

New Music and Art Building
St Catherine's School, Twickenham

Fire Safety Strategy

21 November 2023

Tim Ronalds Architects

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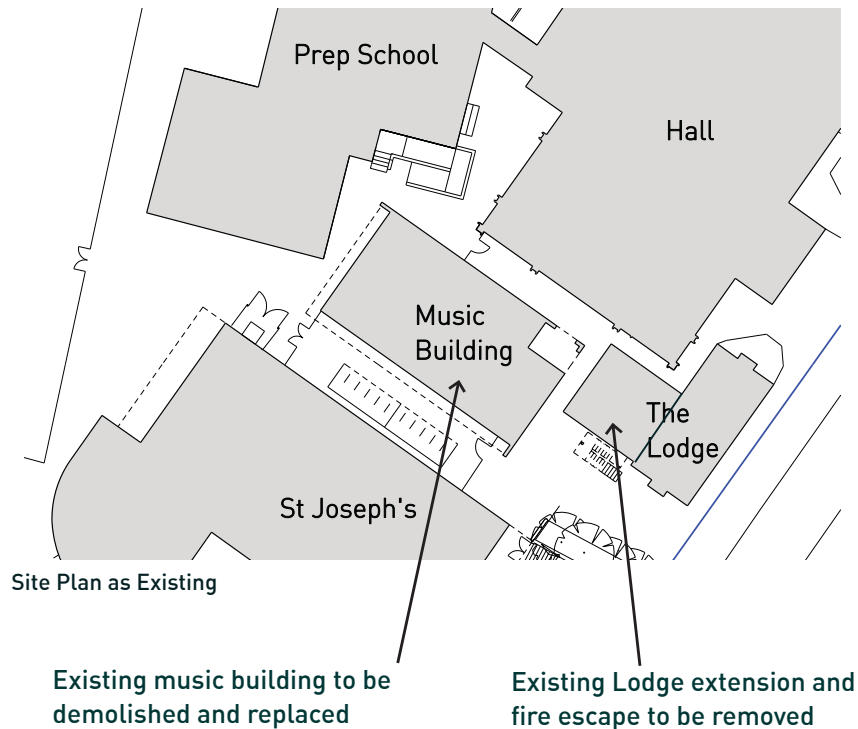
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Introduction

This Fire Safety Strategy has been prepared by Tim Ronalds Architects in order to allow the London Borough of Richmond to fully assess the proposal for a new Music and Art Building at St Catherine's School. We are registered architects with many years experience developing fire strategies for school projects. This document is produced based on the advice in 'London Plan Guidance - Fire Safety'.

During the design work, we have referred to 'Building Bulletin 100: Design for fire safety in schools', and Approved Document B, Volume 2. We have also consulted with Harwood Building Control and agreed the fire strategy with them. The strategy will be developed in more detail as the project progresses.

