

The Former Grove Park School site Feasibility Study

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TACP Architects Ltd



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1.0 Introduction

TACP Architects Ltd have been appointed by Wrexham County Borough Council to prepare a Feasibility Study for The Former Grove Park School Site to examine the potential for reuse for Primary Education.

This Feasibility Report has been prepared to take account of Planning Policy Wales (November 2016) as well as local policy, including the adopted Wrexham Unitary Development Plan (2005) and the emerging Wrexham Local Development Plan. This report sets out the findings on the potential of the site and existing building to accommodate Primary Education.



2.0

Overview and Context

The site is located at Chester Road, Wrexham LL12 7AQ to the north of Wrexham town centre, in the south western corner of the Acton community area. The Site has frontages onto Chester Road, Powell Road, Park Avenue and Penymaes Avenue. The site is located within an established area which is generally residential in use. Powell Road forms part of Wrexham's inner ring road with town centre amenities to the south. There is a subterranean walkway under Powell Road located in the central area of the Groves site southern boundary.

The site is generally level, with a significant number of mature trees protected by Tree Preservation Order. Primary access is provided via Penymaes Avenue, with a secondary access off Park Avenue.

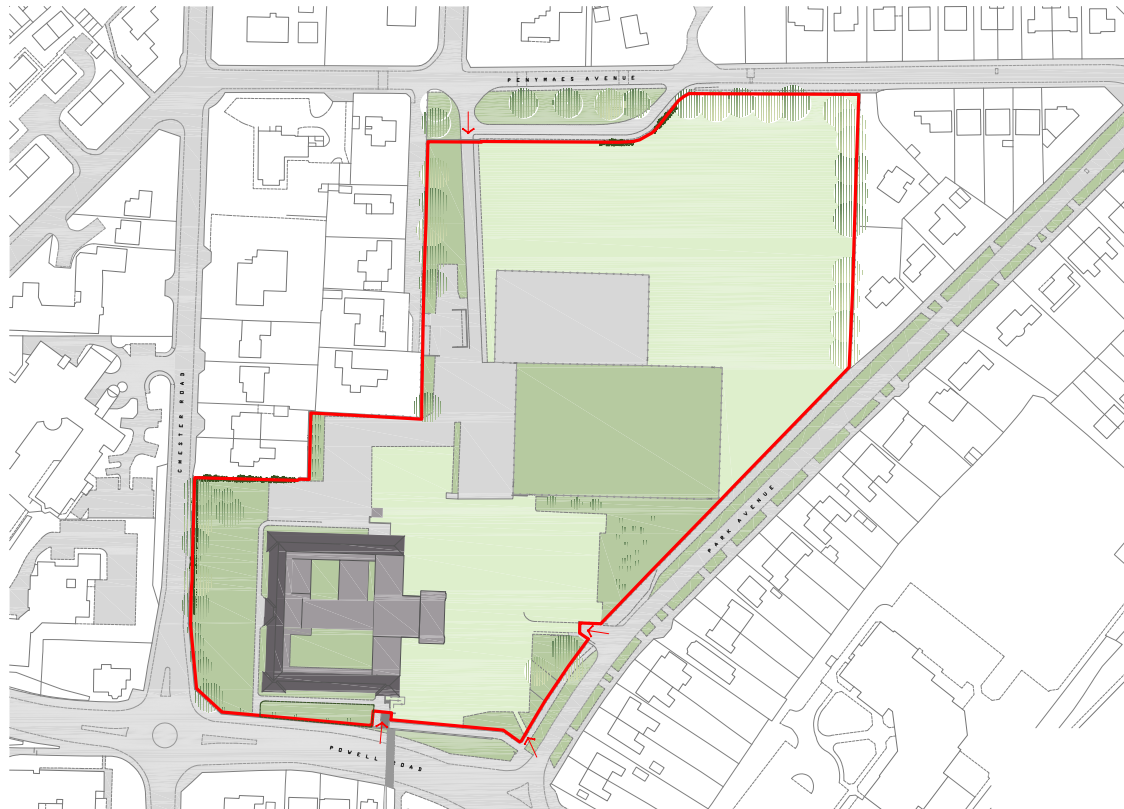
The site is in the ownership of Wrexham County Borough Council and is currently unoccupied having provided secondary education use for some 70 years between the late 1930s and 2003. The school expanded and developed significantly during this period with major additions to the building in the 1960's and 70's.

Since 2003 the site has generally been unoccupied however its was used on a temporary basis by a local secondary school in circa 2006 and beyond 2006 the site was used by the Wrexham Pupil Referral Service. In subsequent years the later extensions to the school have been demolished with the original elements of the school being retained. The infill extensions to the northern courtyard remain in situ.

The Former Grove Park School is Grade II listed, record number 87719 dated 29 November 2016. The site is not located within or adjoining a conservation area. There is one listed building adjacent to the site. The Cottage was grade II listed in 1994 and is located to the western end of Penymaes Avenue opposite the main site entrance.

In addition, the site/building is subject to covenant, water main easement, and tree preservation order.

Existing services and utilities to the site have been disconnected with a limited power supply for maintenance retained. The site has been subject to vandalism, theft and misuse in recent years; the resulting weather ingress has had a detrimental impact on the fabric of the building.



3.0

Study Requirements and Objectives

The original brief established the following criteria.

Objectives

TACP were appointed to provide an 'all-in' design and costing service to undertake a feasibility study into:

- (a) The conversion of the remaining building into a primary school to accommodate 420 pupils plus 60 nursery pupils;
- (b) The removal of the existing building and the construction of a new build primary school to accommodate 420 pupils plus a nursery for 60 pupils on the existing footprint;
- (c) The study shall also consider the placement of a second 420 / 60 pupil school on the site with shared playing fields for both Options (a) and (b);
- (d) The study should also consider options for the use of the remaining space within the listed building, should the provision of a primary school prove feasible but not requiring the entire footprint of the listed building.



4.0

Site

The site is circa 3.3 hectares with the retained building located in the south west zone of the site. The site has a variety of minor retained features including roadway and parking areas, substation building, and various areas of hard standing. The majority of the site is grassed, with mature trees located to the site perimeter in various locations.

The boundary treatments vary significantly around the site, the majority being metal rail fencing to the north and east, with stone walling, and brick wall with metal rail making up the remainder.

The site has a primary access point which is to the north of the site on Penymaes Avenue and benefits from an adjacent lay by/drop off area. A secondary access is located off Park Avenue.

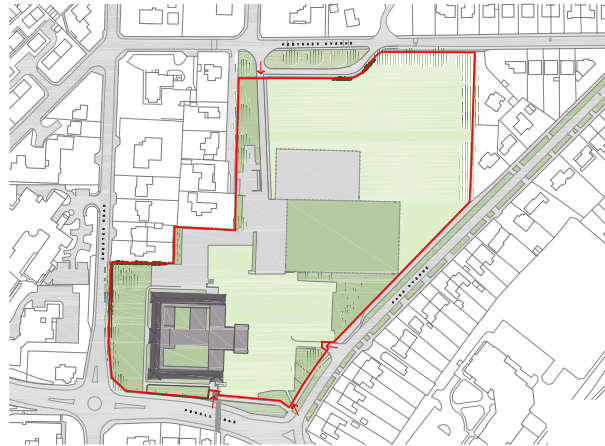


4.0 Site

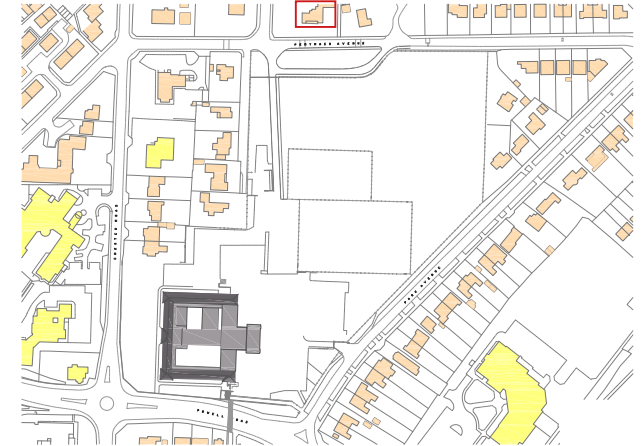
Overview

Key site constraints have been identified on the plans. These include: -

1. Listed Status and associated setting
2. Land Use Covenant
3. Utilities and associated easements
4. Tree preservation orders and associated root protection areas
5. Existing Noise Generators (main roads)
6. Previous development retained foundations etc.

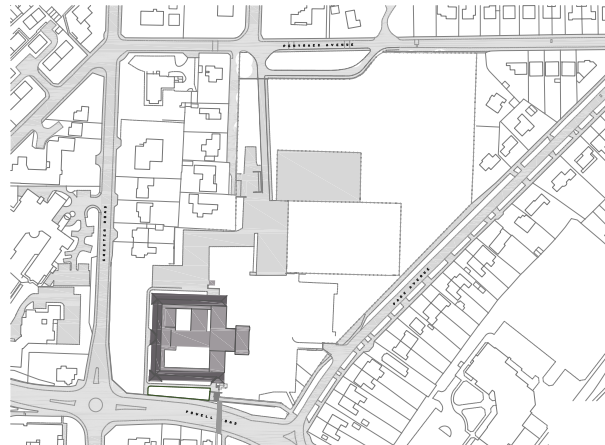


Site boundary & access points



Adjacent Buildings

Residential
Non residential
Listed building



Roads & hard standing areas



Green space

4.0 Site

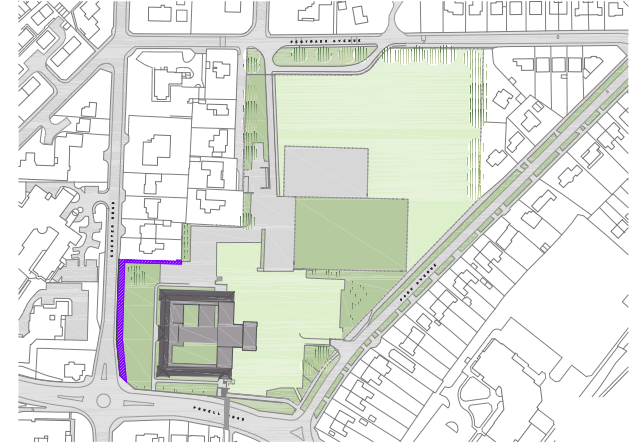
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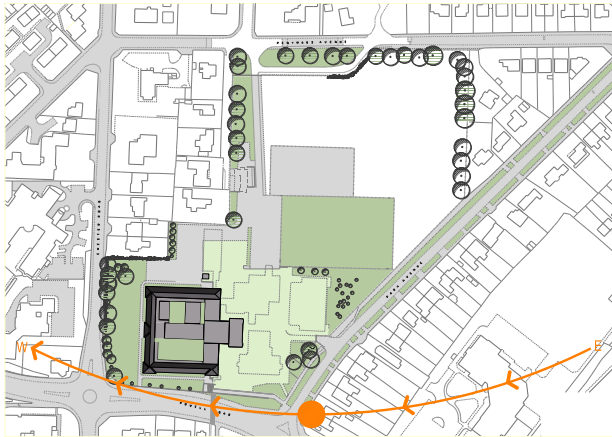
Water easement



