

**PROPOSED EXTENSION & ALTERATIONS TO
NORTH HERTS LEISURE CENTRE**

Executive Summary

B3 Architects have undertaken work as described in the brief dated 06 August 2014 and developed the proposals together with Press & Starkey, Furness Partnership and B3 Building Services, including indicative costings. B3 Architects and Furness Partnership have visited the building and undertaken a visual appraisal of the existing building.

The exterior fabric of the building appears to be in reasonable condition. We understand that the roof insulation and roof covering were replaced to the pool hall roof circa 2010 and to the sports hall and remaining areas in 2012; these areas appear to be in good condition.

The interior fabric of the building, including the roof void above the pool hall, appears to be in reasonable condition which can be attributed in part to the robust materials and finishes that have been used.

The building appears to be in reasonable condition and with routine maintenance which is currently undertaken – and has historically been carried out – the building should have a life expectancy of at least 25 years.

Asset Registers, which were compiled in May 2013 by others, have been reviewed by B3 Building Services. The registers include the majority of the M&E services and detail their condition and expected life span. From this it has been concluded that the existing M&E systems have an overall life expectancy of around 5 to 13 years. With routine maintenance and planned replacement the existing systems will need replacing at least once within the 25 years expected life of the building. Distribution systems such as pipework, ductwork, cables etc are not detailed in the Assets Register but providing they have been installed correctly and are regularly maintained they should have an estimated life span of circa 30 years. It is possible that some elements may need replacing during the projected 25 year life span for the building.

The proposals within the report have been developed to respond to both the requirements of North Hertfordshire District Council and Stevenage Leisure Ltd. to enable the Centre to offer enhanced leisure facilities that will remain attractive to both the local and wider community for years to come.

The report is presented to provide the reader with an outline understanding of the proposals and budget costs; it does not provide a fully designed solution. We have presented options for both the scope of works, internal finishes, and services installations which have been designed to offer a serviceable centre for the next 20 - 25 years.

The total scheme comprises the following:

Learner Pool Extension and associated plant	£1,370,000
Café Extension	£477,000
Dance Studio (former Cafe Area)	£ 204,000
Offices (former Kitchen Area)	£ 96,000
Sports – new sprung timber floor covering and lighting	£ 135,000
Corridors – refurbishment of finishes and lighting	£ 51,000
Wet Changing Facility refurbishment – finishes, services, fixtures & fittings	£ 504,000
Car Parking – additional 15 spaces	£ 50,000
Existing primary services (gas and electricity upgrade)	£131,000

Total Estimated Cost **£ 3,018,000**

All figures include preliminaries, main contractor overheads and profit, contingencies and professional fees but excludes VAT, planning and building regulations fees.

Options are as follows:

Learner Pool Extension

Main Plant Option 1 - additional boiler in existing plant room in lieu of stand alone plant additional	additional £3,100
Main Plant Option 2 - replace central boiler plant with increased capacity in lieu of stand alone plant	additional £184,300

Further discussion will be required between North Hertfordshire District Council, Stevenage Leisure Ltd. and the Project Team to review and prioritise the options and the way forward.

01 Introduction

Introduction

The Leisure Centre, originally built circa 1982, is a wet and dry multi-use leisure centre located in landscaped grounds within Letchworth Garden City, a short distance from Junction 9 of the A1.

North Herts Leisure Centre provides a variety of health and fitness facilities including indoor swimming, exercise classes and sports courses. The facility is run on behalf of North Hertfordshire District Council by Stevenage Leisure Ltd.

Existing Facilities

The main facilities include:

- Leisure pool measuring 34m x 25m with wave machine and flume
- Multi-purpose sports hall (4 badminton courts)
- Dance studios
- Four squash courts
- Multi-activity room
- Sauna and steam rooms.
- Cafeteria
- Crèche
- Fitness suite
- Fully equipped gym

Over-view of Leisure Centre

Being the main public leisure facility, which has been used intensively for in excess of 30 years, North Herts Leisure Centre has undergone some internal alterations to respond to changing needs relating to health and fitness but the wet facilities have remained unchanged. Particular issues that have become increasingly apparent include:

- The need for a learner training pool separate from the leisure pool. Currently learning and training takes place in a part of the leisure pool which places restrictions on programming and usage, particularly by school groups in the 8-13 years age range.
- Relocation of the cafeteria from first floor to ground floor to attract more custom, from both swimmers, sports and fitness customers, and spectators.
- Conversion of the existing first floor cafeteria into dance studio.
- Conversion of kitchen area into offices to allow the cafeteria to be located in the prime position adjacent the main entrance.
- Replacement of the badly worn existing Granwood block flooring in the Sports Hall with a new resilient floor finish. The existing floor has been sanded and resealed regularly since installation and there is now barely any wood fibre left in some areas.
- Replacement of lighting within the Sports Hall.
- Replace floor covering, ceiling and lighting in the main ground floor corridors and introduce a wall lining to improve the appearance and presentation of the circulation areas.
- Refurbishment of existing wet change facilities.
- Provision of 15no. additional car parking bays including a new footpath to the main entrance

02 Architectural Design

Potential Development

An initial sketch feasibility study identified the main frontage of the building as the appropriate location for the Learner Pool and the area occupied by the offices as the location for the Cafeteria.

The initial study, which included budget costing, has been developed within this more detailed Feasibility Study and includes development of the construction, finishes, structure and M&E plant and services.

Feasibility Plans

The plans illustrate the opportunities for the following:

Learner Pool

- New Learner Pool 16m x 9m x 0.8m-1.2m deep with 2m wide level deck pool surround, stepped access and plastic bench seating for approx. 44No. spectators.
- The pool surround and steps have been specified as wet anti-slip ceramic tiles, the pool tank will be fully tiled.
- Walls are to have a smooth ceramic tile finish.
- External windows are to be Kalwall (similar to the existing) translucent panels to provide diffuse natural light but maintain visual privacy.
- The Learner Pool is to have one point of access for swimmers and spectators via the existing Leisure Pool surround.
- The existing glazing between columns is to be removed to provide a visual link between the two pool areas but the existing built-in perimeter seating is to be retained and glazed stainless steel balustrades introduced to provide a physical barrier for safety purposes.
- A dedicated plant room housing pool filtration plant at ground floor level and air handling plant at first floor mezzanine level. For details of the plant and services refer to the M&E section of this report.

Cafeteria

- Cafeteria seating 80 persons, located adjacent the main entrance to encourage increased custom from users of the centre.
- The cafeteria overlooks the Learner Pool via a fully glazed screen.
- Curved glazed facade incorporates sliding patio type doors to provide access onto a level deck serving as an outdoors extension of the cafe area.
- The kitchen facilities and equipment will be similar to the existing to cater for a range of hot and cold food, snacks and beverages.
- The entrance to the Cafe will slightly increase the foyer circulation area which may improve the experience of customers and staff alike.

Dance Studio

- The proposed Dance Studio will provide a usable area of approx 142m² and a store of 7m².
- A glazed full height screen and doors will be incorporated within the new partition separating the Dance Studio from the main first floor circulation area. Full privacy blinds are proposed internally.
- The existing floor finish will be removed and a new resilient floor laid, either Gerflor Taraflex Multi-Use 6.2 in natural wood finish or Taraflex Sport M Evolution which is available in a range of solid colours. Both floor coverings offer a P1 category level of shock absorption. The Sport M Evolution is slightly cheaper than the Multi-Use 6.2.
- The ceiling and lighting will be replaced.
- The windows overlooking the Leisure Pool will be retained.

Offices

- The proposed office accommodation provides a general office and a Manager's Office, together with some storage space. The general office includes space for the Fitness Manager.
- The accommodation offers a small increase on the total existing office area.
- The proposal includes new mechanical ventilation and lighting.
- Rooflights are proposed to provide some daylight into these internal rooms.

Sports Hall

- Replacement of the floor with Gransprung or a sprung timber floor, e.g. Junckers SylvaSport solid beech in New Era UnoBat self-levelling batten system, will require removal of the existing wood blocks and screed, assumed overall depth to be approximately 75mm. Allowance would be made for a two coat liquid DPM / vapour control layer on the sub-base.
This will provide a floor which is guaranteed for 25years.
We would recommend Junckers solid beech system in preference to Gransprung.
It is important to note that both of the above sprung floor systems will require temperature conditions to be maintained constant throughout the year.
- The existing lighting within the Sports Hall is poor and allowance has been made for replacement.

Corridors - Ground Floor

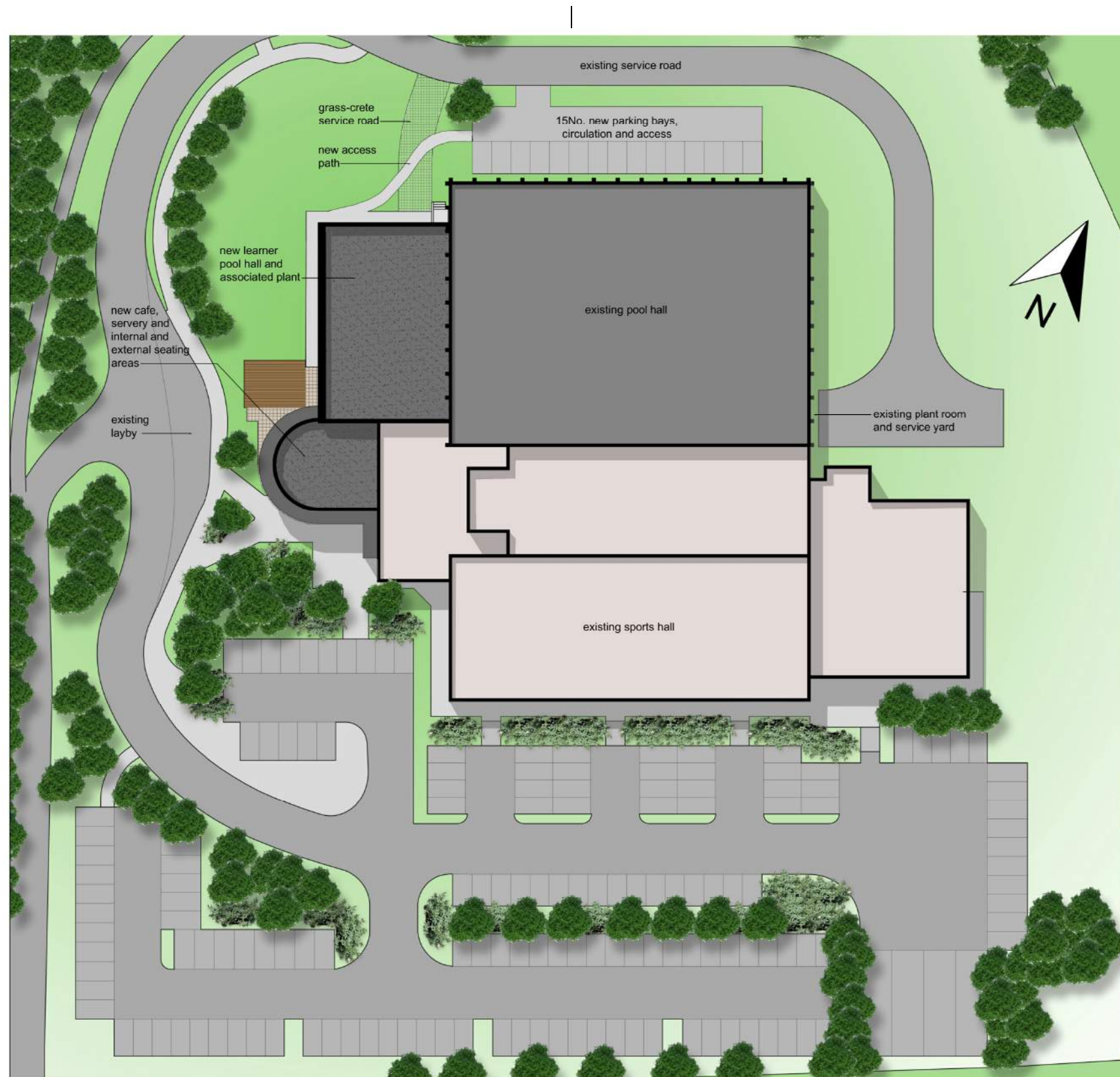
- Replace the existing carpet tile finish with a timber effect vinyl floor covering.
- Replace the ceiling with a new lay-in grid suspended ceiling and new energy efficient lighting.
- Install acrylic wall panels over the existing fairfaced brickwork. This should improve the visual impact of the corridors and provide for the introduction of corporate graphics, artwork, etc.

