Chartered Institute of Building

Open Book Exam 2023

Health Safety & Welfare

Q.2

June 2023

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Introduction

This project is being conducted on behalf of the Regional authority.

The requirement is to construct a specialised storage & research facility to house surplus exhibits & sensitive materials away from the main museum.

The project is to be constructed upon the grounds of a disused gas works which ceased operations in the 1970s.

The grounds were remediated in 1972 after which they were left undeveloped.

Executive Summary

This report will identify the legal framework underpinning accessibility & illustrate how the Museum Storage Facility can satisfy the legal requirements to make it safe for all users.

Q.A Legal framework underpinning accessibility

The Equality Act 2010 is the legal framework that enshrines accessibility.

This act merged & superseded several other anti-discriminatory laws one of which was the Disability Discrimination Act 1995.

Section 20 of the Equality Act 2010 requires ;

"reasonable adjustment' to be made to allow for Access to goods, facilities, services & premises". *(Equality Act 2010, Section.20. Duty to make adjustments.)*

Section 149 states

"149Public sector equality duty

(1)A public authority must, in the exercise of its functions, have due regard to the need to—

(a)eliminate discrimination, harassment, victimisation and any other conduct that is prohibited by or under this Act;

(b)advance equality of opportunity between persons who share a relevant protected characteristic and persons who do not share it;

(c)foster good relations between persons who share a relevant protected characteristic and persons who do not share it." *(Equality Act 2010.section.149.)*

This is reinforced by Part.M. & Part .K. of the building regulations 2010. Where the regulations conflict Document .M. takes president.

Failure to comply may result in prosecution under the Building Act.1984

Q.B). Illustrated report explaining how relevant legislative requirements can be met to ensure the building is compliant and safe for all users.

To comply with the Equality Act 2010 the Museum building and surrounding area within the boundary is required to conform to The Building Regulations 2010, Approved Document M. For this to happen a design strategy should be adopted early on in the design process which should include the local planning authority & building control.

If access is considered from the time of arrival to the time of departure then the following is relevant.

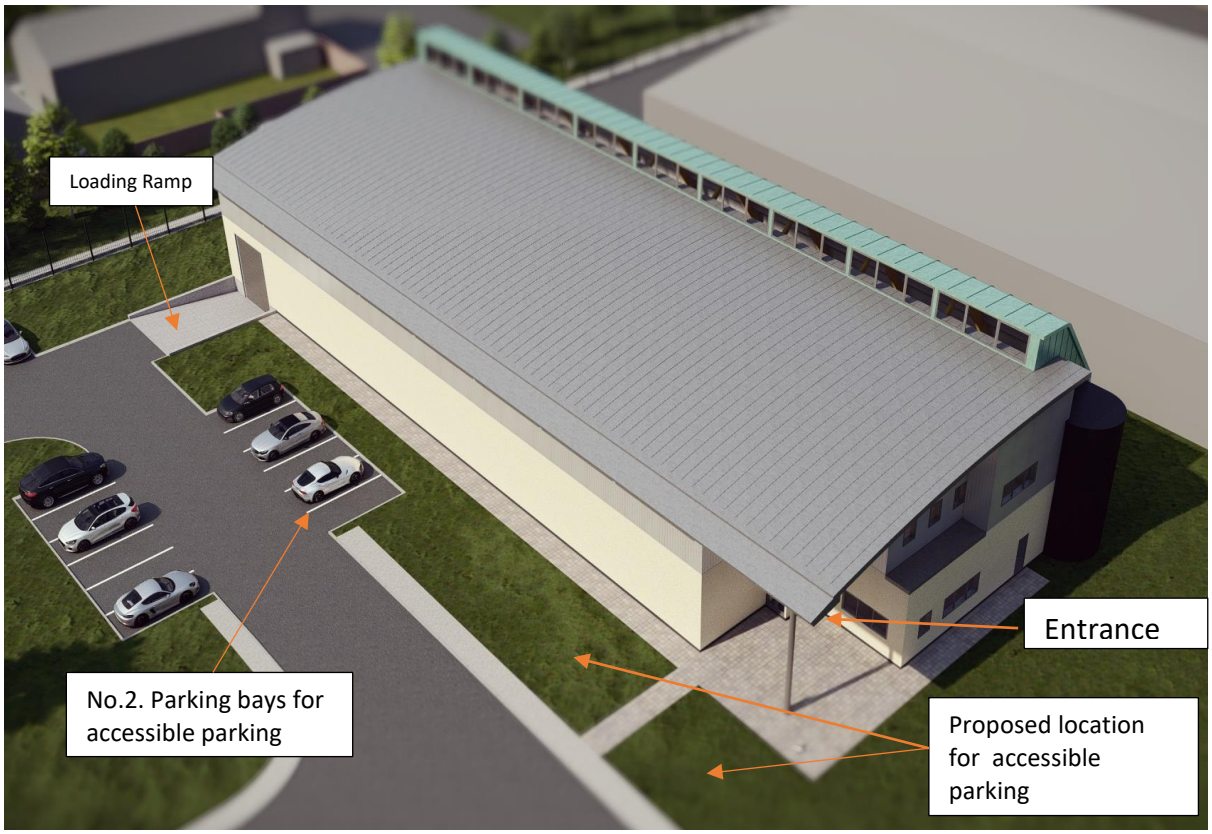
Access to the building

The design should allow for access for a person with a disability from the boundary or a car parking space to alight in a designated space and progress to the museum with the minimum amount of hindrance that is reasonably achievable.

This may include levelling areas, installing ramps & the use of tactile surfaces.