Utilities



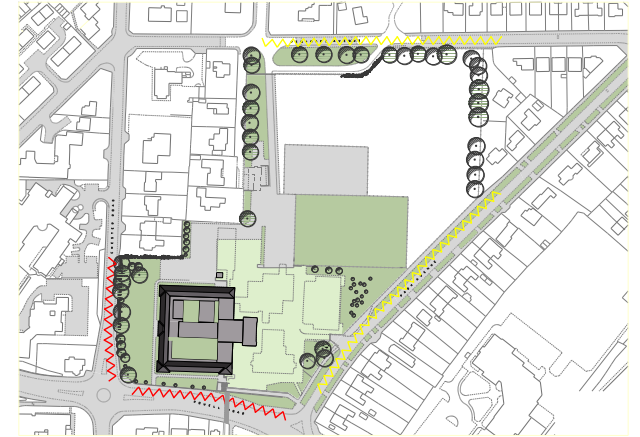
Chester Road easement



Sun path and potential for solar gain, overheating and glare



Tree Preservation Orders with root protection area
Note - Trees to Park Avenue have been omitted for clarity



Noise emitters

4.0 Site

Site Analysis and Constraints

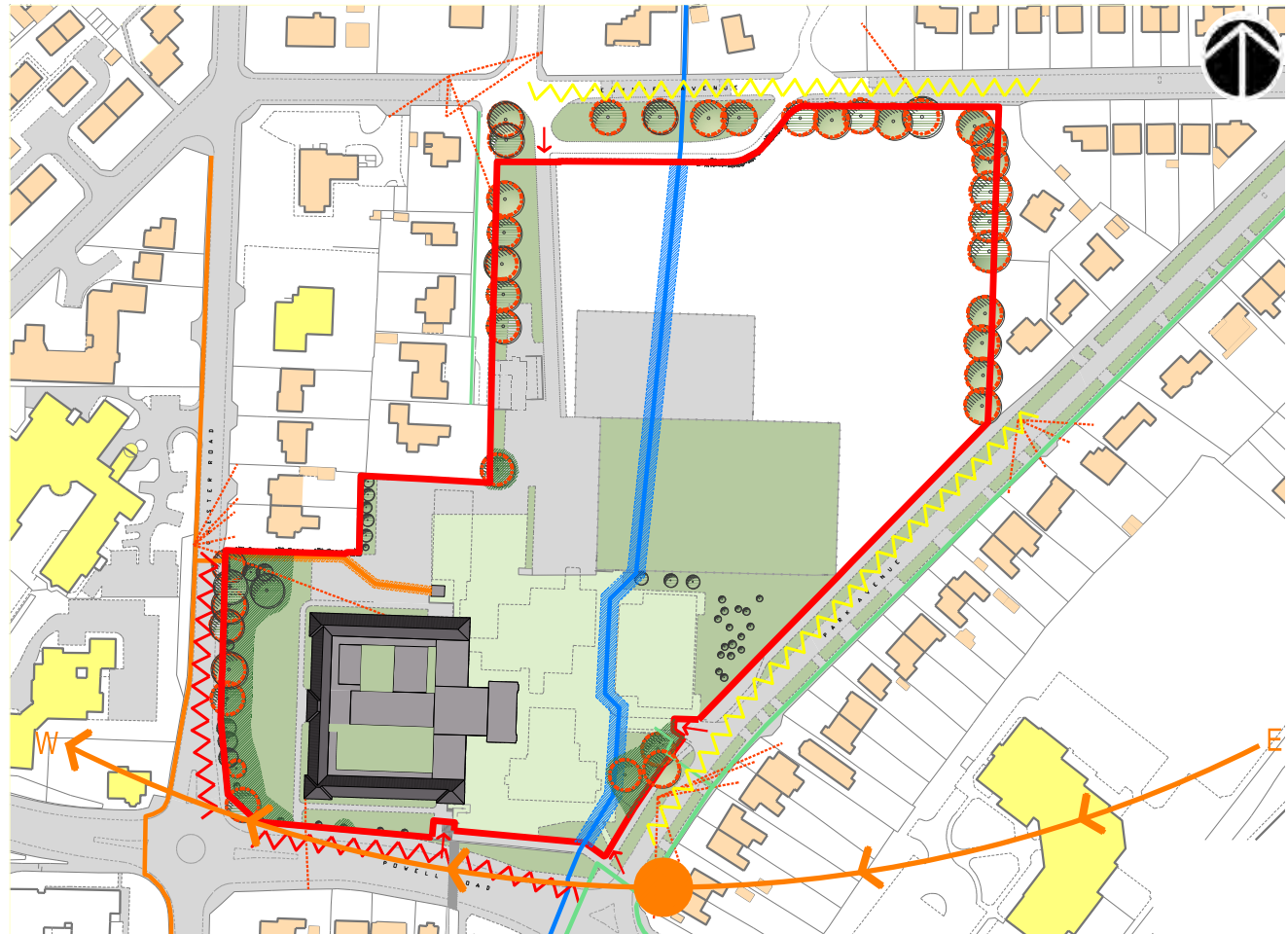
Combining all the individual physical site constraints demonstrates and defines the overall impact of the wide range of factors influencing development.

Many of the constraints are to the perimeter of the site and many, such as the Tree Preservation Orders, should have minimal impact on development, and have wider benefits which outweigh the limitations.

The physical constraints which, at this stage, are deemed to have the greatest impact on development area:-

1. Water Main Easement. This effectively divides the site in half and limits the potential for siting new buildings. It should not however have limitations on the siting of parking, hard play areas etc.; although consideration should be given for any disruption relating to future maintenance of the pipeline.
2. The noise emitters. Particularly from vehicle traffic adjacent to the roundabout serving Powell Road and Chester Road. The noise levels need to be measured and considered with regards to natural ventilation via opening windows. This is particularly relevant to the southern wing.
3. Solar gain to the existing building. This could be problematic to find a balance between 21st Century School requirements and the listed status. In particular the southern wing requires consideration and mitigation measures should be further investigated by specialist.
4. The proximity of neighbours. In most instances the neighbouring properties benefit from being significant distances from the site and separated by public roads. The distance from the site boundary is, in most instances greater than 22m, which is often used as a measure to define distances for privacy between habitable room windows on residential developments. There are some five residential properties with direct boundaries to the site. Many of these benefit from established and mature tree screening, and this could be reinforced and extended to other site boundaries such as on Park Avenue.

Note, Park Avenue benefits from a significant number of mature trees within the road/pavement verge. These have not been indicated on the constraints plans for clarity as they are outside the site boundary.



5.0 Existing Building

Exterior

The Former Groves Park School is a substantial 2 storey building with brick exterior walls and slate roof. The listing statement describes it well as follows:

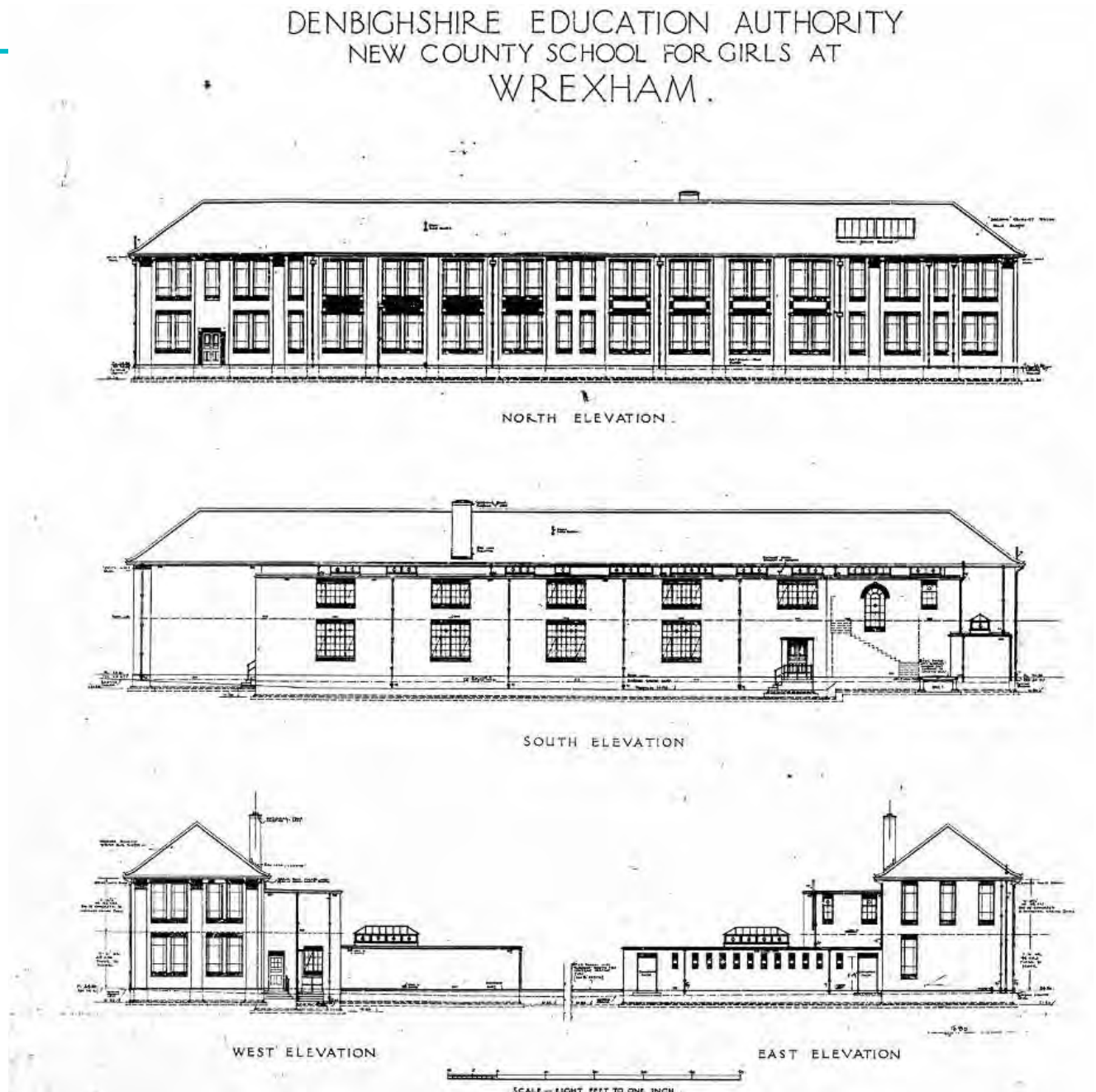
The building broadly conforms to a neoclassical tradition but in a 1930s interpretation and has some elements which are reminiscent of Art Deco. It is constructed of brushed brick with panels of herringbone and geometric arrangements. The main west facing entrance range is a wide 15 bay symmetrical façade with hipped advanced end bays and an advanced central entrance of stone or artificial stone. A dedication stone next to the entrance doors was laid by William Jones JP, Chairman of the Governors June 1938. Three wings project backwards, a central hall wing and on the outside two mirrored classroom wings. Quadrangles and cloistered walkways fill the spaces between the wings.

