REPORT

FEASIBILITY STUDY

16021 - THE HARLINGTON, FLEET

Charcoalblue LLP
17 Short Street
Bankside, London SE1 8LJ

+44 (0)20 7928 0000
studio@charcoalblue.com
www.charcoalblue.com

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CHARCOALBLUE
THEATRICAL INNOVATION | ESTD 2004

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EXECUTIVE SUMMARY

This study is the result of work completed by Charcoalblue during a feasibility period from mid-April through to mid-June 2016.

The study is an investigation into the ability of the existing building to accommodate the auditorium requirements set out by the Harlington Team, with a proposed design approach. The new proposal aims to refurbish and rework The Harlington.
The refurbishment would also develop the ancillary spaces of the existing building to work with the new auditorium.

In addition, this report examines the potential footprint for a new building, with possible locations for this identified. The new build would accommodate all of the briefing requirements of the Harlington Team detailed herein, including a 400-seat auditorium complete with technical level, all necessary supporting spaces, together with a dance studio and large second performance space.

Outline budget costs for both the refurbishment and new building are provided, based on similar construction projects.

A headline analysis of the room acoustic requirements, along with an initial approach to the design of the theatre technical systems is included, together with outline budget cost allowances for the technical systems – for refurbishment and new build.

At the end of the report ‘next steps’ highlight the key activities required to progress the proposed works into the next phase of design.

1 INTRODUCTION

The Harlington opened as a civic complex in 1972, comprising ‘Civic Hall/Assembly Room’, library, offices and meeting rooms.
A major fire in 1991 destroyed the hall, which was rebuilt with improved facilities, reopening in 1994 as The Harlington.
In 2005 the building had some minor DDA modifications, with the addition of a lift in the northwest of the building leading to all floors.

The building is a multi-purpose arts and entertainment venue in the heart of Fleet town centre, Hampshire. The Harlington is operated by Fleet Town Council and is also currently home to WRVS and The Point – charitable and voluntary organisations.

The current Harlington frontage

2 THE BRIEF

Following a previous exercise undertaken to investigate the potential for a new combined library and community facility, subsequently quashed for financial reasons, Fleet Town Council (FTC) approached Charcoalblue to explore the viability of developing a “modern, functional theatre facility”, either by means of a new building or through the redevelopment of the existing Harlington site.

2.1 CURRENT ARTS ACTIVITIES

The Harlington currently mostly undertakes one-night events, typically:

- Cabaret
- Tribute acts
- Stand-up comedy
- Beer festival
- Exhibitions
- Magic shows
- Wrestling events
- Male variety shows
- ‘An evening with…’ with Q&A

This programme is supplemented with day and evening hires for:

- Music classes
- Rock Choir
- Youth theatre
- Roller discos
- Weekly fitness classes (aerobics, yoga, Ceroc, dance, etc.)

The aim is to maintain the current programme of events but to expand with larger scale visiting shows and simultaneous activities in supporting spaces.

2.2 OUTLINE ASPIRATIONS

At its simplest, the venue has outgrown its current facilities and needs new facilities for both the present and to grow into. But in all the areas described below, it is not simply a matter of providing better facilities for the same output, but of providing a venue to increase and improve the output.

The key requirements of the brief, as identified through our meetings with the client team and the briefing document issued by the General Manager, Alex Robins, are as follows:

MAIN HOUSE

- Programme: Tribute shows, comedians, plays, amateur shows, dance school performances, pantomime, larger children/family shows, named artists & performances where a larger capacity is required, conferences & large meetings, exhibitions, large party nights with live entertainment, cinema (not new releases)
- Capacity: 350-400 theatre / 320-350 cabaret (chairs & tables)
- Ability to do flat floor, all-standing gigs
- Ability to do front half standing, rear half cabaret seating
- Integral bar (which can cater for up to 500ish standing)
- Capacity to include balcony with minimum 100 fixed seats (can be removed for sound / followspot positions); to include side balcony on both sides
- Balcony to be accessed from first floor to avoid losing space downstairs when in cabaret format
- Theatre bar on first floor with higher quality toilets etc.; can be closed off at bottom of stairs at ground level when not sold.

BACKSTAGE

- Dance Studio
- Dressing rooms: 3 separate, plus one large space for larger panto, dance school, amateur casts; should be able to use as one open room or cut in half to split boys/girls where necessary
- Green room
- Crew room
- Laundry room
- Workshop
- Kitchen
- Dock / storage (which would include level access loading bay and parking for up to 2 Luton vans, plus additional cars if possible).

FOYER

- Possibly all open plan with current café (which could become café/bar and theatre bar) and box office area.
- Toilets.

LIVE ROOM (OR SECOND PERFORMANCE SPACE)

- Programme: Live music (jazz, blues & folk clubs, original breaking artists, up and coming artists, comedy club, experimental theatre, rehearsals, private party hires etc. where capacity requirements are lower)
- Black box space with flat floor (must replicate main house stage size so rehearsals could take place in here)
- Capacity: 200 standing with cabaret option.
- Stage height: 0.9m-1.2m
- Facilities: Own bar, toilets, LX & sound
- Ideally self-contained so audience can enter the venue from the street and don’t mix with the theatre audience in the main house. There should be an option of entering from the main building, but able to be locked off from it so it can operate independently whilst the rest of the building is closed.

OUTDOOR EATING / DRINKING AREA

- Accessed through café/bar

The intention of this report is to therefore clarify what, from the above list, could be accommodated within the existing building as part of a refurbishment project, and to identify what could only be possible as part of a new build construction.

3 THE CURRENT FACILITIES

3.1 THE AUDITORIUM

The Chernocke Hall is a flat-floored room, with an end-on stage 18m x 6.5m, with treads up either side as the only access from auditorium to stage. Wing space is limited by an existing stair to the basement on stage right and the current technical provisions housed on stage left.
The space no longer meets the visiting company requirements or the desired programming for the future business model.

Existing Chernocke Hall

The overall look and feel of the auditorium is dated and tired, and the wide, spread-out nature of the space makes it more difficult for the performers to create an atmosphere of excitement and intimacy for focused performance. At present the auditorium does not meet modern expectations for both access and facilities.

3.2 FRONT OF HOUSE SPACES

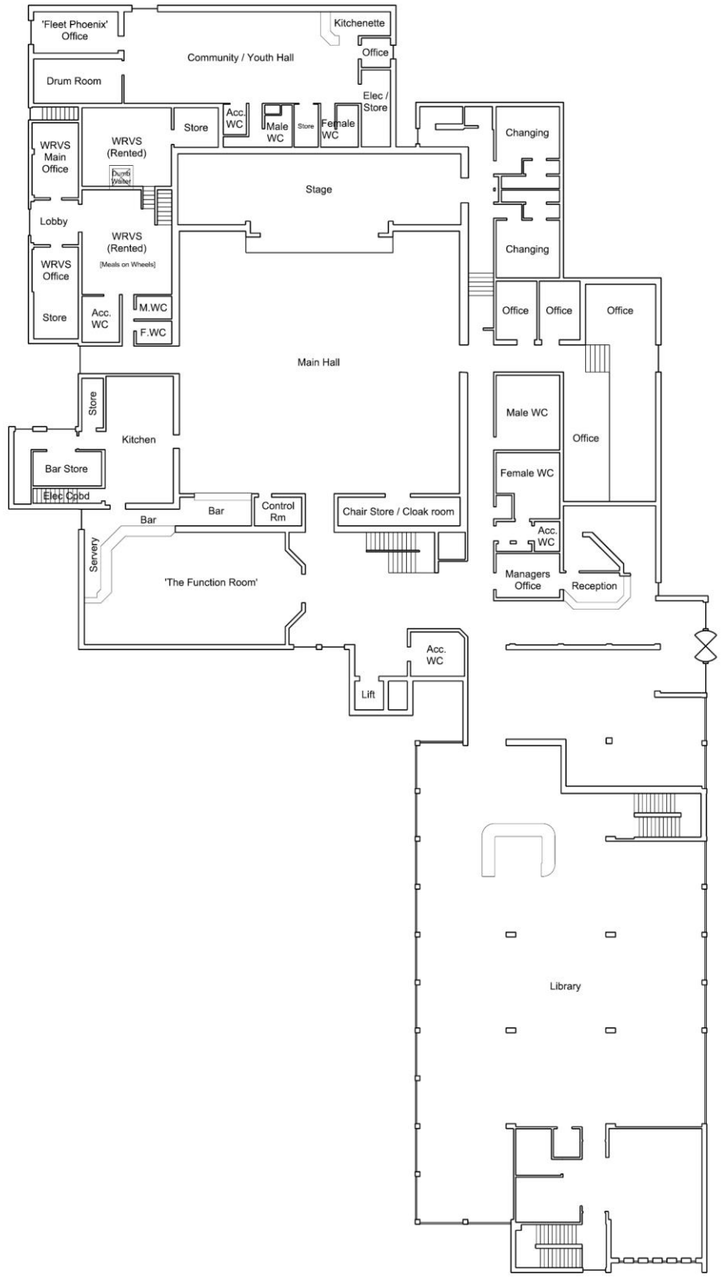
The Harlington's public-facing amenities are severely limited: upon entering the building one is immediately faced with a partition wall which naturally creates a division in the 'meet and greet' space. There is a café/coffee shop area to one side, which serves as the only foyer area with no real space to resolve any ticketing issues that may arise and is not geared towards creating an evening performance atmosphere. Sanitary facilities are off to the opposite side, and are in serious need of attention both in décor and updating of the mechanical services.
The Function Room is situated directly through to the back of the building and serves as an overflow to the foyer facility in times of larger audience capacities. The room has a small hatch to serve refreshments from prior to and during the show – this often magnifies the current noise separation issues during the performance when staff need to restock the bar ready for the interval as it is currently linked directly through to the main auditorium volume.
Neither the café/coffee shop or The Function Room are spaces that are suitable to create anticipation for an evening's entertainment.
Indeed, from the main approach on Fleet Road and through Gurkha Square, one could be forgiven for thinking that The Harlington is solely a library facility, as is its neighbouring building.

At the next stage of design, once a design team has been appointed, it would be fundamental to interrogate this front of house area, along with the façade to create a more engaging and exciting entrance facility for the venue.

3.3 BACKSTAGE SPACES

There are no counterweight or electrically flown bars over the stage, and any cloths, set, sound, AV or lighting required in this area is rigged by ladder, or pulled up manually by the technicians using direct-haul hemp lines to the overhead bars. The bars are in fixed positions and the lighting rig is also fixed to reduce turnaround times and staff costs, which does not allow the flexibility required for visiting companies – any departure from the fixed rig is at a cost to the incoming production.
Power to the stage area is insufficient for the desired productions. The control room is too small as well as having poor sightlines to the stage for sound and projection and access to the room is via a set of wooden steps within a small enclosure at the rear of the auditorium, i.e. this room is not accessible to wheelchair users.
The auditorium is equipped with one fixed advance bar, with the only access to this position through the use of a ladder, which means the seats have to be moved to allow a clear route along the full length of the bar, which again adds time and cost if alterations to the rig need to be accommodated.

There are significant sound separation issues throughout the building, which cause problems during classes and productions alike. The supporting spaces and dressing rooms are too few and too small. The load-in is small and sits on the floor c.1350mm below stage level, meaning difficult and time-consuming get-ins for performances.



Existing ground floor plan

4 KEY PRECEDENTS

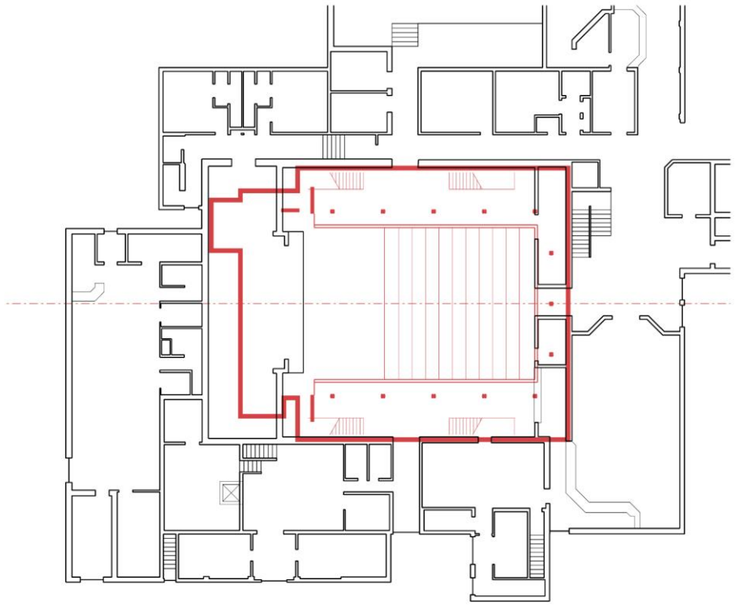
The spaces described below have been key in understanding the ambitions and desires of The Harlington, and have played a useful role in the development of the plans for refurbishment of the main auditorium. The review of built examples as comparatives has helped to evolve the scheme and test the spatial characteristics.