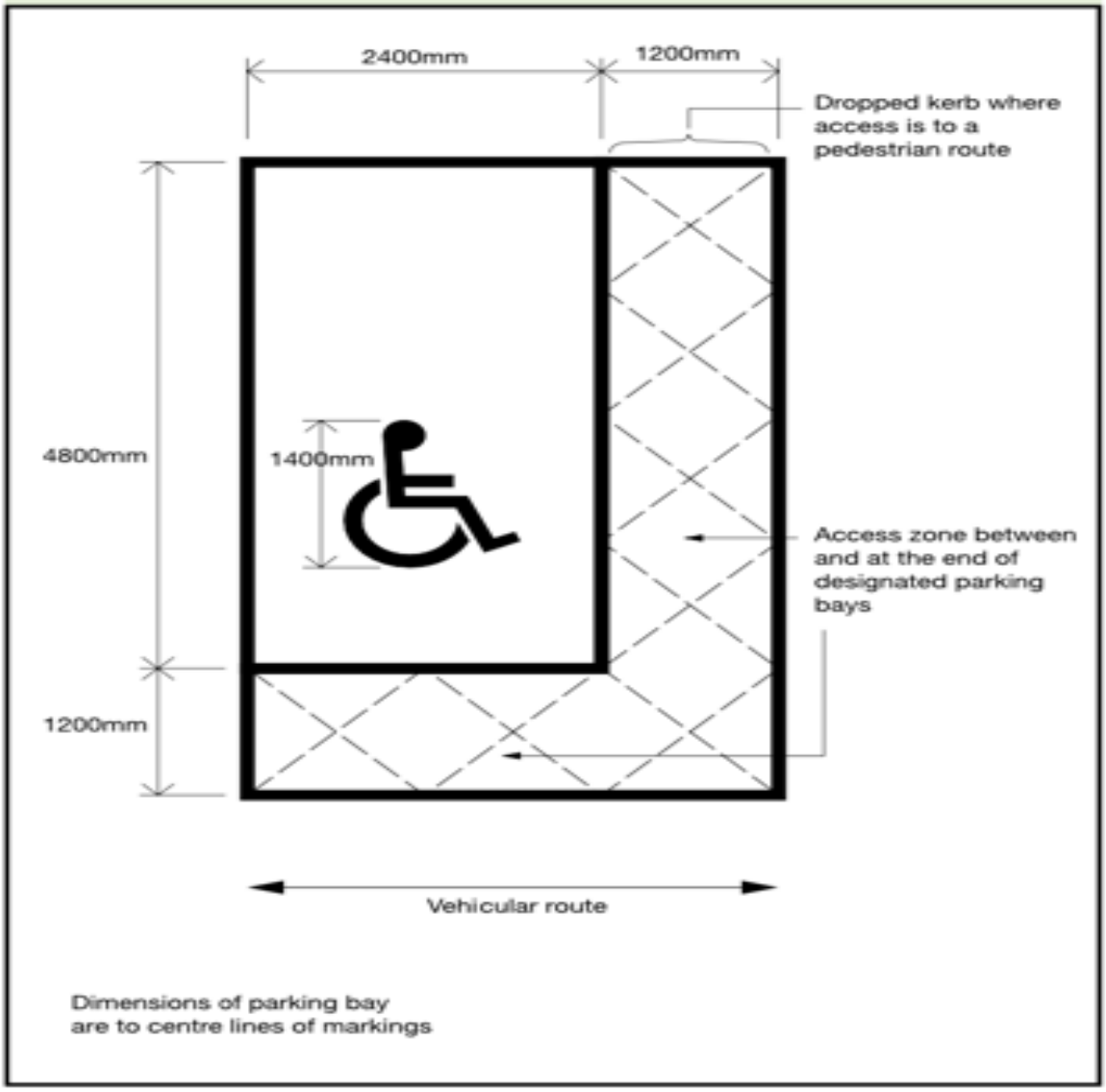
Steps are permitted but are considered the least desirable.

The concept drawings & computer images show the carparking spaces to be at the loading end of the building. This may not be considered as **reasonable access** as there is a greater distance to travel with a more suitable location available. *See below.*



The parking bays are required to conform with the dimensions shown below, noted as Digram.2. from *Doc.M,Volume.2.2010.pp18.*

Diagram 2 **Parking bay designated for disabled people**



HM Government. “O N L I N E v E R S I O N O N L I N E v E R S I O N.” HMG, 2010. Approved Document M Volume 2.pp.18

Entry & exit.

The museum entrance shows two sets of double doors.

It is desirable to have the threshold at the same level as the internal floor level, this may involve the inclusion of a ramp designed in accordance with document M . This should not be at the expense of a weather bar and not present any trip hazards for any users.

The entrance should be clearly sign posted as per **BS8300** & well lit.

The entrance floor surface should ensure a smooth transition with all obstacles and door furniture clearly marked by way of signage or colour.

Non-powered doors should have weather protection provide, all entrances are required to be of the correct width and preferable powered.

Clear visibility through allows safe passage.