Refurbishment of Wet Changing Facility

- Removal and replacement of the existing tiled finish with a new wet anti-slip ceramic tile and matching cove skirting.
- Replacement of drainage channel gratings with stainless steel.
- Removal and replacement of existing ceramic tile wall finish where exposed. Render and ceramic tile finish to existing fairfaced brickwork wall surfaces.
- Replacement of existing suspended ceiling, light fittings and ventilation grilles, etc.
- Replacement of existing benching, lockers, vanity units, cubicles (Prospec or product of equivalent quality) and sanitaryware.

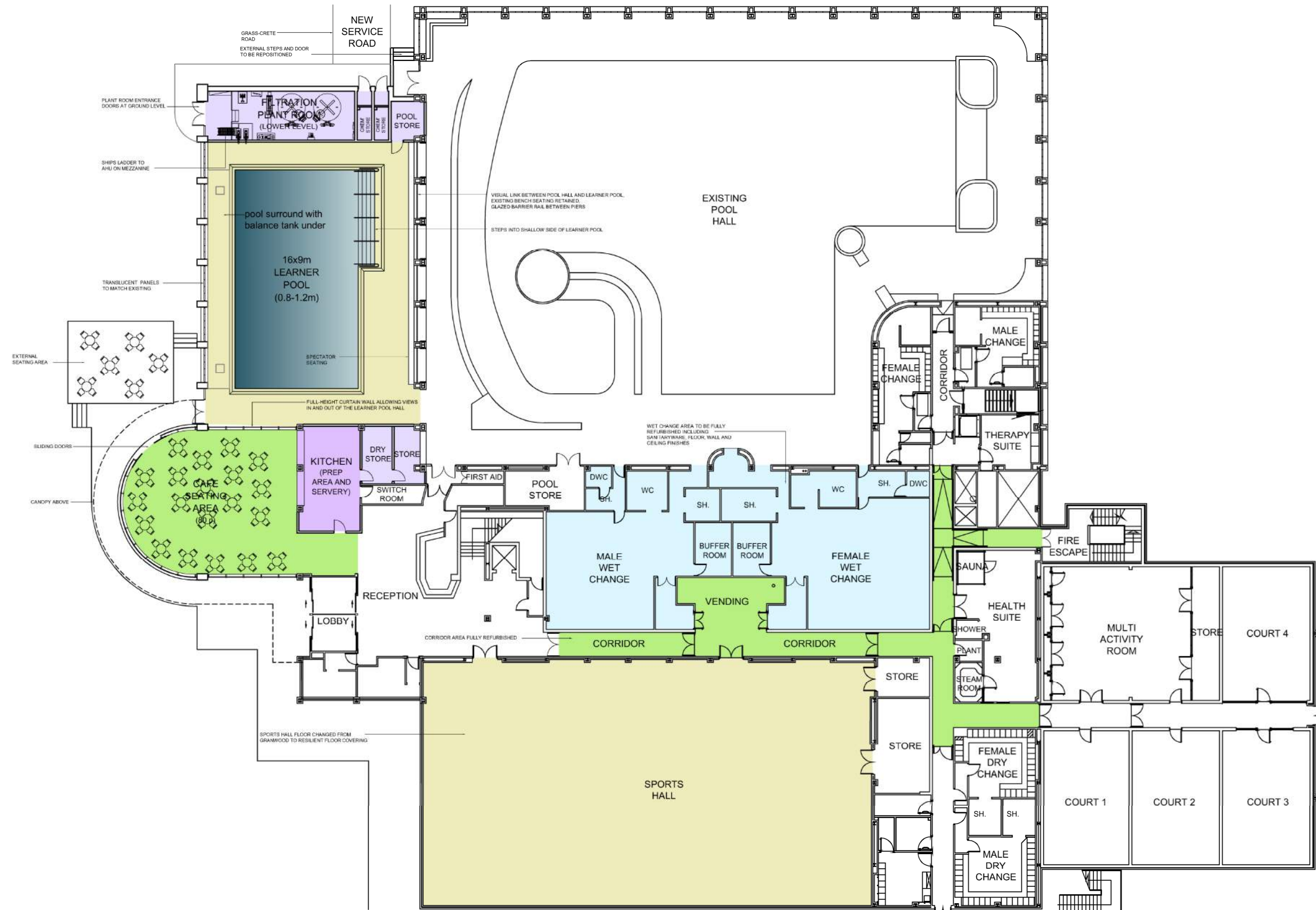
Car Parking

- Provision of new parking area off the service road to provide 15 spaces including a new footpath to the main entrance.
- Provision of service vehicle access strip to the Learner pool plantroom and stores.