The exterior of the building has suffered as a result of previous extensions being removed which have exposed interior elements of the building. The building has been subject to damage and theft particularly with regards to lead work.

Records indicate that the northern wing was the first element to be constructed with subsequent wings being constructed soon after.

The elevation drawing to the right indicates the extent of the original school building. This comprised of the north wing of the school with a single storey rear wing. The elevations remain pretty much intact however the southern elevation has been greatly impacted by the courtyard infill extensions and the east elevation has been impacted by both the construction and subsequent removal of further extensions.

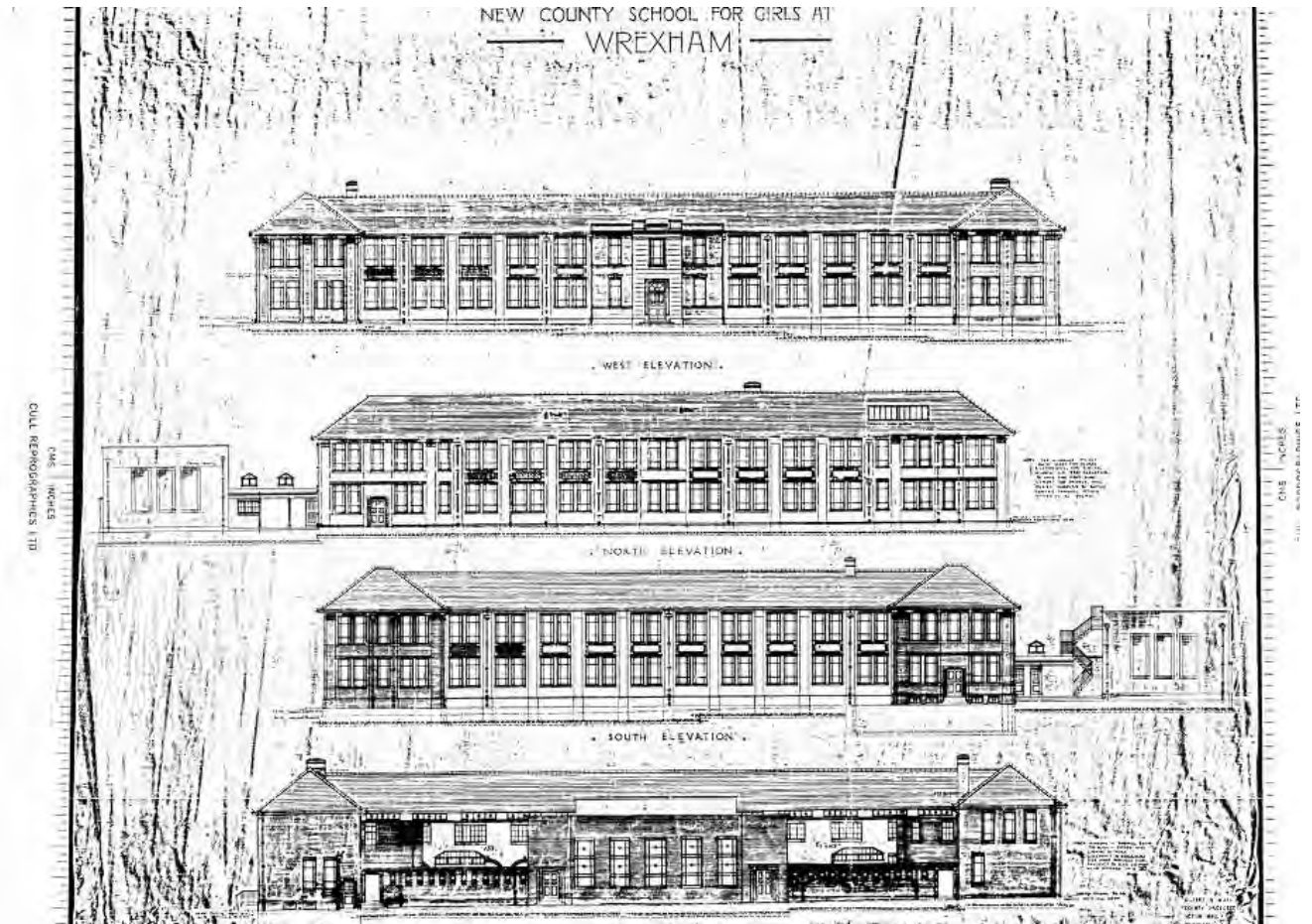
The original school building was extended significantly to form the building which remains today.



5.0

Existing Building

The school building was extended both rapidly and extensively to create a full quadrangle with central hall forming two internal open courtyards. The elevations to the right indicate the extent of the building which, in the most part, remains intact today. The building does however indicate some variances from these drawings, in particular the drawings indicate a flat roof over the main entrance however the physical building has a slate pitched roof.



5.0

Existing Building

These photographs demonstrate that the original building remains widely intact. However, the eastern façades to the north and south wings have been greatly impacted by later extensions and their subsequent removal. The elevations abounding the northern courtyard will be similarly impacted by the construction of flat roof infill extensions.



5.0

Existing Building

Interior

As described in the Listing:

The main feature of interest is the double sweep stair in the main entrance hall with terrazzo treads and cast iron balustrading. Similar, but smaller stairs are located at the rear of each side wing. The basic layout of the classrooms survives largely intact, together with some original detail such as dado panelling, doors, and parquet flooring.

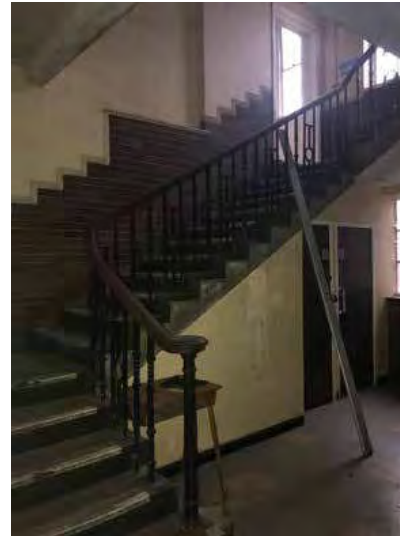
The hall has a tier gallery accessed via the main staircase area. Circulation is via corridors which generally face into the courtyard area. Some circulation was afforded via open cloisters.

The interior of the building has been subject to vandalism, theft and weather ingress. Lead work and copper pipework has been taken and damage to the fabric has resulted. Areas of wooden flooring have blown and raised. However, the building does retain many existing features and points of interest.

Both CADW and the WCBC Conservation Officer have indicated a desire to retain examples of key features within the existing building. Examples mentioned include:

- A teaching wall with chalk board etc.
- Area of parquet flooring
- Area of dado panelling
- Area of glazed brickwork
- Example of original pupil toilets.
- Glazed roof lantern

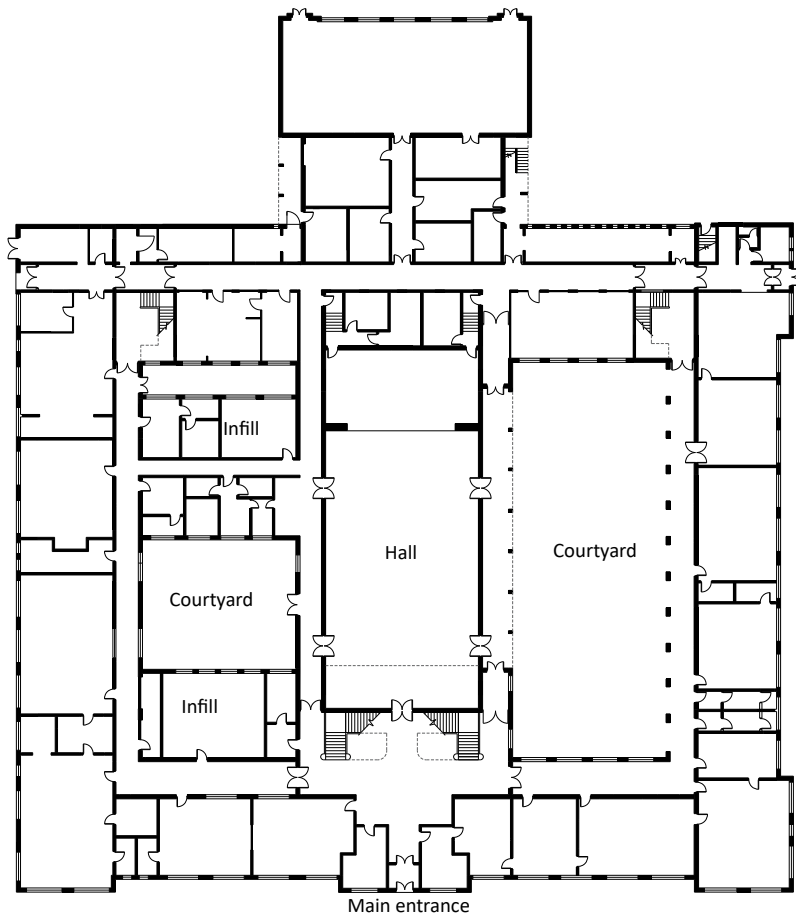
Many of these items are not requirements within a 21st Century school and do not align, or comply with current primary school requirements. On this basis it is anticipated that the retained features will not be located within the active primary school area of the building.



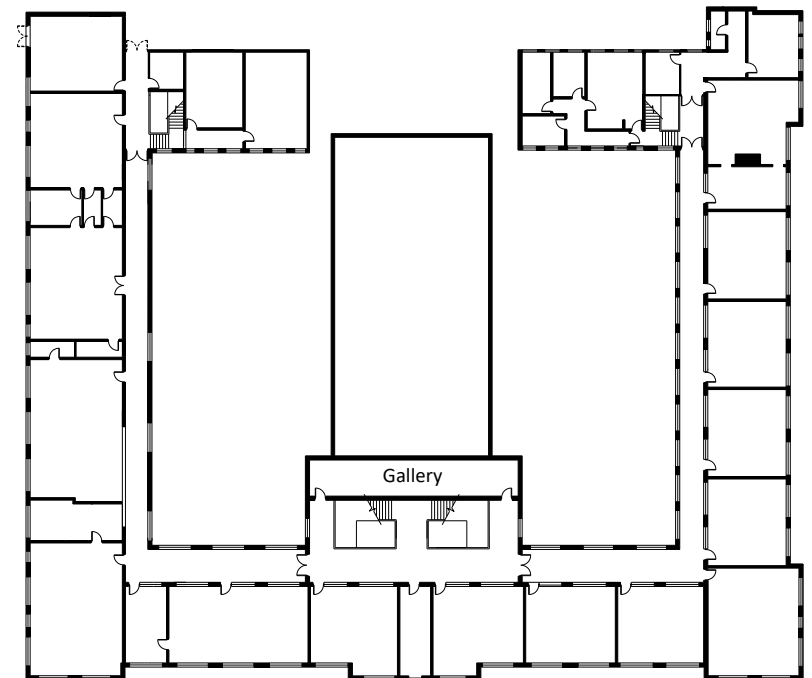
5.0

Existing Building

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Existing ground floor plan



Existing first floor plan

6.0

Key Physical challenges for reuse as a primary school

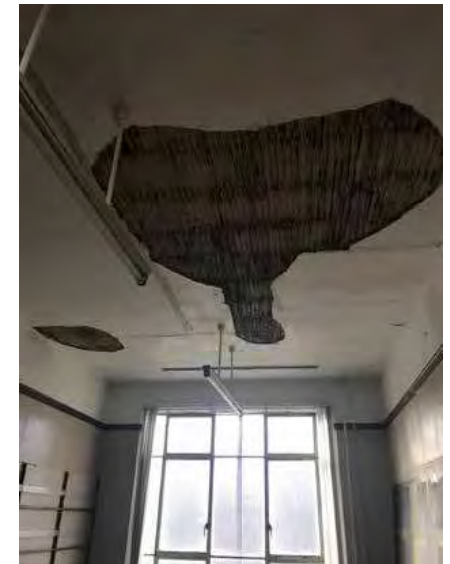
The building has a wide range of constraints which impact on redevelopment:

- (a). Alteration to the elevation facades prevent -
 - direct pupil access to external play areas connected to ground level classrooms, as is standard design practice for Foundation Phase classes
 - Provision of canopies, external play equipment impact on setting.
- (b). Hall is too large, tall and inflexible for use by primary school aged children.
- (c). Disabled access is challenging in areas due to level changes, proximity of car parking, access to upper floors.
- (d). Existing stairs are not compliant with current Building Regulations for use by primary school aged pupils,
- (e). Compliance with current Building Bulletin Standards challenging in particular:
 - Natural ventilation limited by existing exterior window design and impact of external noise generators.
 - Acoustics within classrooms due to existing hard finishes.
- (f). Distribution of modern power and data requires consideration to avoid surface fixed conduit.