All doors throughout the building will have to comply as per: Doc.M. 3.7

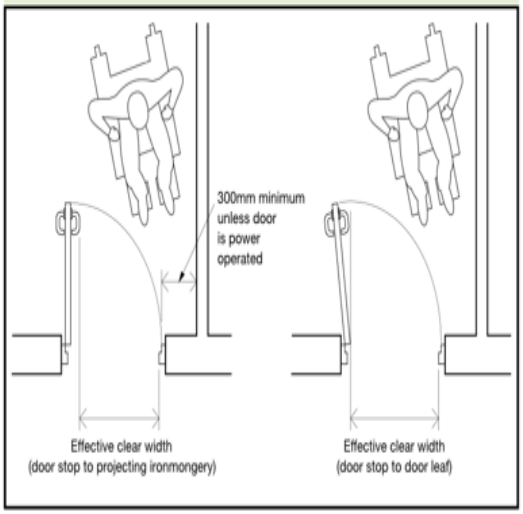
Table 2 **Minimum effective clear widths of doors**

Direction and width of approach	New buildings (mm)	Existing buildings (mm)
Straight-on (without a turn or oblique approach)	800	750
At right angles to an access route at least 1500mm wide	800	750
At right angles to an access route at least 1200mm wide	825	775
External doors to buildings used by the general public	1000	775

Note:

The effective clear width is the width of the opening measured at right angles to the wall in which the door is situated from the outside of the door stop on the door closing side to any obstruction on the hinge side, whether this be projecting door opening furniture, a weather board, the door or the door stop (see Diagram 9). For specific guidance on the effective clear widths of doors in sports accommodation, refer to ''accessible sports facilities'.

Diagram 9 **Effective clear width of doors**



HM Government. "O N L I N E v E R S I O N O N L I N E v E R S I O N." HMG, 2010. Approved Document M Volume 2.pp.25

Door entry systems and intercoms are required to be installed at set heights to allow seated persons ease of access.

Entrance Lobby

Doc.M. 3.1.

The first floor of the current building is accessible by stairs only.

To remedy this the following may be suitable.

The entrance area shows a security office adjacent to the corridor requiring a redesign to accommodate a lobby area which would incorporate a passenger lift sited near the entrance for disabled users to gain access to the first floor.

The security can still monitor persons and also assist those in need.

This would include reducing the size of the security office & opening out the remaining space to the hall thus creating a space for the passenger lift with the remaining area allowing for security counter should be at a height to allow for persons seated to use it without hindrance.

The fixtures fittings & decoration within this area should not be reflective to assist hearing impared people to lip read & visualy impaired people to interprete sign language.

Hearing induction loops should be installed to assist hearing.

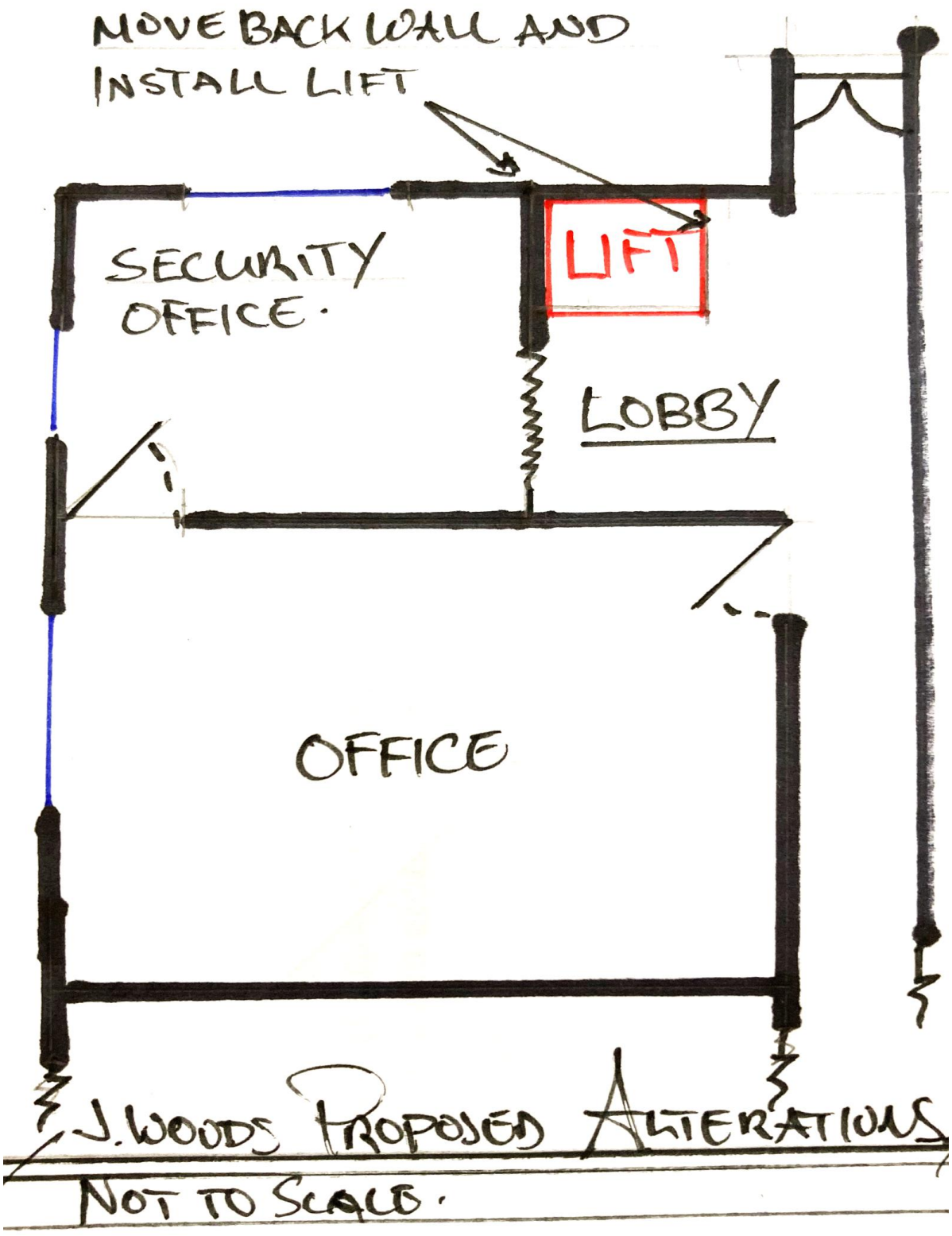
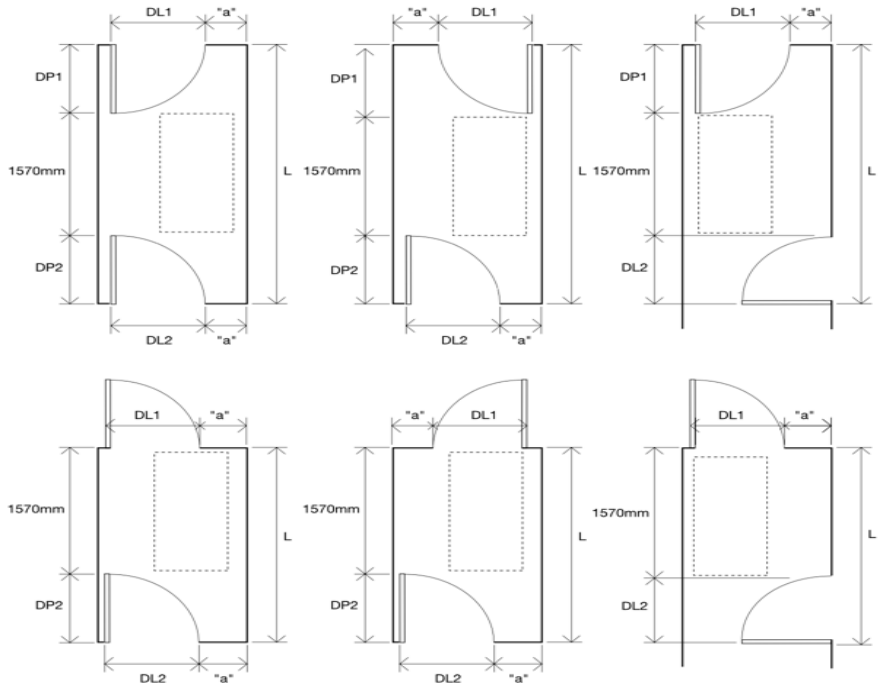