The National Theatre's Dorfman Theatre and the Royal Opera Houses' Linbury Theatre, both in London, along with the Great Hall at The Leys School in Cambridge have been particularly informative. The principles of these spaces aligning closely with the proposals for the existing hall.

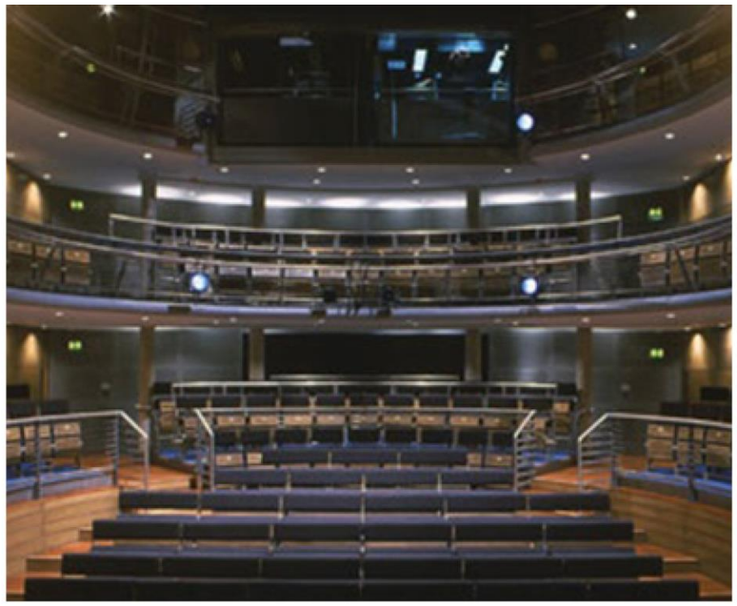
The key precedent spaces are shown on the following pages, with the outline of the existing performance venue overlaid in red within The Harlington.

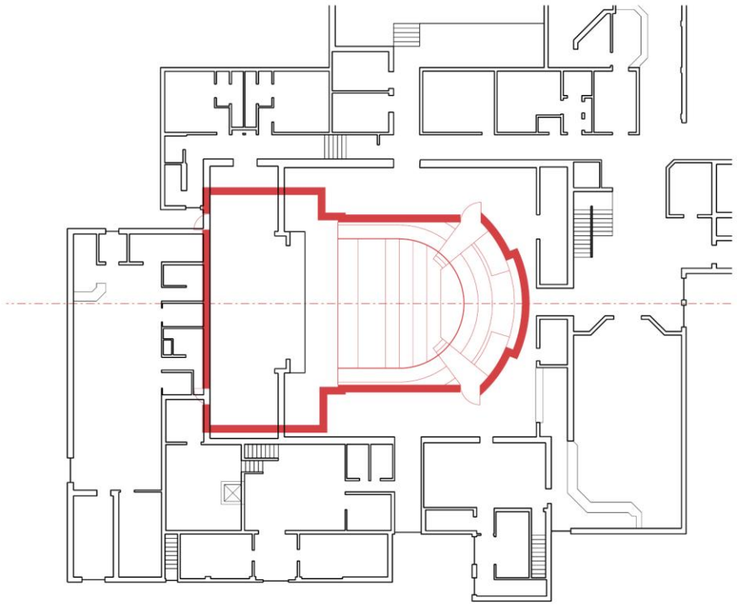
The key precedents include:

- Dorfman Theatre, National Theatre, London
- Vanbrugh Theatre, RADA, London
- Performing Arts Centre, Folkestone
- Parabola Arts Centre, Cheltenham Ladies' College
- Great Hall, Leys School, Cambridge
- Linbury Theatre, Royal Opera House, London

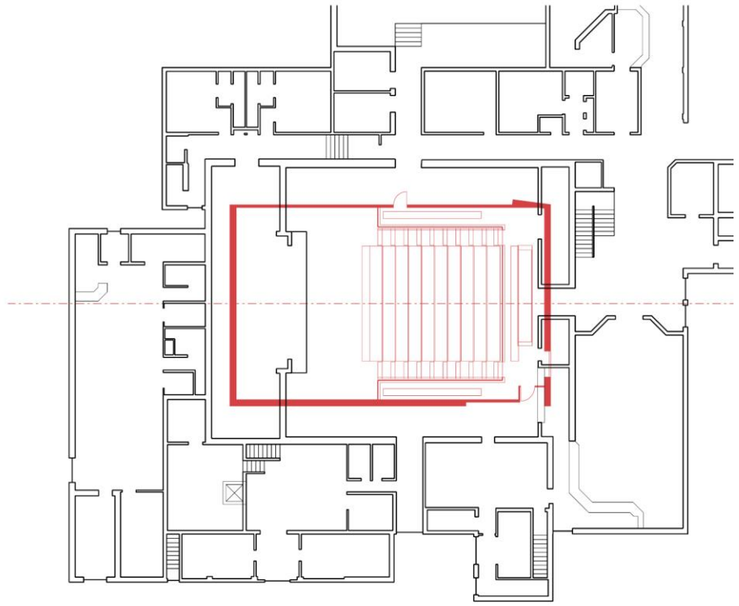


Dorfman Theatre, National Theatre, London

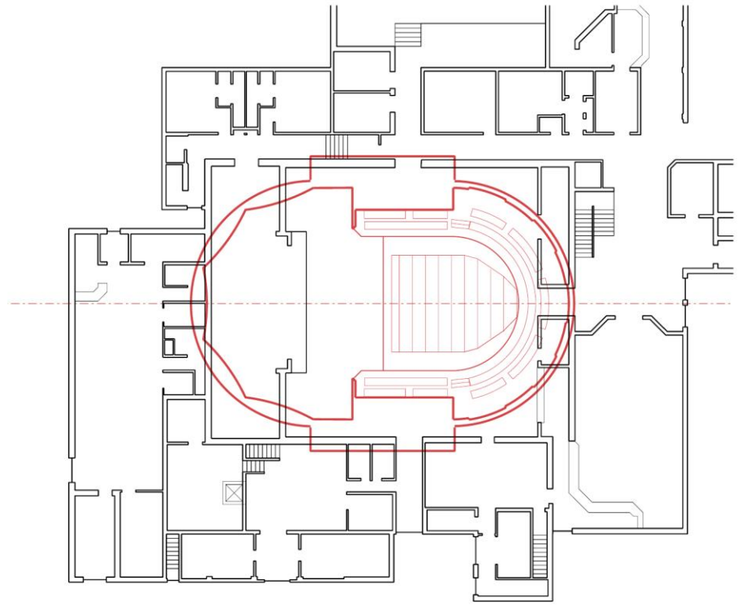




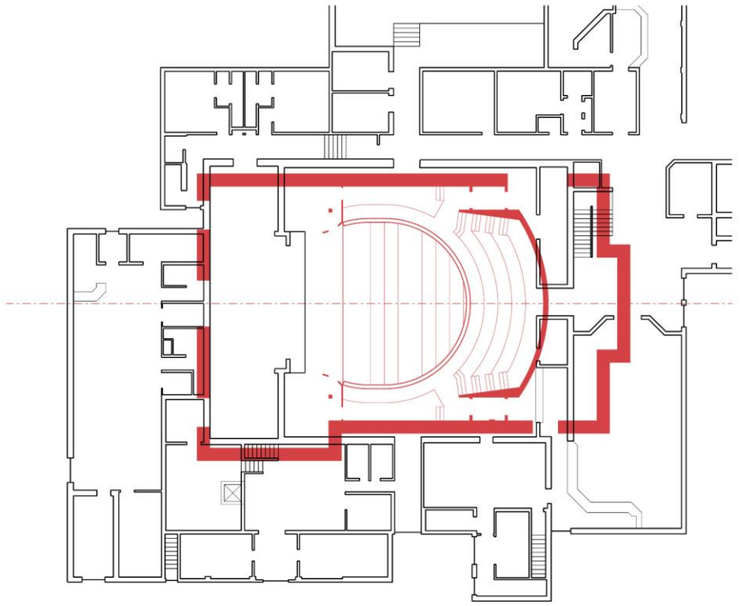
Vanbrugh Theatre, RADA, London



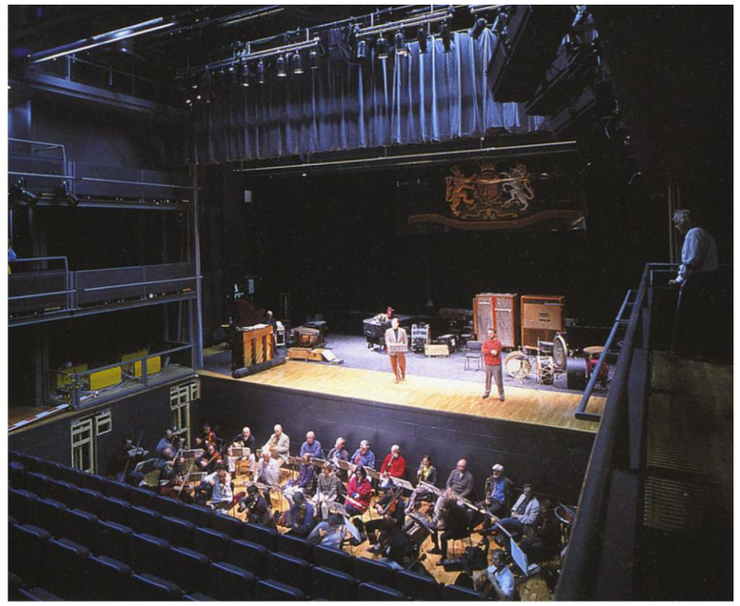
Performing Arts Centre, Folkestone

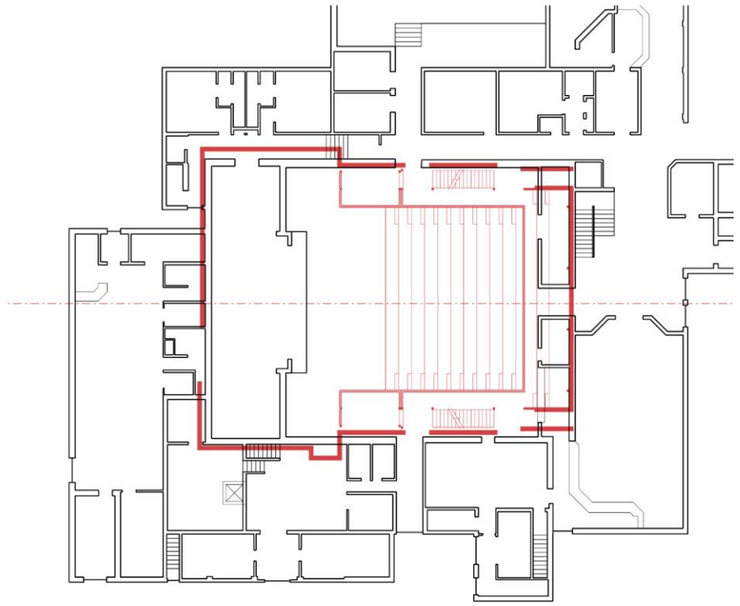


Parabola Arts Centre, Cheltenham Ladies' College



Great Hall, Leys School, Cambridge





Linbury Theatre, Royal Opera House, London

5 AUDITORIUM PLANNING

The proposal for The Harlington has been broken down into two sections, the first being to address a refurbishment of the existing room by inserting a new venue within the structural envelope of The Chernocke Hall. This proposal is intended to be the most economic development of the site, to ensure the existing venue is enhanced to meet both the current program and that the space will meet the future requirements and aspirations.
The second option outlines the requirements on the site to develop a new, purpose-built venue; identifying the key areas and proposing possible locations for a venue that will not only allow for the future programming of The Harlington, but create a performance venue that will build upon and enhance the design proposal of the refurbishment, refining the main space to perform as required and allow further development in line with the wider business model of a new building.