- (g). Interior 'feel' with dark glazed bricks etc. imposing for young children

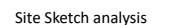
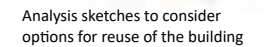
The site also creates number of potential benefits including:

- (a). The school size is generous and could provide larger than standard rooms in some locations.
- (b). The existing building has several interesting features which could enhance a setting.
- (c). The floor to ceiling heights are generous.
- (d). The courtyard plan arrangement provides an attractive, secure and sheltered setting for outdoor teaching spaces.
- (e). The plan generates large circulation spaces which create opportunities for use as flexible learning areas.
- (f). Developing the building offers the opportunity to create a new feature main entrance and define a new school identity.



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1. Alterations to the 'public' elevations should be limited as far as possible.
2. The structure of the building should be retained, although demolition of the later infill areas and elements to the rear area could be considered favourably.
3. The alterations to the internal layout could be considered favourably however examples of the original layout/finishes and furniture e.g. teaching boards should be retained in some of areas/rooms.
4. The external setting to the main roads should be retained as far possible e.g. minimise external canopies, shelters, play equipment etc.



8.0 Feasibility Study Outcomes

OPTION 1

Reuse of Existing building

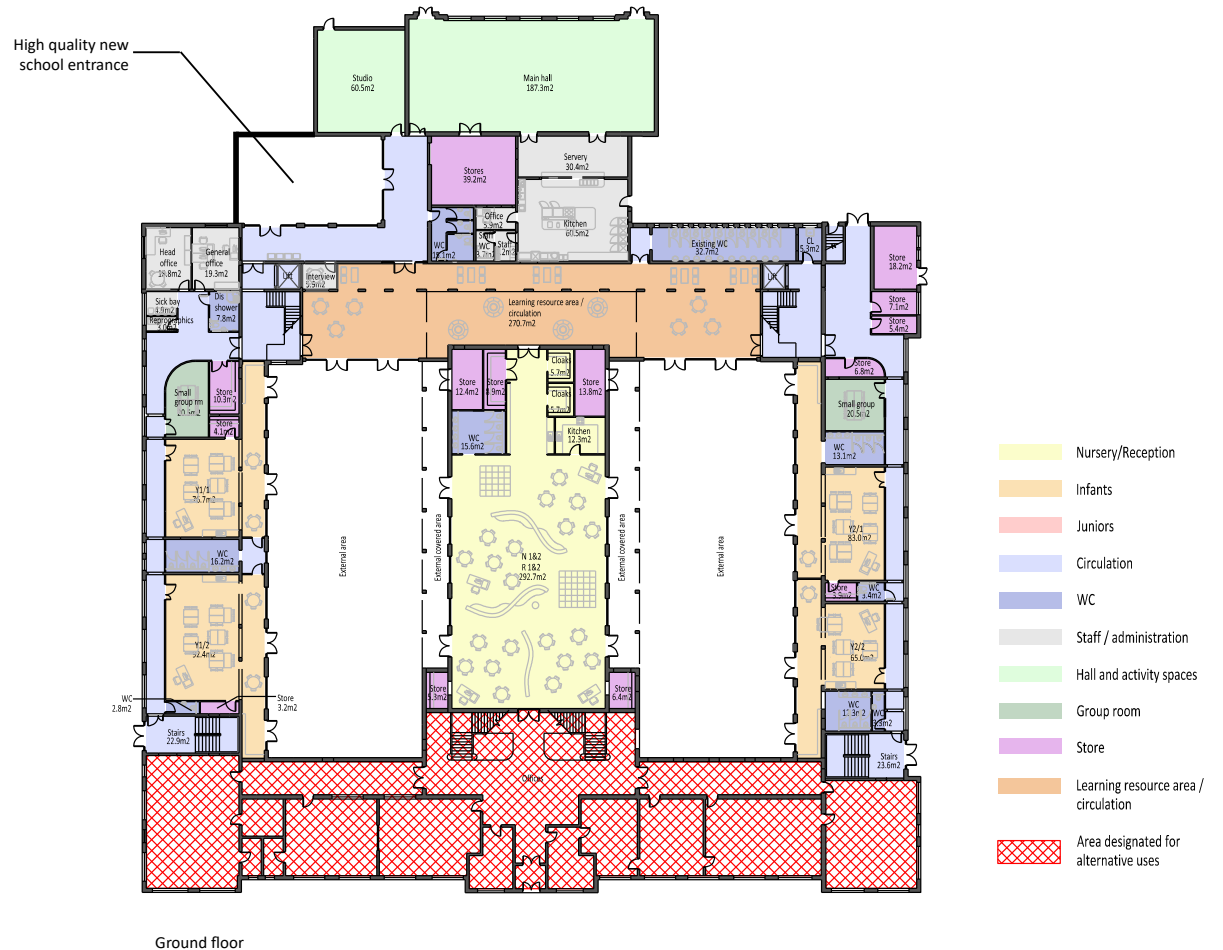
The feedback received from both CADW and WCBC Conservation Officer has steered the outcomes of the study and enabled focus on a core strategy for redevelopment. This approach embraces the opportunities afforded by the existing building whilst mitigating, as far as possible, the inherent restrictions.

The strategy for utilising the central courtyard spaces for outdoor play has the advantage of minimising alterations to the main building façades and retaining the external character and setting. This strategy does require alterations of the ground floor plan to relocate main corridors and provide greater access to the central courtyards from classrooms.

This approach does create some ‘in use’ challenges, with particular relevance to the arrival and departure of pupils. These activities will require consideration both in terms of normal day routines and in emergency situations.

This layout presents some challenges in management for example, it is common practice for pupils arriving to enter the external play areas directly, often with parents waiting until teachers lead the children into the building. Here, since there is no direct access to the play areas without going through the building, there is a question as to where the children are dropped off by parents and collected by teachers. Similar considerations are required for the end of the school day. Particular consideration is required for nursery children who will be dropped off and picked up at various times during the day. Overall, this relies on an increase in circulation areas (compared to a new build) and a greater level of management. This does however present the opportunity to use large circulation areas creatively such as doubling them up as Learning Resource Centre and flexible informal teaching space.

Initial discussions have been undertaken with Building Control to consider the use of the courtyard areas with particular emphasis on fire safety and means of escape. The courtyards could be considered as extension to the classrooms and, as the courtyards afford a number of alternative means of escape, the strategy is considered to be appropriate, although this will require further development and formal approval.



8.0 Feasibility Study Outcomes

The sketch design for the school utilises both storeys of the side and rear wings retaining the main frontage of the building for alternative use. Access is provided from Penymaes Avenue with parking to the north of the building. This enables the main western and southern site areas to remain as existing.

The feasibility sketch proposal occupies the north, east and south wings of the building for school proposes. The main west wing which fronts onto Chester Road is proposed for alternative use. Areas such as the original locker areas, which have subsequently been enclosed, could be reopened to form flexible teaching areas.

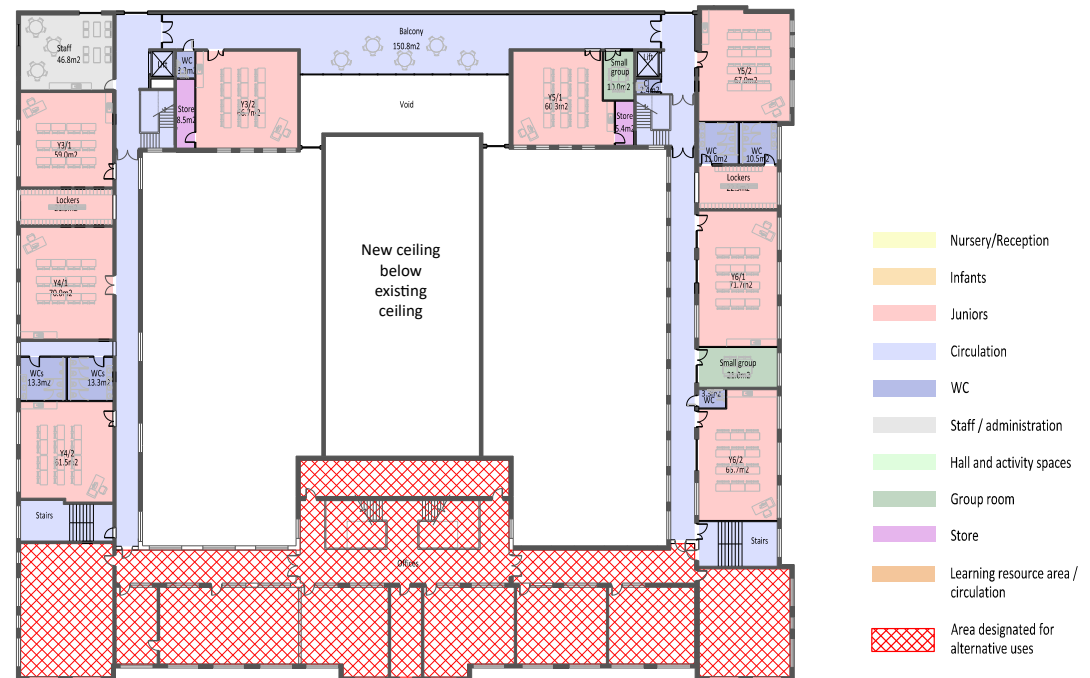
The central hall is proposed for preschool/nursery use, in this instance the stage and associated ancillary rooms would be removed, however it is anticipated the gallery and ceilings could be retained above a new false ceiling. The false ceiling would reduce the height to the benefit of the small children using the space.

