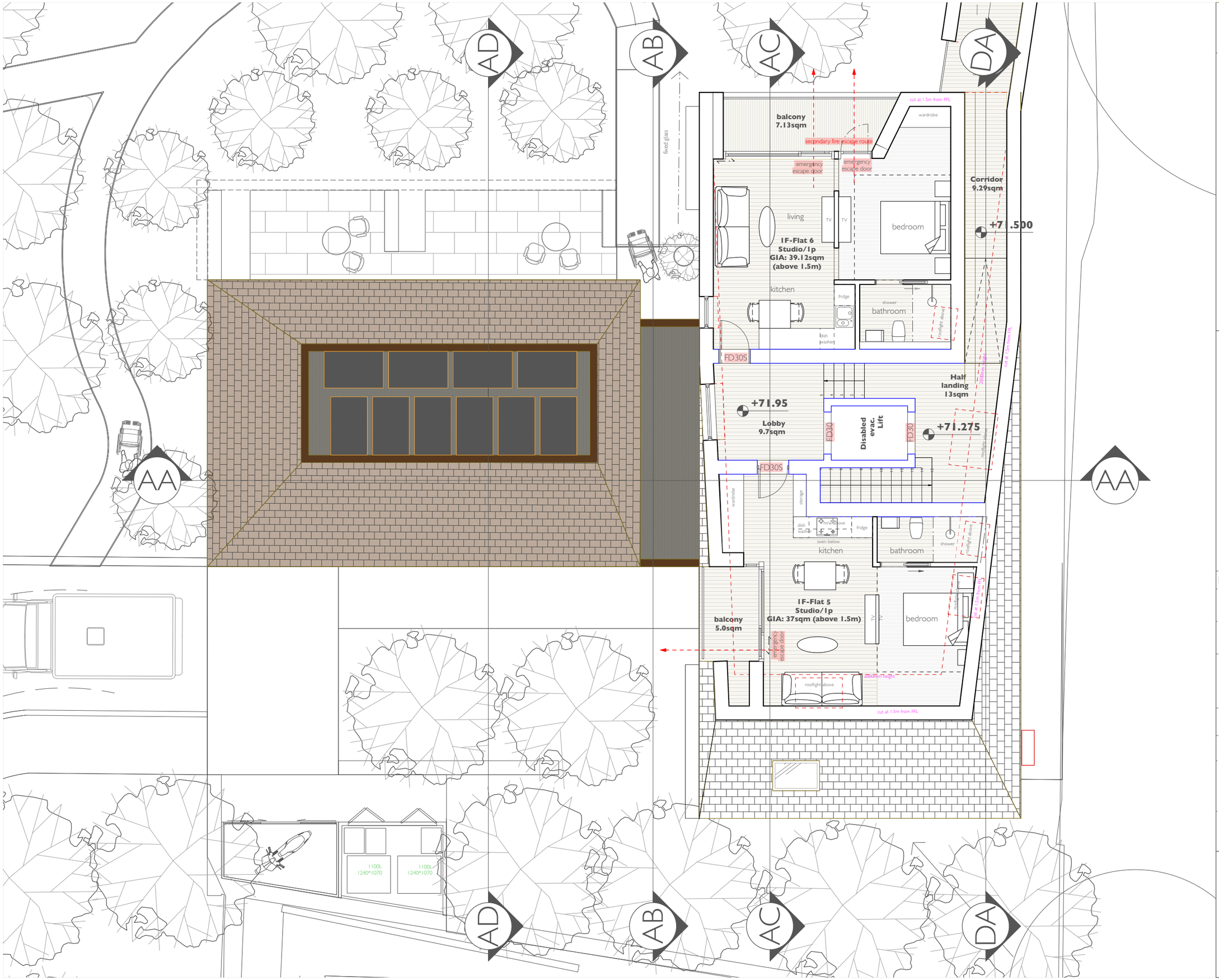
Design Firm
Kalli- architecture & design ltd
www.kalli-a-d.co.uk info@kalli-a-d.co.uk

Project Architect	Project ID
MK	1918
Drawn By	Scale
MK	1:100
Reviewed By	Sheet No.
	P_GA (-2) 302.2
	of 66
Date	Sheet Title
	Proposed Build A_GF Plan @ A3

kalli-

arb Architects Registration Board

RIBA Chartered Practice



This drawing shall be read in conjunction with all other drawings forming part of the contract including architectural, structural and other services installation drawings, with the relevant specifications and technical schedules forming part of the contract. **DO NOT SCALE** this drawing and verify all dimensions on site and report any discrepancies to the project architect. This drawing is issued confidentially and must not be disclosed to any third parties without the prior written consent of Kalli- architecture and design ltd.

Scale Bar 0 1 2 3 4 5 M

KEY

- 60min fire rated walls
- 30min fire rated walls
- FD30 30min fire rated door
- FD30S 30min fire rated door with smoke seals
- FD60 60min fire rated door
- FD60S 60min fire rated door with smoke seals
- fire escape route/fire egress
- kitchen hob critical distances
- H Hydrant location
- Firefighting access point
- Distance of hydrant from firefighting access point
- Fire hose distance
- Poured resin flooring
- Carpet
- Decking
- Clay tiles

No.	Date	Revision Notes

Project Title
DENVILLE HALL

Project Client
DENVILLE HALL 2012 LTD

Design Firm
Kalli- architecture & design ltd
www.kalli-a-d.co.uk info@kalli-a-d.co.uk

Project Architect	Project ID
MK	1918
Drawn By	Scale
MK	1:100
Reviewed By	Sheet No.
	P_GA (-2) 302.3
	of 66
Date	Sheet Title
	Proposed Build A_1F Plan @ A3

kalli-

Architects Registration Board

RIBA Chartered Practice

This drawing shall be read in conjunction with all other drawings forming part of the contract including architectural, structural and other services installation drawings, with the relevant specifications and technical schedules forming part of the contract. **DO NOT SCALE** this drawing and verify all dimensions on site and report any discrepancies to the project architect. This drawing is issued confidentially and must not be disclosed to any third parties without the prior written consent of Kalli- architecture and design ltd.