5.1 REFURBISHMENT

The key principles in our proposals for the Harlington Theatre are the rationalisation of the rooms' proportions, transforming the space from a performance hall to a courtyard theatre, reflecting the development of the venue and the aspirations for future use; being used for music, theatre, dance, comedy and standing gigs, as well as being the main space for community use.

The main drive behind changing the theatre from its current arrangement is to allow for a larger stage required by many of the visiting acts and to create an auditorium that enhances the actor-audience relationship, creating a more intimate experience by enclosing the body of patrons.
We propose to achieve this by the full removal of the existing core of the space, together with lifting the current ceiling level to maximise the usable volume of the room. The large flat floor area currently used for audience will be replaced with a bank of raked seating that extends up to meet a courtyard balcony. As well as pulling the audience into the extended volume of the space this also helps to create a wall of faces to each side of the room, which connects both the audience to the performance and audience to audience, thus enhancing the experience for both actor and patron whilst maximising the seating capacity, all the while sustaining an intimate playing space.

At this stage, we are proposing two options for the stalls rake, both of which achieve the principle of a courtyard space, but with differing levels of flexibility that will be explored at the next stage of design.
These options are both based on a retractable seating unit, creating the bulk of the seating rake:

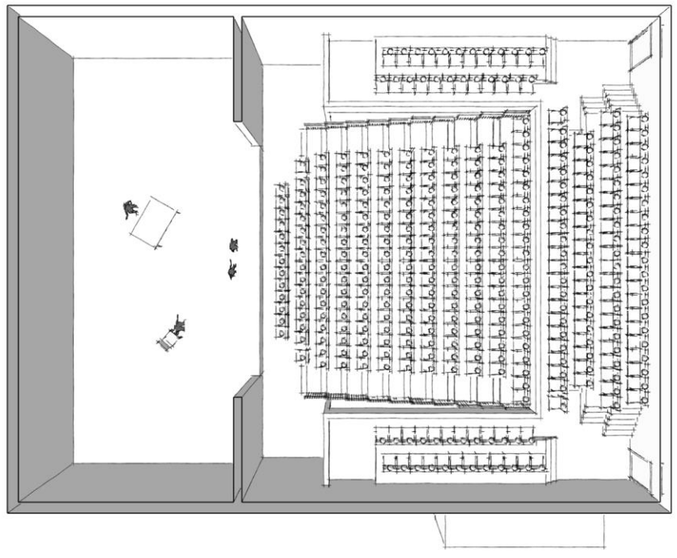
- Option 1 uses just the retractable seating - a stalls audience that climbs from the stage edge at grade, in a single unit.
- Option 2 adds to a slightly reduced retractable unit with a small seating pit to sit directly in front of the stage. This pit is used to allow stage height flexibility whilst the rest of the stalls area can still be configured using the retractable unit, or tables and chairs for alternative functions.

  The seating pit will consist of removable seats and a mechanically-assisted rostra system, described elsewhere in this report.

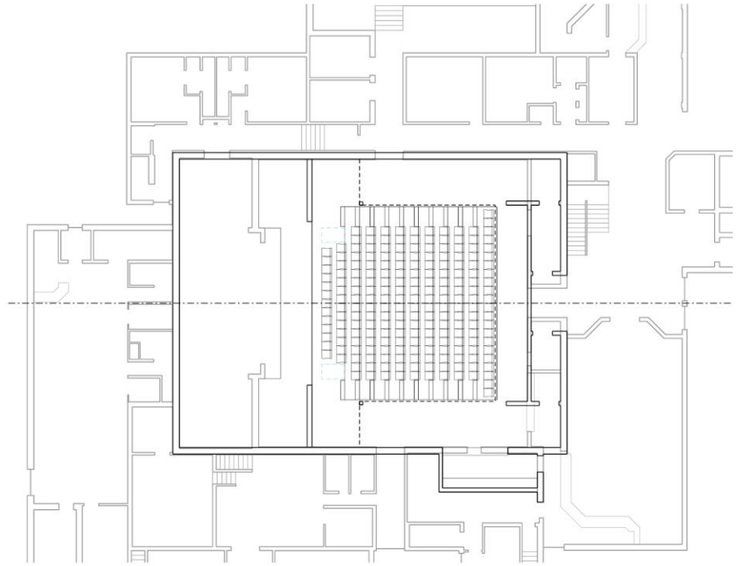
5.1.1 OPTION 1

As described above, option 1 creates a stalls rake from a retractable seating unit, providing 211 seats over 12 rows, with 2 accessible spaces to the front.
To the rear of the retractable unit sit a further four rows with 82 seats and 2 accessible spaces, located on a permanently installed balcony. The balcony wraps around the sides of the retractable, forming a traditional courtyard room and providing an additional 24 seats per side, totalling 132 places at balcony level.
Total capacity for end stage configuration, 345 seats.

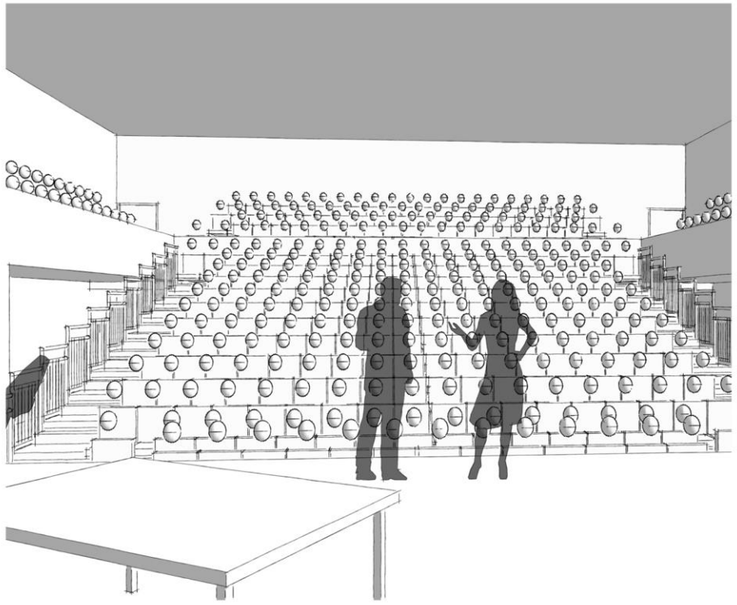
For flat-floor events, an area of 225m^2 is cleared by the retractable unit footprint.
Standing events based on 0.75m^2 per person to allow for circulation and bar access, gives an estimated figure of 300 standing audience with the additional 132 balcony positions still available.
When in cabaret, this same footprint at stalls level will accommodate 41 tables seating 4 persons per table, giving a total capacity of 164 seats. This, together with the available 132 balcony seats, gives us a total occupancy of 296.



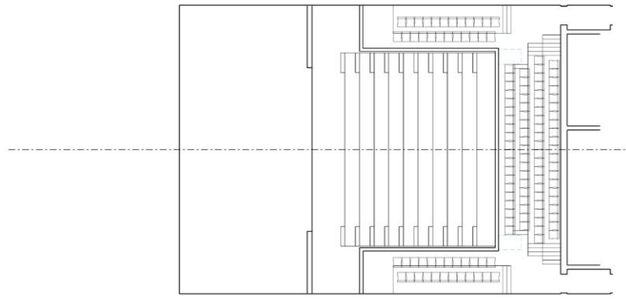
Plan view



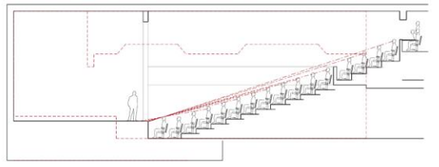
Stalls plan end stage format



View from stage



Balcony plan end stage format



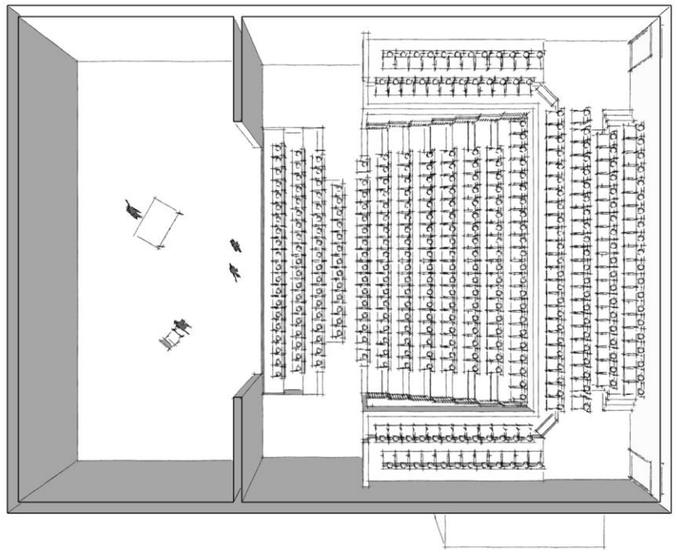
Section end stage format

5.1.2 OPTION 2

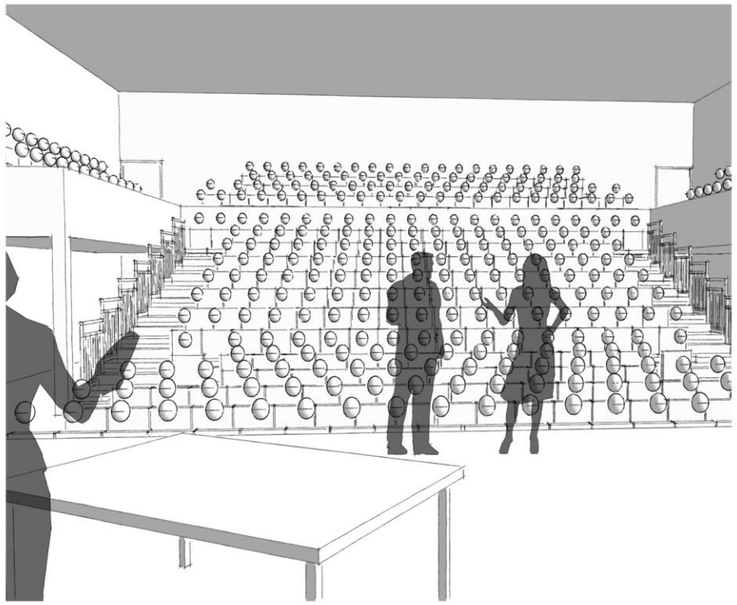
Option 2 expands on the retractable system described above, by adding a seating pit in front of the retractable unit. This provides 144 seats over 8 rows with 2 accessible spaces in the centre of the seating bank. The seating pit drops into the floor directly in front of this unit, with an additional 70 seats over four rows that descend down to the stage edge.
As with option 1, to the rear of the retractable unit sit a further four rows with 82 seats and 2 accessible spaces located on a permanently installed balcony. Again, providing an additional 24 seats per side, giving 132 places at balcony level.
Total capacity for end stage configuration, 348 places.

For flat-floor events, the same area of 225m^2 is available for an estimated 300 standing audience, again using the balcony as seated positions.
This space accessible at stalls level is created by retracting the seating unit and levelling the seating pit.
Without the retractable unit, 70 seats in front of the stage within the pit, with cabaret format seating behind, accommodates 31 tables seating 4 persons per table giving 124 places, with a total capacity of 194 seats. This, added together with the balcony fully occupied, totals an audience capacity of 326.

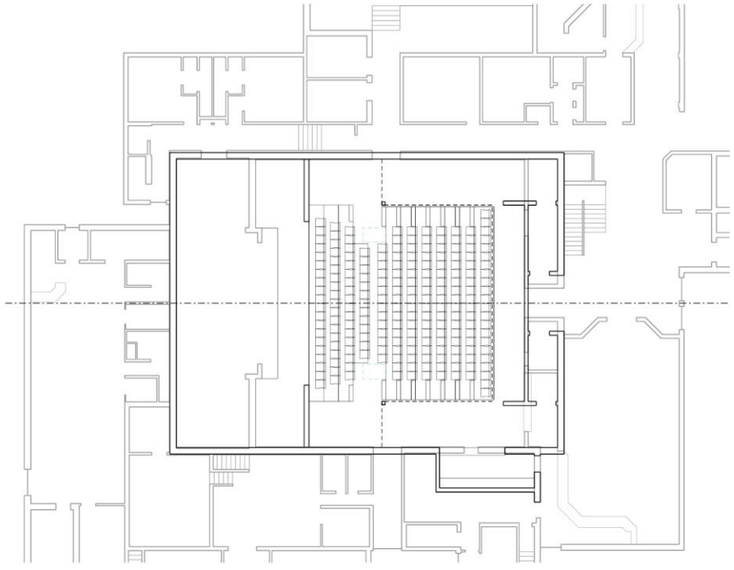
At this stage of the design we have developed both sets of plans using a nominal 520mm-wide seat place measured from centre to centre, while the back-to-back dimension of the rows is 900mm. These dimensions allow for appropriately generous seats, and guarantee that the comfort of the audience is maximised, as well as ensuring that adequate seatways are maintained on the longest rows.