Alterations to the external main elevations and structure of the building are kept to a minimum. The main impact on structure at the ground floor results from the repositioning of the corridor to the external edge of the north and south wings. This requires the construction of new corridor partitions to infill between existing structure; and the removal of small sections of internal wall to open the classrooms to the courtyard areas.

The upper floor maintains the main structure and corridors facing into the courtyards.

Providing additional vertical circulation in the form of both stairs and lifts will be required. Where new stairs form means of escape, existing window openings are proposed to be adapted sympathetically to form exit doors. It is anticipated this will occur in 2 locations one on both the south and north elevations.

A first floor extension is proposed to the east wing, this will create the complete quadrangle and link the main wings serving the school. This space could create a main feature to the entrance zone of the school with a double height space and balcony. The end wall of the existing hall could form an impressive feature within this double height space. Extending the first floor would be subject to Listed Building consent.

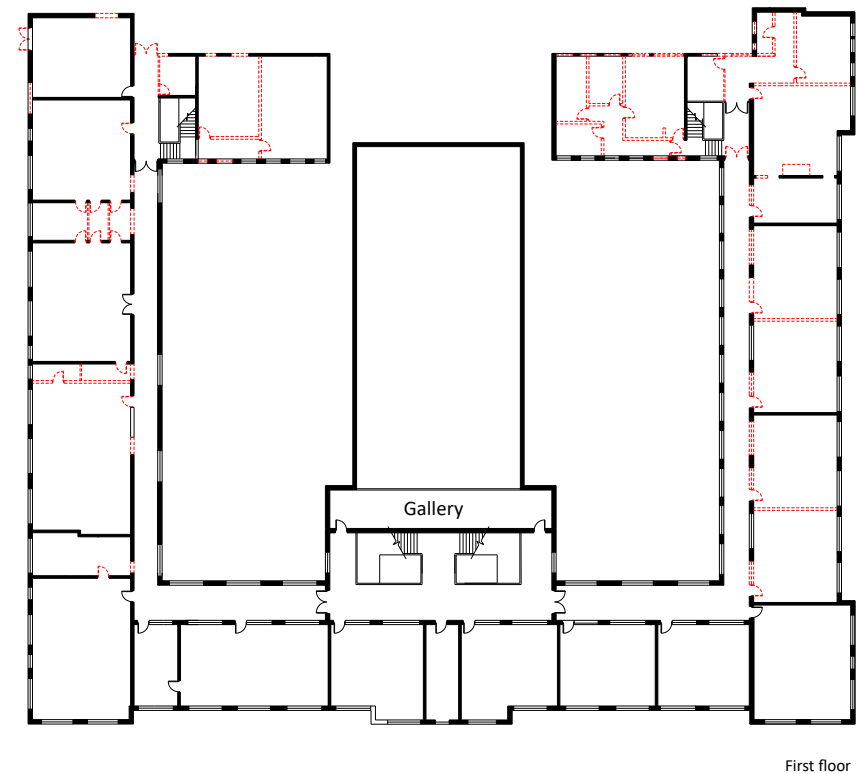
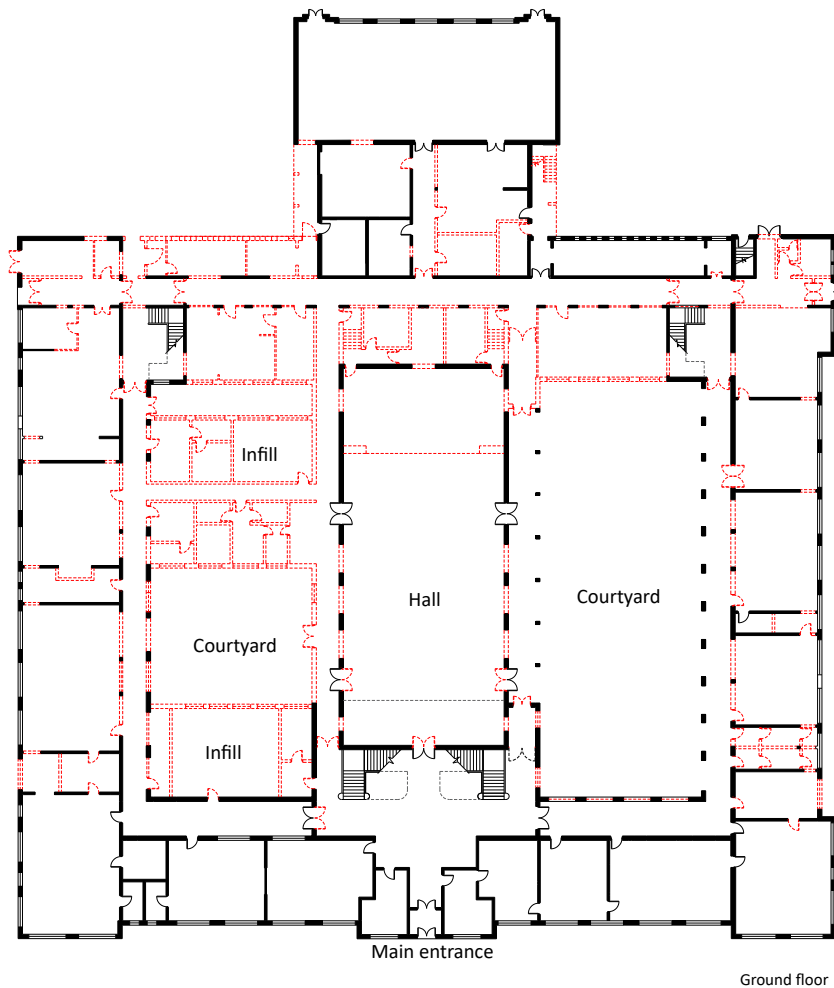


First floor

8.0

Feasibility Study Outcomes

Demolitions and alterations plan



8.0

Feasibility Study Outcomes

OPTION 1

Site Plan

The site is accessed off Penymaes Avenue via a shared road which serves the school and the remaining building area. Separate car parks are provided. Car parking provision for all options has been based on provision provided at a recently completed school in the Wrexham County borough area. The school makes use of the internal courtyards of the existing building as hard play areas as well as utilising the south eastern edge of the site.



8.0

Feasibility Study Outcomes

OPTION 2

New School to replace existing Building

Within the scope of the brief, the option to investigate the potential for the physical removal of the existing building and replacement with a new 420 pupil primary school with accommodation for 60 preschool pupils is identified. This has been considered and the option has been reviewed.

The existing building holds a large footprint area in the South West corner on the site. This is a prominent location which has the capacity to accommodate a new school building. Any new building in this location should respond to the corner location.

The sketch proposal is based on the accommodation recently provided for a new school in the Wrexham County Borough Council are. The proposed school is 2 storey and roughly 'L' shaped in plan. This would enable a building with the necessary impact to be designed and respond to this important streetscape with a high visual public profile.

The building is set back from the main roads and maintains the existing trees and setting. Car parking is located to the rear of the site and is screened from the main roads. Outdoor play areas are located to the perimeter of the building and consideration would need to be given to the design of the external spaces to ensure they are both functional and appropriate for this important location.

This approach retains the existing site access points, maintains existing trees and provides more than adequate external space to support the school.



8.0

Feasibility Study Outcomes

OPTION 3

New school with existing building retained

The overall site is circa 3.33 hectares and has a large open area to the north and east of the site. This area is generally screened with mature trees around the perimeter. The proposed school is defined to accommodate 420 pupils with preschool for 60 pupils. It has been confirmed that the layout for this building should be based on a recently completed school in the Wrexham County Borough Council area.

A number of locations have been considered for the location of a new school within the overall site. The northern zone, to the east of the water main easement, has been identified as the preferred location at this stage.

The school is 2 storey and linear in form which relates well to the existing streetscape on Penymaes Avenue. The building is set back from the road with a significant landscape buffer zone which maintains the existing trees. The site entrance utilises the existing access route and provides parking and delivery to the front and western areas of the building. Additional buffer zone planting within the site adjacent to Park Avenue is worthy of consideration.

The site provides external play areas along with external games area including large grassed areas. In addition, there is capacity to provide soft landscape and ecology areas. Overall the site area afforded to the school, after land associated with the existing building is considered, is more than sufficient for the proposed 420+60 school.



8.0

Feasibility Study Outcomes

OPTION 4

Provision of two primary schools one utilising the Grove Park Building and a new build school

The brief has identified the requirement to review the possibility of providing 2 schools within the site. This has been considered by combining options 1 & 3.

This exercise has demonstrated that the school buildings can be accommodated within the site along with the required external areas: hard outdoor PE; soft informal and social areas; and hard informal and social areas. Areas for habitat and soft landscaping are also provided within the layout as well as maintaining the setting of the existing building to the west and south.

The soft outdoor PE area provided in this arrangement would be shared and affords more than required for a single school and circa 70% of the area required for the 2 schools identified in the brief. The soft outdoor PE area provided is well positioned between the two schools and is regular shape. The soft outdoor PE area in this arrangement provides two mini soccer pitches or one junior primary school pitch.

BB103 states the following with regards to allocation of external areas, which has been followed in this instance:-

Where there is limited outdoor space available to pupils on a restricted site, consideration should be given to providing the following:

- firstly, hard informal and social area, including outdoor play area immediately accessible from early years classrooms;
- then hard outdoor PE space, ideally in the form of a multi-use games area;
- then soft informal and social area;
- finally soft outdoor PE area.

On this basis it is proposed that the reduction in soft outdoor PE area could be accommodated by flexible timetabling of this resource between the two schools.



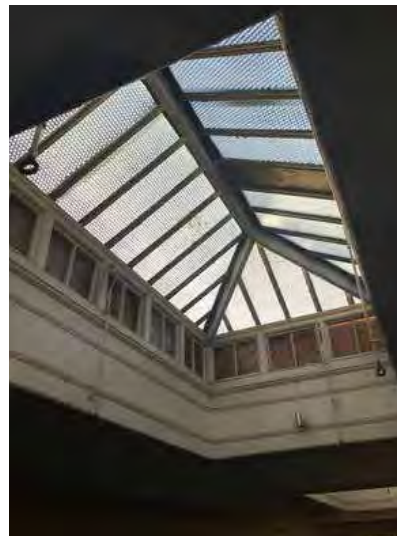
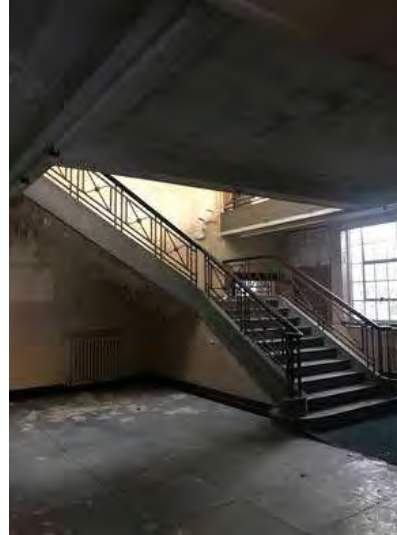
8.0

Feasibility Study Outcomes

A range of alternative options for shared use of the existing building alongside the primary school use has been considered. The shared occupation of the site and building creates a wide range of safeguarding challenges and, as a result, the specific requirements of a different occupier(s) are likely to impact on the school design.