Scale Bar 0 1 2 3 4 5 M

KEY

- 60min fire rated walls
- 30min fire rated walls
- FD30 30min fire rated door
- FD30S 30min fire rated door with smoke seals
- FD60 60min fire rated door
- FD60S 60min fire rated door with smoke seals
- fire escape route/fire egress
- kitchen hob critical distances
- H Hydrant location
- Firefighting access point
- Distance of hydrant from firefighting access point
- Fire hose distance
- Poured resin flooring
- Carpet
- Decking
- Clay tiles

AD AB AC DA AA

14 PV units @ roof level

1100L 1240*1070

1100L 1240*1070

No.	Date	Revision Notes

Project Title
DENVILLE HALL

Project Client
DENVILLE HALL 2012 LTD

Design Firm
Kalli- architecture & design ltd
www.kalli-a-d.co.uk info@kalli-a-d.co.uk

Project Architect	Project ID
MK	1918
Drawn By	Scale
MK	1:100
Reviewed By	Sheet No.
	P_GA (-2) 302.4
	of 66
Date	Sheet Title
	Proposed Build A_Roof Plan @ A3

kalli-

arb Architects Registration Board

RIBA Chartered Practice

This drawing shall be read in conjunction with all other drawings forming part of the contract including architectural, structural and other services installation drawings, with the relevant specifications and technical schedules forming part of the contract. **DO NOT SCALE** this drawing and verify all dimensions on site and report any discrepancies to the project architect. This drawing is issued confidentially and must not be disclosed to any third parties without the prior written consent of Kalli- architecture and design ltd.

Scale Bar 0 1 2 3 4 5 M

KEY

- 60min fire rated walls
- 30min fire rated walls
- FD30 30min fire rated door
- FD30S 30min fire rated door with smoke seals
- FD60 60min fire rated door
- FD60S 60min fire rated door with smoke seals
- fire escape route/fire egress
- kitchen hob critical distances
- H Hydrant location
- Firefighting access point
- Distance of hydrant from firefighting access point
- Fire hose distance
- Poured resin flooring
- Carpet
- Decking
- Clay tiles

BUILDING B
B GIA: 100 sqm

Bar
8.9sqm

+68.65

Circulation
10.07sqm

Blackout Curtain

Cinema 60 seats
71.89sqm

Screen

FD30

Disabled
evac.
Lift

Restroom
8.85sqm

Services
10.07sqm

Disabled
WC
4.11 sqm

FD60S

Storage

Fire escape route

Storage

Dry riser outlet

BA

BB

No.	Date	Revision Notes

Project Title
DENVILLE HALL

Project Client
DENVILLE HALL 2012 LTD

Design Firm
Kalli- architecture & design ltd
www.kalli-a-d.co.uk info@kalli-a-d.co.uk

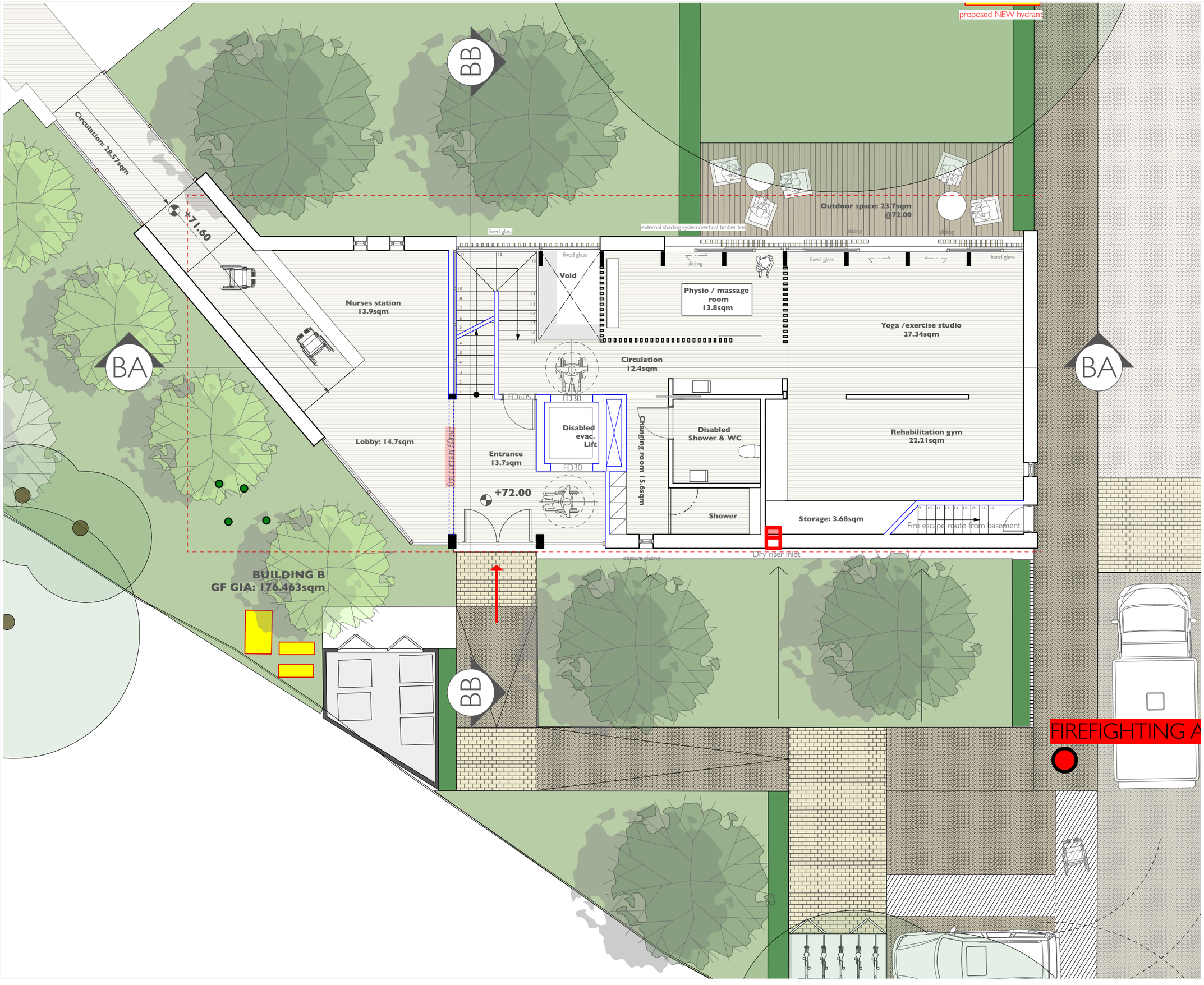
Project Architect	Project ID
MK	1918
Drawn By	Scale
	1:100
Reviewed By	Sheet No.
	P_GA (-2) 303.1
	of 66
Date	Sheet Title
	Proposed Build B_BL Plan @ A3