MOVE BACK WALL AND
INSTALL LIFT
LIFT
SECURITY
OFFICE.
LOBBY
OFFICE
J. WOODS PROPOSED ALTERATIONS
NOT TO SCALE.

Diagram 10 **Key dimensions for lobbies with single leaf doors**



DL1 and DL2 = door leaf dimensions of the doors to the lobby
DP1 and DP2 = door projection into the lobby (normally door leaf size)
L = minimum length of lobby, or length up to door leaf for side entry lobby
"a" = at least 300mm wheelchair access space (can be increased to reduce L)
1570mm = length of occupied wheelchair with a companion pushing (or a large scooter)

NB: For every 100mm increase above 300mm in the dimension "a" (which gives a greater overlap of the wheelchair footprint over the door swing), there can be a corresponding reduction of 100mm in the dimension L, up to a maximum of 600mm reduction.

. Document .M.2010 Volume.2pp.28

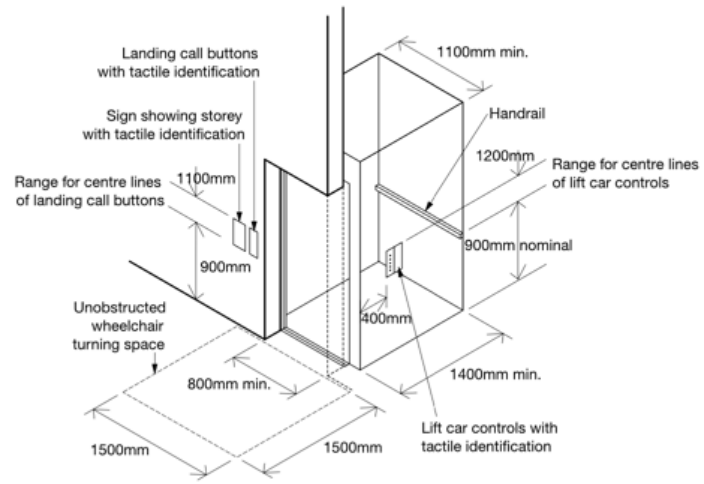
The entrance area is required to allow suitable access, although double doors are fitted the minimum dimensions are shown above. *See also p8. dia.2 above*

Personnel Lift

As there is currently no lift suitable for access to the first floor the security area has been redesigned to accommodate one.

This lift will be required to conform to Doc.M. 3.21 & all other lift regulations in particular Lift Regulations 1997, SI 1997/831 & BS EN81-70:2003. *(DOC.M.2010.p34/section.3.34).*

Diagram 11 **Key dimensions associated with passenger lifts**



(DOC.M.2010.p28).

Clear visible signage is required to indicate the location of the lift and be clearly visible from the building entrance a be in contrast to their surroundings.

Corridors and passageways Doc.M.3.11

As the drawings are concept drawings the corridors and passageways have no dimensions shown.

They are required to be a min 1200mm wide & where they are less than 1800mm wide have passing places 1800mm [2.]

No objects such as radiators and fire hoses etc are allowed to contravene this space.

The floors required to be level with provisions for slopes which have specific dimensions.

The concept drawings do not show any variation of floor height & due to the nature of the building construction none are envisaged at this stage.

Doors are preferred to pen inwards to rooms, if they do open outwards they required to open into recesses so as not to impede the corridor width as mentioned above.

Any doors of unequal width servicing major access routes are required to all be installed on the same side within the corridor.

The first floor corridor may include a glazed partition along the void side of the Glazing within the corridors should comply with Document. K section.7. using manifestation to indicate its presence.

Offices

Consideration should be given to open plan offices this will reduce the number of doors and provide easier access due to the increased space.

Desks should be positioned to allow for wheelchair access and turning.