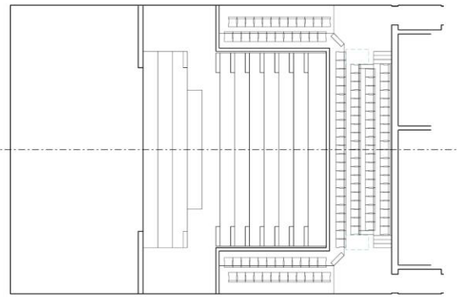
Plan view



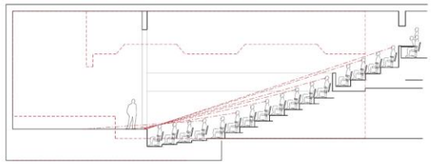
View from stage



Stalls plan end stage format



Balcony plan end stage format



Section end stage format

5.1.3 FLEXIBILITY

The majority of the flexibility provided within both schemes comes through the use of a retractable seating unit on which the seats sit, they are fixed to a series of horizontal platforms which telescope into themselves.

In both options the unit is fixed to the rear wall of the stalls floor, it tracks forward from this position to where they are used in the theatrical formats. Each platform deploys from its stored position beneath the row behind, with the seats mounted either on the deck floor or the riser of the row behind.

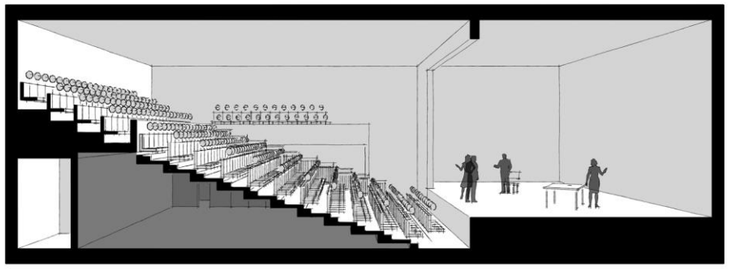
Retractable units are available with 3 different drive methods; manual, semi-powered and fully powered.

- A manual system requires the user to manually fold down the seats and physically push back a deployed seating rake.
- Semi-powered systems require users to fold the seats down manually, but the platforms are driven by an electric motor.
- A fully powered system folds the seats down automatically, as well as deploying the platforms.

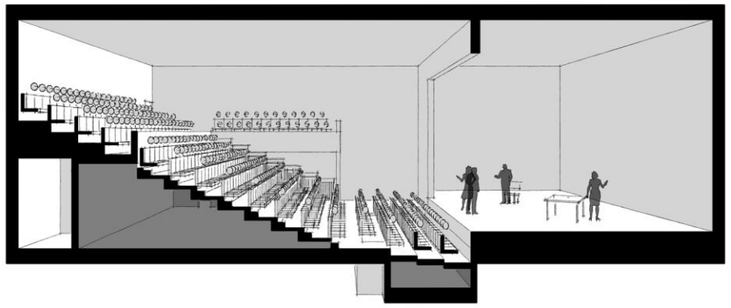
We are proposing a semi-powered system within this project to allow for the ease of flexibility within the constraints of the project budget.

The retractable mechanism is power operated, the handrails and side fascia panels still have to be manually folded down, or removed.
Control will be from a handheld operated pendant, which plugs into the front of the unit. The drive units are located within the under-structure and require no supervision or maintenance apart from a greasing of the drive chains and bearings and a checking of chain tension during the routine annual maintenance contract.

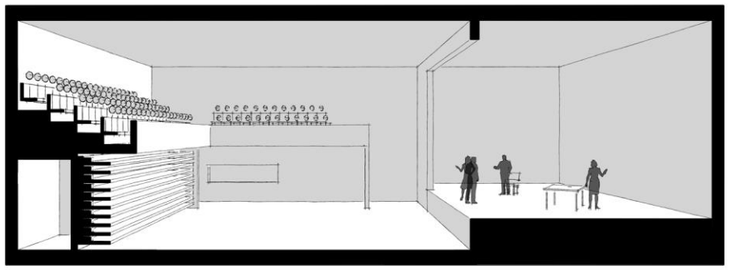
Option 2 has the additional seating pit that will be built from modular rostra, which will allow for flexibility of the pit area - to be raised to create a flat floor for the auditorium, lowered to provide a seating pit when stepped for a seated audience, lowered level to provide a recessed standing area whilst allowing for cabaret spaces behind in gig mode. Standard, steel theatre rostra are heavy and cumbersome to move and with the quantity required will increase time and cost to re-configure the auditorium. So, two alternative options using combinations of lighter weight, low profile aluminium rostra or mechanically-assisted rostra can be considered.



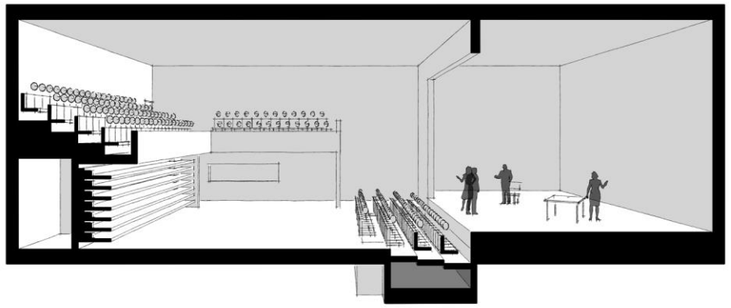
Option 1 end stage format, retractable deployed



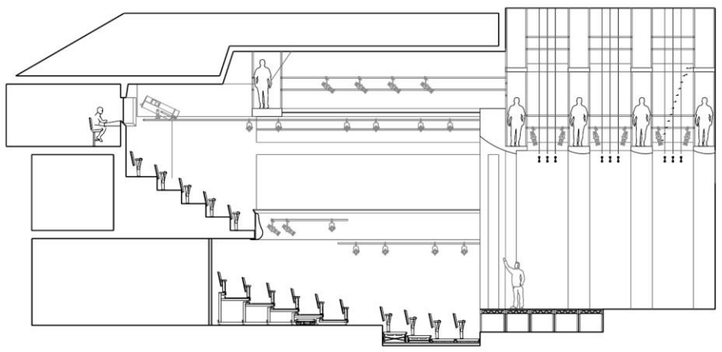
Option 2 end stage format, retractable deployed and seating pit in use



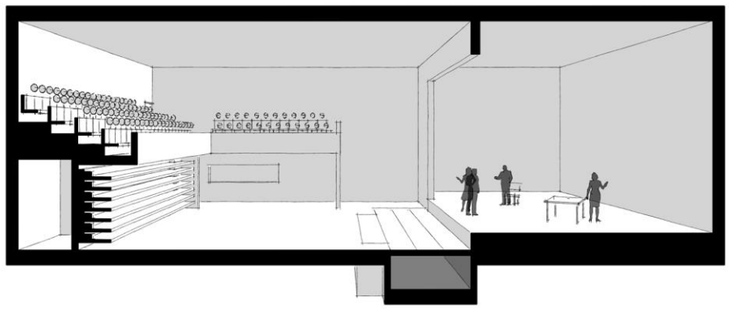
Option 1 flat floor format, retractable stowed



Option 2 intermediate format, retractable stowed and seating pit in use



The Great Hall, Ley's School. An example of retractable unit installation with a seating pit extension.



Option 2 flat floor format, retractable stowed and seating pit infilled

5.1.4 SUPPORTING SPACES

FRONT OF HOUSE

The entrance, foyers, concessions, and public toilets are the ‘welcome’ to all patrons arriving at any theatre. In addition to the necessary functionality, the elements provide an opportunity to express the fundamentals that make up The Harlington and share them with the outside world.
A delicate balance must be found between artistic expression and staid usability. A café can help keep the public spaces alive throughout the day and provide opportunity to break down the barrier between staff and their patrons. The service and environment of the café should be an attraction in itself, whilst sharing an identity and feeling of hospitality akin with the theatre. It should be a place patrons and neighbours frequent at any time of day, not just before or after a performance.
It is our intention to keep the current location for the front-of-house spaces, updating the tired decor of the building and creating a space which reflects the improvements made inside the auditorium.
The development of these spaces will form a major part of the next design phase for both the client and design team, to ensure that both the aspirations and functionality are united alongside the project goals, both in budgetary and aesthetic considerations.

ADDITIONAL PERFORMANCE SPACES

The client team’s aspirations for a second performance space and a large dance studio are the elements that have the greatest limitations within the refurbishment plan. Our proposal for the renovation works to the main auditorium requires the relocation of the dance studio.
We propose to update the current Function Room to serve as the second performance space, with full access to the existing bar facilities. A new dance studio will be located in place of the current offices, creating the largest area available in the existing footprint.
Both of these spaces are located at ground floor level, directly off the foyer to ensure access and ease of use.

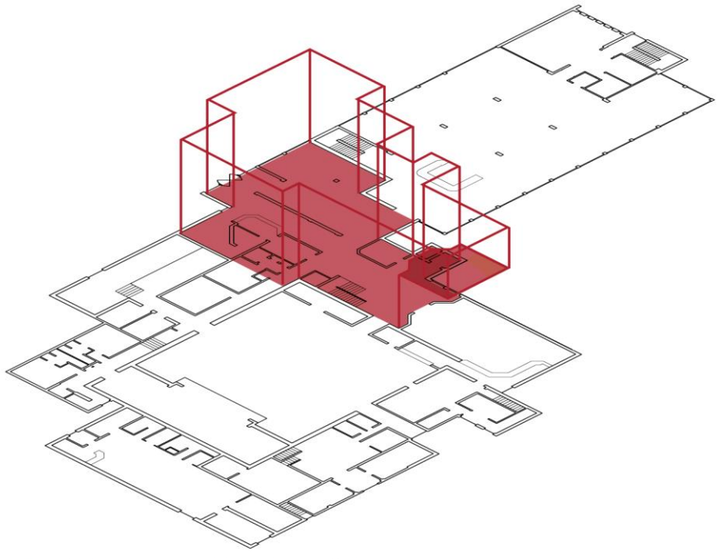
BACKSTAGE AREAS

Backstage spaces are usually separated from public spaces to keep backstage areas secure and to protect public safety.
The orientation of the auditorium within the existing building has directed us towards using The Point as a location for the support facilities for the venue; its position to the rear of the stage makes it a prime location for both dressing rooms and technical facilities to service the main space.
Its location to the rear of the site also allows for staff and visiting artists to enter through The Point, providing a traditional stage door.

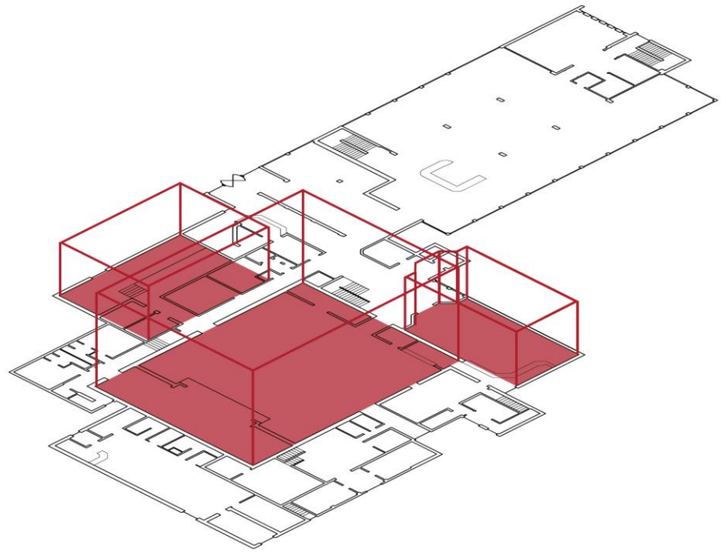
Technical and performer spaces should be tightly sited and joined via shared corridors to maintain the collaborative connection across The Harlington team.
Dedicated performer dressing rooms shall be provided to accommodate performers and, as with all arts venues, all spaces in this area should be flexible/adaptable to allow for multiple use of all supporting spaces, to ensure the holistic adaptability of the venue. Dressing rooms shall be located at stage level, along with the other backstage facilities, to provide ease of access for theatre technical equipment and to be fully accessible for all performers.
Technical spaces should be provided to include, but not be limited to, dedicated space for the workshop, lighting, audio, props and wardrobe. This will be detailed alongside the client team to ensure the building meets the objectives.