kalli-

N

arb Architects Registration Board

RIBA Chartered Practice



This drawing shall be read in conjunction with all other drawings forming part of the contract including architectural, structural and other services installation drawings, with the relevant specifications and technical schedules forming part of the contract. **DO NOT SCALE** this drawing and verify all dimensions on site and report any discrepancies to the project architect. This drawing is issued confidentially and must not be disclosed to any third parties without the prior written consent of Kalli- architecture and design ltd.

Scale Bar 0 1 2 3 4 5 M

KEY

- 60min fire rated walls
- 30min fire rated walls
- FD30 30min fire rated door
- FD30S 30min fire rated door with smoke seals
- FD60 60min fire rated door
- FD60S 60min fire rated door with smoke seals
- fire escape route/fire egress
- xx kitchen hob critical distances
- H Hydrant location
- Firefighting access point
- Distance of hydrant from firefighting access point
- Fire hose distance
- Poured resin flooring
- Carpet
- Decking
- Clay tiles

Note:
For detailed landscape design refer to drawigns by LGD-London Garden Designer

No.	Date	Revision Notes

Project Title
DENVILLE HALL

Project Client
DENVILLE HALL 2012 LTD

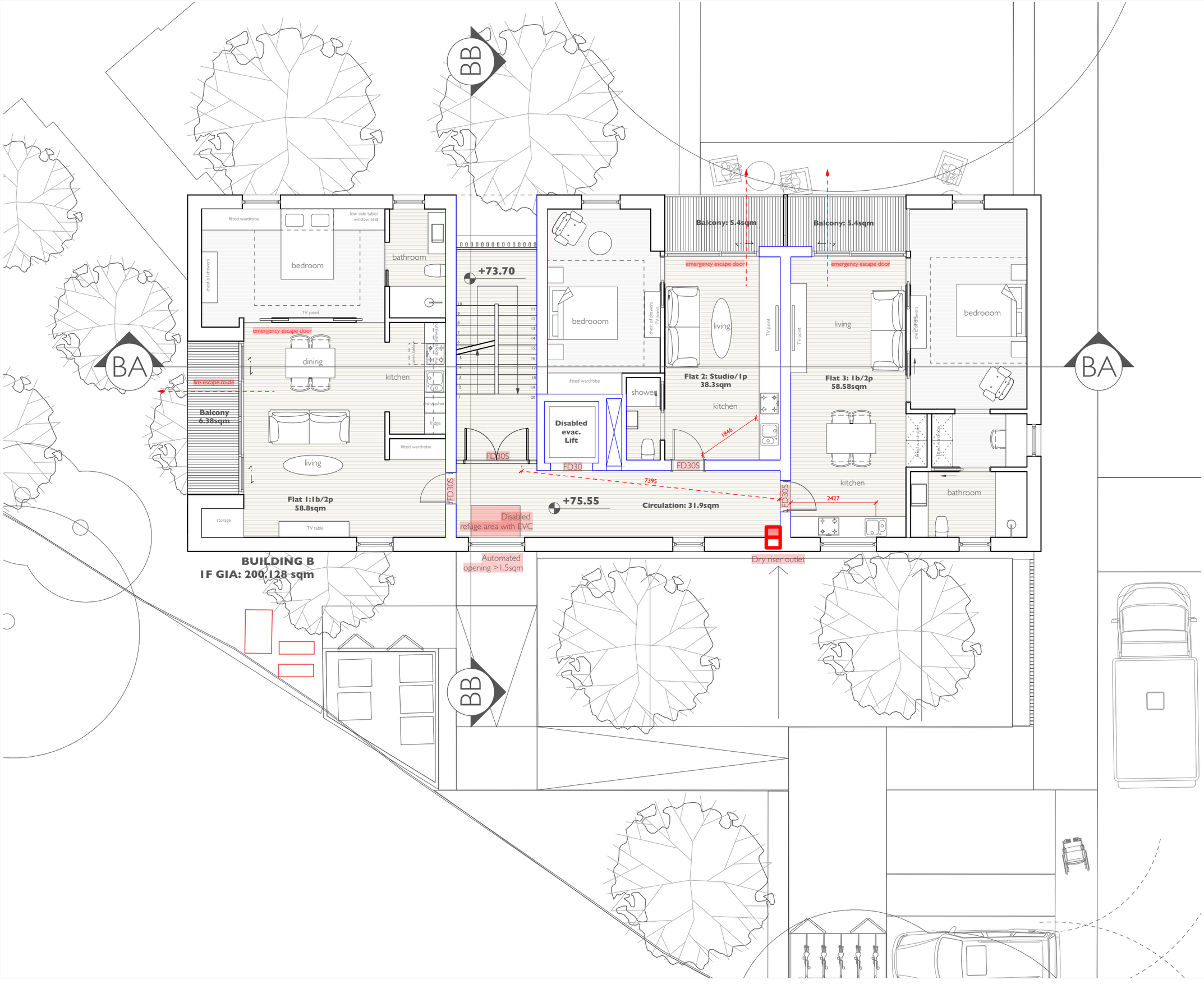
Design Firm
Kalli- architecture & design ltd
www.kalli-a-d.co.uk info@kalli-a-d.co.uk