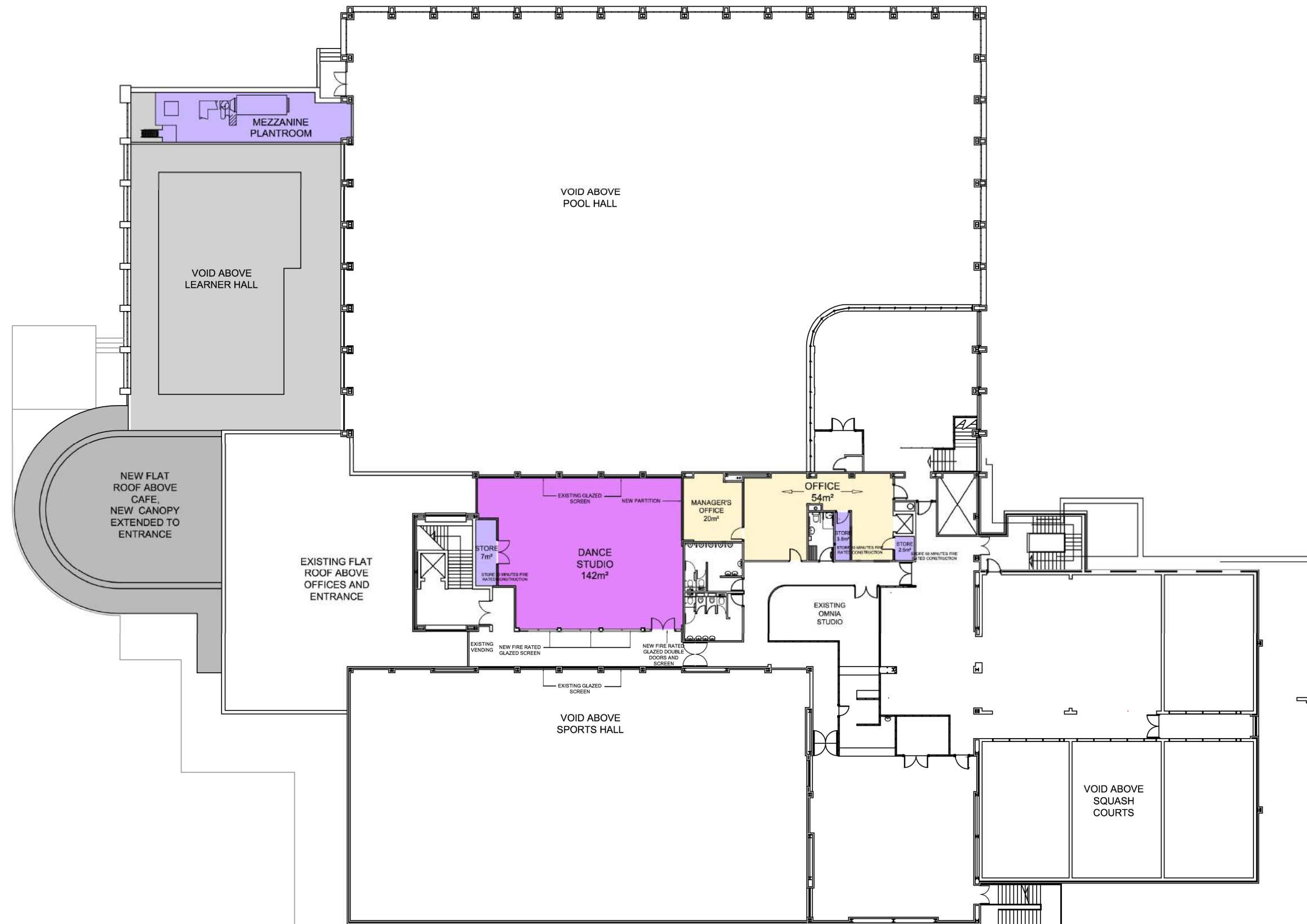


PROPOSED SITE PLAN

PROPOSED EXTENSION & ALTERATIONS TO NORTH HERTS LEISURE CENTRE
 02 ARCHITECTURAL DESIGN



PROPOSED GROUND FLOOR PLAN

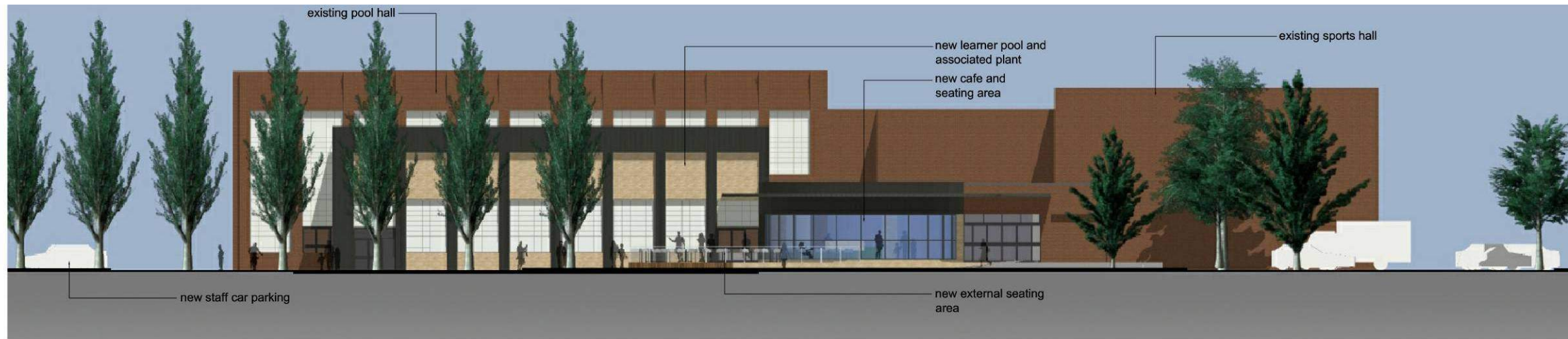


PROPOSED FIRST FLOOR PLAN

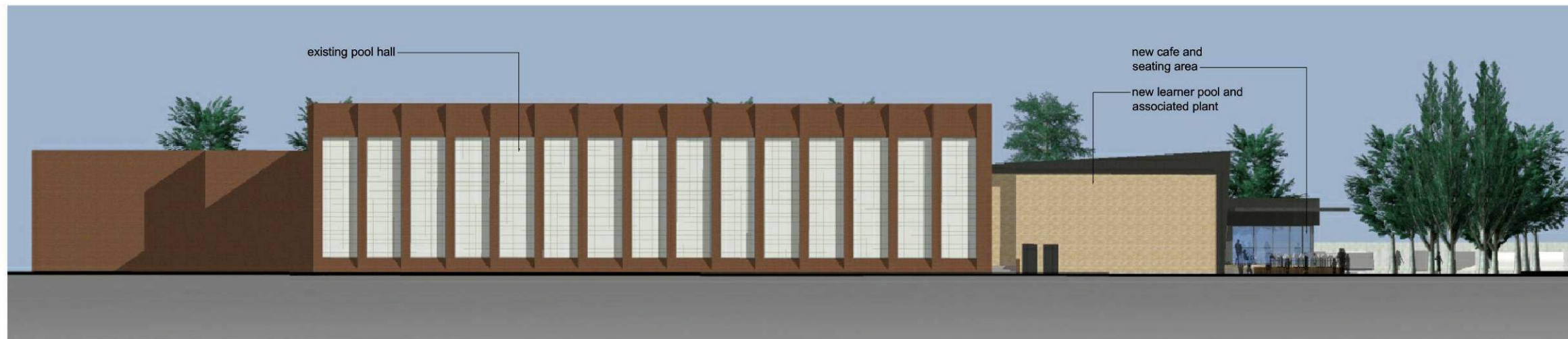


VIEW FROM WEST SHOWING PROPOSED LEARNER POOL & CAFE

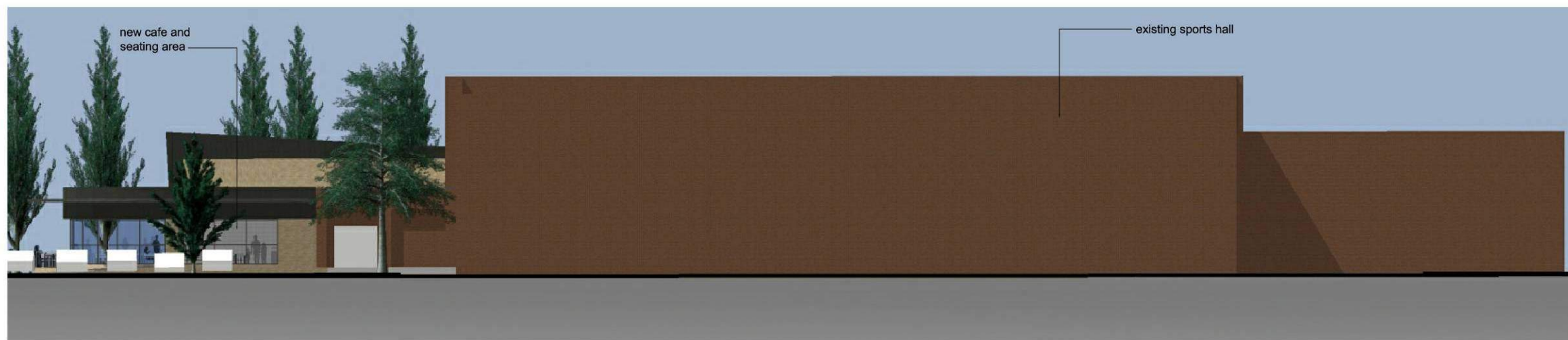
PROPOSED EXTENSION & ALTERATIONS TO NORTH HERTS LEISURE CENTRE
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SOUTH-WEST ELEVATION



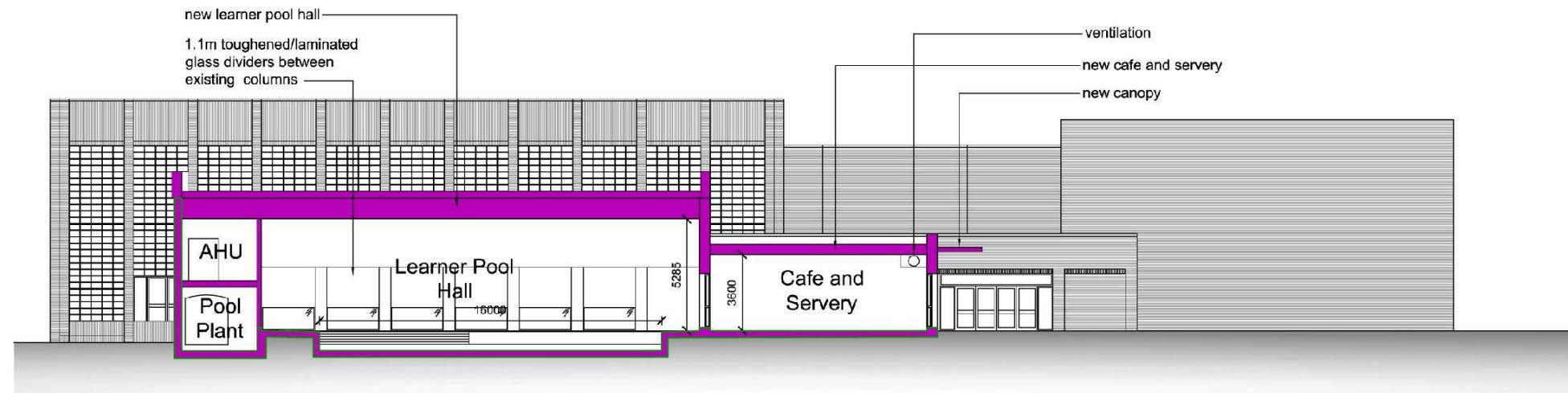
NORTH-WEST ELEVATION



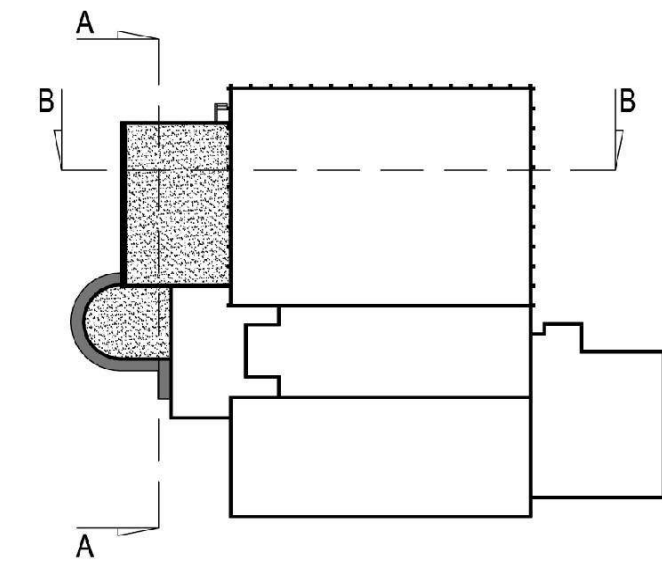
SOUTH-EAST ELEVATION

PROPOSAL IN ELEVATION

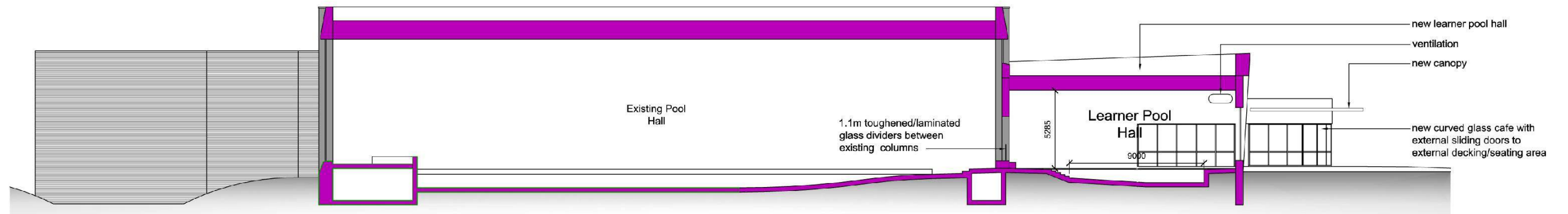
PROPOSED EXTENSION & ALTERATIONS TO NORTH HERTS LEISURE CENTRE
 02 ARCHITECTURAL DESIGN