OFFICES

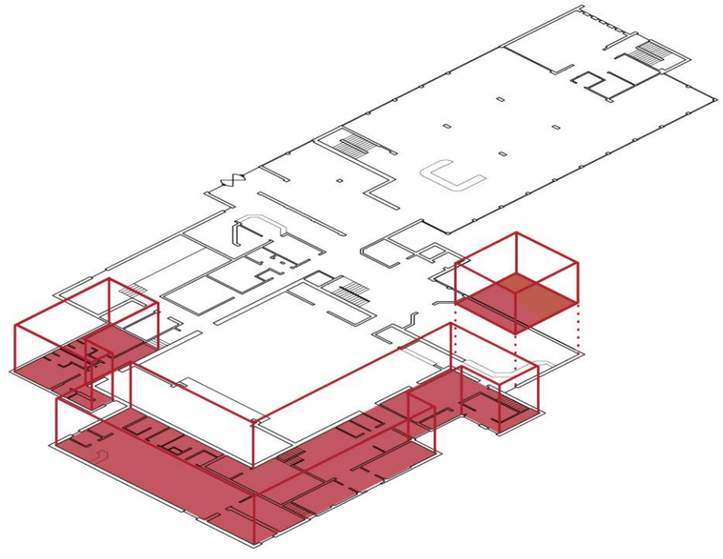
As with the front-of-house areas, the office accommodation reflects the client's brief, installing modernised facilities on two newly proposed sites; front of house offices being situated at first floor level, where the existing dance studio currently resides. Back of house offices will be where the existing dressing rooms are situated.
This area will require further development at the next stage to ensure that all administration requirements are captured.



Front of house refurbished over 2 floors



Redevelopment of existing auditorium, Function Room as second space and new dance studio



Backstage located in existing ‘The Point’ and ancillary spaces, together with front and back of house office locations

POSSIBLE BUILDING EXPANSION OPTIONS

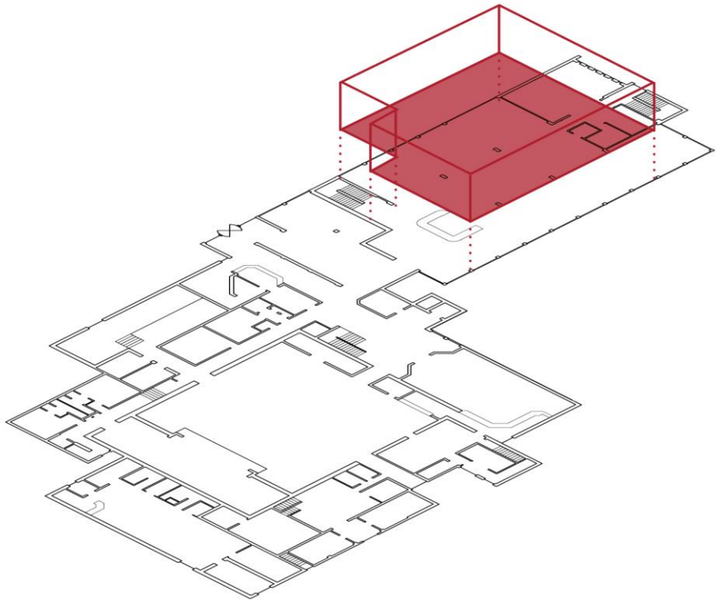
To allow for future growth of The Harlington, the following options highlight possibilities for expansion of the refurbishment works:

Option 1 – looks to provide additional accommodation for The Harlington to allow for future expansion of administration and outreach facilities by relocating to the first floor of the existing adjacent Library. This would carry the least cost implications due to the fact there is no new build works required. The use of the Library can be interrogated at the next stage of design.

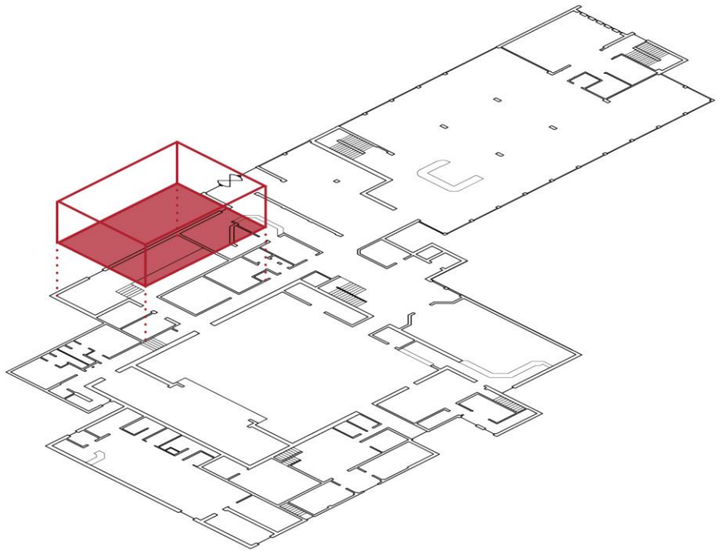
Option 2 – is to provide a minimal new building extension to the south, located above the new Dance Studio, providing additional area for office and front of house facilities.

Option 3 – develops the same principles of option 2, replacing the existing offices with a new second space and stacking the dance studio to the first floor, directly above.
In addition, a new office accommodation is built over the backstage areas to incorporate additional technical support facilities.

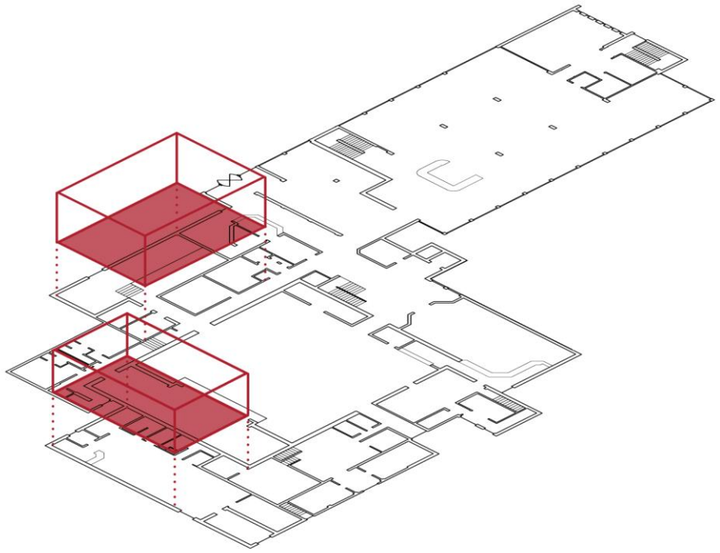
Option 4 – is to see both the Second Space and Dance Studio spaces as future expansion works for The Harlington masterplan, adding to the refurbished facilities and achieving the greatest separation from the main hall. We would propose the addition of a new suite of performance and dance spaces adjacent to the site, allowing for the construction of a purpose-built block to be developed at a time in the future, as and when more funds become available.
We have shown a massing study to propose a possible location for the development, which will require further investigation and studies with the advancement of the overall scheme.



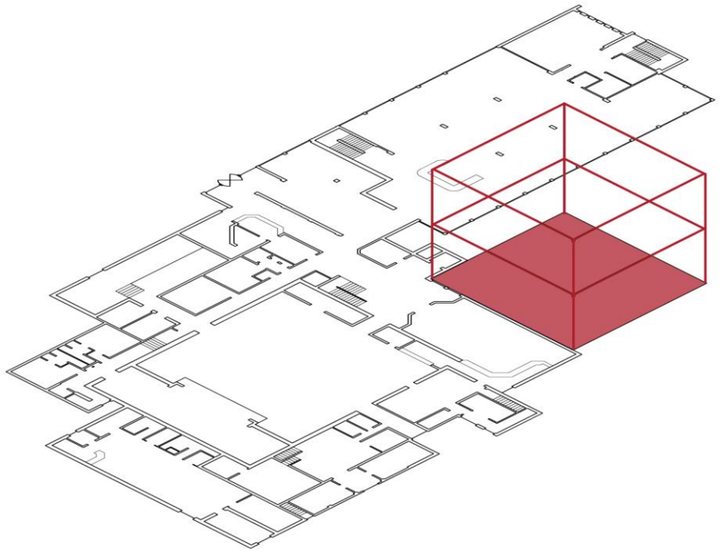
Option 1 Larger offices moved to 1st floor of Library



Option 2 Additional area provided by a minimal extension, above new Dance Studio



Option 3 Second Space replaces Dance Studio, relocated above. Offices moved to new level above backstage area



Option 4 New Second Space and Dance Studio constructed to the side of retained Function Room, maintaining the current office location

5.2 NEW BUILD

In our latter meetings with the client team, discussions focussed on the aspirations for a new building, both from a commercial and spatial standpoint. Together we identified the requirements that would be fundamental to a fully functioning and sustainable theatre.
The following outlines the key elements that are required (in addition to associated support spaces):

- A 350 seat theatre required to support the commercial aspirations for productions
- A 10m x 8m playing space with associated wing space
- A flexible 200max. capacity studio allowing for live music events
- Dance studio with a clear floor area of 140m^2 for rehearsals and classes
- A foyer that functions as a social gathering space serving both food and drinks to audience and the general public - not just a foyer but crucial to the success of a sustainable venue
- Accommodation for the intended staff members on site
- Workshop for productions
- Dressing rooms
- Box office facilities within, but not dominating, the foyer
- Technical facilities that provide safe and accessible equipment for all performance spaces.

This informed an initial area schedule and a proposed building footprint for the scheme. Additional revisions to the schedule were incorporated to reduce the footprint, removing the second performance space and dance studio to determine their feasibility within the development of the site.

Estimated project costs for all options, both refurbishment and new build, and level of project requirements can be found later in this report.

5.2.1 AREA SCHEDULE

Based on our previous experience of similar projects, the following pages represent what we believe to be the areas required for the construction of a new build development for the proposed theatre, together with all the necessary support spaces, to align with the original client briefing document.