Project Architect: MK	Project ID: 1918
Drawn By	Scale: 1:100
Reviewed By	Sheet No.: P_GA (-2) 303.2 of 66
Date	Sheet Title: Proposed Build B_GF Plan @ A3

kalli-

arb Architects Registration Board

RIBA Chartered Practice



This drawing shall be read in conjunction with all other drawings forming part of the contract including architectural, structural and other services installation drawings, with the relevant specifications and technical schedules forming part of the contract. **DO NOT SCALE** this drawing and verify all dimensions on site and report any discrepancies to the project architect. This drawing is issued confidentially and must not be disclosed to any third parties without the prior written consent of Kalli- architecture and design ltd.

Scale Bar 0 1 2 3 4 5 M

KEY

- 60min fire rated walls
- 30min fire rated walls
- FD30 30min fire rated door
- FD30S 30min fire rated door with smoke seals
- FD60 60min fire rated door
- FD60S 60min fire rated door with smoke seals
- fire escape route/fire egress
- kitchen hob critical distances
- H Hydrant location
- Firefighting access point
- Distance of hydrant from firefighting access point
- Fire hose distance
- Poured resin flooring
- Carpet
- Decking
- Clay tiles

No.	Date	Revision Notes

Project Title: DENVILLE HALL

Project Client: DENVILLE HALL 2012 LTD

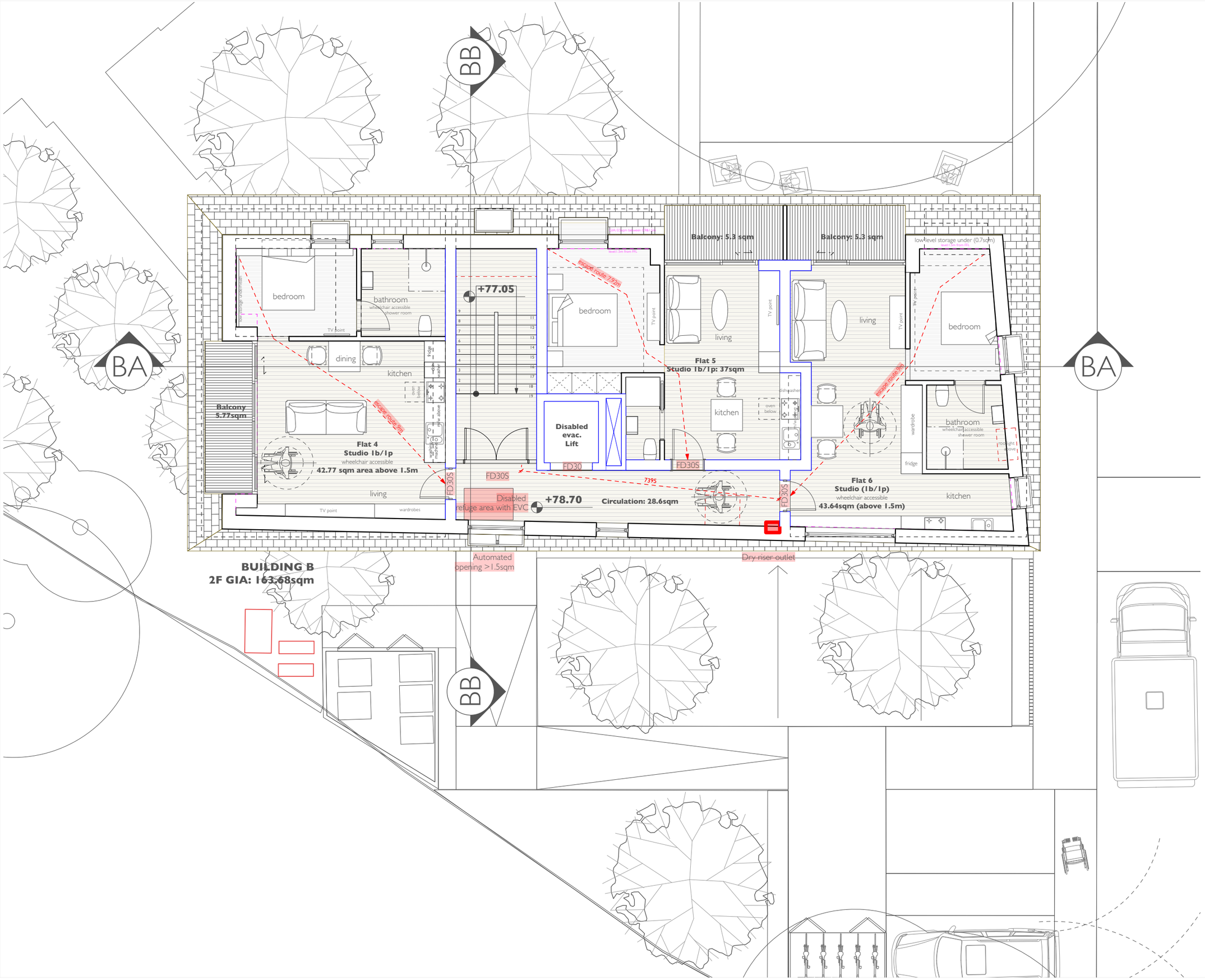
Design Firm: Kalli- architecture & design ltd
www.kalli-a-d.co.uk info@kalli-a-d.co.uk

Project Architect: MK	Project ID: 1918
Drawn By	Scale: 1:100
Reviewed By	Sheet No.: P_GA (-2) 303.3 of 66
Date	Sheet Title: Proposed Build B_1F Plan @ A3

kalli-

Architects Registration Board

RIBA Chartered Practice



This drawing shall be read in conjunction with all other drawings forming part of the contract including architectural, structural and other services installation drawings, with the relevant specifications and technical schedules forming part of the contract. **DO NOT SCALE** this drawing and verify all dimensions on site and report any discrepancies to the project architect. This drawing is issued confidentially and must not be disclosed to any third parties without the prior written consent of Kalli- architecture and design ltd.