The area should conform to the **Workplace (Health, Safety & Welfare) Regulations 1992.**

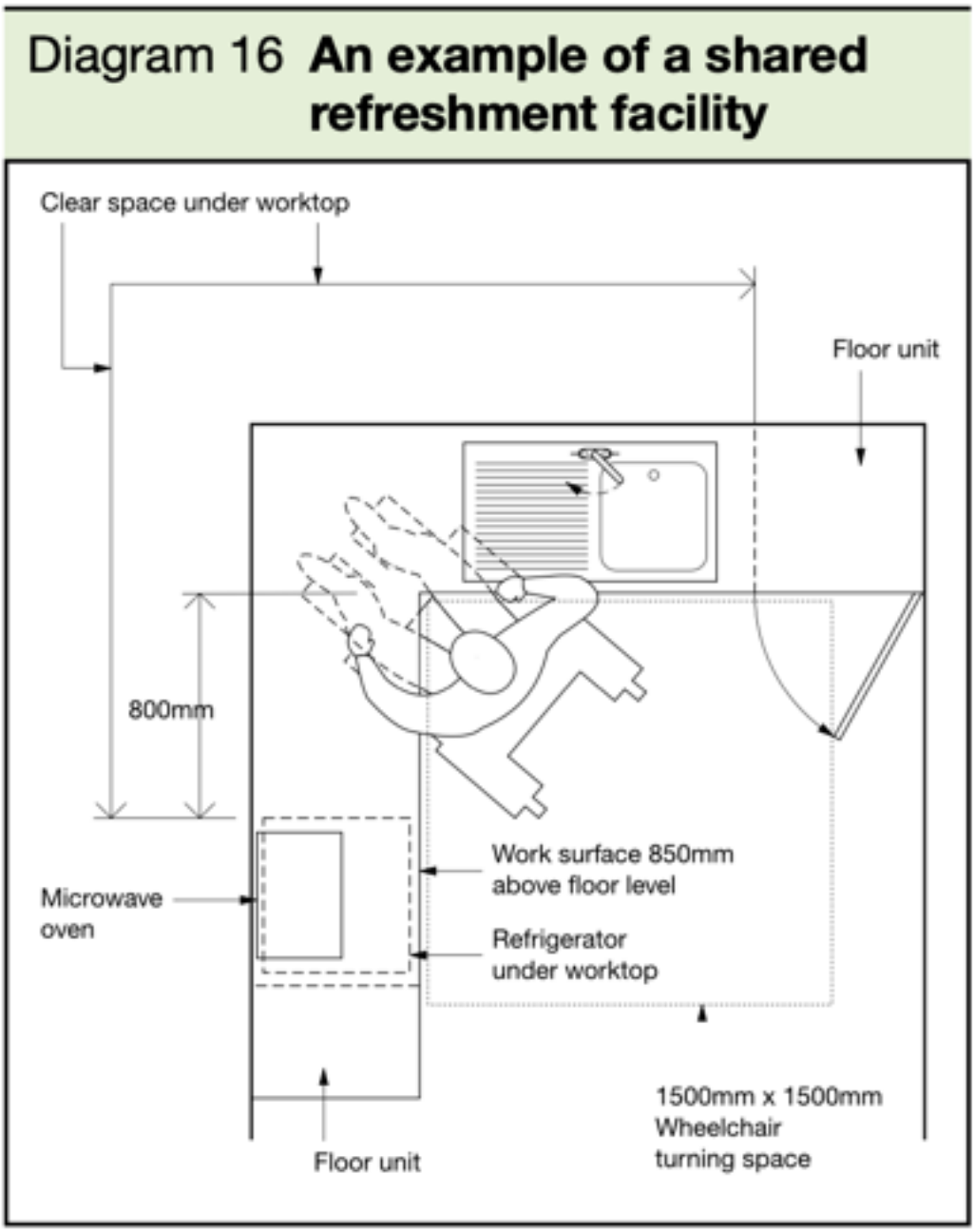
Kitchen area

Removing the wall between the kitchen and canteen area would allow for ease of access & open up the space allowing for additional natural light which may assist visually impaired persons.

The kitchen should be designed for ease of access with part of the countertop fixed at a maximum height of 850mm with a clear space beneath of 700mm height.

The required 1500^2 turning space sited adjacent to the work top.

See below.



Document M.2010.Volume.2. Diagram 18.p42

WC & Shower room.

The concept drawings show a total of two WCs one on each floor with the addition of a shower room on the first floor.

As a result it is concluded that these are to be unisex facilities and will also be required to accommodate able bodied persons.

All locations are required to comply with Document M in order to comply with the Uk regulations.

It is not known how m any staff are to be employed so the building will need to comply with **The Workplace (Health, Safety & Welfare) Regulations 1992.**

Regulation 20 requires a specific number of WCs are available for staffing levels.

Number of toilets and washbasins for mixed use (or women only):