	Sqm	Occupancy	Notes
PUBLIC AREAS			
Foyer	210	350	Based on .75m2 per person
Cloakroom	0		
FOH store	10		
Cleaner stores	0		In gross
Pushchair/mobility scooter parking	0		In gross
Toilets			
Toilets (public male)	19	6	Based on a 60:40 percentage audience split
			Male audience 140 WCs 2
			Urinals 4
Toilets (public female)	54	12	Based on a 60:40 percentage audience split
			Female audience 210 Stalls 12
Toilets (accessible)	7	2	Approximate - 1 per audience level
Box office and reception			
Box office/reception desk	10	2	5 sqm per person
Box office manager/cash office	8	1	Adjacent to box office
Catering			
Bar/Cafe seating area	0		In foyer
Bar and servery	20		
Bar stores	10		
Kitchen	25		
Kitchen store	10		
Staff changing	18		
Staff toilets - male	3	1	
Staff toilets - female	5	1	

PUBLIC AREAS 408

	Sqm	Occupancy	Notes
THEATRE			
Auditorium and stage			
Seating area	350	350	Based on 1sqm per person
Main stage	100		Mainstage 10mX10m
Wings	40		2m left and right
Substage/trap	20		
Seating store	20		
Lighting bridges	0		In gross
Overstage bridges	0		In gross
Stage support			
Stage door	0		Box Office
Truck bay - external area	0		Outside site
Scene dock / Back stage	20		
Refuse	8		
Stage kitchen	5		
Assembly area / Quick change	8		
Toilets - male	3	1	
Toilets - female	5	1	
Toilets - accessible	4	1	
FOH technical areas			
Control room	12		

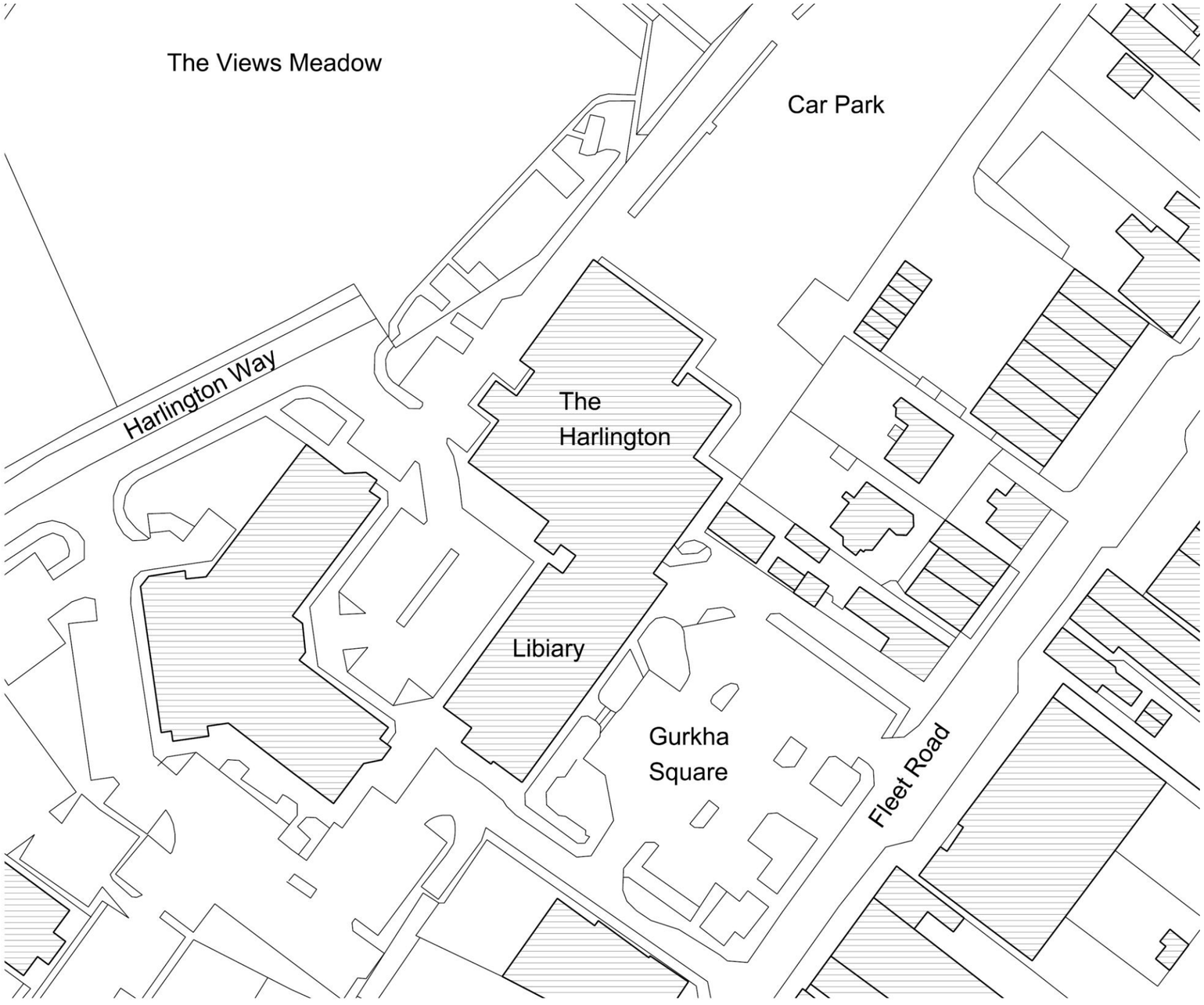
THEATRE 594

	Sqm	Occupancy	Notes
SECOND SPACE			
Second space	100	200	Based on .5sqm per person
Playing space	48		Mainstage 8mX6m
General store	20		
SECOND SPACE	168		
DANCE STUDIO			
Studio	100		
Store	10		
DANCE STUDIO	110		
TECHNICAL AREAS			
Dimmer room	10		
Audio rack room	12		
Workshop /maintenance	80		
Technical office	8		
Cleaners store	0		In gross
Intake room	0		In gross
General store	20		
TECHNICAL AREAS	130		
PERFORMER SUPPORT SPACES			
One/two person dressing room - 1	20	2	With acc. shower, toilet and wash basin in room
One/two person dressing room - 2	15	2	With shower, toilet and wash basin in room
Eight person dressing room - 1	40	8	With shower and wash basin in room
Eight person dressing room - 2	40	8	With shower and wash basin in room
Green room / Crew room	25		
Wardrobe and Laundry	12		
Toilets - male	6	2	
Toilets - female	9	2	
Disabled toilet and shower	7	1	
PERFORMER SUPPORT SPACES	174		
ADMINISTRATION AREAS			
Offices	54	6	
Resources room	12		
Confidential office	0		Within office area
Group meeting store	10		
Kitchenette	0		In gross
Staff toilets	8		
Staff showers	8		
Disabled toilet	4	1	
ADMINISTRATION AREAS	96		

	Sqm	Occupancy	Notes
Total NET usable area	**1,679**		
Plant			
Grossing rate (20%)			
Grossing rate (50%) including plant	50.0		
Gross area	**840**		Includes circulation, plant and technical areas
Total GROSS area	**2,519**		

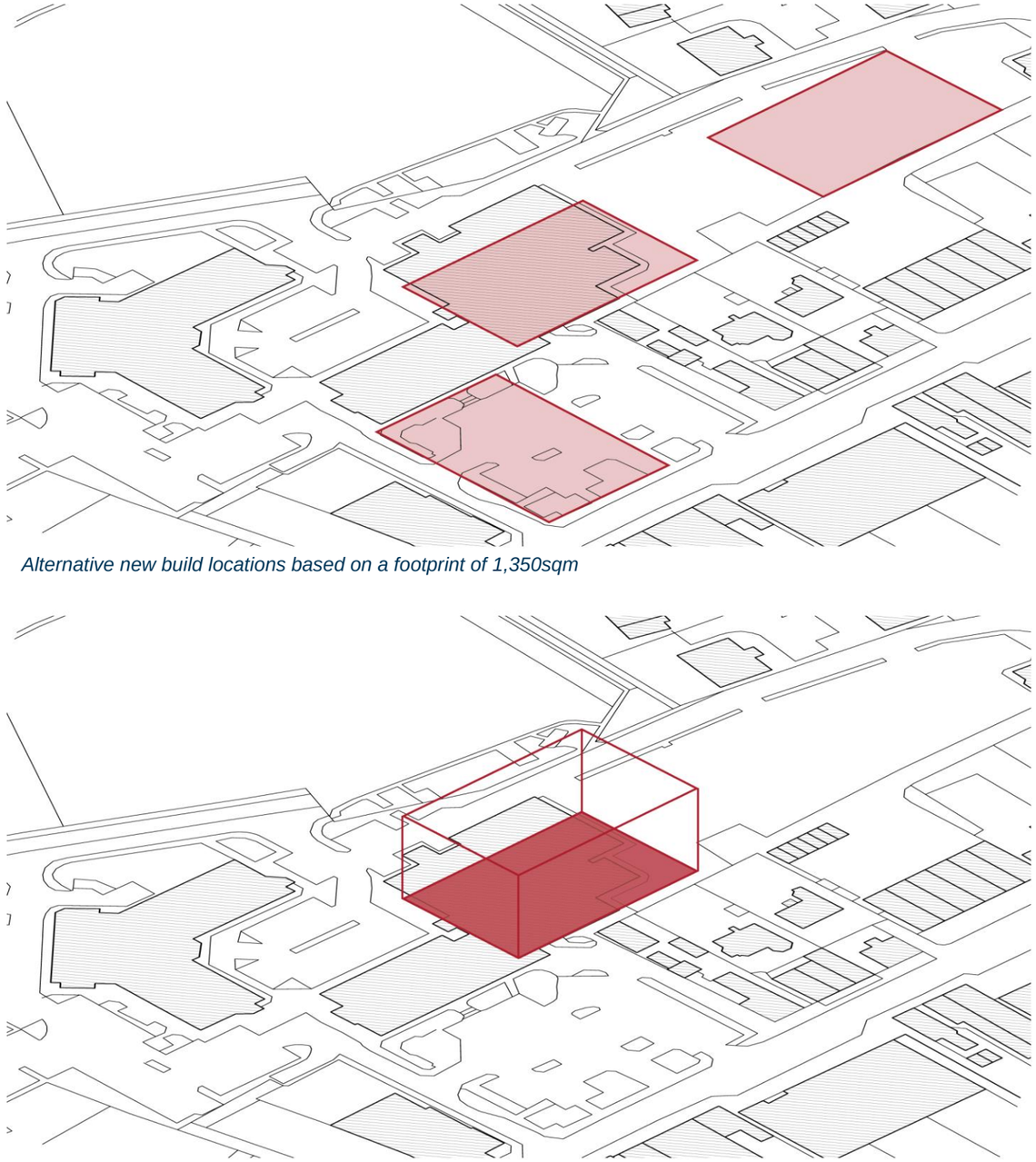
5.2.2 SITE PLANNING

The diagrams that follow represent the possible locations for the required footprint of a new build proposal, based on a maximum three storey building to accommodate the required areas.



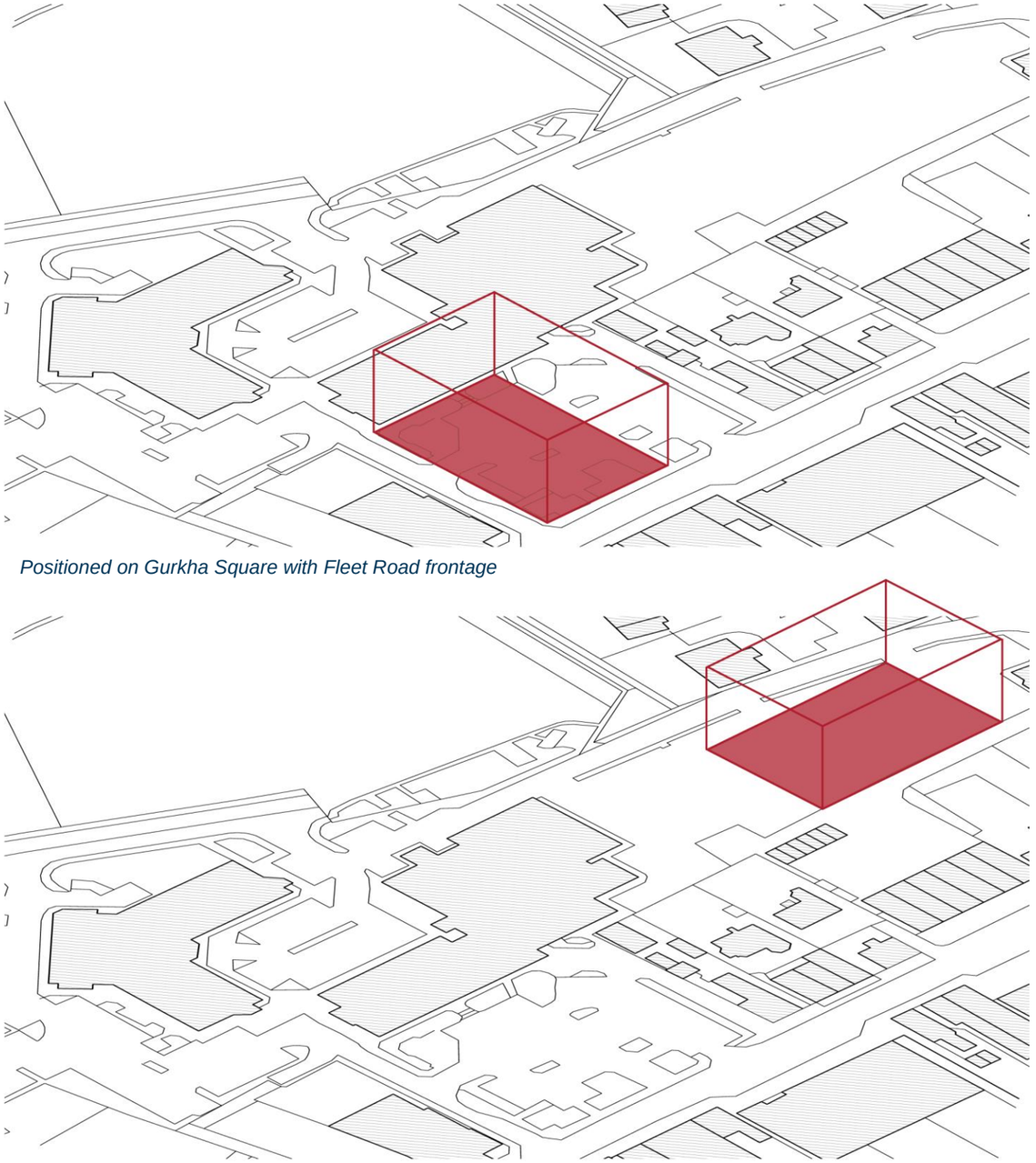
Existing site plan

Alternative new build locations based on a footprint of 1,350sqm



Positioned on existing footprint of The Harlington

Positioned on Gurkha Square with Fleet Road frontage



Positioned in the car park with Victoria Road frontage

6 ACOUSTIC ANALYSIS

The Harlington is being conceived as a multi-function performance venue with an overall seat count of 350. Based on discussions with the client team, it is our understanding that the venue is intended to provide the local community with a performance space suitable for hosting a variety of events, including touring theatre productions. It is our understanding that the following types of events are being considered:

- Unamplified and amplified speech (drama, comedy, book signings, etc.)
- Amplified music concerts including Pop/Rock, Jazz/Blues and Folk
- Conferences and lectures
- Film presentations (not new releases)

The overall acoustic goal for the project is to create a performance space that prioritises clarity and projection, is quiet enough to allow actors' whispers to be heard, and has the appropriate reverberance and adequate early sound reflections to support the actor's projection to the audience, without making the room too 'dry' for music performances.