The site address is: St Catherine's School,
Cross Deep,
Twickenham
TW1 4QJ

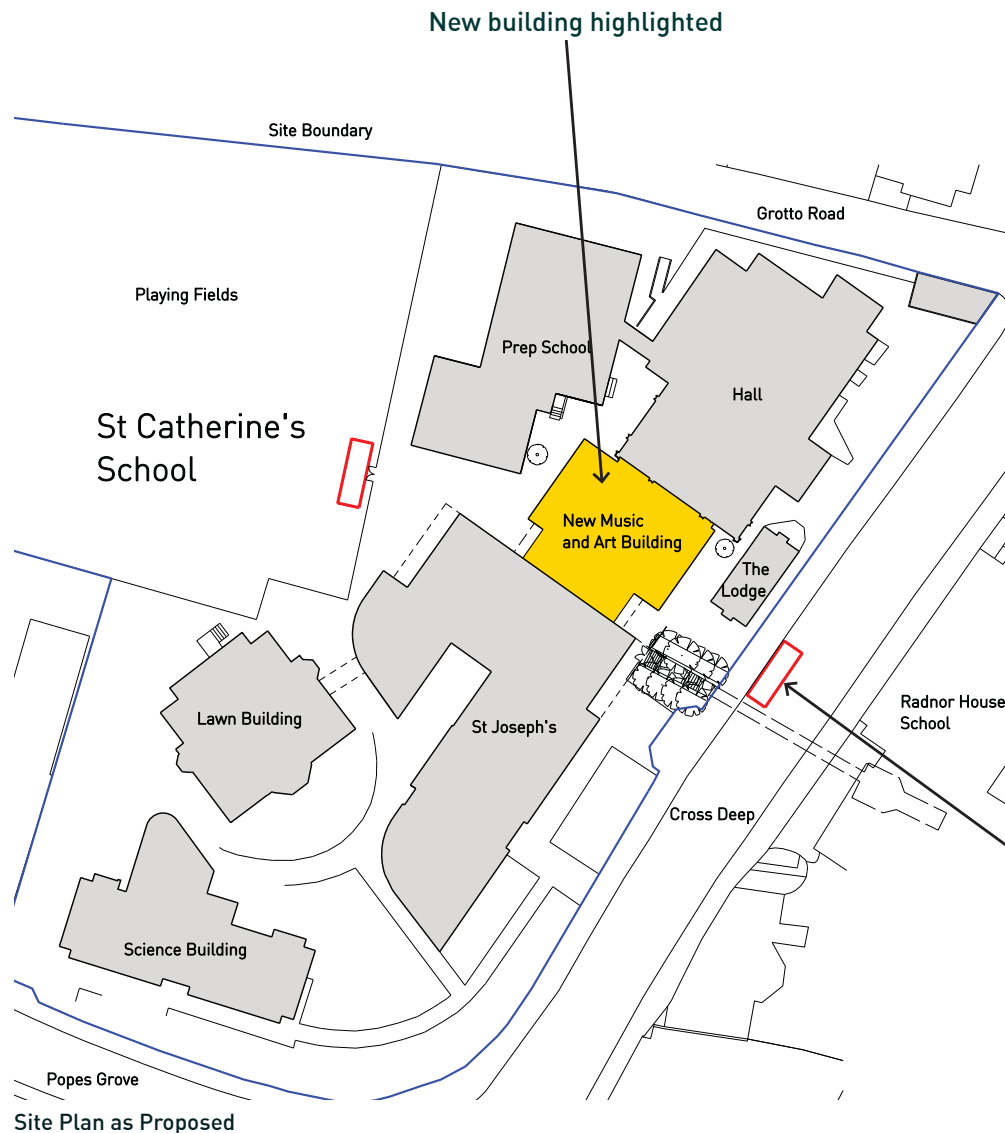


The proposals are for a new Music and Art Building, to improve the facilities at St Catherine's School. The existing single storey music building and extension to the Lodge will be demolished to make space for the new two storey building.

The development is significantly less than 18m in height, so a Planning Gateway One Statement is not required.

As part of the project, improvements will also be made to fire safety in the Lodge, and these are included in this Fire Safety Strategy.

Fire Appliance Access



Fire brigade access to the new building is possible from Cross Deep, as shown on the plan to the left. All parts of the proposed building will be less than 33m from Cross Deep, so well within the 45m maximum required under BB100 clause 8.3.2.1.