SECTION A-A



KEY PLAN

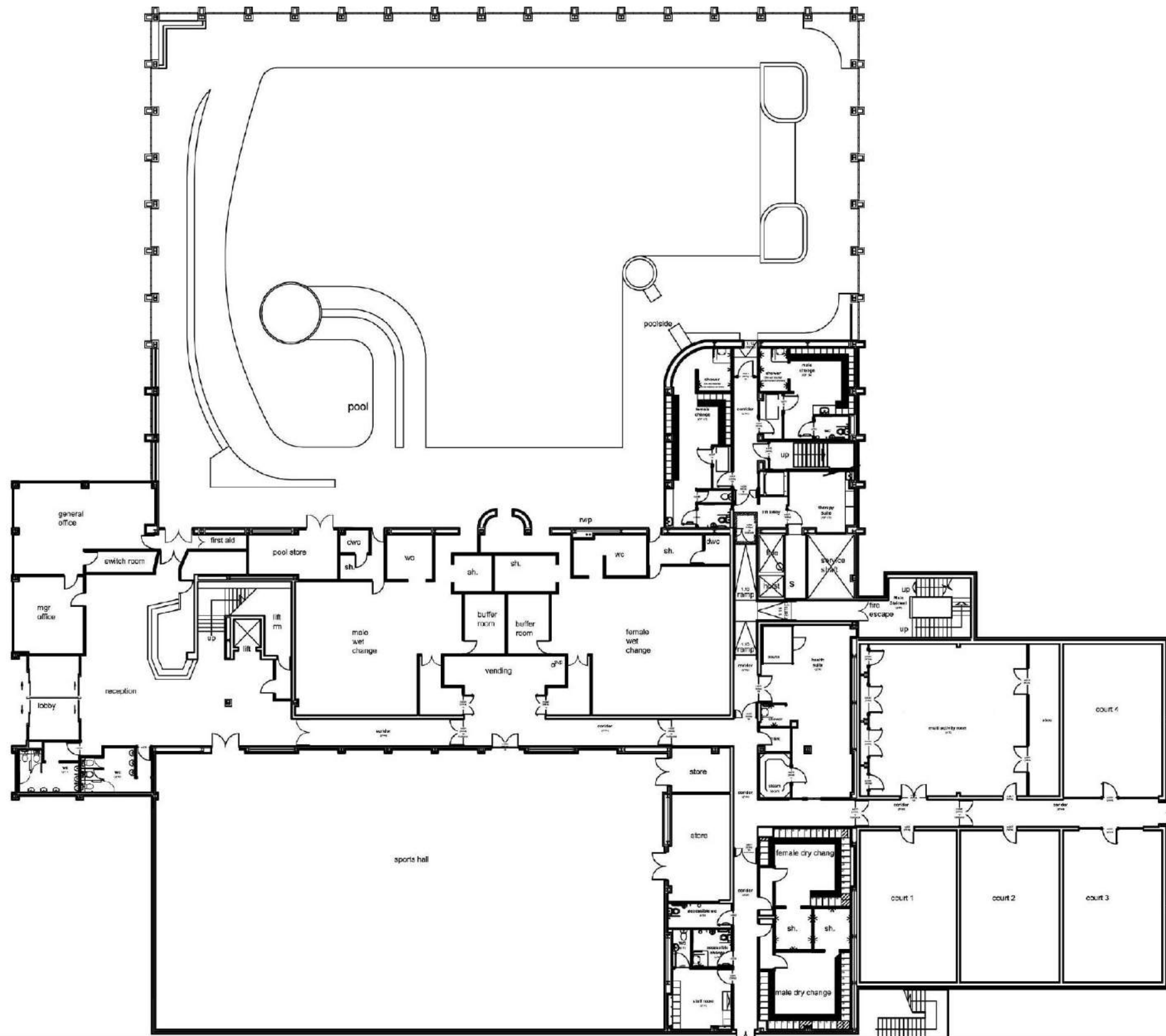


SECTION B-B

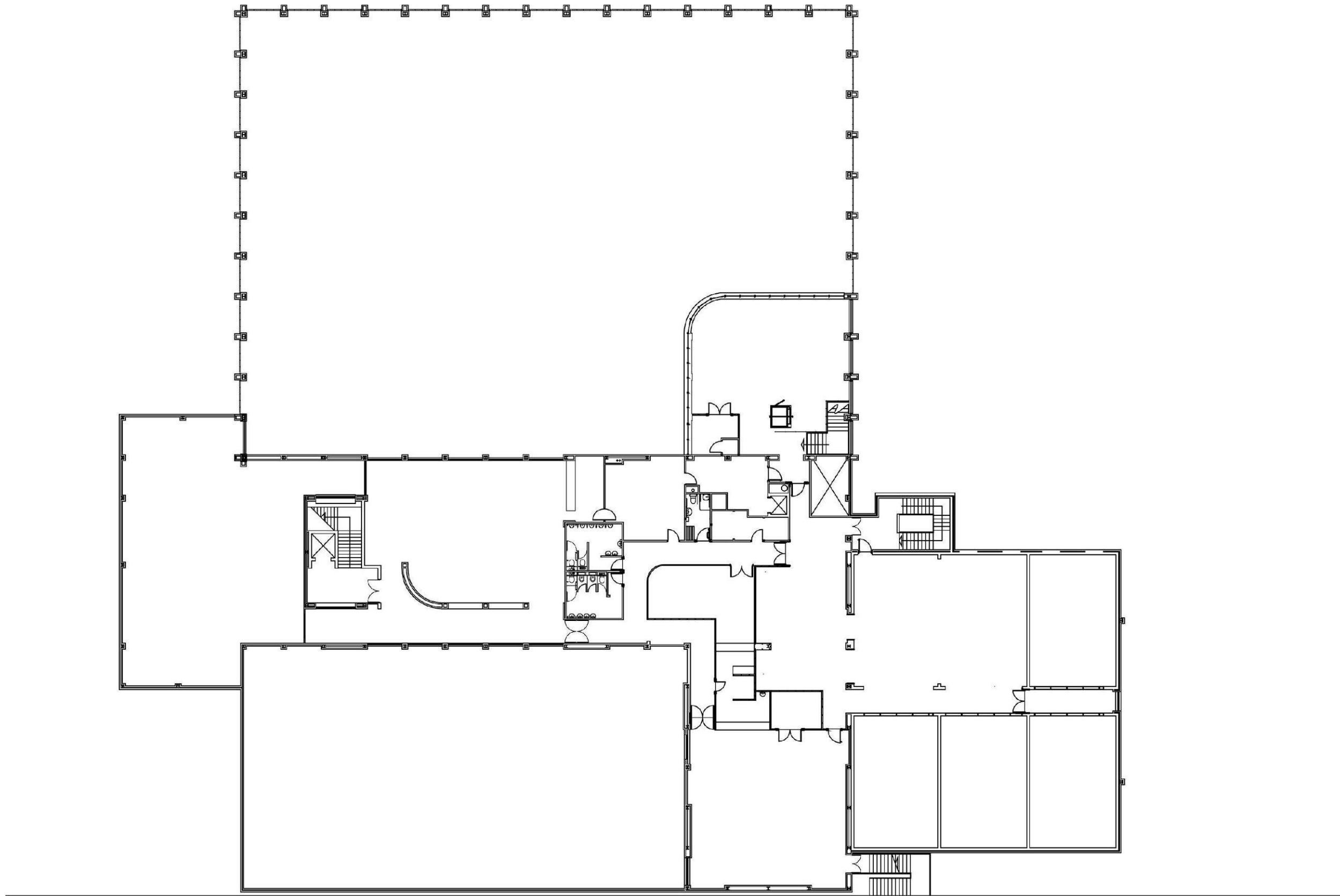
PROPOSAL IN SECTION



3D VISUALISATIONS OF PROPOSAL



GROUND FLOOR PLAN AS EXISTING



FIRST FLOOR PLAN AS EXISTING

03 Structural Report

1.0 INTRODUCTION

This section of the report provides an outline description of the main structural aspects of the current scheme by B3 Architects Ltd. Proposed structural solutions for this scheme are presented, as well as basic design criteria and additional information that is required prior to detailed structural design.

The proposed development includes the following works:

- Partial demolition of wall to existing Pool Hall.
- Construction of new learner pool hall and plant room.
- Construction of new Café

2.0 SUBSTRUCTURE

Typically in this area we expect to find stiff silty clay with some gravel and chalk fragments overlying a medium grade chalk. Based on this we expect to use conventional spread foundations and footings. The ground slabs may be suspended or ground bearing depending on levels and site investigation report.

3.0 SUPERSTRUCTURE

The structure is to be designed in accordance with the relevant British standards, including but not limited to the following:

- BS 6399: Dead, imposed and wind loads
- BS 5628: Structural use of masonry
- BS 8110: Structural use of concrete
- BS 5950: Structural use of steelwork
- BS 5268: Structural use of timber

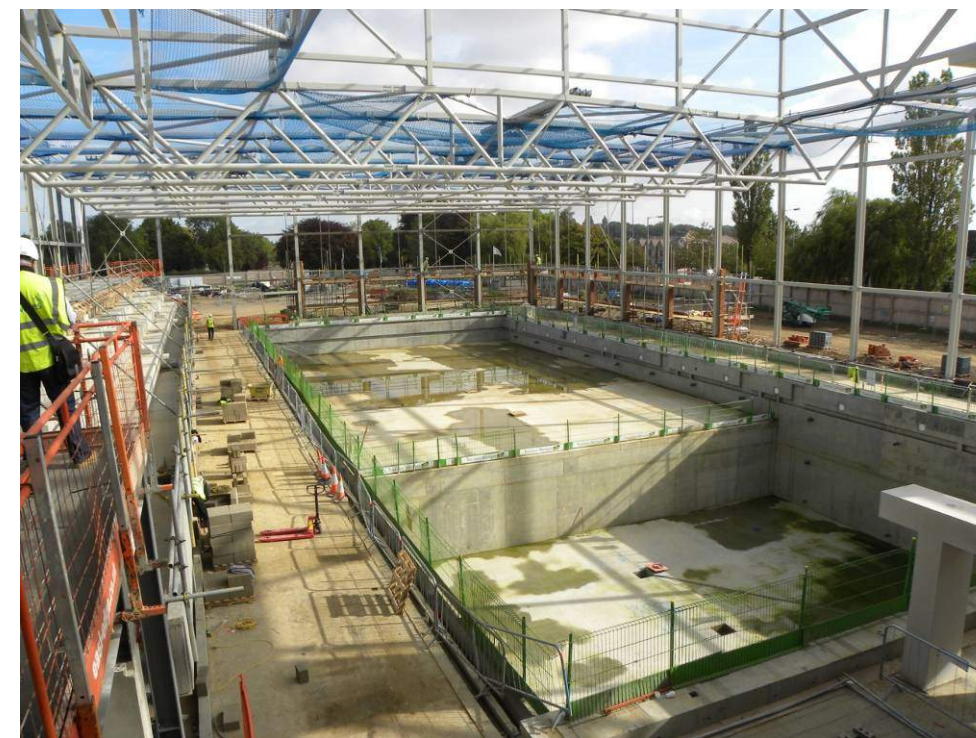
3.1 Pool Tanks

The new learner pool will all be constructed in in-situ reinforced concrete designed in accordance with BS 8007, the code of practice for design of concrete structures for retaining aqueous liquids. All construction joints will incorporate water bars in the form of "hydrophilic" strips, which swell on contact with water thus sealing any leaks. The falls to

the pool surround will be achieved using a concrete screed. Stainless steel mesh will also be provided in the concrete screed of all wet areas and the joints in the screeds will be limited to 6m maximum. Elsewhere all concrete screeds will receive ordinary mesh reinforcement.