Scale Bar 0 1 2 3 4 5 M

KEY

- 60min fire rated walls
- 30min fire rated walls
- FD30 30min fire rated door
- FD30S 30min fire rated door with smoke seals
- FD60 60min fire rated door
- FD60S 60min fire rated door with smoke seals
- fire escape route/fire egress
- kitchen hob critical distances
- H Hydrant location
- Firefighting access point
- Distance of hydrant from firefighting access point
- Fire hose distance
- Poured resin flooring
- Carpet
- Decking
- Clay tiles

No.	Date	Revision Notes

Project Title: DENVILLE HALL

Project Client: DENVILLE HALL 2012 LTD

Design Firm: Kalli- architecture & design ltd

www.kalli-a-d.co.uk info@kalli-a-d.co.uk

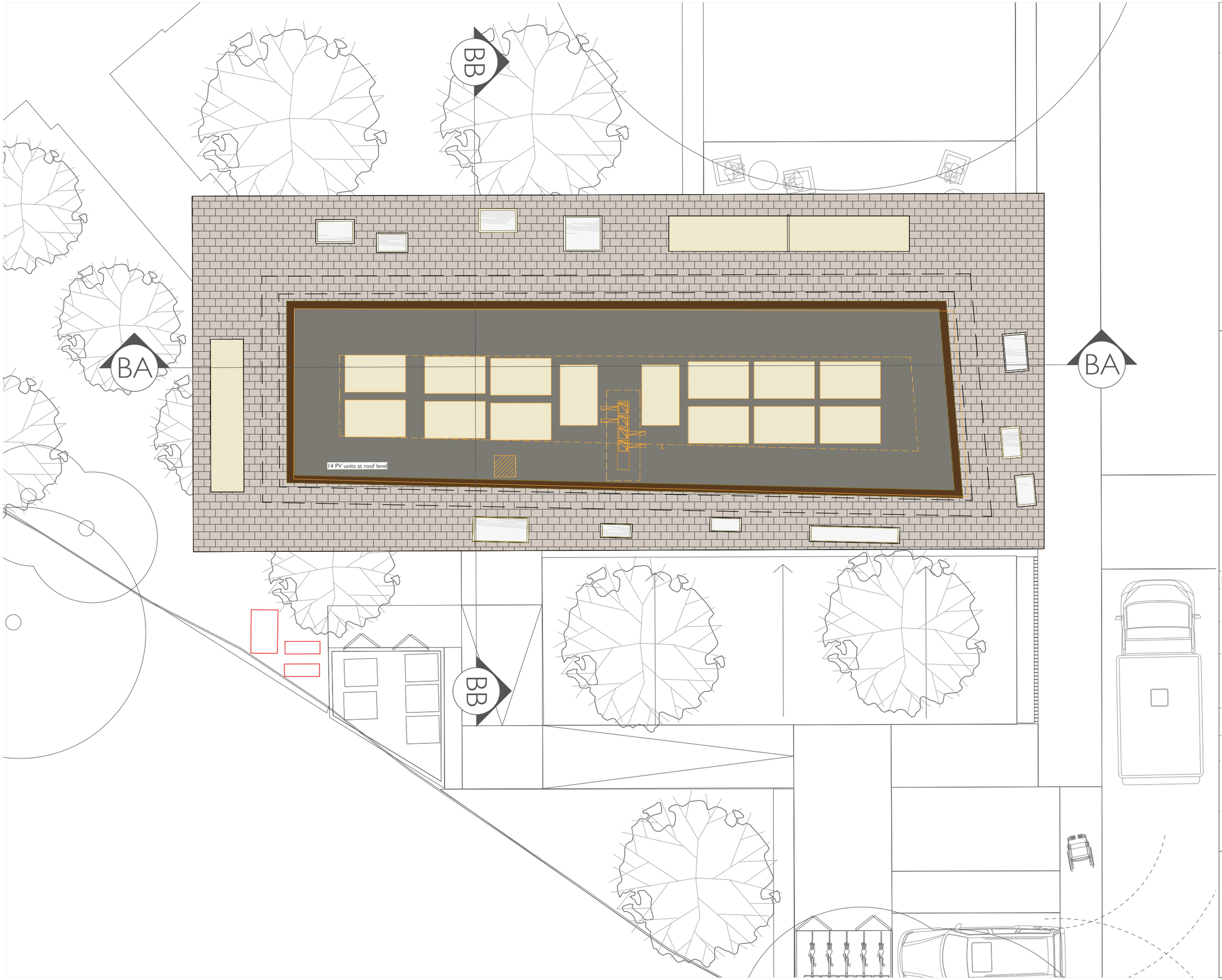
Project Architect: MK	Project ID: 1918
Drawn By	Scale: 1:100
Reviewed By	Sheet No.: P_GA (-2) 303.4 of 66
Date	Sheet Title: Proposed Build B_2F Plan @ A3

kalli-

N

arb Architects Registration Board

RIBA Chartered Practice



This drawing shall be read in conjunction with all other drawings forming part of the contract including architectural, structural and other services installation drawings, with the relevant specifications and technical schedules forming part of the contract. **DO NOT SCALE** this drawing and verify all dimensions on site and report any discrepancies to the project architect. This drawing is issued confidentially and must not be disclosed to any third parties without the prior written consent of Kalli- architecture and design ltd.