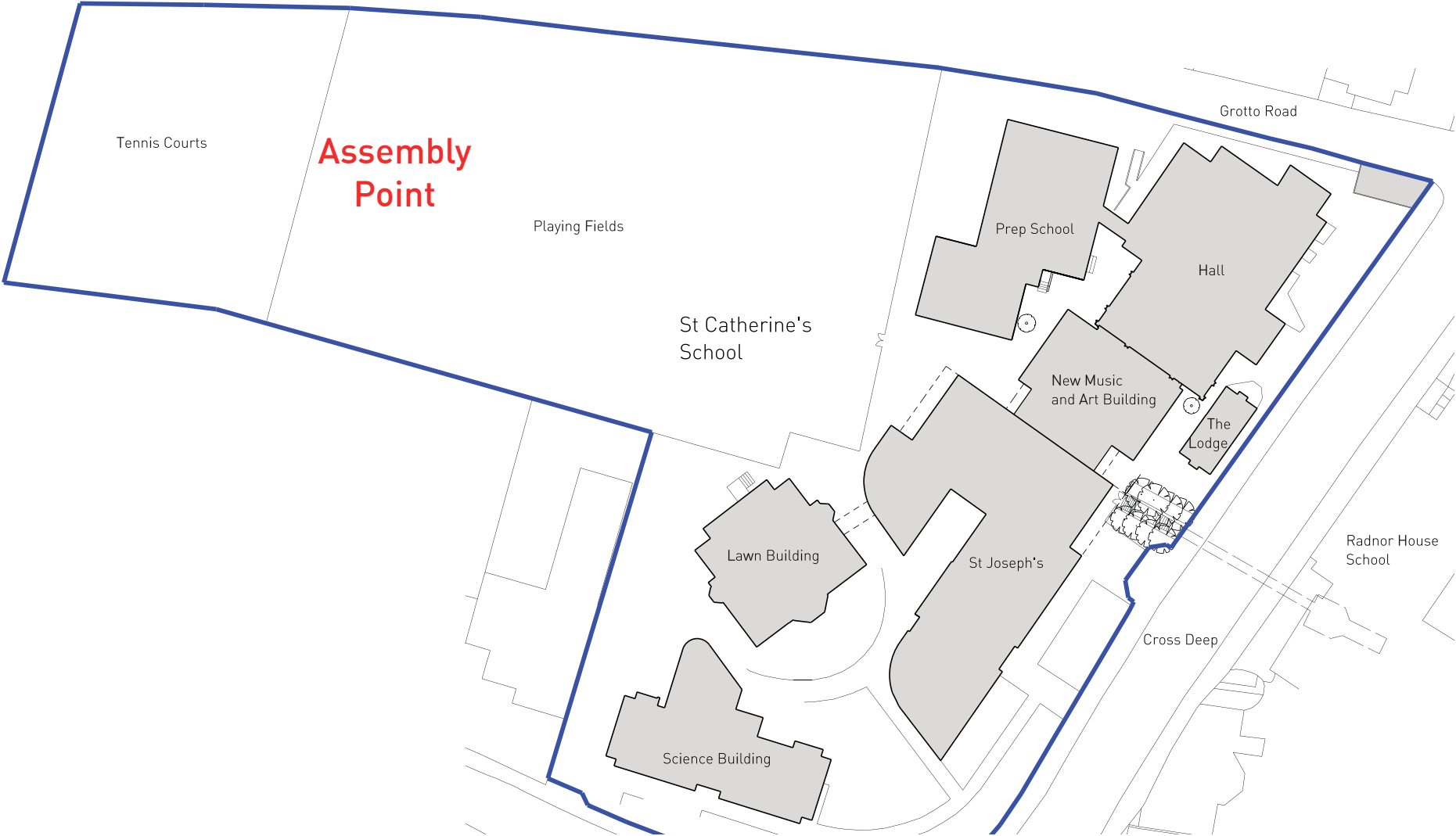
Alternatively, fire appliances can be positioned on the playing fields, which can be accessed from Grotto Road. This location is also within 45m from every part of the new building.

For the Lodge, the best location for fire brigade access is Cross Deep.

The new building will not compromise fire brigade access to other buildings on the site, and the requirements of Table 18 in BB100 will be met for all the School buildings. The total floor area for the whole School will remain less than 8000m², and over 15% of the perimeter walls will be accessible by a pump appliance.

Evacuation Assembly Point

The current assembly point for the whole school is at the west of the playing fields, and this will remain as existing.



Site Plan as Proposed

Fire Safety Measures: New Building

The new Music and Art Building is a 'Small Building' in accordance with BB100, and internal fire mains are not required. There is vehicle access for a pump appliance, as shown on page 4. The building is low-rise, and a fire-fighting stair is not required.