In the following design stages we will work with the rest of the design team (architect, services and structure) to develop the most appropriate strategy for the acoustic details, in line with the refurbishment proposals

6.1 ROOM ACOUSTICS APPROACH

The overall size of the room is the most significant factor in establishing the acoustic environment. We expect small rooms (and rooms of small seating capacity) to sound different from large rooms. Larger rooms are characterised by more reverberance and reduced loudness—things that should be avoided in intimate drama rooms.

To assist in benchmarking designs, we classify rooms by the volume per occupant. Greater volume per occupant tends to be appropriate for music rooms; smaller volume per occupant tends to be used for rooms for speech. The following list gives common guidelines:

- 14 to 16 m^3/person: Orchestra acoustic for mid-sized rooms
- 12 to 14 m^3/person: Orchestra acoustic for large rooms
- 10 to 12 m^3/person: Chamber music
- 7 to 10 m^3/person: Opera
- 8 to 9 m^3/person: Amplified music
- 6 to 7 m^3/person: Drama, spoken word

As the overall volume will inform the maximum -unoccupied- reverberation time, we suggest between 7 m^3/person and 8 m^3/person as a suitable range for a room that is focused on amplified music, but can also very successfully host drama and spoken word.

Preliminary 3D analysis of the auditorium suggests the current design is approximately 7.3 m^3/person, which is in line with our recommendations for the design intent.

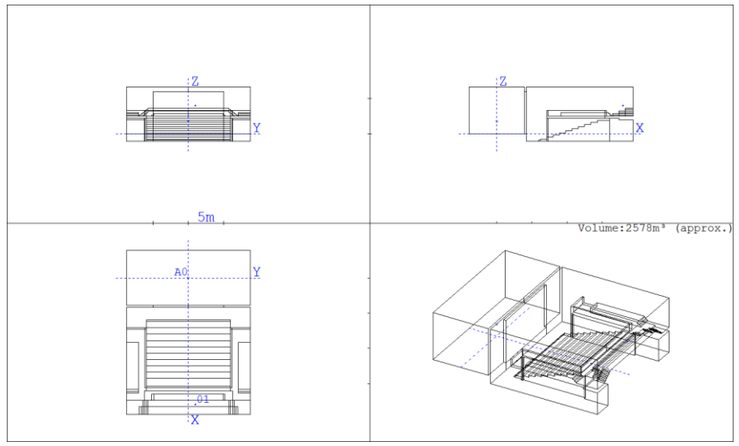


Figure 1: CATT output of plan, section, and isometric view of the Harlington Auditorium.

The mid-frequency unoccupied reverberation time is recommended to vary between 1.3 and 1.5 seconds in most typical conditions, depending on the presence of draperies and masking in the stage area, and the position of variable acoustic curtains and finishes which will help control the reverberation time when hosting amplified music, drama and spoken word. With the provision of theatrical masking (and the variable curtains and occupants) this value may be well below 0.7 seconds, which is regarded as the suitable listening environment for amplified music and speech.

The project planning should assume specialty sound-absorbing and sound-diffusing surfaces within the auditorium, lobbies, and control room. The dimensional allowance for the wall surfaces in these areas should assume 100mm to 150mm of acoustic and architectural interior finish to auditorium walls. The foyer spaces will need to have sound-absorbing finishes sufficient to allow causal conversation at short distance.

6.2 SOUND SEPARATION APPROACH

Successful noise attenuation from the exterior and building services will play a large role in achieving the recommended background noise criteria. Noise from nearby rooms and equipment should not intrude and impact the background sound levels of the performance space. The design goal for intrusive noise is informed by the criteria for continuous background noise. To achieve sufficient sound separation from adjacent areas, some special construction and detailing is expected to be required. This includes noise from mechanical equipment such as air handling units, pumps and associated piping, fans, washers/dryers, and any adjacent amp and dimmer room.

The structural scheme will need to assume that the auditorium design will include an approach that allows a vibration break between auditorium and surrounding structure, depending on adjacencies - a cavity wall construction is expected for direct adjacency of the auditorium to the exterior, while a double-layer roof/ceiling construction is expected in order to provide a high level of airborne and rain-impact noise separation. Critical adjacencies between noise sensitive spaces, especially equipment rooms that may generate airborne noise and vibration, will need to be avoided and may result in some compromises to the most efficient space planning for plant areas.

Acoustic attenuation may also be required for building services equipment (e.g. piping or ductwork) within the footprint of the performance space. Depending on the noise levels of the associated mechanical equipment, the ductwork may require lagging or gypsum enclosures to reduce radiated noise.

NOISE SEPARATION BETWEEN PERFORMANCE SPACES

We understand the client aspiration is the concurrent use of the Auditorium and the proposed new performance space / dance studio. The potential noise separation issues with this aspiration can be classified into two categories: Noise separation between stacked spaces, and noise transfer between adjacent spaces.

Commenting on the design options for the additional performance spaces and the possible building expansion options as they are described in section 5.1.4 of this report, we have identified the following potential issues:

Updating the current Function Room to serve as the second performance space, and locating the new dance studio on the existing offices footprint will guarantee no issues with regards to vertical noise transfer. However, both new spaces will be in close proximity to the Auditorium, and they will be separated from the latter only by means of a corridor (dance studio) and the Auditorium back wall (new performance space). A high degree of noise separation will be required between the Auditorium and the new spaces, which, as the Auditorium envelope will be retained, will need to be achieved by means of substantial wall partitions on the new spaces-side.

With regards to the possible building expansion Options 1, 2 & 3, moving the larger offices to 1st floor of Library / directly above the new dance studio / to new level above backstage area will guarantee no issues with regards to vertical noise transfer, as offices have a high noise tolerance and a fairly low noise activity.

For Option 3, where the second space replaces the dance studio, a vibration isolation strategy will have to be developed to address noise transfer to the new studio space due to dancing activity in the dance studio above, and a floating floor system will likely be necessary between the two stacked spaces.

Option 4, where the new suite of performance and dance spaces will be on a new purpose-built block adjacent to the site, is regarded as the best option in terms of noise transfer between adjacent spaces, as the current Function Room and front-of-house areas will act as a noise buffer zone, allowing the simultaneous use of the Auditorium and the new performance spaces. While stacking the Dance Studio on top of the new Studio space will likely require a similar vibration isolation strategy as the one described above, it is regarded that potential vibration isolation issues can be addressed by locating the Dance Studio on ground level instead.

NOISE EGRESS

Some noise from performances is expected to transfer to the directly adjacent spaces that make up the Harlington site. However, this is not expected to be a concern, as the adjacent spaces to the Auditorium will predominately comprise front-of-house and backstage spaces. Noise egress from building services will also need to be considered so as not to be disruptive to nearby residences and noise sensitive premises.

6.3 BACKGROUND NOISE APPROACH

PRELIMINARY BACKGROUND NOISE CRITERIA

Maximum levels of acceptable continuous background noise are specified using noise criteria rating systems. These systems are used to describe and specify neutral-sounding sound spectra of a given perceived loudness. These criteria ratings systems can be used to meaningfully compare the loudness of sound at different frequencies. Sound spectra that are perceived as neutral-sounding do not have equal decibel values at all frequencies, as the human hearing mechanism does not have equal acuity at all frequencies.

Many different noise criteria rating systems have been developed, each with their own intentions for use and application. These systems are referred to by two- or three-letter acronyms. We suggest using values from both the Preferred Noise Criteria (PNC) and Noise Rating (NR) systems. The recommended criteria (and octave band sound pressure levels) are listed below. From a design perspective, these values will be used as 'not-to-exceed' values for the purposes of calculating anticipated background noise levels due to ventilation and electrical noise.

	SOUND PRESSURE LEVEL (dB, re: 20^{-6} Pa) OCTAVE BAND CENTRE FREQUENCY (Hz)								
NOISE CRITERIA	32	63	125	250	500	1K	2K	4K	8K
PNC-20	59	46	39	32	26	20	15	13	13
PNC-25	60	49	44	37	31	25	20	18	18
NR-30	76	59	48	40	34	30	27	25	23
NR-35	79	63	52	45	39	35	32	30	28
NR-40	83	67	57	49	44	40	37	35	33

The following table includes our recommended background noise levels for the primary spaces in the project.

ROOM NAME	BACKGROUND NOISE CRITERIA
Auditorium	LAeq ≤ 30 dBA; PNC-20
Control Room	LAeq ≤ 34 dBA; PNC-25
Sound and Light Lobbies	LAeq ≤ 34 dBA; PNC-25
Dressing Rooms, Green Room,	LAeq ≤ 40 dBA; NR-30
Production Office, Workshops and Storage	LAeq ≤ 40 dBA; NR-30
Foyer / Reception	LAeq = 45-55 dBA[1]; NR-40
Store, Toilets	LAeq ≤ 50 dBA; NR-40

1 Requirement of BS 8233:2014 Sound insulation and noise reduction for Buildings

Achieving background noise goals will require not only the quiet delivery of ventilation, but also the attenuation of any plant equipment noise that propagates down the duct paths. Sound attenuators and strategic use of internal acoustically lined ductwork should be assumed.

Specialty detailing of building services that cross through the boundary construction of the auditorium and other sound-sensitive spaces should be assumed, as well as the vibration isolation detailing of building services that cross structural separations that are intended for acoustic purposes.

DUCT AND SHAFT SIZING

As reference, the following tables include our criteria for air velocity, to inform preliminary duct and shaft sizes.

RECOMMENDED SUPPLY AIR VELOCITIES BY NOISE CRITERIA

		Branch Duct or Clear Opening	Secondary Duct	Main Duct
Noise Criterion	At Diffuser	Upstream 1.5m	Upstream 1.5 to 3m	Upstream 3m to 6m
PNC-20	1.5 m/s	1.8 m/s	3.0 m/s	5.3 m/s
PNC-25	1.8 m/s	2.1 m/s	3.6 m/s	6.4 m/s
NR-30	2.2 m/s	2.5 m/s	4.3 m/s	7.9 m/s
NR-35	3.3 m/s	4.0 m/s	6.0 m/s	8.3 m/s
NR-40	4.4 m/s	5.0 m/s	7.0 m/s	8.6 m/s

RECOMMENDED RETURN AIR VELOCITIES BY NOISE CRITERIA

		Branch Duct or Clear Opening	Secondary Duct	Main Duct
Noise Criterion	At Grille	Downstream 1.5m	Downstream 1.5 to 3m	Downstream 3m to 6m
PNC-20	1.8 m/s	2.1 m/s	3.0 m/s	5.3 m/s
PNC-25	2.2 m/s	2.5 m/s	3.6 m/s	6.4 m/s
NR-35	2.5 m/s	3.0 m/s	4.3 m/s	7.9 m/s
NR-35	3.3 m/s	4.0 m/s	6.0 m/s	8.3 m/s
NR-40	4.4 m/s	5.0 m/s	7.0 m/s	8.6 m/s

7 TECHNICAL SYSTEMS

The design choices for the theatre technical systems have been informed by our understanding of the client brief, and our assumptions for the buildings' operational requirements by the end user.