Scale Bar 0 1 2 3 4 5 M

KEY

- 60min fire rated walls
- 30min fire rated walls
- FD30 30min fire rated door
- FD30S 30min fire rated door with smoke seals
- FD60 60min fire rated door
- FD60S 60min fire rated door with smoke seals
- fire escape route/fire egress
- kitchen hob critical distances
- H Hydrant location
- Firefighting access point
- Distance of hydrant from firefighting access point
- Fire hose distance
- Poured resin flooring
- Carpet
- Decking
- Clay tiles

No.	Date	Revision Notes

Project Title
DENVILLE HALL

Project Client
DENVILLE HALL 2012 LTD

Design Firm
Kalli- architecture & design ltd
www.kalli-a-d.co.uk info@kalli-a-d.co.uk

Project Architect	Project ID
MK	1918
Drawn By	Scale
	1:100
Reviewed By	Sheet No.
	P_GA (-2) 303.5
	of 66
Date	Sheet Title
	Proposed Build B_Roof Plan @ A3

kalli-

N

arb Architects Registration Board

RIBA Chartered Practice

This drawing shall be read in conjunction with all other drawings forming part of the contract including architectural, structural and other services installation drawings, with the relevant specifications and technical schedules forming part of the contract. **DO NOT SCALE** this drawing and verify all dimensions on site and report any discrepancies to the project architect. This drawing is issued confidentially and must not be disclosed to any third parties without the prior written consent of Kalli- architecture and design ltd.

Scale Bar 0 1 2 3 4 5 M

KEY

- 60min fire rated walls
- 30min fire rated walls
- FD30 30min fire rated door
- FD30S 30min fire rated door with smoke seals
- FD60 60min fire rated door
- FD60S 60min fire rated door with smoke seals
- fire escape route/fire egress
- xx kitchen hob critical distances
- H Hydrant location
- Firefighting access point
- Distance of hydrant from firefighting access point
- Fire hose distance
- Poured resin flooring
- Carpet
- Decking
- Clay tiles

Note:
For detailed landscape design refer to drawigns by LGD-London Garden Designer

No.	Date	Revision Notes

Project Title: DENVILLE HALL

Project Client: DENVILLE HALL 2012 LTD

Design Firm: Kalli- architecture & design ltd
www.kalli-a-d.co.uk info@kalli-a-d.co.uk

Project Architect	Project ID
MK	1918
Drawn By	Scale
	1:100
Reviewed By	Sheet No.
	P_GA (-2) 304.1
	of 66
Date	Sheet Title
	Proposed Build C_GF Plan @ A3

Architects Registration Board
RIBA Chartered Practice

CA

CB

Dining Room
(44 seats)
76 sqm

Circulation: 87.5sqm

<To Existing Building

fire curtain

TBC

fire escape route

external shading system/vertical timber fins

Cafe
52.32sqm

Bar/Drinks
10.43sqm

Disabled
WC
4.42sqm

restroom
4.48sqm

To Build. B >
+71.50

Dry riser outlet

external shading system/sliding panels vertical timber fins

Outdoor viewing deck: 30.3sqm

fire curtain 60min

+71.500

breakable glass for firefighting access

external shading system/sliding panels vertical timber fins

BUILDING C
GF GIA: 270sqm

Dry riser Inlet

This drawing shall be read in conjunction with all other drawings forming part of the contract including architectural, structural and other services installation drawings, with the relevant specifications and technical schedules forming part of the contract. **DO NOT SCALE** this drawing and verify all dimensions on site and report any discrepancies to the project architect. This drawing is issued confidentially and must not be disclosed to any third parties without the prior written consent of Kalli- architecture and design ltd.

Scale Bar 0 1 2 3 4 5 M

KEY

- 60min fire rated walls
- 30min fire rated walls
- FD30 30min fire rated door
- FD30S 30min fire rated door with smoke seals
- FD60 60min fire rated door
- FD60S 60min fire rated door with smoke seals
- fire escape route/fire egress
- kitchen hob critical distances
- H Hydrant location
- Firefighting access point
- Distance of hydrant from firefighting access point
- Fire hose distance
- Poured resin flooring
- Carpet
- Decking
- Clay tiles

Single Ply Roof

Green roof

Single Ply Roof

Green roof

Single Ply Roof

Dry riser outlet

Dry riser Inlet

CB

CB

No.	Date	Revision Notes

Project Title
DENVILLE HALL

Project Client
DENVILLE HALL 2012 LTD

Design Firm
Kalli- architecture & design ltd
www.kalli-a-d.co.uk info@kalli-a-d.co.uk

Project Architect	Project ID
MK	1918
Drawn By	Scale
	1:100
Reviewed By	Sheet No.
	P_GA (-2) 304.2
	of 66
Date	Sheet Title
	Proposed Build C_Roof @ A3

kalli-

arb Architects Registration Board

RIBA Chartered Practice

This drawing shall be read in conjunction with all other drawings forming part of the contract including architectural, structural and other services installation drawings, with the relevant specifications and technical schedules forming part of the contract. **DO NOT SCALE** this drawing and verify all dimensions on site and report any discrepancies to the project architect. This drawing is issued confidentially and must not be disclosed to any third parties without the prior written consent of Kalli- architecture and design ltd.