In spite of these precautions, joints and service penetrations in the tanks are always weak points susceptible to leaking. Consequently construction joints will be kept to a minimum. Service penetrations for filtration pipework will also be minimised by running services within ducts inside the pool tank envelope.

Internal surfaces to the concrete walls and base slab will have rough exposed aggregate finish to provide a superior key for the tile bed and finishes.



3.2 Ground Floor

The ground floor construction will depend both on the site levels and site specific ground conditions. The ground floor construction would typically be one of the following:

- Ground bearing insitu concrete slab construction
- Suspended insitu concrete slab construction
- Suspended precast concrete slab construction

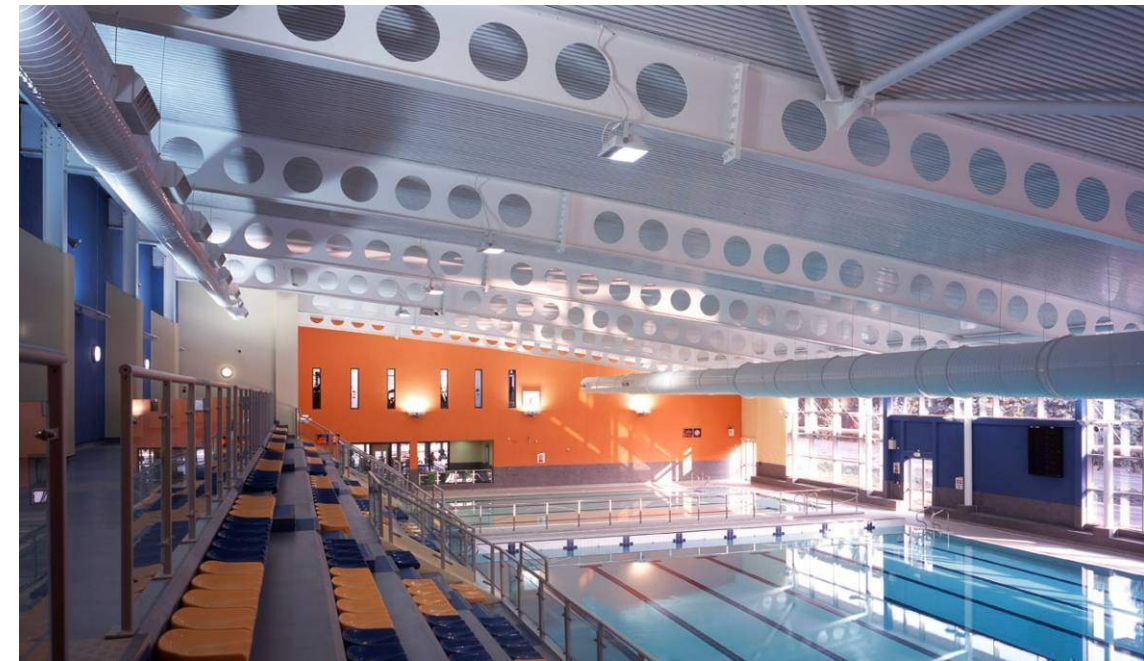
3.3 Roof over Pool Hall/plant area

Because of the relatively aggressive internal environment, particularly in the Pool Hall, the steelwork will be coated with a suitable paint specification to give a suitable life to first maintenance. Any exposed steelwork in the pool area will be detailed to minimise surfaces where condensation can be retained, great care will be taken to ensure all connections are free draining and not water retaining. Circular hot rolled sections will be specified for all roof plan bracing members. Aluminium perforated structural deck (Eurodeck) will be utilised for the Pool Hall roof to satisfy the durability and acoustic requirements and galvanised steel decking on roof purlins to the remaining areas. There are several options for the primary roof structure over the main pool hall, as detailed below:

- Exposed long span steel trusses provide a greater area in which services can pass:



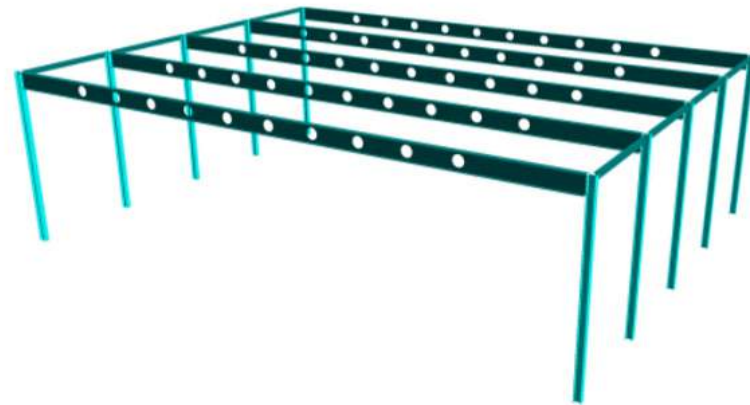
- Exposed long span “Cellbeams” to provide lightness of appearance and a pleasing form.



3.4 Learner Pool Hall

The frame for the new pool hall will be constructed from steel. We recommend spanning the steels in the long direction to avoid putting load on the existing columns and foundations.

The use of cell beams over long spans is efficient and aesthetically pleasing.



3.5 Café Extension

The extension to the front of the structure which will include a Café will also be constructed from a steel frame. We would recommend using exposed CHS columns to support the glazing which give a pleasing appearance. The roof steels will be cantilevered to form a canopy at the front.



4.0 DESIGN CRITERIA

The loading specification will form the basis of the detailed design and reflects the requirements of the Building Regulations and associated British Standards.

- **Imposed Loadings** (to BS6399 or as stated below)

Plant rooms	7.5kN/m ²
Spectator seating & pool surround	4.0kN/m ²
General circulation areas	4.0kN/m ²
Roof	0.75kN/m ²
- **Wind Loading**
In accordance with BS6399 Part 2
- **Snow Loading**
In accordance with BS6399 Part 3

The cladding line loads are to be confirmed following confirmation of the external wall build ups.

The basic structural design criteria are as follows:

- Deflection of structural beams and slabs to limits described in BS8110, BS5950, BS5628 as appropriate
 - Maximum allowable live load deflection is span/360
 - Maximum allowable sway is Building Height/300
 - Maximum allowable total deflection of structural element is span/200
- Structural Fire rating will be 1 hour typically

5.0 STABILITY

Overall stability for the structure will be achieved using vertical cross bracing to suitable panels and roof plan bracing. Where vertical cross bracing will be exposed, proprietary stainless steel rod bracing will be used to satisfy the aesthetic requirements. Vertical cross bracing is the most cost effective method for satisfying the sway stability for a building of this type. Moment frames are associated with larger column/rafter sizes and will be restricted only to limited areas where vertical braced frames are not possible. Masonry panels will be assumed to offer no contribution to the resistance of the wind loads.

6.0 FURTHER INFORMATION REQUIRED

- A site investigation to determine the soil conditions on site will be required
- Drawings of the existing structure would be beneficial to assist with determining the best scheme for the extension. The local building authorities have been contacted to see if any are available.

04 M&E Services

1.0 INTRODUCTION

This section of the report provides an outline description of the building services aspects of the current scheme by B3 Architects. Proposed solutions for mechanical and electrical services are presented including an outline of the options that may require further and more detailed consideration. The proposals are based on the facilities which are to be designed and specified for a planned life of 20 years allowing for regular maintenance.

1.1 Upgrade Existing supplies

Pending a detailed review and design of the incoming services against additional loadings provision has been allocated for upgrade of existing incoming electricity and gas mains services.

2.0 PROPOSED OPTIONS

The following section provides outline proposals of the building services options for the extensions, alterations and refurbishment. These initial proposals will need to be developed in parallel with the Architectural and Structural proposals to achieve a fully integrated design.

2.1 Learner Pool

The new 16 x 9m Learner Pool with Pool surround is to have a level deck pool tank with balance tank under the surround. At Pool side there will be seating provision for up to 44No. spectators.

2.1.1 Pool Filtration Plant

The Pool Filtration plant will be located to north of the pool with a dropped floor level to give flooded suction from the balance tanks to the Pool circulation pumps. Alongside the Pool Filtration plant will be the Chemical stores; there is a requirement for two separated stores with external access.

The Pool volume is circa 140m³ and the recommended turnover rate for a Learner Pool would be one hour. This equates to a filtration rate circa 22.9m./hr based on two 2.0mØ sand filter vessels.

2.1.2 Learner Pool Ventilation

The ventilation and heating of the Learner Pool will be provided via a dedicated air handling plant. The air temperature achieved within the Pool hall is to be 1 degree higher than the pool water temperature. To minimise running costs the unit is to be capable of recirculation of pool air when possible with heat recovery of the waste exhaust air via a plate heat exchanger.

The location of this plant will be directly above the Pool Filtration on a mezzanine deck. The proposal is to run a supply air duct from the plant at high level along the external glazed elevation. Supply diffusers will direct air towards the glazing and along the Pool surface.

The ductwork design will need to be carefully considered with the following key issues addressed:-

- Ensure there is sufficient air movement at pool surface to pick up and disperse the gasses from the pool water treatment.
- Ensure an even temperature throughout the pool hall.
- Ensure there is sufficient air movement to keep condensation from forming on the glazing.
- Provide comfortable conditions for spectators in the pool hall.
- Consider future access for the cleaning of ductwork.

2.1.3 Learner Pool Lighting

Pool hall lighting is recognised as a key electricity user. To reduce the connected load and provide an energy efficient installation, luminaries will have electronic dimmable ballasts with daylight linking. Pool hall lighting will be arranged to provide indirect illumination of the pool surface by aiming the luminaries directly at the pool hall soffit preventing disabling glare that would impede a lifeguard's ability to see bathers in or under the water. Where the pool hall soffit has a luminance factor of less than 70% or is too far away from the source of light mirrortec reflective panels will be used to increase overall levels and uniformity of lighting.