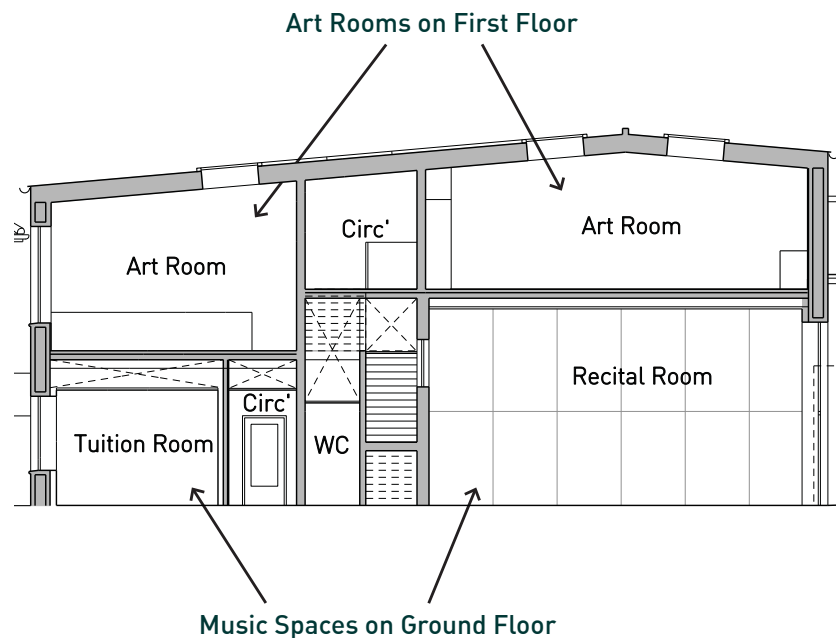
There will be no basement in the proposed building, and no Places of Special Fire Hazard.

The School has a low risk of fires compared to other schools, and a risk assessment will be carried out to determine whether sprinklers are required.

The new building will include a fire alarm system, which will be connected to the School's main system. This will include mains-powered smoke detectors and alarm sounders to serve all spaces, and break-glass call-points at all storey exits. Emergency lighting will be provided to the escape routes, and illuminated exit signage, in accordance with BB100 and Part B of the Building Regulations.