Scale Bar 0 1 2 3 4 5 M

KEY

▬	60min fire rated walls
▬	30min fire rated walls
FD30	30min fire rated door
FD30S	30min fire rated door with smoke seals
FD60	60min fire rated door
FD60S	60min fire rated door with smoke seals
- - ►	fire escape route/fire egress
xx	kitchen hob critical distances
H	Hydrant location
●	Firefighting access point
- - -	Distance of hydrant from firefighting access point
- - -	Fire hose distance
▨	Poured resin flooring
▨	Carpet
▨	Decking
▨	Clay tiles

Note:
For detailed landscape design refer to drawings by LGD-London Garden Designer

No.	Date	Revision Notes

Project Title
DENVILLE HALL

Project Client
DENVILLE HALL 2012 LTD

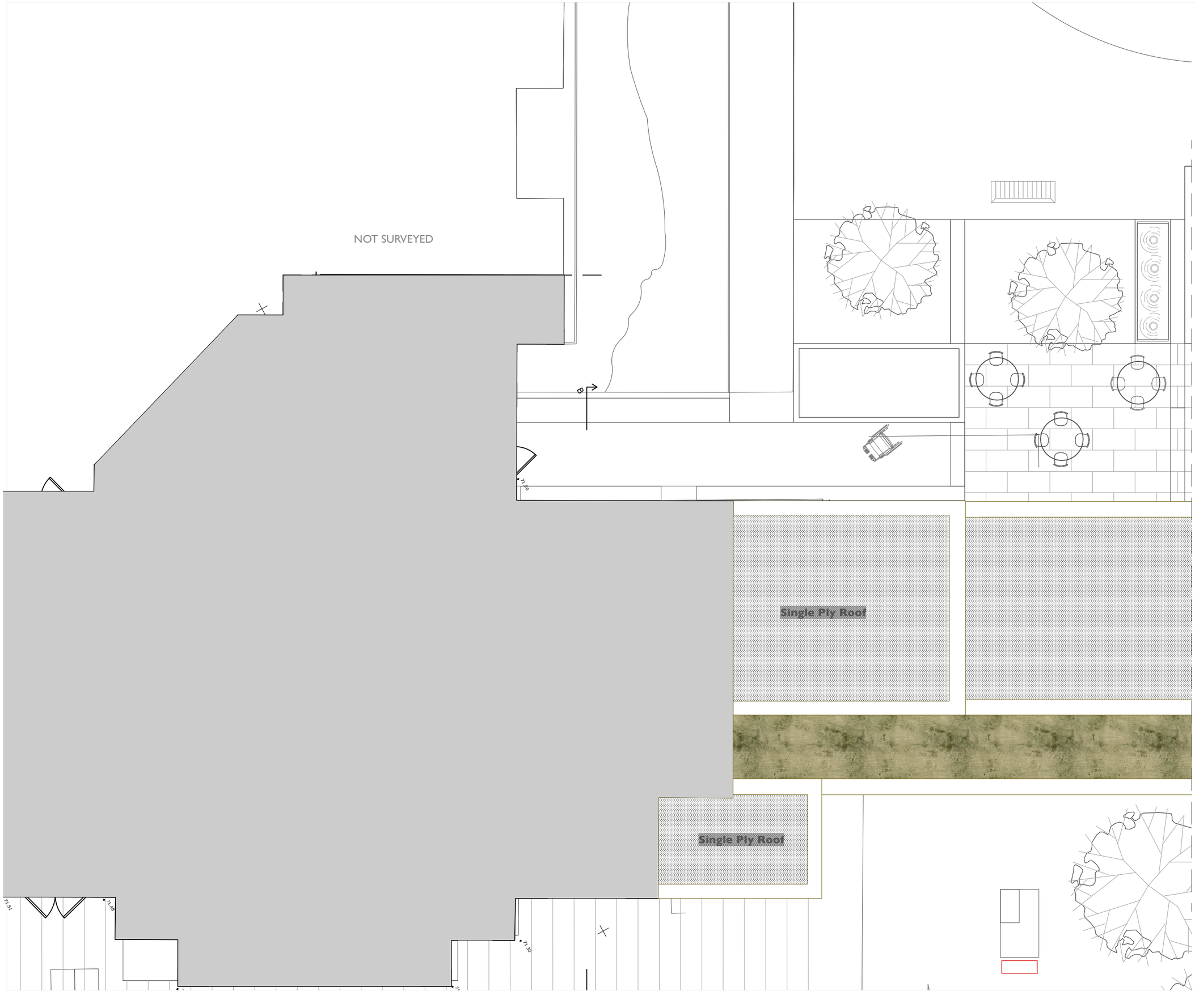
Design Firm
Kalli- architecture & design ltd
www.kalli-a-d.co.uk info@kalli-a-d.co.uk

Project Architect: MK
Project ID: 1918
Drawn By:
Scale: 1:100
Reviewed By:
Sheet No.: P_GA (-2) 304.3 *of 66*
Date:
Sheet Title: Proposed Main DH_GF Plan @ A3

kalli-

arb Architects Registration Board

RIBA Chartered Practice



This drawing shall be read in conjunction with all other drawings forming part of the contract including architectural, structural and other services installation drawings, with the relevant specifications and technical schedules forming part of the contract. **DO NOT SCALE** this drawing and verify all dimensions on site and report any discrepancies to the project architect. This drawing is issued confidentially and must not be disclosed to any third parties without the prior written consent of Kalli- architecture and design ltd.

Scale Bar 0 1 2 3 4 5 M

KEY

- 60min fire rated walls
- 30min fire rated walls
- FD30 30min fire rated door
- FD30S 30min fire rated door with smoke seals
- FD60 60min fire rated door
- FD60S 60min fire rated door with smoke seals
- fire escape route/fire egress
- kitchen hob critical distances
- H Hydrant location
- Firefighting access point
- Distance of hydrant from firefighting access point
- Fire hose distance
- Poured resin flooring
- Carpet
- Decking
- Clay tiles

No.	Date	Revision Notes

Project Title
DENVILLE HALL

Project Client
DENVILLE HALL 2012 LTD

Design Firm
Kalli- architecture & design ltd
www.kalli-a-d.co.uk info@kalli-a-d.co.uk

Project Architect	Project ID
MK	1918
Drawn By	Scale
	1:100
Reviewed By	Sheet No.
	P_GA (-2) 304.4
	of 66
Date	Sheet Title
	Proposed Main DH_Roof Plan

kalli-

N

arb Architects Registration Board

RIBA Chartered Practice

This drawing shall be read in conjunction with all other drawings forming part of the contract including architectural, structural and other services installation drawings, with the relevant specifications and technical schedules forming part of the contract. **DO NOT SCALE** this drawing and verify all dimensions on site and report any discrepancies to the project architect. This drawing is issued confidentially and must not be disclosed to any third parties without the prior written consent of Kalli- architecture and design ltd.