All luminaries will be suitable for the chlorinated atmosphere and high ambient temperatures.

2.1.4 Heating Plant

There are two options available for the heat source to the new Pool Hall. Option A is to connect into the existing central boiler plant & Option B is to provide standalone boiler plant. Refer to Section 2.7 for further details and options.

2.1.5 Electricity Supply LV Distribution

The new Learner Pool plant room will require a new mains electricity supply from the existing site supply. We assume that there is sufficient existing capacity at the main incoming switch panel location to enable a new LV feed to be routed through the building to the new plant room to serve a new Distribution board that will solely serve the New Learner Pool and associated plant.

2.1.6 Fire Alarm / Security / CCTV

The existing building has Fire Alarm, Security and CCTV. The intention is to extend these existing systems to serve the new Learner Pool extension.

2.2 Cafe & Kitchen - Ground Floor

The proposed scheme extends the existing building footprint to provide a 80 Seater Cafe. Part of the existing area is currently office space which is to be relocated to first floor level.

It is proposed to ventilate the Cafe and Kitchen by Mechanical means with new air handling plant installed on the flat roof of the existing building directly above. A separate extract fan serving a kitchen hood will be required for the Kitchen with bifurcated fan and fire rated ductwork.

Space heating and cooling is proposed with a central air source refrigeration plant (VRF). The intention is to install a bulkhead on either perimeter of the cafe and install duct mounted heating/cooling units within. The bulkhead will also be utilised to hide supply and extract ductwork.

Domestic services will be provided from the existing building plant. The existing distribution pipework will be extended to serve the relocated Kitchen and Served. It is assumed that the requirements will be similar to the piped systems which currently serve the existing Kitchen. New above ground drainage will be connected into new below ground drainage system to convey waste.

Lighting to the cafe will comprise appropriate fittings set within the perimeter bulkhead and suspended lay-in grid ceiling, complete with daylight dimming control. Lighting within the kitchen will be suitable IP rated enclosed fittings set within the ceiling grid. Small power outlets will be spaced as appropriate.

LV distribution will be derived from the existing circuits within the immediate area. These will be in full compliance with the latest regulations as required.

The existing building has Fire Alarm, Security and CCTV. The intention is to adapt and extend these existing systems to suit the proposed facility.

2.3 Relocated Offices at First Floor

The Manager's office and general office space is being relocated from ground floor to the first floor to the area currently occupied by the Kitchen. The new spaces will be bound by others rooms therefore fresh air is to be provided by mechanical means. Provision of comfort cooling is to be provided, the control of which is to be standalone to allow individual zone control as required.

Space heating is to be provided by installing new low level radiators with TRV and LSV valves. The heating will be provided from the existing distribution system.

General lighting, small power and data will be provided to suit the intended office space layouts to comply with current standards. In general the use of low energy T5 and LED lighting is to be utilised. All linear and compact fluorescent luminaires will have High Frequency Electronic ballasts. Absence detection to be installed to control the lighting.

LV distribution is to be derived from the existing circuits within the immediate area. These will be in full compliance with the latest regulations as required.

The existing building has Fire Alarm, Security and CCTV. The intention is to adapt these existing systems to suit the proposed new use and layout of this area.

2.4 New Dance Studio at First Floor

The existing Cafe space at first floor is to be converted into a new Dance Studio facility.

The intention is to provide a new ventilation plant to serve the studio; this will need to be located on the roof and will be ducted into the space. Space heating and cooling will be provided by central air source refrigeration plant (VRF).

Provision for cold water supply & drainage will be provided to a drinks fountain – it is assumed that modification to existing services will be carried out.

General lighting, small power and data will be provided to suit the intended Dance Studio space layout to current standards. In general the use of low energy T5 and LED lighting is to be utilised. All linear and compact fluorescent luminaires shall have High Frequency Electronic ballasts. Absence detection to be installed to control the lighting.

LV distribution will be derived from the existing circuits within the immediate area. These will be in full compliance with the latest regulations as required.

The existing building has Fire Alarm, Security and CCTV. The intention is to adapt and extend these existing systems to suit the new use and layout of this area.

2.5 Replacement of Existing Lighting

There are areas within the building where the existing finishes are to be refurbished. In these areas the lighting is considered to be poor and therefore in need of replacement. To reduce the connected load and provide an energy efficient installation, luminaries will have electronic dimmable ballasts with daylight linking as appropriate. Presence and absence detection to be installed to control the lighting.

2.5.1 Sports Hall Lighting

New lighting to be installed throughout, the luminaries are to be provided with suitable mechanical protection against ball impact and be mounted above the minimum clear zone. Long life lamps are to be used to minimise the frequency of maintenance given that the luminaries are installed at high level.

2.5.2 Circulation Lighting

The general circulation space between the Wet Change and Health suite will have replacement lighting installed. The fittings will be lay in grid fittings with presence detection.

2.6 Wet Changing Rooms

The existing wet changing areas to be refurbished entirely. As the space is being fully refurbished (i.e. new sanitary ware, floors, walls, tiles etc) it is considered that the M&E Services should to be replaced to improve efficiency and achieve lower running costs.

New ventilation plant and ductwork is proposed to serve the newly refurbished changing areas. The vent unit is to be located on the existing roof. This unit is to provide an effective air change rate within the Changing Village utilising heat recovery. The unit and ductwork will be internally treated to suit the wet environment and will provide ventilation during occupation hours only.

We would propose installing new LTHW heating to the space as part of the refurbishment. Two viable options available are radiant ceiling panels or low level low surface temperature panel radiators.

It is proposed to provide new domestic hot & cold water services to the new sanitary fittings, connected into the existing pipework distribution system within the building.

General lighting is to be replaced with new lay in grid fittings suitable for the wet environment within the changing rooms. Lighting control will be via presence detection.

LV distribution will be derived from the existing circuits within the immediate area. These will be in full compliance with the latest regulations as required.

The existing building has Fire Alarm, Security and CCTV. The intention is to adapt these existing systems to suit the refurbishment.

2.7 Main Plant

The existing building is served from a central plant room. There is an Asset Register for the building that was produced May 2013. The following information has been derived from the asset register.

2.7.1 Central Boiler Plant (Existing)

From the information received it is estimated the total installed heating capacity for the building is in the region of 1,220kW. The existing heating is derived from 2No gas fired boilers alongside a gas fired CHP plant. The current installed heating capacity is estimated by B3BS at around 1,200kW based on the connected equipment and plant within the asset register.

Therefore there is no spare capacity for the additional Learner Pool systems described in section 2.1. It may be worthwhile the Client considering upgrading the central boiler plant in two ways:

- **Option 1** - add additional boiler module to the existing plant to provide required heating load for the Learner Pool. A new circulation pump will then be provided to serve the Learner Pool from the existing plant room. Upgrade associated LTHW header and reconnect existing circuits. Modification to controls to accommodate the new circulated system and boiler.
- **Option 2** - upgrade the entire LTHW boiler plant and associated headers, pressurisation unit, circulation pumps, controls etc. Based on the asset register the predicted future life of the plant lies between 3 and 11 years, therefore this option may not be financially viable at this stage.

2.7.2 Learner Pool Boiler Plant (standalone)

If the options in 2.7.1 are not deemed financially viable at this stage the remaining option would be to provide a standalone boiler plant to serve solely the learner Pool.

For this new incoming supplies will need to be routed over to the plantroom (gas, water and electricity).

A new wall mounted gas fired boiler plant will then be installed with appropriate expansion facility. A pumped circuit will serve the Pool air handling unit and Pool water plate heat exchanger.

Controls will be linked to the central building management system from a new control panel interface in the Pool Filtration plantroom.

2.8 Existing Primary Services

The existing building is provided with mains incoming services of Gas, Water, Electricity and telecommunications. The proposed extension will need to be connected into the existing primary services. In order to determine that the existing infrastructure serving the building is capable of supporting the proposed extensions a detailed survey and desktop study would need to be undertaken.

It is assumed that the existing systems have no issues with loadings and therefore as the refurbishment of the existing main involves relocating rooms we believe that the works associated with the refurbishments will not hinder the existing supplies and systems.

2.8.1 Electricity Supply

The existing building is provided with mains electricity serving central switch gear. Until a detailed investigation is carried out to determine the loadings a sum of money has been allocated within the feasibility study estimate costs for increasing capacity of the existing electrical supply and main switchgear.

2.8.2 Mains Water

It is surmised that there is sufficient capacity in the existing system to serve the refurbished building. The sanitary allowance and capacity is not increasing under the current proposals.