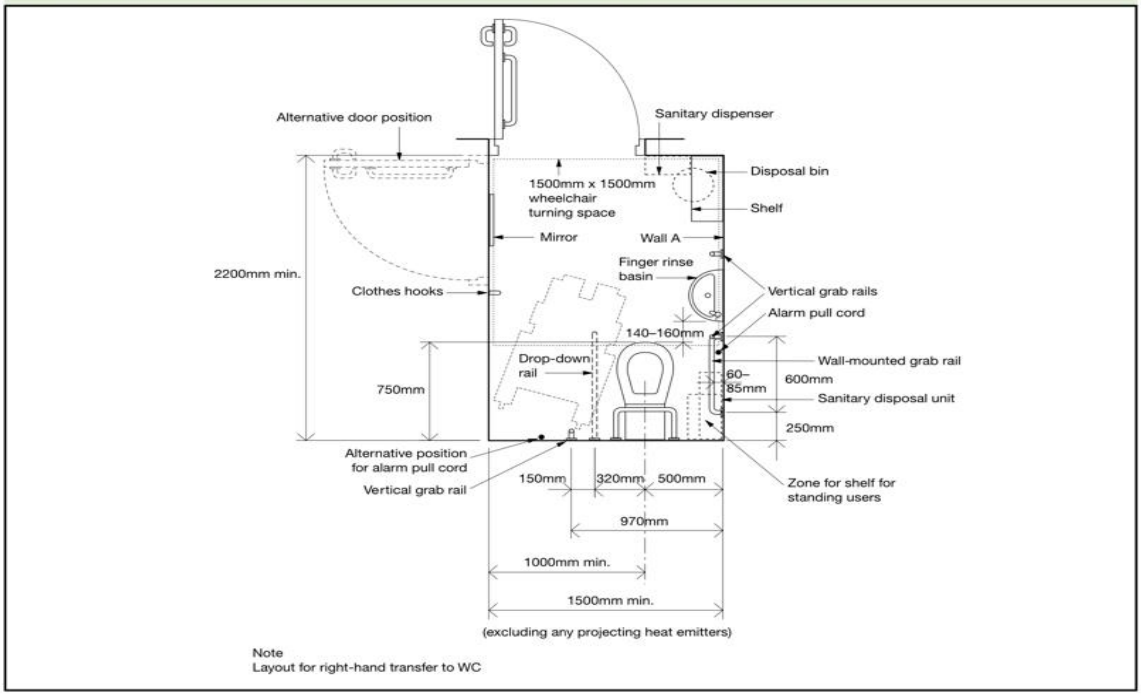
Number of people at work	Number of toilets	Number of washbasins
1-5	1	1
6-25	2	2
26-50	3	3
51-75	4	4
76-100	5	5

"How Many Toilets Should a Workplace Have?" *Hse.gov.uk*, HMG, 2015, www.hse.gov.uk/contact/faqs/toilets.htm. Accessed 13 June 2023.

Taking the number of facilities shown it will be preferable for the ground floor to be compliant with the Document M unisex WC specifications. *See below.*

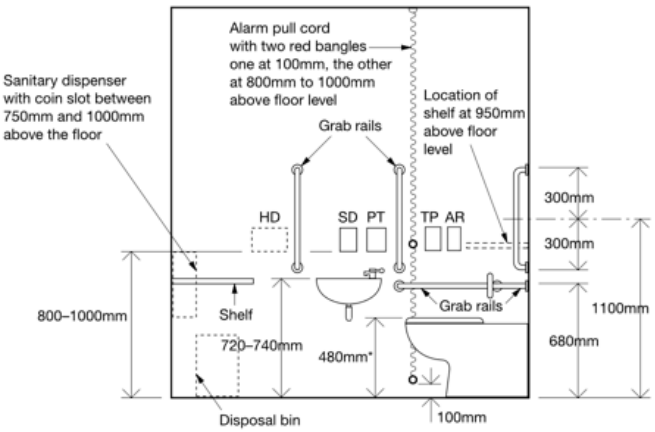
SANITARY ACCOMMODATION IN BUILDINGS OTHER THAN DWELLINGS

Diagram 18 **Unisex wheelchair-accessible toilet with corner WC**



Note
Layout for right-hand transfer to WC

Diagram 19 **Heights and arrangement of fittings in a unisex wheelchair-accessible toilet** (looking towards wall A in diagram 18)



*Height subject to manufacturing tolerance of WC pan

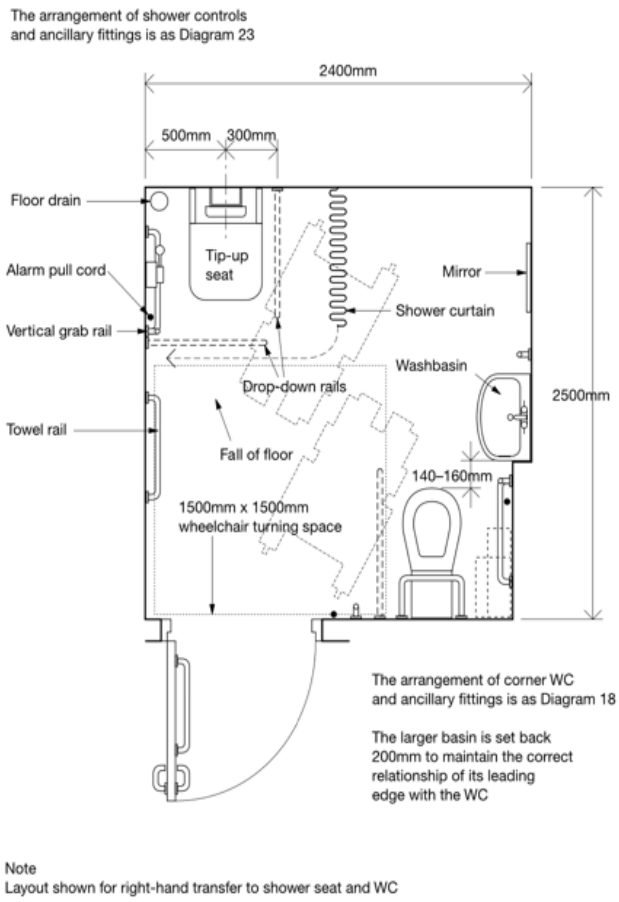
HD: Possible position for automatic hand dryer (see also Diagram 20)
SD: Soap dispenser
PT: Paper towel dispenser
AR: Alarm reset button
TP: Toilet paper dispenser

Height of drop-down rails to be the same as the other horizontal grab rails

Document M.2010.Volume.2. Diagram 18.p51

The first floor WC & shower room should be re designed without the dividing wall and constructed as below.