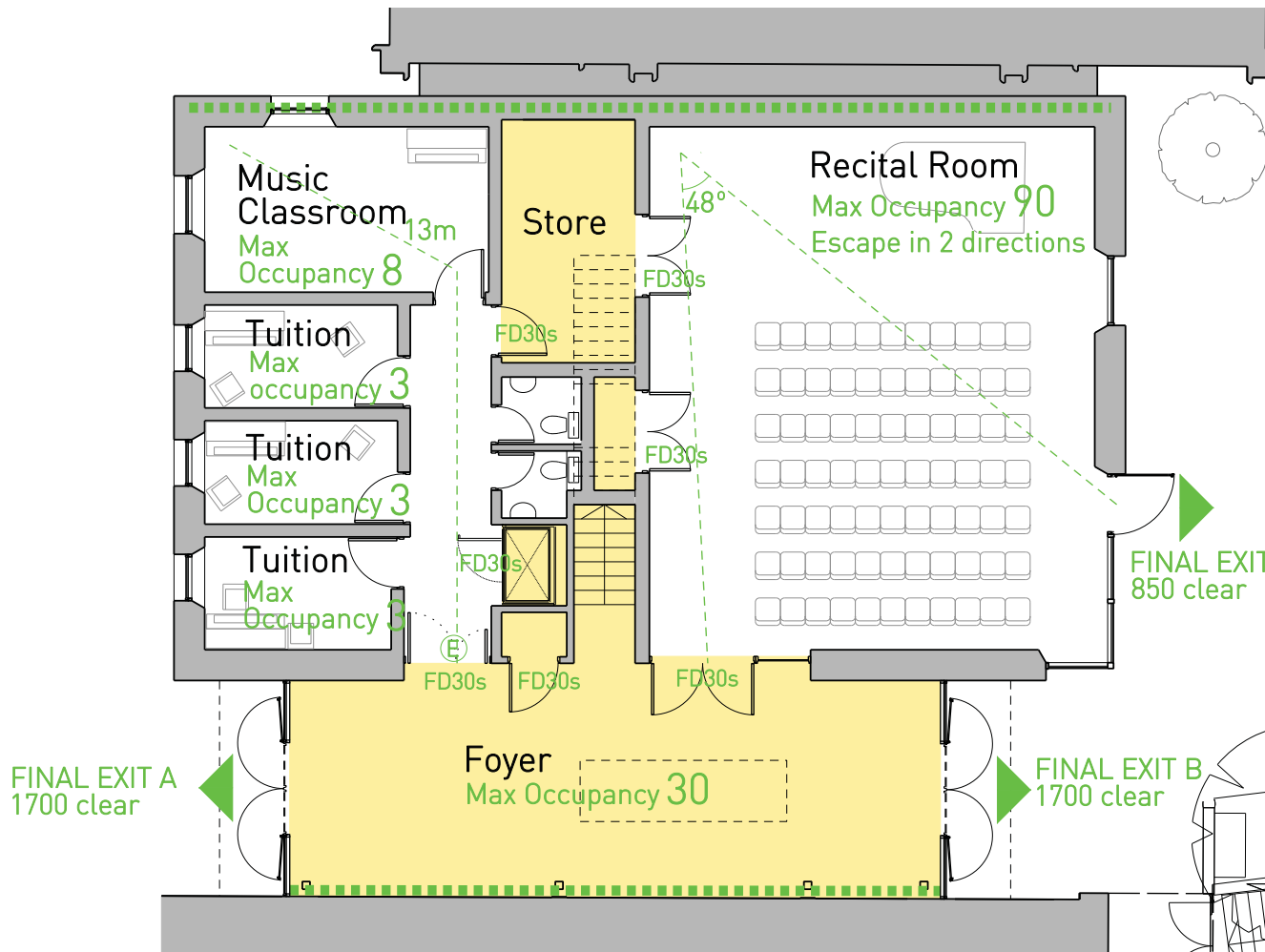
All floors in the new building will be Compartment Floors, and walls between new and adjacent buildings will be Compartment Walls, providing 60 minutes fire resistance. The new staircase will have a fire-resisting enclosure, as shown on the following pages. The structure supporting all the floors will have 60 minutes fire protection.

The fire safety measures for the Lodge are described on page 10.



Section of the Proposed Building

Means of Escape: Ground Floor of New Building



The main escape route from the ground floor is via the foyer, with the main escape doors at the west of the building, leading the occupants towards the assembly point on the playing fields. A second set of escape doors are at the east of the foyer.

The Recital Room will occasionally have over 60 occupants, so a second means of escape is provided from this room, directly to outside.