Scale Bar 0 1 2 3 4 5 M

KEY

- 60min fire rated walls
- 30min fire rated walls
- FD30 30min fire rated door
- FD30S 30min fire rated door with smoke seals
- FD60 60min fire rated door
- FD60S 60min fire rated door with smoke seals
- fire escape route/fire egress
- kitchen hob critical distances
- H Hydrant location
- Firefighting access point
- Distance of hydrant from firefighting access point
- Fire hose distance
- Poured resin flooring
- Carpet
- Decking
- Clay tiles

Note:
For detailed landscape design refer to drawigns by LGD-London Garden Designer

No.	Date	Revision Notes

Project Title
DENVILLE HALL

Project Client
DENVILLE HALL 2012 LTD

Design Firm
Kalli- architecture & design ltd
www.kalli-a-d.co.uk info@kalli-a-d.co.uk

Project Architect	Project ID
MK	1918
Drawn By	Scale
	1:100
Reviewed By	Sheet No.
	P_GA (-2) 304.6
	of 66
Date	Sheet Title
	Proposed Bridge_GF Plan @ A3

kalli-

arb Architects Registration Board

RIBA Chartered Practice

DA

+71.500

Bridge
39.7sqm

AD AB AC DA

balcony
7.13sqm

fixed glass

cut at 1.5m from FFL

wardrobe

emergency escape door

emergency escape door

living

TV TV

bedroom

IF-Flat 6
Studio/1p
GIA: 39.12sqm
(above 1.5m)

Corridor
9.29sqm

+71.500

This drawing shall be read in conjunction with all other drawings forming part of the contract including architectural, structural and other services installation drawings, with the relevant specifications and technical schedules forming part of the contract. **DO NOT SCALE** this drawing and verify all dimensions on site and report any discrepancies to the project architect. This drawing is issued confidentially and must not be disclosed to any third parties without the prior written consent of Kalli- architecture and design ltd.

Scale Bar 0 1 2 3 4 5 M

KEY

- 60min fire rated walls
- 30min fire rated walls
- FD30 30min fire rated door
- FD30S 30min fire rated door with smoke seals
- FD60 60min fire rated door
- FD60S 60min fire rated door with smoke seals
- fire escape route/fire egress
- xx kitchen hob critical distances
- H Hydrant location
- Firefighting access point
- Distance of hydrant from firefighting access point
- Fire hose distance
- Poured resin flooring
- Carpet
- Decking
- Clay tiles

No.	Date	Revision Notes

Project Title
DENVILLE HALL

Project Client
DENVILLE HALL 2012 LTD

Design Firm
Kalli- architecture & design ltd
www.kalli-a-d.co.uk info@kalli-a-d.co.uk

Project Architect	Project ID
MK	1918
Drawn By	Scale
	1:100
Reviewed By	Sheet No.
	P_GA (-2) 304.7
	of 66
Date	Sheet Title
	Proposed Bridge_1F Roof @ A3

kalli-

arb Architects Registration Board

RIBA Chartered Practice

NORMAN DISNEY & YOUNG CONSULTING ENGINEERS

NDY CONSULTING LIMITED | A Registered Company in England and Wales. Company Registration No. 3890617
11th Floor, 1 Angel Court
London EC2R 7HJ

Telephone: +44 20 7553 9494
Facsimile: +44 20 7553 9499

OFFICES

Australia:	Sydney, Melbourne, Brisbane, Perth, Canberra, Adelaide, Gold Coast
Canada:	Vancouver
Ireland:	Dublin
New Zealand:	Auckland, Wellington
United Kingdom:	London

CONFIDENTIAL INFORMATION

This document is made available to the recipient on the express understanding that the information contained in it be regarded and treated by the recipient as strictly confidential. The contents of this document are intended only for the sole use of the recipient and should not be disclosed or furnished to any other person.

DISCLAIMER OF LIABILITY

The information contained in this document is provided under direction from the nominated client and addresses this direction. Any third party reviewing the content of this document needs to make their own assessment on the appropriateness of the information contained. NDY Management Pty Limited makes no assurance the information meets the needs of a third party and as such accepts no liability for any loss or damage incurred by third parties whatsoever as a result of using the information.

COPYRIGHT

© NDY Group 2022.

Learn more about NDY
Website: www.ndy.com
LinkedIn: www.linkedin.com/company/norman-disney-&-young
Twitter: @ndygroup
YouTube: https://www.youtube.com/ndygroup
Facebook: www.facebook.com/NDY-Group

NDY QA SYSTEM

Revision No:	1.1	Authorisation By:	RH
Revision Date:	17 November 2022		
Reason Description:	ISSUE		
Client Name:	Change Consulting		
Client Contact:	Change Consulting		
Project Leader:	Troy Player		
Editor:	Ray Ho		
File Location:	\\tt.local\NDY\lon\w\U146xx\U14637\001\00\24_Reports		
Filename:	rp220803u0017		

Verification By: ES

NDY Offices

AUSTRALIA
Adelaide
Brisbane
Canberra
Gold Coast
Melbourne
Perth
Sydney

CANADA
Vancouver

IRELAND
Dublin

NEW ZEALAND
Auckland
Wellington

UNITED KINGDOM
London

www.ndy.com

Norman Disney & Young
A TETRA TECH COMPANY