Diagram 24 **An example of a shower room incorporating a corner WC for individual use**



Document M.2010.Volume.2. Diagram 18.pp42

Loading Bay

In the event of an emergency the loading bay may form part of the emergency access route out.

This area is already ramped to allow for the level unloading of good vehicles.

However it is likely that a drop will still be in place. Therefore a ramp is required to allow for safe egress to the carpark area and should comply with :

Table 1 Limits for ramp gradients

Going of a flight	Maximum gradient	Maximum rise
10m	1:20	500mm
5m	1:15	333mm
2m	1:12	166mm

Note:

For goings between 2m and 10m, it is acceptable to interpolate between the maximum gradients, i.e. 1:14 for a 4m going or 1:19 for a 9m going (see Diagram 3).

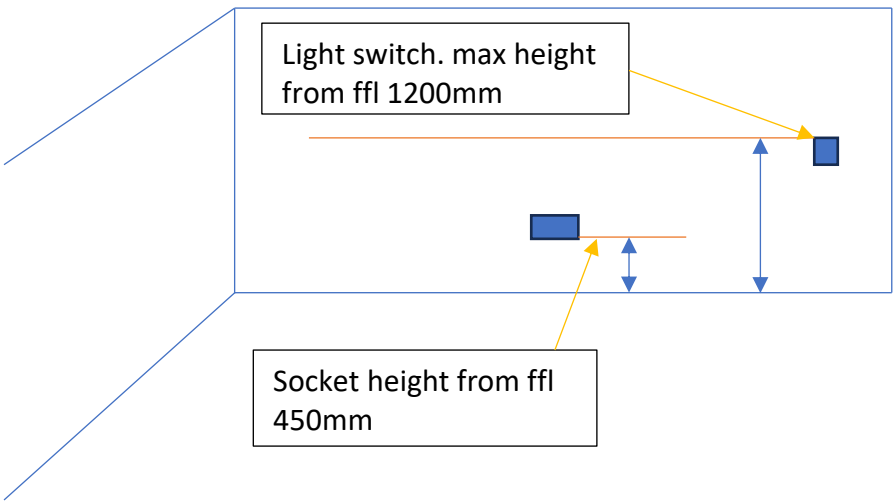
Document M.2010.Volume.2. Diagram 18.p19.

Controls

The siting of electrical switches, socket outlets and controls for functional & maintenance

should be between 450mm & 1200mm ffl finished floor level.

Required to comply with **BS7671 18th Edition Electrical regulations**.



Stairs

The internal stairs should make use of handrails sited as per Diagram.4.& 7.

of Document M.

Distances between that wall & the rails are set as are any rails along landings and should provide a visual contrast to the surrounds they are installed within.

The materials should not be cold to touch and resistant to damage.

At the top, bottom and any intermediate landings of the stairs corduroy mating is used as a warning of a change of level surface.

The steps should include nosing's that are in contrast to the rest of the step although the top step is exempt.

Summary

In conclusion the concept drawings can be improved upon to allow for greater ease of accessibility to the building from the car park.

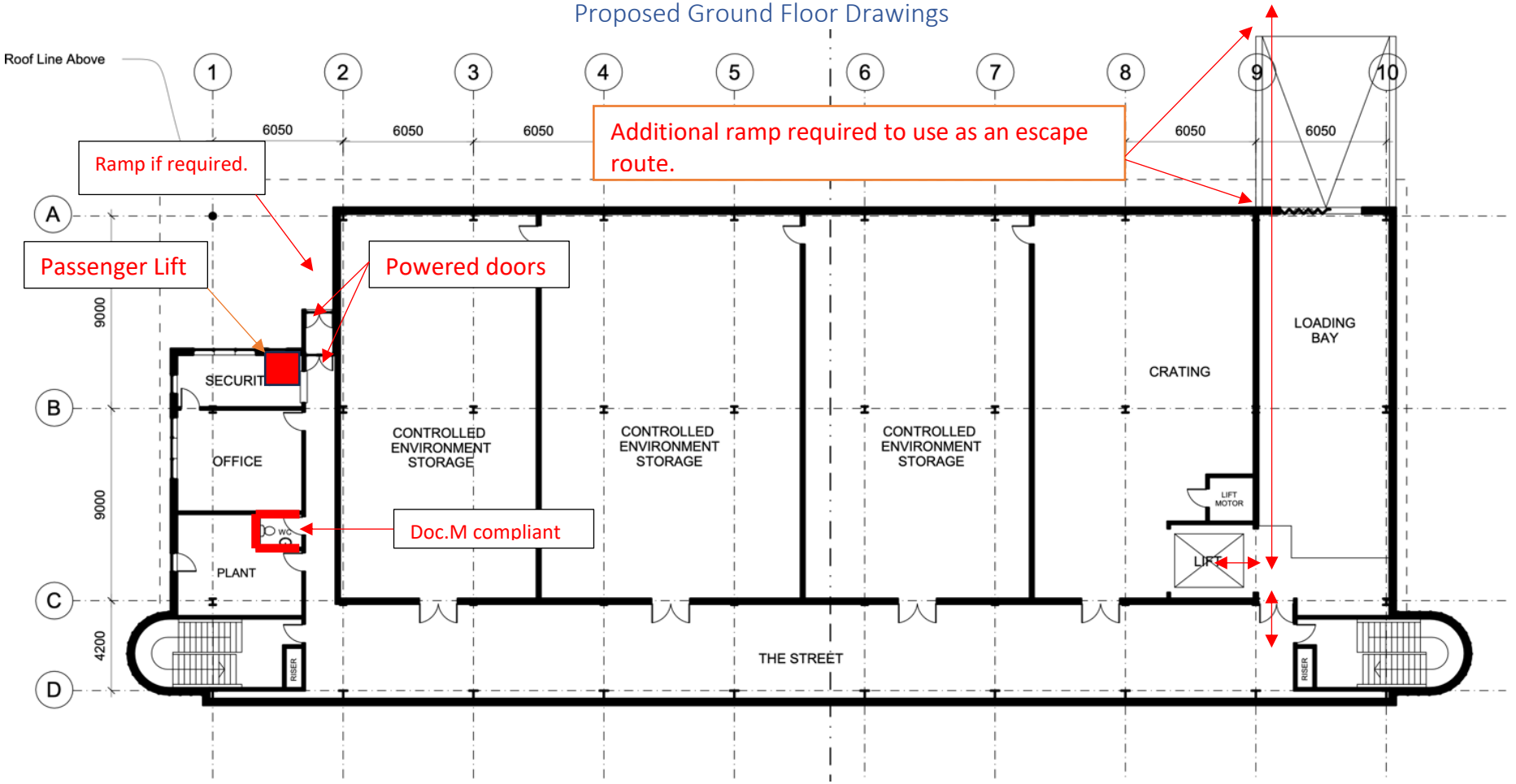
The entrance would benefit from a lobby and an accessible lift to the first floor.