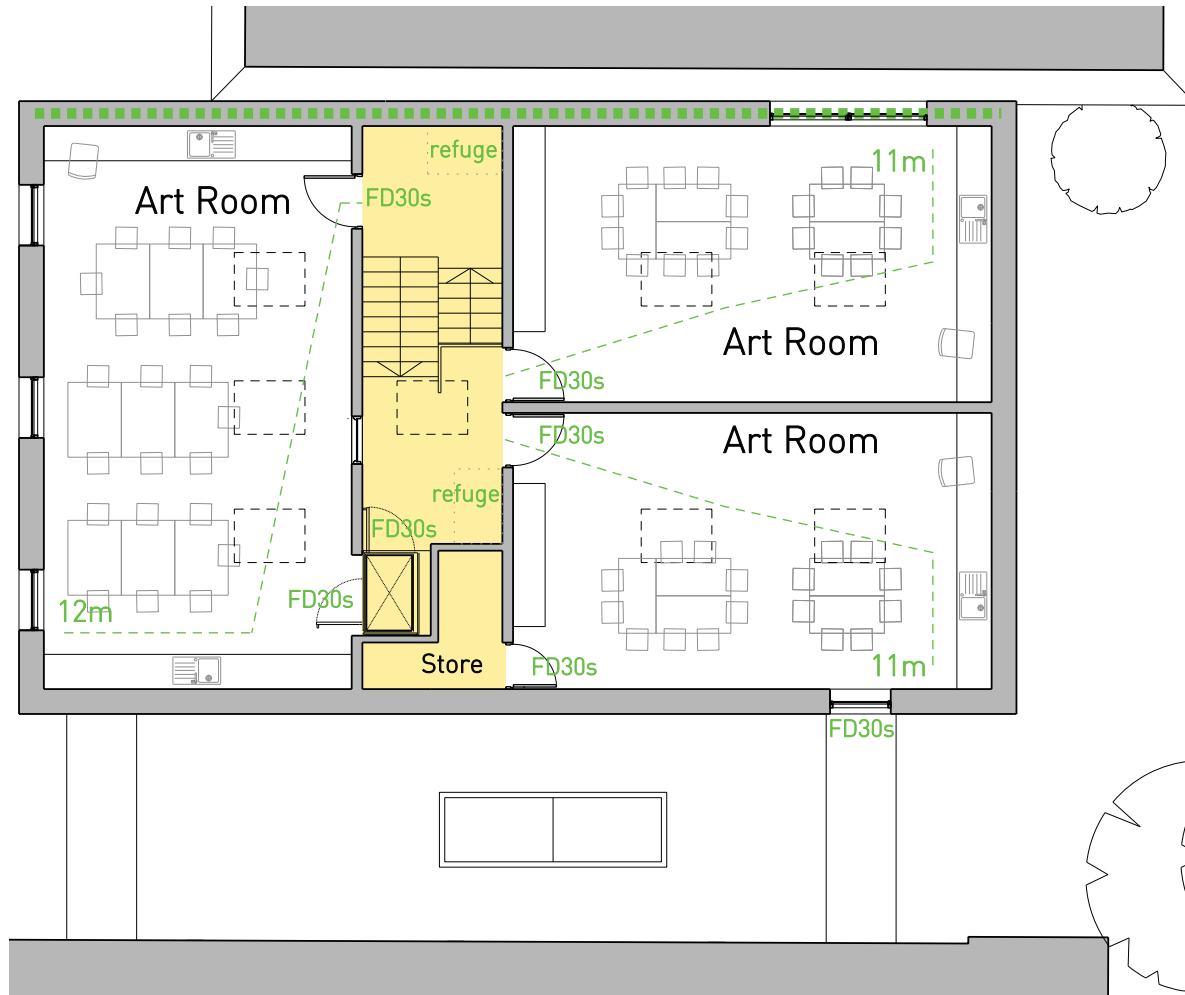
Key

- Protected enclosure / stair
- E Door on electromagnetic holdopen connected to fire alarm
- FD30s Fire door rating
- 60 min Compartment Wall

Total Max Occupancy of Ground Floor of New Building: 120

Ground Floor Fire Safety Plan

Means of Escape: First Floor of New Building



As it is a small building, a single staircase is acceptable as a means of escape, in accordance with paragraph 3.3d of Approved Document B vol. 2, , and 4.4.2.1 of BB100. Travel distances are in accordance with Table 2.1 in Approved Doc B, and Table 1 in BB100. Protected lobbies are not required between the art rooms and the escape stair, in accordance with paragraph 3.34 of Approved Document B.

Wheelchair refuges will be provided at both landings outside the art rooms, as shown, and an EVC system installed.

Key

- Protected enclosure / stair
- E Door on electromagnetic holdopen connected to fire alarm
- FD30s Fire door rating
- 60 min Compartment Wall

Total Max Occupancy of First Floor of New Building: 60

First Floor Fire Safety Plan

Fire Safety Measures and Means of Escape: The Lodge



The Lodge



Existing extension and fire escape to the Lodge, to be removed.