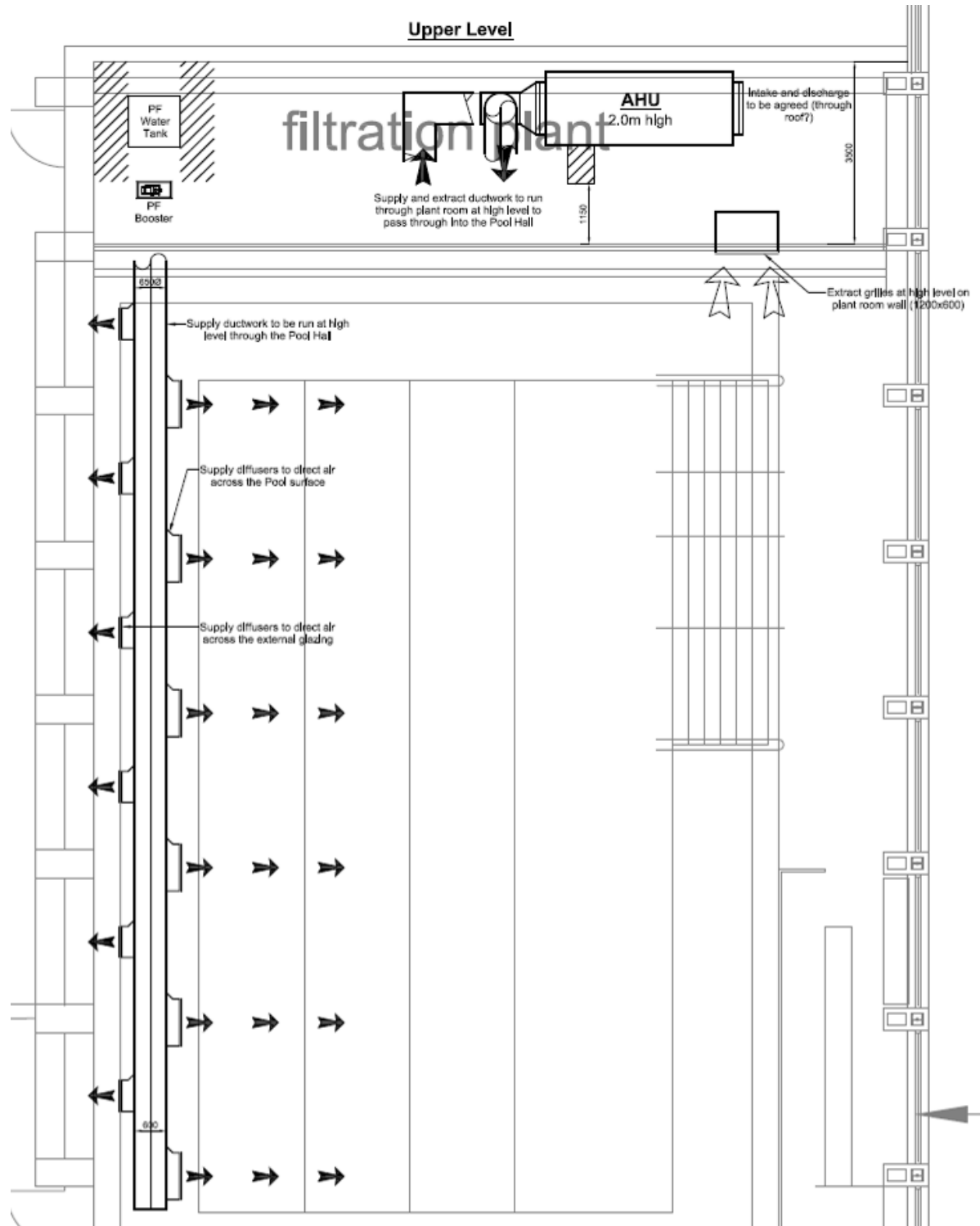
2.8.3 Mains Gas

The existing gas main serving the building may need to be increased in capacity to serve the boilers to the new Learner Pool extension; this will need to be determined following detailed investigation and design. If required the options to increase capacity would be either through a change in the meter and/or increased size of supply pipe. A sum of money has been allocated within the feasibility study estimate costs for increasing the capacity of the existing incoming gas service.

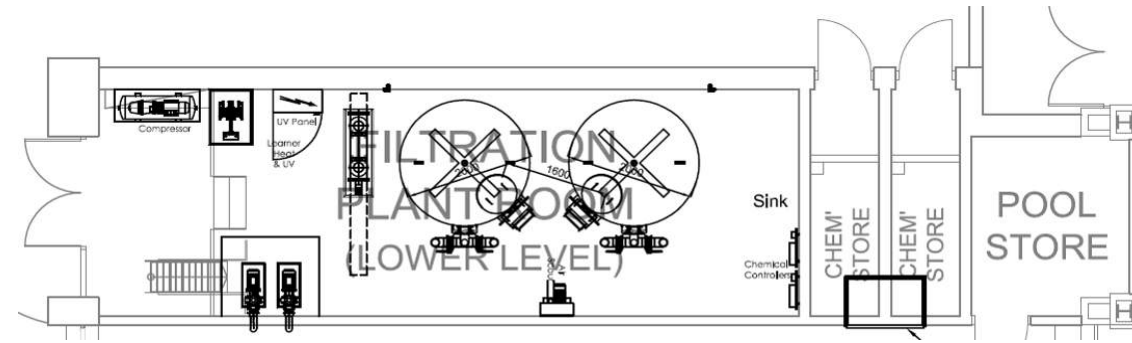
3.0 Indicative drawings

The following are indicative drawings for information only at this stage, further design development is required.

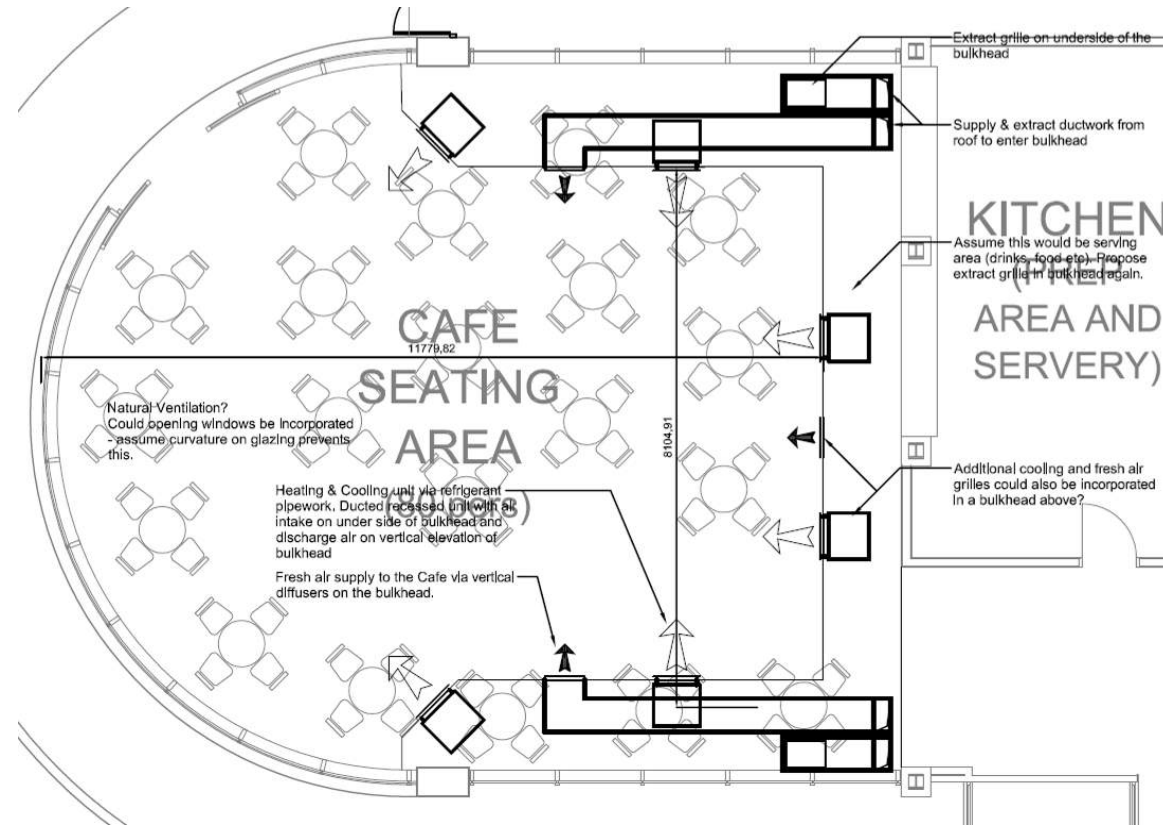
3.1 Learner Pool Ventilation



3.2 Learner Pool Filtration



3.3 Cafe (Ground Floor)



4.0 Existing Assets

B3 Building Services have reviewed the Asset Registers for NHLC which were compiled in May 2013 by others. The registers include the majority of the M&E services and detail their condition and expected life span. In summary the existing M&E systems have an overall life expectancy of around 5 to 13 years.

The existing systems will need replacing at least once within the 25 years expected life of the building.

The life expectancy and estimated costs for replacement of plant are outlined below:

Life Expectancy <5 years

- CHP Plant - replacement budget cost £115,000.00
- Cold Water Booster - replacement budget cost £5,000.00
- Pool Water Circulation Pumps - replacement budget cost £5,000.00 to £8,500.00
- Ventilation fans (local toilets etc) - replacement budget cost £7,500.00
- Emergency Lighting exit signs & floods

Life Expectancy 5 to 10 years

- Central Boiler plant - replacement budget cost £25,000.00
- General BMS Control Panel - replacement budget cost £20,000 to £40,000.00 (around 5 panels on site).
- General heating pump sets & inverters - replacement budget cost £10,000 to £15,000.00
- Pool Filtration Plant - replacement budget cost £50,000.00 (assuming pipework to Pool is in good condition).
- General Air Handling Plant - replacement budget cost £10,000 to £100,000.00 (number of units installed i.e. Pool, lounge, changing etc)
- Emergency lighting generally.
- General lighting throughout the centre.
- General Electric Distribution boards.
- Above ground drainage & sanitaryware

Life Expectancy >10 years

- External Condenser units

Distribution systems such as pipework, ductwork cables etc are not detailed. Providing they are installed correctly and regularly maintained it is estimated that their life span is circa 30 years. Therefore it is possible that elements may need replacing during the projected 25 year life span for the building.

It is assumed that items in the AR that are detailed as 12 month will be picked up by the Centre Operator as part of their general service & maintenance works. The above doesn't details items such as sockets outlets which will show in time as the centre is decorated etc.

05 Cost Summary

The budget costings have been prepared as summarised below by Press & Starkey for the scheme outlined in this report. A detailed, fully measured approximate estimate is available in a separate document produced by Press & Starkey.

APPROXIMATE ESTIMATE	Total
Learner Pool	£1,370,000
Café Extension	£477,000
Dance Studio	£204,000
Offices	£96,000
Sports Hall	£135,000
Corridors and Vending	£51,000
Wet Change Refurbishment	£504,000
Additional Car Parking	£50,000
Existing Primary Services (upgrade)	£131,000

Total Estimated Construction Cost	£3,018,000

Options

Learner Pool Extension

Main Plant Option 1 - Additional boiler and associated plant to increase capacity of existing in lieu stand alone plant	£3,100
Main Plant Option 2 - Replace central boiler plant with increased capacity in lieu stand alone plant	£184,300

All figures include preliminaries, main contractor overheads and profit, contingencies and professional fees

Exclusions

VAT

06 Appendices

1.0 APPENDIX 1 – OUTLINE SPECIFICATION

1.1 Teaching Pool Extension – Pool Hall & Plant Room

Substructure

Pool Tank 16m x 9m x 0.8-1.2m deep and steps:
Reinforced concrete tank, inside reinforced concrete to BS8007
Change in depth from 0.8m – 1.2m to be 1 in 20 gradient
Waterproofing
Deck level edge to pool surround, in-situ reinforced concrete
Integral channel set back from edge of pool

Pool access steps divided by handrails (316 stainless steel) and a barrier rail at the ends
Pool tank markings to be provided

Superstructure

Walls Steel column and beam frame
Insulated cavity wall construction comprising 140mm blockwork cladding internally
Brickwork/blockwork cladding externally, blockwork over clad with colour coated zinc cladding on timber and plywood subframe
Parapet framed out and clad with colour coated zinc cladding as above.

Roof 'SpeedDeck' High Humidity Aluminium roof construction incorporating perforated acoustic soffit system, 3° pitch.