Whilst the options considered would be capable of occupying the remaining vacant parts of the building they are not compatible with the existing covenant. Any potential uses for the unoccupied area of the building would need to be considered in detail on their own merits including site wide safeguarding of young people, long term sustainability and commercial viability.

With regards to safe guarding; the opportunities to find suitable occupiers to share the site could be extremely restricted. Ensuring the school area of the shared building/site is suitably segregated and controlled from unauthorised access will be essential.



8.0

Feasibility Study Outcomes



9.0 Budget cost plans

Detailed budget estimates have been prepared by SP Projects. These relate to all three feasibility sketch schemes and are full project estimates including fees, furniture and fixtures and fittings. The estimates are exclusive of VAT.

The cost estimate defines the costs into 4 elements in line with the options:

- 1a. Works to the existing building fabric and creation of new primary school.
- 1b. Works to complete the remaining area of the existing building for alternative purposes. The cost plan is based on office use.
- 1Combined. The total cost for developing the existing building into a Primary School and remaining area into office use.
2. Replacing existing building
3. The provision of a new school.
4. A combination of options 1 & 3 to provide 2 schools and reuse of remaining parts of the existing building.

The works to the existing building have been separated into the works associated with the school, and those associated with the remaining alternative use area. At this stage, the total cost for the external fabric works have been included in the school costs. This is on the assumption that the external works will be addressed in a single contract and the school is likely to be the main/leading project.

The current 21st century funding programme is complex, however in general terms the funding available for a 420 plus 60 school is calculated based on floor areas. The floor area for a 420 plus 60 school is circa 2385m² and attracts a funding guidance cost of £2,775/m². On this basis the cost for a 420 plus 60 school equates to circa £6.6 million. 21st century school grants will fund only a proportion of this maximum value and therefore any financing over and above government funding would need to be obtained independently from funds beyond the 21st century schools programme. For overall comparison a budget estimate has been requested for the refurbishment of the existing building to the standard to serve as a secondary school. This estimate relates to the existing part of the building and does not include further facilities such as sports halls catering kitchens etc. The budget cost established to refurbish and upgrade the existing building for secondary school general teaching purposes is circa £8 million.

Proposed Redevelopment of Groves School, Wrexham

Budget Estimate 05/09/2018

Accommodation and design features: Redevelopment of former Groves School, including restoring, upgrading and adapting the existing accommodation and providing new accommodation in the form of extensions along with new office space a new build school, car parking, playgrounds, sports pitches and associated drainage works.						
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	Option 1 Convert existing building into school and offices			Option 2 Demolish existing building and construct new build school	Option 3 New build school	Option 4 Refurbish existing building and construct new school on site
Ground Floor GIFA	<i>School</i> 2,071m ²	<i>Office</i> 681m ²	<i>Combined</i> 2,752m ²	1,267m ²	1,267m ²	4,019m ²
First Floor GIFA	1,283m ²	735m ²	2,018m ²	951m ²	951m ²	2,969m ²
Total GIFA	3,354m²	1,416m²	4,770m²	2,218m²	2,218m²	6,988m²

Element	Total cost of element	Total cost of element	Total cost of element	Total cost of element	Total cost of element	Total cost of element
Facilitating Works	£ 191,552	£ 21,285	£ 212,837	£ 320,000	£ -	£ 532,837
Substructure	£ 135,429	£ -	£ 135,429	£ 328,264	£ 328,264	£ 463,693
Superstructure	£ 2,062,524	£ 586,047	£ 2,648,571	£ 1,161,514	£ 1,161,514	£ 3,810,085
Internal finishes	£ 677,508	£ 286,638	£ 964,146	£ 354,226	£ 354,226	£ 1,318,372
Fittings	£ 375,000	£ 50,000	£ 425,000	£ 218,990	£ 218,990	£ 643,990
Services	£ 1,824,266	£ 700,511	£ 2,524,777	£ 1,276,802	£ 1,276,802	£ 3,801,579
Building sub-total	£ 5,266,279	£ 1,644,481	£ 6,910,760	£ 3,659,796	£ 3,339,796	£ 10,570,556
Works to existing	£ 348,249	£ 33,000	£ 381,249	£ -	£ -	£ 381,249
External works	£ 1,278,670	£ -	£ 1,278,670	£ 1,293,670	£ 754,020	£ 2,062,690
Preliminaries	£ 896,116	£ 218,073	£ 1,114,188	£ 573,134	£ 573,134	£ 1,687,322
Main contractors OHP	£ 233,679	£ 56,867	£ 290,546	£ 140,009	£ 140,009	£ 430,554
Sub-Total	£ 8,022,993	£ 1,952,420	£ 9,975,413	£ 5,666,609	£ 4,806,959	£ 15,132,371
Project/design team fees	£ 770,207	£ 187,432	£ 957,640	£ 461,468	£ 461,468	£ 1,419,108
Risk allowance	£ 439,660	£ 106,993	£ 546,653	£ 278,421	£ 263,421	£ 810,074
Inflation	£ 174,501	£ 42,465	£ 216,966	£ 104,552	£ 104,552	£ 321,518
VAT	£ -	£ -	£ -	£ -	£ -	£ -
Budget Estimate	£ 9,641,041	£ 2,346,177	£ 11,987,218	£ 6,511,050	£ 5,636,400	£ 17,683,072

Price per metre square	£2,805/m²	£1,617/m²	£2,513/m²	£2,935/m²	£2,541/m²	£2,480/m²
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10.0 Risk Register



Project: GROVES SCHOOL	Risk Matrix	Likelihood	Impact	Stakeholders
Client: WCBC	Low	1	1	Developer
Document: RISK REGISTER	Low-Medium	2	2	End user
Date: 30-Apr-18	Medium	3	3	Consultant
Revision:	Medium > High	4	4	Designers
	High	5	5	Contractor

Risk Category	
S Statutory	P Procurement / Programme
L Legal	F Funding
D Design	B Build
C Cost	O Operational

H&S - Health & Safety

ID	Description	Consequence	Likelihood	Impact Potential	Risk Exposure Score	Risk Owner	Risk Type	Risk Cost	Risk Mitigation	Action By	Status Stage 2	Status Stage 3	Comment
CONTRACT													
CON1	Unsuitable procurement route	Inflated costs, inadequate design, timescale	2	2	4	WCBC, SPP	P		Early client meeting to establish main requirements.				
DESIGN													
D1	The Brief for the project is not properly established leading to an unsatisfactory design.	Re-design scheme, delay programme, additional design costs	3	4	12	WCBC	D,C,P	£10,000.00	Early client meeting to establish main requirements.	TACP			
D2	End user requirements not fully established at design stage	Re-design scheme, delay programme, additional design costs	2	4	8	WCBC	D,C,P	£10,000.00	Involve key stake holders at an early stage, record information taken and confirm in writing.	TACP			
D3	Design changes- changes in specification which impact on design costs	Re-design scheme, delay programme, additional design costs	3	4	12	WCBC, TACP	D,C,P	£25,000.00	Avoid unnecessary changes in requirements after they have been established. Create and issue change logs.	TACP			
D4	Contingency values included in tenders due to uncertainty of the ground conditions	Inflated costs	1	3	3	WCBC	C	£30,000.00	Provide site investigation report for information purposes in the tender packages.	TACP			
D5	Contingencies values included in tenders due to uncertainty about existing drainage condition	Inflated costs	1	3	3	WCBC	D,C	£15,000.00	Obtain CCTV survey to clarify options for discharge in relation to present and future developments	WCBC			
D6	High tender allowances due to potentially high costs of Utilities connections and uncertainty of available capacities	Inflated costs	1	3	3	WCBC	C	£15,000.00	Appoint consultant to assess loadings and obtain quotations for the utilities connections	WCBC			
D7	Existing surrounding buildings must be fully functional at all times	Surrounding buildings unable to function, loss of rent, bad publicity	2	5	10	C	O	£25,000.00	Ensure that the contract documents identify any limitations relating to use of the site entrance and adjacent buildings	TACP			
D8	In accuracy of measured survey	Re-design scheme, delay programme, additional design costs	1	3	3	TACP	D	£20,000.00	C to physically spot check dimensions on site	WCBC, TACP			
D10	Potential over-heating of the domestic water systems	Legionella forming in domestic water systems	1	5	5	TACP	D	£10,000.00	Measures are to insulate all cold water pipework against heat gains, limit dead legs and routing. Also hot water distribution is to be heated up to 60 degrees on primary routes and ensuring that all other circulation routes are not less than 50 degrees; allow landlord system to be sterilised.	TACP			
D11	Reduce risk of scalding	Injury to persons	1	2	2	TACP	D	£0.00	Providing blending valves and thermostatic devices to all hot water outlets	TACP			
D12	Cleaning and maintenance of lighting in double height spaces	Specialist access/management arrangements required for maintenance	5	1	5	WCBC	O	£0.00	Access via mobile tower with out-riggers in this area	TACP			
FUNDING / BUDGET													
F1	Insufficient budget due to scope increase during design development.	Value Engineering	3	4	12	WCBC	F		Review costs at key stages and if any significant changes are requested, revise scope to maintain within the budget	WCBC			
F2	Achieving clarity on cost	Proceeding on wrong basis	2	5	10	SPP	C		Cost reviews at RIBA stages 3 and 4.	SPP			
F3	Additional fee claims due to client changes	Increase in costs	4	3	12	WCBC	C		Ensure client understands that re-working the design will incur additional fees. Avoid changes after sign-off of each RIBA stage	WCBC			
PROGRAMME													
P1	Lack of control of the project programme resulting in inability to deliver the project within the timescale	Programme delays	4	4	16	SPP	P	£20,000.00	Manage preconstruction activities to ensure programme requirements are met.	SPP			
P2	Adverse weather conditions causing a delay to the Construction Works on site.	Programme delays	3	4	12	ALL	P	£0.00		ALL			

10.0 Risk Register



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Risk Category	
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H&S - Health & Safety