All technical equipment and systems will be specifically chosen to maximise the theatre's operational potential, but without over-complicating the design or functionality of the building for the operator.

All equipment proposed can be found in many professional theatres nationwide; specific model types throughout will be determined during the design development stages.

7.1 STAGE ENGINEERING

OVERHEAD SYSTEMS

To complement the flexible performance design of the auditorium and support all possible stage layouts there will be a number of both mechanically assisted and fixed technical equipment systems over the stage and auditorium. The current system of fixed bars rigged from a ladder is not a suitable method of operation today.

FRONT OF HOUSE LIGHTING BARS

Over the auditorium there are to be fixed lighting bars, mounted to the soffit for the rigging of stagelighting and audiovisual equipment.
It is envisaged that the stagelighting fixtures rigged on these bars will be motorised which will obviate the need for focussing and therefore the requirement for working at height and access equipment for such tasks.

In addition to the above there are to be fixed lighting bars on the ends of the balcony fronts, either side of the auditorium.

ONSTAGE LIGHTING BARS

It has been concluded that the most effective route for resolving the current technical issues over stage will be through the use of motorised lighting bars, these allow equipment to be rigged at a safe working height. Focussing of equipment will need to be undertaken at height using suitable access equipment, access equipment is not included in the budget cost below.

These bars are based on a self-contained unit powered by a standard chain hoist, this unit is a good value for money unit that is ideally suited to simple lifting during the fit-up of a show, these bars are not suitable for operation during a show, but do improve on safety and speeding up rigging operations.

To supplement the flown bars, we would propose to intersperse a number of hemp sets for the rigging of static scenic elements, such as masking etc.

PROJECTION SCREEN

An electrically operated roll-down projection screen suitable for front projection is proposed. As this is expected to be used frequently it is to be permanently mounted to the stage house soffit.

FLEXIBLE STALLS ROSTRA

It is proposed that the first three rows of seating are made up of modular rostra, which will allow the stage extent and position to be re-configured, along with the auditorium seating, for different audience formats. We believe a mechanically-assisted system is most appropriate; this will aid turnaround times and can easily be operated by one person, reducing staffing costs.

Tuchler Zoom 1200 rostra

7.2 STAGELIGHTING & AUDIOVISUAL

RIGGING POSITIONS

Stagelighting and audiovisual equipment will be rigged on bars at stage level then flown out for focusing and operation. This approach will mean the amount of work conducted at height will be greatly reduced. It will also significantly reduce rigging time, potentially resulting in considerable cost and time savings. Appropriate high-level access equipment will be required for focussing and any other activities which still need to be carried out at height.

In the auditorium we are proposing fixed bars mounted to the soffit and balcony ends. These positions would be used for rigging lighting equipment, loudspeakers and other items.

CONTROL ROOM

An improved technical control room will be located on the centreline directly above the balcony level. With the current set of proposals, it would be prudent to allow for a platform lift to make this room fully accessible.
An additional temporary control position can be accommodated in the stalls area if required for live sound mixing.

EQUIPMENT

Stagelighting and audiovisual equipment will be proposed and developed in the next design stages alongside the client technical team; for the purposes of this report allowances have been made in the costs for new equipment suitable for a theatre of this size.

WIRING INFRASTRUCTURE

Although a power and wiring infrastructure already exists in the building, user reports suggest that it is inadequate for the productions that are currently staged in the venue.

Therefore, it is recommended that a new ‘fit for purpose’ infrastructure will be installed to meet current working practices and standards, as well as complementing the redevelopment of the building.

A full stagelighting and audiovisual wiring infrastructure, as well as loose equipment that can be rigged and focused to suit each show, is to be provided.

The infrastructure will comprise a dedicated containment system and associated wiring, supplying power, data, audio, video and communications services to custom socket outlet boxes (facilities panels) distributed throughout the space, to allow for systems such as comms, cuelights and show relay etc. Containment and power outlets will form part of the electrical services design as part of the electrical contract. Dedicated power distribution boards will supply power to the theatre technical systems, housed in a new dedicated dimmer and amp room.

Some panels for followspot positions etc. will contain larger 32A power supplies, wired radially from the distribution boards, as well as dedicated supplies for the connection of temporary equipment, brought in for specific show requirements.

The current stage lighting dimmers will be replaced with modular, digital dimmers, and RCD protected. The flexibility of module configuration will obviate the need for a separate power distribution system for moving lights but will allow visiting companies to use a mixture of different sources, i.e. LED, arc and tungsten.

The primary control protocol for the stage lighting will be DMX512A. The DMX wiring will comply with ANSI E1.11-2004, DMX512A-A and ANSI E1.20-2006, Remote Device Management.

Wiring infrastructure will be installed for both DMX and Ethernet outlets at each socket box location - to allow for shows to use a stage lighting control network in the future. The DMX infrastructure will be wired with Ethernet cabling so that it can be converted to use as a network in the future if the use of DMX is phased out.

The control infrastructure will be radially wired from a control equipment rack in the dimmer and amp room.

BUILDINGWIDE - PAGING SYSTEM

A paging and show relay system is proposed as a useful means of communicating calls to key locations in the building. This will be a simple 2-zone system where calls can be made to front of house or backstage areas. The backstage provision will include distribution of a show relay signal from the stage to the dressing rooms, offices, and control room. This system is entirely independent, and in addition to any voice alarm and evacuation system.

HOUSELIGHTING

We recommend an LED solution for the auditorium house lighting system, which dims smoothly all the way to zero intensity. Unfortunately, many LED fittings cannot achieve smooth dimming to zero; however, we have successfully specified LED house lighting systems for many theatres, including Bristol Old Vic, Liverpool Everyman, Dorfman (National Theatre) and Chichester Festival Theatre, giving considerable power and running cost benefits in the long term. These fittings are likely to form part of the electrical services designer’s scope, but we will give advice and co-ordinate on the specification and control of these fittings in the next design stages.

7.4 MECHANICAL & ELECTRICAL IMPLICATIONS

The current power supplies for the theatre technical systems are insufficient for the desired programming. As part of the refurbishment works we would suggest that the current allowances are increased for both stagelighting and AV, as well as supplying a new feed for the stage engineering systems. Exact sizing of these supplies will happen in the following design phases.

At the next stage of design, we will provide a detailed report of the mechanical and electrical implications of our theatre technical systems to assist the electrical services designer with their calculations.
The report will include the anticipated main electrical supply requirements for each of the systems, together with a breakdown of the individual supplies required. Expected mechanical loads (typical heat loads generated etc.) and the diversity considerations that can be made when developing the M&E strategy for the normal expected loads on our systems are also provided.

7.5 COSTS

Our initial cost estimate for the systems described above, based on the technical requirements, can be given as **£560,000** of the total construction budget for a refurbishment (included in the below benchmarked figures).

For a new build we would recommend an allowance of **c.£760,000** for the technical systems, (included in the benchmarked model costs provided below).

8 BASE BUILD COSTS

The scope for this study is not for a costed scheme, it is for an outline understanding of the building costs measured from area and calculated by applying an appropriate square metre rate.
For cost certainty we would recommend the appointment of a cost consultant to solidify our assumptions.

We have split the costs into two sections, that for a refurbishment of the existing building and costs for a new build project (build costs).

We have suggested a range based on a benchmarked rate in order to get a feel for the scale of the project. The rates of course will differ and may be improved upon through detailed design, but provide a useful indication of the scale of project we are dealing with.

In quoting square metre rates it is worth remembering that the cost dramatically changes room to room, some costs are high, for the theatre for instance, others lower, often the backstage, support spaces and offices.

For refurbishment over the two floors of the foyer and auditorium and the single story for the remainder of the side plot, we have calculated an area circa 2,200m^2. The numbers proposed as benchmark costings reflect current industry standards and make an allowance for the following:

- Balcony construction
- Extra £60/m2 for quiet ventilation
- Extra £50/m2 for LED houselighting
- Seating – in the region of £150,000
- Technical theatre systems – detailed in the sections above

The area schedule illustrates a project of 2,519m^2. Notably, these include a grossing factor of 50%, which calculates circulation, plant and technical spaces. Analysis of our previous projects indicate theatre spaces have a grossing element of between 50% - 55%.

8.1 REFURBISHMENT

8.1.1 BASE BUILD

Typical cost per square metre is considered across a range, £1,900/m^2 being the lowest, £2,550/m^2 being the typical and industry standard benchmarked cost, with up to £3,000/m^2 being the higher end.

Low model - cost rate at £1,900/m^2

TOTAL - £4.18m

Benchmark model - cost rate at £2,550/m^2

TOTAL - £5.6m

High model - cost rate at £3,200/m^2

TOTAL - £7m

8.1.2 ALTERNATIVE OPTIONS FOR EXPANSION OF REDEVELOPMENT

There will be additional costs for the development of the site to allow for supplementary accommodation as set out on page 14 of this report. These will be in line with the above area rates for refurbishment and new build extension.

8.2 NEW BUILD

8.2.1 BASE BUILD

Typical cost per square metre is considered across a range, £2,500/m^2 being the lowest, £3,000/m^2 being the typical and industry standard benchmarked cost, with up to £4,000/m^2 being the higher end.

Low model - cost rate at £2,500/m^2

TOTAL - £6.3m

Benchmark model - cost rate at £3,000/m^2

TOTAL - £7.6m

High model - cost rate at £4,000/m^2

TOTAL - £10.1m

9 PROJECT COSTS - EXCLUDING VAT

In addition to the construction costs outlined above, a design team will need to be commissioned to carry out the design work. The likely fees to be expected, along with other project costs such as surveys, etc., should be in the region of an additional 25% - 40%. Based on the above benchmark model costs:

		Refurbishment	New Build (incl. Second Space & Dance Studio)
Construction Cost		£5.6m	£7.6m
Other Project Costs	25%	£1.4m	£1.9m
Other Project Costs	32.5%	£1.8m	£2.5m
Other Project Costs	40.0%	£2.2m	£3m
Project Cost		**£7m to £7.8m**	**£9.5m to £10.6m**

It is possible that further fees would be required for services such as legal fees, access consultant, project manager, development / fundraising officer, closure costs, marketing campaign.

We believe the benchmark model costs set out in this report are realistic, based on our previous experience of similar buildings and AECOM's 2013 'Cost Model: Performing Arts' publication:

'Building that house the performing arts can be very expensive. Often they have innovative design, so they do not benefit from the use of well-tried construction techniques, or the economies of scale, that are available to commercial schemes of a similar values.
Indicative construction costs per square metre are:

- *Mid-range theatre (regional standard) £2,500-£4,000*

One challenge is that costs are mainly driven by the auditorium, stage and foyer areas, so there is little flexibility once the size of the performance space and character and quality of the building has been determined. Furthermore, there is no simple set of cost drivers that can be addressed to make savings without drastically affecting the character and quality of a scheme.'

All of these costs assume that all work can be carried out concurrently and that any potential phasing required by the project may add cost to the development of the scheme.
A decision will need to be taken about any continued operation during the construction works. Rather than simply closing The Harlington, it may be advisable to take over rented accommodation during the construction period, to maintain the audience and build a sense of anticipation towards the reopening. There are many precedents for different approaches to this; we have not included any costs for temporary operations within this report.

10 NEXT STEPS

Following this initial feasibility study, our intention is to assist Fleet Town Council with the architect selection process, this will include:

- Providing a long list of suitable architects
- Assisting with shortlisting to a maximum of 5 architects for interview
- Further shortlisting to a maximum of 3 for final selection
- Organising competition packs and selection interviews
- Attending architect interviews alongside the Council and Harlington teams.
- Providing an assessment of each bid and make a recommendation

Swiftly after this appointment, we would envisage engaging with the rest of the design team (MEP, structures) to commence the design and detail a suitable design programme.

. /end

END OF THEATRE CONSULTANT'S FEASIBILITY STUDY
16021 – THE HARLINGTON, FLEET