Plant Room Mezzanine deck galvanised steel support frame, with metal grillage floor etc. Fensecure Steelway or Holorib with in-situ concrete fill; galvanised steel ship ladder access and barrier rail across narrow end
Fair faced paint grade blockwork throughout, no finish, flush pointed
Allow for industrial floor paint finish, anti-slip, on concrete floor surface(s)

External Glazing Kalwall translucent panel system to pool "windows"
Aluminium double glazed fire exit door, aluminium PPC min 60 microns, double glazed with laminated toughened glass

External doors Steel doors and frames to plant room incorporating inset louvres, PPC finish

Internal Finishes

Pool Edge 'Spec Tile' dark grey nosing and white groove body tiles with Cat C Anti-Slip finish, size 244x119mm
Scum Channel grating 'Spec Tile' HD500 Multi Rigid tile finished in white

Pool Floor 'Spec Tile' White tiles with Anti-Slip finish, size 244x199mm

Pool Walls 'Spec Tile' White, glazed matt tiles, size 244x119mm

Pool Step Entry 'Spec Tile' DDA Tread-Edge tiles in Dark Grey with Grooved Tread Edge Anti-slip finish, size 244x56mm

Pool Surround Floor 'Spec Tile' CG Technical Series, colour price group 1, tiles with Anti-slip Roccia finish, size 200x200mm

Pool Surround Walls 'Spec Tile' R Series Vitrified tiles, White with glazed matt Finish, size 200x100mm

Bench Seating Proprietary polypropylene moulded seating on PPC steel frame by specialist eg Audience Systems, capacity approx 44 persons.

Openings formed by removal of existing Kalwall between leisure pool hall and teaching pool:
Make good where Kalwall removed
Existing brickwork (external face) to be cleaned with fungicide, prepared and wall tiling applied, PPC aluminium cover strip to be fitted where Kalwall removed, tiling to run up to bulkhead
Install stainless steel rail with laminated toughened glass infill panel, 1100mm overall height, between existing brickwork reveals
Framed infill panel, approximately 3000mm high to be formed between head of opening to above new flat roof level forming abutment for roof over new pool hall
Internal facing in Knauf aquapanel board with aquapanel skim finish

Bay Adjacent Café Allow for diamond cutting existing reinforced concrete upstand
Infill approximately 200mm x 2560 wide opening in concrete floor
Make good floor finish

1.2 Café Extension & Kitchen

Substructure The ground floor construction will depend both on the site levels and site specific ground conditions. The ground floor construction would typically be one of the following:

- Ground bearing insitu concrete slab construction
- Suspended insitu concrete slab construction
- Suspended precast concrete slab construction

Superstructure Steel column and beam frame incorporating cantilever beams to form canopy and exposed steel columns within full height glazed frontage

Walls Brickwork blockwork insulated cavity wall construction, plaster finish internally
Full height glazed curtain wall/patio door system, curved (approx 6m radius) on plan
Incorporating curved sliding doors (pair), approx 2.5m high;
Toughened low-E double glazed units in doors and glazing panels;
Multi-point locking on patio doors

Roof 1.2m aluminium deck, Sarnavap 5000 bonded vapour control membrane, nominal 200mm PIR insulation board
IKO Superflex Torch-on felt roof covering
Canopy and upstand to be clad in colour coated zinc on timber framing

Floor Reinforced ground bearing concrete slab
Styrofoam Floormate insulation below slab
DPM membrane
Minimum 50mm screed

Internal Walls 140mm blockwork full height, plaster finish on both faces
Altro Whiterock lining to kitchen/food prep area, fixed directly to blockwork

Glazed screen To Pool Hall Approx 2.5m high aluminium, 60 microns PPC finish double glazed with toughened safety glass

Ceiling Café - perimeter bulkhead, plasterboard on suspended galvanised metal MS system. Bulkhead to incorporate ventilation ductwork and grilles
Café raised central ceiling - suspended lay-in grid mineral fibre ceiling, eg Rockfon, 600 x 600/1200 x 600
Kitchen - suspended lay-in grid ceiling, hygienic washable face Rockfon 600 x 600

Floor Finish Café - Allow for ceramic tiling 300 x 300mm
Kitchen - Anti-slip vinyl floor covering, self coved skirting and cap strip to underside of Altro Whiterock

Counter Corian worktop and front "fascia" laminate faced panel frontage on timber framework below worktop

Doors Oak veneered solid core flush doors and frames to kitchen door (off entrance)
Store doors paint grade solid core flush doors and frames

Kitchen Allow for supply of services, electricity, gas, water, drainage with all necessary Equipment safety switch/value gear. Allow for dismantling, transport and storage of existing kitchen equipment. Existing equipment installed into new kitchen area when available.

1.3 Dance Studio and Offices (First Floor)

- Remove existing walls to accommodate new layouts
- Remove existing kitchen equipment, counter and tiled wall finish
- Remove existing lay in grid suspended ceiling and trim. Take down curved section of plastered bulkhead.
- Remove existing services and cap off.
- Remove existing floor finishes – vinyl in café area, ceramic tiles in kitchen area, make good screed.

1.4 Dance Studio

Floor Gerflor 'Taraflex Sport Evolution' 7mm thick sheet floor, range of solid colours available, or
Gerflor ' Taraflex Multi-Use 6.2' 6mm thick sheet floor, 'wood natural' finish.

Walls Repaint existing plaster walls
New walls blockwork, 2 coats plaster both faces, paint finish.

Skirting Hardwood skirting to match existing.

Glazed Screen Full height glazed PPC aluminium screen, provisionally 30 minute fire rated, fire and acoustic infill above screen within ceiling void, e.g. Reynaers C77FP Fire Product door and screen system, including fully glazed doors. If non-fire rated is accepted, Reynaers Vision 50 system. (alternative hardwood 30 minute fire rated glazed screen and doors, minimum 630 kg/m³ density, lacquer finish)
Allow for Gradus aluminium ramped threshold at door opening.

Ceiling Extend and form straight vertical face to existing bulkhead (curved section removed). Supply and install Rockfon lay-in grid suspended ceiling system between bulkheads. Ceiling at minimum 2.7m high.

Lighting Replace existing lighting
Allow for 'mood lighting' e.g. LED strip lighting, multi-coloured (as per Hitchin Dance Studios).

1.5 Office

Floor	Carpet tile on latex levelling screed Note – allow for removing and capping off all redundant floor drains/drainage connections and services
Walls	Repaint existing plaster walls New walls blockwork, 2 coats plaster both faces, paint finish.
Skirting	Hardwood skirting throughout.
Doors	Veneered flush solid core doors and frames, including vision panels. Digital locks on corridor access doors to offices
Ceiling	Supply and install Rockfon lay-in grid suspended ceiling system, ceiling 2.4m high.
Rooflights	Allow for installing 5 no. – 600 x 600mm triple skin highly insulated rooflights within existing flat roof.
Lighting	Replace existing lighting. Allow for modular low energy light fittings (suitable for office use) fitted into suspended ceiling grid.
Ventilation	Install mechanical ventilation system.

1.6 Male & Female Wet Change – including accessible change/WC, shower areas and buffer areas (Ground Floor)

- Remove existing floor tiles and check falls to channel drains, remove existing channel drains
- Remove existing lockers, benching, cubicles and tiled wall finish
- Remove existing lay in grid suspended ceiling and trim.
- Remove exiting doors and frames
- Remove existing sanitary ware to toilets, showers, accessible change/WC
- Remove existing services and cap off.

Male & Female Wet Change

Floor	New ceramic wet barefoot anti-slip floor finish, max 200x200mm tiles complete with 'sit-in' skirting tiles. Allow for repair and replacement to existing screed. Supply and install new stainless steel channel drains (316 grade), including gullies and traps
Walls	Render and ceramic tile finish to existing decorative facing brickwork/rendered walls allowing for PPC aluminium trims and accessories

Doors	Leaderflush Shapland Laidlaw Plasform WR doorsets complete with ironmongery. Doors to be fully encapsulated, non-shedding and maintenance free with 6mm radii postformed edges for PVC and 12mm radii for laminate. Frames to be wrapped in PVC. Flush glazing system vision panels required where necessary. Doorsets supplied fully finished doorsets with door leaf, frame and essential ironmongery forming a single, integrated, factory made assembly. Doorsets to be water resistant, using fully sealed cores and glazing systems for swimming pool application. Allow for Gradus aluminium threshold strip between corridor and changing floor finishes.
Ceiling	Supply and install Rockfon lay-in grid suspended ceiling system between bulkheads. Ceiling at minimum 2.7m high.
Lighting	Replace existing lighting.
Sanitary ware	Replace all existing sanitary ware with Armitage Shanks ceramic washroom appliances. Supply and install Horne Duso Shower Column Integrated shower assembly, hydraulically actuated timed-flow control, hard anodised aluminium column, chromium plated shower head, adjustable sprayplate and flow regulation (8 L/min). Coloured actuator paddle and spray plate. Note for use with pre-blended water supply only such as a suitably sized Horne TMV e.g. Horne 15 or Horne 20.
Benching	Replace benching with Prospec or equal solid laminate benching.
Lockers	Replace with Prospec or similar Marathon lockers, generally 3 tier, solid laminate fronts and end panels.

1.7 Corridor & Vending (Ground Floor)

- Remove existing carpet tiles
- Remove existing lay in grid suspended ceiling and trim.

Corridor & Vending (Ground Floor)

Floor	Timber effect vinyl floor covering on latex levelling screed
Walls	Acrylic sheet panels fixed to form 'blocks' on the walls. Panels to take graphics and artwork.
Skirting	Allow for skirting throughout area. Yeoman Shield vinylac extruded skirting complete with an MDF inner core.
Doors	Allow for cleaning, preparation and varnishing
Ceiling	Supply and install Rockfon lay-in grid suspended ceiling system, ceiling 2.7m high.
Lighting	Replace existing lighting. Allow for modular low energy light fittings fitted into suspended ceiling grid.
Services	Check water, power and drainage provision to vending area

1.8 Sports Hall (Ground Floor)

- Remove existing granwood floor including skirting the extent of works dependent on chosen sports hall floor finish replacement (see notes below).
- Remove existing lighting fittings at high level

Sports Hall (Ground Floor)

Floor	Replacement of the floor with Gransprung or a sprung timber floor, e.g. Junckers SylvaSport solid beech in New Era UnoBat self-levelling batten system. Will require removal of the existing wood blocks and screed, assumed overall depth to be approximately 75mm. Provide and apply two coat liquid DPM / vapour control layer on the sub-base.
	This could see the need for adjustment of the bottom edge of the four pairs of doors into the Sports Hall.
Lighting	Replace existing lighting. Allow for low energy light fittings suitable for the sports hall environment and types of sport to be played