ID	Description	Consequence	Likelihood	Impact Potential	Risk Exposure Score	Risk Owner	Risk Type	Risk Cost	Risk Mitigation	Action By	Status Stage 2	Status Stage 3	Comment
P3	Design changes cause delay to design development affecting design programme and ability to develop detailed information	Programme delays, re-design works and increased costs	3	4	12	WCBC	P	£5,000.00	Design stage sign off process needs to be firm and unequivocal.	ALL			
P4	Design changes resulting in variation to site works	Programme delays, re-design works and increased costs	3	4	12	WCBC	P	£25,000.00	Carry out a formal change control procedure that identifies time implications as well as cost	TACP / C			
P5	Material delays	Programme delays, re-design works and increased costs	2	3	6	ALL	P	£0.00	Programme clearly identified in the tender, C to develop construction programme and consider material lead times	ALL			
P6	Contractors unable to deliver construction works within the given period leading to delay	Delays to handover, unable to spend required VVP allocation, funding withdrawn	2	3	6	WCBC	P, C	£0.00	Programme clearly identified in the tender, C to develop construction programme early to highlight any issues; possible accelerated programme	C			
APPROVALS / PLANNING													
A1	Failure to obtain Planning approval for the project	Re-design scheme, delay programme, additional design costs	1	5	5	WCBC, TACP	S, L	£0.00	Regular monitoring of the approvals process during the planning submission phase.	WCBC, TACP			
A2	Failure to obtain building control approval for the project	Re-design scheme, delay programme, additional design costs	1	5	5	WCBC, TACP	S, L	£0.00	Regular monitoring of the approvals process during the construction phase.	C			
A3	Opposition from stakeholders	Re-design scheme, delay programme, additional design costs	2	2	4	WCBC, TACP	L, D	£0.00	Regular engagement with client and stakeholders and present feedback to designers	WCBC, TACP			
A4	Failure to obtain BREEAM rating "Excellent"	WG funding withdrawn	2	3	6	WCBC, TACP	D	£50,000.00	Early appointment of BREEAM assessor by Client for pre construction phase	C			
A5	Conflict between BREEAM and planning for listed buildings	Re-design scheme, delay programme, additional design costs	2	4	8	WCBC, TACP	S, L	£0.00	Look into the listing status of the building and early appointment of a BREEAM assessor to determine if the listing affects the BREEAM score and what alternative items are needed to achieve the status	WCBC, TACP			
A6	Failure to obtain permission from CADW for demolition of sections of existing building	Re-design scheme, delay programme, additional design costs	4	5	20	WCBC, TACP	S, L	£100,000.00	Regular monitoring of the approvals process and meetings prior to the demolition phase.	WCBC, TACP			
CONSTRUCTION													
C1	Disruption of adjacent business activities	Loss of rent, bad publicity	2	5	10	C / WCBC	O	£1,000.00	Maintain regular dialogue on any issues relating to the site entrance.	C / WCBC			
C2	Damage to existing underground services	Disruption to adjacent businesses, increase in costs	2	5	10	C / WCBC	B, C	£10,000.00	Ensure that they are clearly identified on the site prior to commencing excavations, CAT scan	C / WCBC			
C3	Safe deliveries during operation	Disruption to adjacent businesses	2	3	6	C	P	£1,000.00	Careful control of the site entrance	C			
C4	Constructability of building works.	Ideas cannot be constructed	2	3	6	C	B	£5,000.00	All designers should consider buildability and should not design something unsuitable. Contractor to then put input into the design	C			
C5	Diversion of incoming utilities connections causing disruption	Delaying demolition of existing building, Disruption to construction programme, loss of rent, bad publicity, additional costs for out of hours working	5	3	15	C / WCBC	O, C	£5,000.00	UCML to chase utility providers and book date for diversion works	C / WCBC			
C6	Existing Live Services	Delay to programme and increase in costs, injury to persons	2	4	8	C / WCBC	B	£0.00	CAT scan and ground paint to identify live cables. Permit work and physical barriers around substation	C			
C7	Percolation tests are not conclusive and/or completed later in design process	Increased drainage attenuation scheme, increasing costs and design time	2	3	6	TACP	D, C	£50,000.00	Percolation tests to be done as soon as possible and then re-done at lower level	TACP			
C9	Damage existing trees/boundaries during construction	Delays to works, contravene planning permission and party wall act	2	4	8	C	L, S	£0.00	Ensure contractor's RAM's are adequate for works, protect trees and boundaries with orange mesh barriers to maximise visuals	TACP			
C10	Contractor's Proposals for specification due not comply with Employer's Requirements	Products are inferior and may not provide adequate sound absorption / heat retention / fire retardant	4	4	16	TACP	D	£50,000.00	SPP to meet with client and designers to prepare contract clauses to ensure specified products are provided	TACP			

10.0 Risk Register



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Date: 30-Apr-18	Medium	3	3		WCBC WCBC
Revision:	Medium > High	4	4		Consultant
	High	5	5		SP Projects Ltd SPP
					Designers
					TACP TACP
					Contractor
					N/A C

Risk Category	
S Statutory	P Procurement / Programme
L Legal	F Funding
D Design	B Build
C Cost	O Operational
	H&S - Health & Safety

ID	Description	Consequence	Likelihood	Impact Potential	Risk Exposure Score	Risk Owner	Risk Type	Risk Cost	Risk Mitigation	Action By	Status Stage 2	Status Stage 3	Comment
C11	Sprinkler designs are non-compliant	Client insurers will not insure building	2	5	10	TACP	D, C, O	£50,000.00	Ensure performance specification is water tight or bring sprinkler designer into pre-contract design and not leave as contractor design portion	WCBC			
C12	Radon requirements	Installation of radon protection and sump	1	1	1	TACP	D, C	£10,000.00	Obtain contamination report to see if radon affected area	TACP			
C13	Durability of existing external walls	Requires underpinning, re-design scheme, delay programme, additional design costs	2	3	6	TACP	B, C, D	£10,000.00	Commission report to determine the durability of the existing external walls	WCBC			
C14	Existing roof structure	Does not meet required U-Values	2	3	6	TACP	B, C	£50,000.00	Commission report to determine if additional works are required to existing roof structure. BREEAM assessor to comment on the U-Values required.	WCBC			
C15	Windows	Does not meet required U-Values	2	3	6	TACP	B, C	£50,000.00	Commission report to determine if additional works are required to existing roof structure. BREEAM assessor to comment on the U-Values required.	WCBC			
C16	Facing brickwork	Needs repointing	2	2	4	TACP	B, C	£10,000.00	Commission report to determine if existing brickwork requires repointing as part of the works	WCBC			
	ENABLING WORKS												
E1	Discovery of more Asbestos than anticipated	Delay to programme for removal and increase in costs	3	2	6	WCBC	L,H&S	£5,000.00	Commission updated Refurb and Demolition Survey	C / WCBC			
E2	Demolition of section of existing building	Delay to programme and increase in costs	3	2	6	WCBC	L,H&S	£5,000.00	Early subcontractor involvement, walk around	C / WCBC			
E3	Discovery of Bats / Owls	Delay to programme and increase in costs	3	4	12	WCBC	L,H&S	£5,000.00	Commission updated Ecology Survey	C / WCBC			
E4	Unable to build on water easement running through the site	Re-design scheme, delay programme, additional design costs	3	2	6	WCBC, TACP	L,H&S	£20,000.00	Determine the exact depth and location of the easement and check if anything can be built on top of it	C / WCBC			
E5	Restricted use due to existing covenant	Design is limited to an Education facility only	5	1	5	WCBC	L,H&S		Specific use of the building must be determined	C / WCBC			
	COMMISSIONING												
COM 1	Delay to commissioning the building affects handover	Delays handover	1	3	3	C	B	£0.00	Close review with Contractor to make sure the programme is achieved	C			
	HEALTH & SAFETY												
HS1	The adjacent properties and business are to remain live	Risk to public, temporary works design costs may increase	1	4	4	C	C, B	£0.00	Appoint temporary works designer asap	C			

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The feasibility study has considered the mechanical and electrical services requirements for the existing building. This scope of works has generated a number of reports which have been considered as part of this report however due to their size they have not been included within this document.

Schedule of building services information provided:

- 1 Mechanical and Electrical Services Proposals
2 Part L2 Assessment Report
3 BREEAM Pre-Assessment Report
4 Daylight Factor Calculations
5 Thermal Comfort Assessment
6 Drawings E701 & E702

Executive Summary for each of the above:

1. Mechanical and Electrical Services Proposals

This document has been prepared to provide an overview of the proposed services provision to the school. In summary, it is proposed that the development will be serviced as follows:

Heating

Gas-fired boilers will be located in the boiler room to feed radiators and fan convectors. Each area will be provided with user control. Zoning will be provided to each function area/department or floor plate.

Ventilation

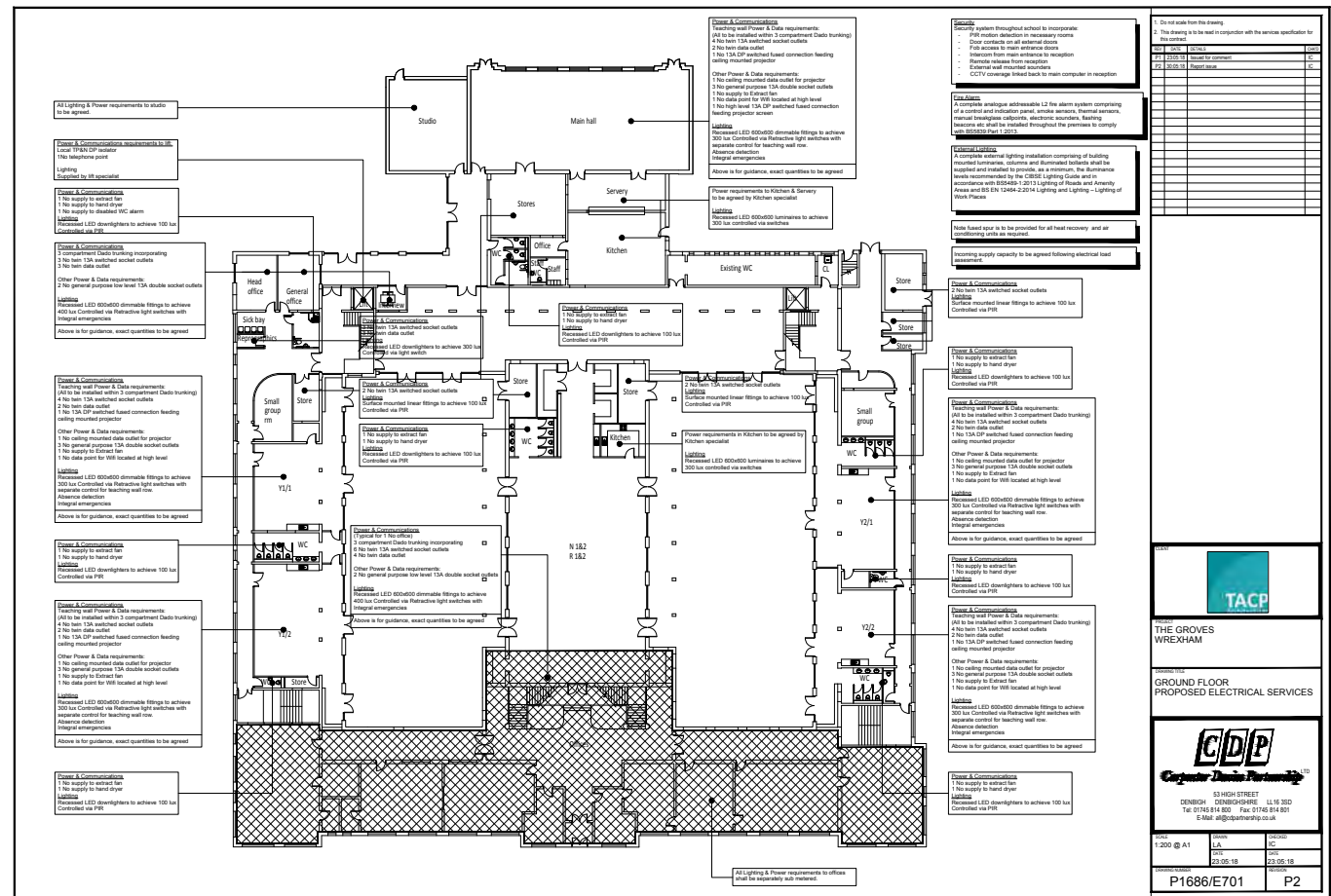
The building will generally be naturally ventilated to all 'occupied' areas. Due to the existing fenestration, mechanical extract ventilation may be required to provide increased purge ventilation in the Summer to classrooms (subject to BB101 compliance requirements). Mechanical extract ventilation will be provided to toilet areas. It is not proposed that any air conditioning will be provided.