There is a general lack of accessibility within the building design and no provision shown for open areas within the kitchen and offices which may allow greater freedom of movement to all persons.

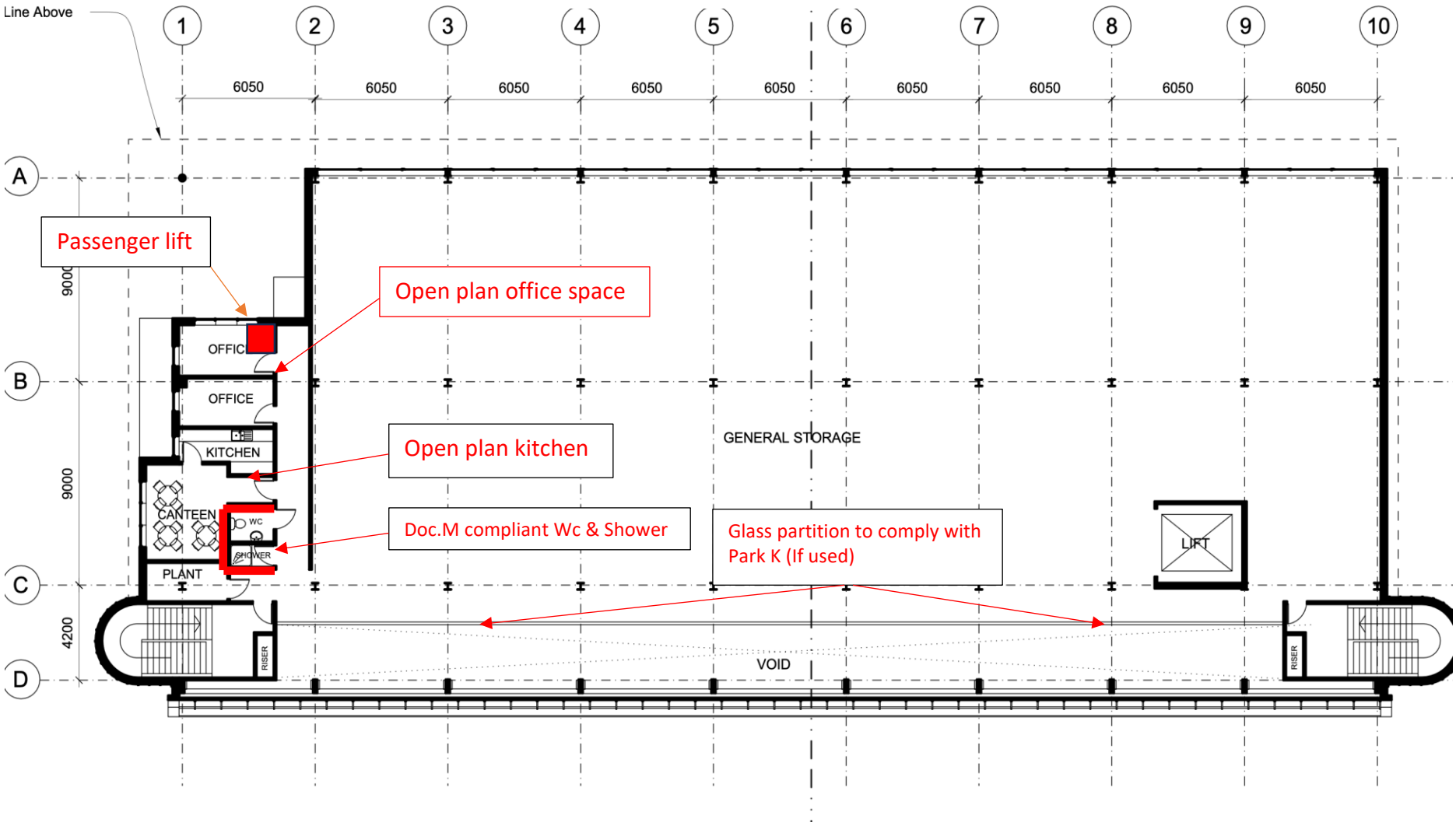
Therefore some re-design is desirable for this facility to comply with the Equality Act 2010, planning and building regulations.

The drawings below highlight the areas of concern and indicate some solutions within the text of the drawings and indicate some of the issues noted in the text above.

Proposed Ground Floor Drawings



Proposed First Floor Drawings



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