Key

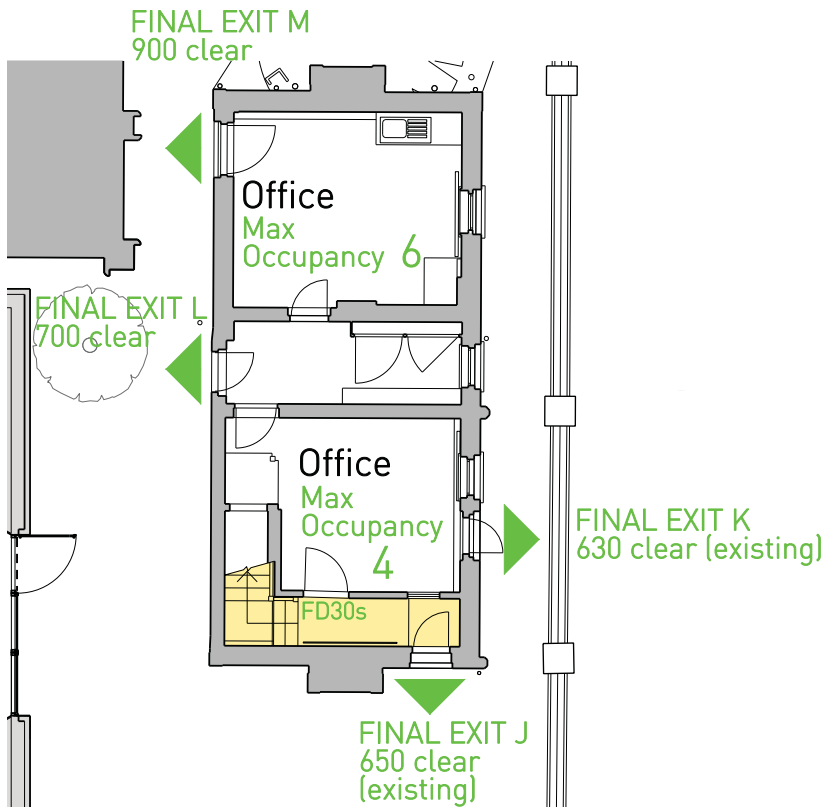
- Protected enclosure / stair
- Door on electromagnetic holdopen connected to fire alarm
- FD30s Fire door rating

The Lodge is a two storey building dating from the 19th century, which is locally listed as a 'Building of Townscape Merit'. It is used by St Catherine's School as administration offices. (Teaching currently takes place in the extension, but this will be removed as part of this project.)

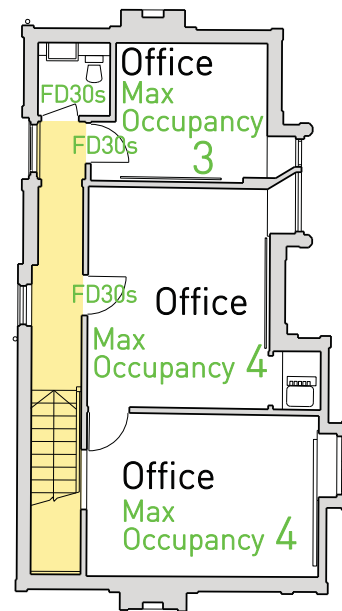
The ground floor will then have two rooms, each with existing escape doors directly to outside, which will be retained.

The first floor currently has a means of escape via the roof of the extension and an external fire escape staircase. This escape stair will be removed, along with the extension, as part of this project. The existing internal staircase in the Lodge will therefore be upgraded to a protected stairway, so that it can be used as the sole means of escape from the first floor. This involves upgrading the internal doors to be fire doors, and ensuring that the walls, floor and ceiling around the escape corridors and staircase achieve a 30 minute fire rating.

The fire alarm system and emergency lighting in the Lodge will be upgraded to meet the standards in the Buildings Regulations and BB100.



Ground Floor Fire Safety Plan - The Lodge



First Floor Fire Safety Plan - The Lodge

Conclusion

Fire safety is a key aspect of the design process, and the proposals are designed to meet a very high standard of fire safety.

Once the detailed design work is complete, full information will be submitted to Building Control for approval. In the mean-time, Harwood Building Control have reviewed the fire safety strategy, and confirmed that they have no objections to what is proposed and consider it to be satisfactory in principle.

The fire safety information will be updated throughout the detailed design, construction and occupation phases. When the building is complete, the strategy will be passed on to the School and periodically updated and published, to ensure safety for all users.

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