Water services

There will be no cold water storage. Hot water will be generated by local electric or gas-fired water heaters.

Lighting

LED lighting will be provided throughout, with occupancy detection and daylight dimming where appropriate.



11.0 M&E Services Overview

Small power

General power distribution will be within the ceiling voids. General power outlets, floor boxes and dado trunking will be provided as dictated by proposed furniture arrangements and future flexibility.

IT/Telephones

A complete data/voice network system will be provided to the building, as well as analogue telephone lines to the lift and security/fire alarm systems to allow remote monitoring.

Fire alarm

A fully addressable L2 classification fire alarm system will be provided to meet the Fire Officer's, Building Control and end-users requirements.

Sprinklers

The requirement for sprinklers has yet to be determined however, if sprinklers are to be provided, then the relevant Standard will be LPC BS EN 12845. This will require a remote tank and pump house, with approximately 30,000 litres of stored water with sprinkler coverage throughout, including voids (non-sterile) and canopies.

Security

The building will be fully protected with a security system. CCTV will be provided to selected areas, both internally and externally, with the monitor and recording device in Reception Office.

Lightning protection

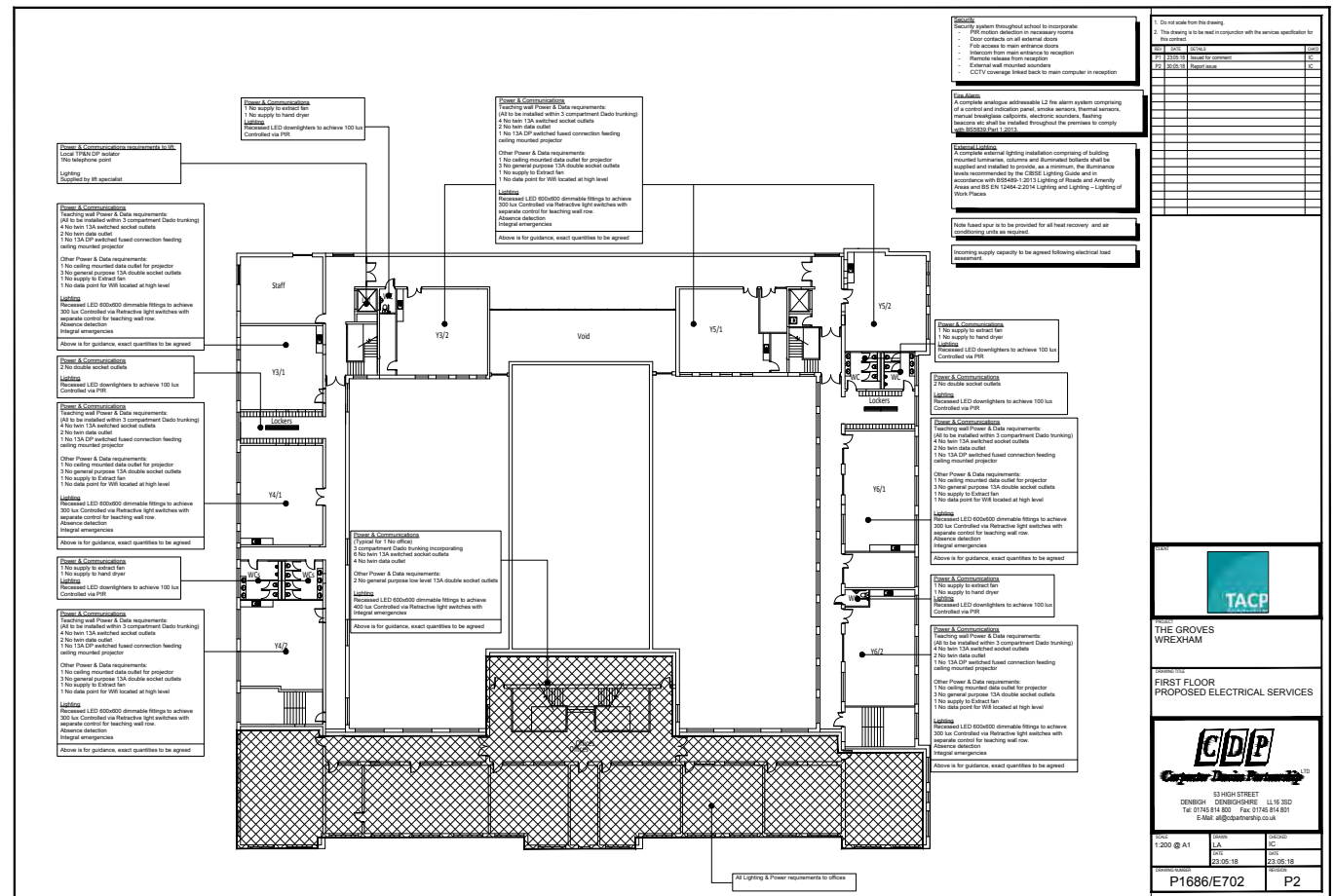
The building will be provided with lightning protection.

Metering

In addition to the incoming services, sub-metering will be provided on heating, water and electric services as described. This includes the office areas to the front of the building.

An outline energy usage assessment has been undertaken between Option 1 Primary School within existing building and Option 3 New Build School. This assessment is based upon the outputs from the initial calculations. Taking into account the significant difference in floor area between the two options, the difference in energy usage is circa 40% greater for Option 1 than Option 3.

This is based on a total of circa 30kWh/m² for Option 1 (floor area 3354m²) and 25kWh/m² for Option 3 (floor area 2118m²) respectively.



11.0

M&E Services Overview

2. Part L2 Assessment Report

This document has been compiled to advise the fabric and services requirements to meet Part L2 for the building.

As can be seen from the results, based on the information stated within the report, the building fails Part L2 2013 assessment unless 25kWp of Photovoltaic panels are included.

Further discussions will be required with Building Control, Listed Buildings, Conservation Officer and the Client to determine whether there is a requirement for the entire building to meet current Building Regulations (in terms of energy) or whether compensatory measures can be considered on the basis of the Listed Building status and the fact that this is a major refurbishment.

3. BREEAM Pre-Assessment Report

It is not currently known whether the building will be required to achieve a BREEAM rating however a BREEAM Pre-assessment, based on the BREEAM Refurbishment and Fit Out 2014 Assessment Criteria, has been produced to demonstrate how the building could perform against this standard (See separate BREEAM Pre-Assessment Report).

The report summarises the minimum standards required for BREEAM ratings and the mandatory credits required for each BREEAM award level. The pre-assessment looks at the credits which could be achieved to meet BREEAM Very Good and then determines whether additional credits could be achieved to increase the score and rating. The credits not included in the initial assessment and marked as additional are deemed to have either an impact on the project design and/or project budget.

All credits will need to be reviewed with the design team and it should be noted that many of the credits have actions required to be carried out at RIBA Stages 1 and 2.

4. Daylight Factor Calculations

Daylight calculations have been carried out to determine compliance with BREEAM Hea 01: Visual Comfort.

Minimum daylight factors for BREEAM are generally not achieved. This is not a Statutory requirement but does demonstrate that daylight factors will be less than would be expected with a newly constructed school.

5. Thermal Comfort Assessment

An overheating analysis has been carried out to assess overheating risk using CIBSE AM11 compliant IESVE software with appropriate CIBSE DSY1 weather files.

Modelling has been carried out for all occupied spaces using appropriate hourly weather data; internal gains; and ventilation/infiltration losses. Natural/mechanical ventilation, solar shading, built form and construction, and load profiles are also considered in detail.

This report concludes that, provided the development is refurbished to the proposed plans and fabric specifications, the development will comply with CIBSE TM52 with no risk of overheating. Further assessments will be required to determine BB101 compliance.

Drawings E701 and E702

These drawings have been prepared to indicate the proposed services provision within rooms, in particular the electrical services

Key items relative to building services which will require to be considered further are:-

- Minimum daylight factors for BREEAM are generally not achieved. This is not a Statutory requirement but does demonstrate that daylight factors will be less than would be expected with a newly constructed school
- Part L compliance – extract from report: ‘As can be seen from the attached results, based on the information above, the building fails Part L2 2013 assessment unless 25kWp of PV is included.
- Further discussions will be required with Building Control, Listed Buildings Officer and the Client to determine whether there is a requirement for the entire building to meet current Building Regulations (in terms of energy) or whether compensatory measures can be considered on the basis of the Listed Building status and the fact that this is a major refurbishment’
- Agreement to extent and type of opening windows to ensure that overheating criteria is met (report assumed that the area equivalent of every window opening minimum 20deg is achieved), plus minimising drafts for BB101 compliance
- Suitable allowance must be made within the cost plan for statutory supplies, in particular the electric as substation may require upgrade
- Agreement to proposal for sub-metering the office spaces (electric, heat, water), fed from same plant as school but designed for separate occupation patterns
- Location for kitchen air handling units, presumably on flat roof hidden by raised parapet
- Ventilation and access to basement boiler room

12.0

Summary

In summary, it has been demonstrated that the existing building could be altered to accommodate a primary school of 420 plus 60 pupils. Based on discussions with CADW and WCBC Conservation officer, it is deemed that this could be achieved within the constraints imposed by the buildings Grade II Listed Status; however this would be subject to a formal Application for Listed Building Consent.

The reuse of the courtyards and formation of a perimeter corridor would require alteration to the buildings internal arrangements, however these should not require wide ranging structural alteration. Similarly, the subdivision of the building into a school and other use area could be achieved without major alteration to the structural fabric of the building.

As well as constraints, the reuse of the existing building could afford some benefits including greater floor area, additional corridor provision, and additional flexible spaces for use by the school.

The existing building does present some matters which will require further more detailed consideration including:-

- Provision for disabled access.
- Provision for vertical circulation including lifts.
- Existing stairs are not compliant with current standards. Options for clear glass infills to the existing guard rails and balustrades could be worthy of consideration.
- Existing window arrangements do not provide day lighting to current desired levels.
- External noise from main roads will require consideration particularly in the context of natural ventilation.
- Creation of a new school main entrance to the existing building requires careful consideration.
- A primary school sharing parts of the building with another user could present challenges and will require careful considerations and assessment.
- The sketch scheme identifies that the reuse of the building is likely to be inefficient in terms of floor area compared to a new primary school; which has both capital and revenue cost implications.
- The relevant cost associated with both the refurbishment of the existing building along with the remodelling required to support primary education is significantly greater than the provision of a new primary school building.

The provision of 2, 420+60 primary schools on the site is also considered to be viable. This option proposes reuse of the existing school, in part, for a school and a further new build school within the site area. This option provides a reduced area of soft outdoor PE facilities; however this could be considered favourably in line with Building Bulletin 103 guidelines for schools with restricted sites.



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