Original Field of Architecture

Feasibility Report

Goring Primary School

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1.0 Introduction

With the support of a consultant team Original Field of Architecture (OFA) have been commissioned to prepare and submit a feasibility study for Goring Primary School (GPS). The study investigates the feasibility of maintaining the school facility on the existing site in accordance with four prescribed options. From an objective view point the study is intended to allow the school to make an informed decision on the viability of the existing site moving forward. The depth of the study is limited and whilst offering options does not provide design solutions, which would be subject to a more detailed level of briefing and a concept design process. Adjacent to the existing school is Bourdillon Field; owned by the local parish. For the purpose of this study it has been offered as available to increase the size of the school site, and is included in all options (although not in its entirety).

The objectives of the project are defined by the invitation to Tender document dated 9th October 2017. This broadly incorporates the outlined options and scope of this study.

1.1 Terms of reference

To establish the project design parameters the following are recognised as key reference documents for the exercise:

- Building Bulletin 99 – Briefing framework for primary school projects
- Building Bulletin 104 – Area guidelines for SEND and alternative provision
- Building Bulletin 103 – Area Guidelines for mainstream schools

1.2 Project Brief

In accordance with Building Bulletin 99 (BB99) target briefs have been established for typical 1 and 1.5 form entry schools. Refer to Appendix 01 - Schedule of Areas 1 and 1.5 form entry.

The brief for a standard school includes an allocation for a ‘‘float’’ that BB99 refers to as a “recommended general space to accommodate the individual priorities of each school”. The float for GPS has been established with the working group and identified as follows;

- Larger sized classrooms to reflect current sizes
- 2 halls as per existing arrangement to support community and school use
- Maintaining a 140sqm pre-school (depending on funding)
- Provision of after-school care facilities
- Library
- Music teaching and small group work space.

For comparison and reference, a SOA for the existing school has been prepared. It is important to note this has been prepared from limited existing building drawings and not a building survey. Refer to Appendix 02 – SOA existing school.

The first project workshop was focused on determining the parameters for a school that meets current best practice using the existing school as a starting point. Refer to Appendix 03 – Meeting notes.

1.3 Project Team

To support the feasibility study a team of consultants have been consulted providing expertise and input. The team are the following;

- Architecture and Project Lead – Original Field of Architecture

- Quantity Surveyor – PSP.

PSP have provided costing advice and analysis resulting in the preparation of a Feasibility Cost Plan. Refer to Appendix 04 – Cost Plan

- Structural and Civil – Engineers HRW.

HRW have conducted a site visit and limited structural appraisal of the existing buildings. Refer to Appendix 05 – Structural Report.

- Site Topographical Survey – Design Base

A topographical survey of the school site and Bourdillon Field has been carried out and used to inform the study. Refer to Appendix 06 – Topographical Survey.

- Mechanical Survey – It was agreed at the commencement of the study there was no requirement for an existing services survey at this stage. Due to the nature of the works and necessary phasing including the possible requirement for a temporary school, allowance has been made for new utility supplies. In the refurbishment options allowance has been made for new services throughout.

1.4. Statement of need

The need for improved facilities either as a new or refurbished school has been previously established and not part of this report. To include a number of options in this investigation, 1 form entry and 1.5 form entry sized schools have been included.

1.5. Consultation and stakeholders

Informing this exercise has been a core group of dedicated staff, governors and parents. For the purposes of definition this group has been referred to as the Project Steering group. Participants were;

- Angela Wheatcroft (Head teacher)
- Helen Scurr (Chair of Governors)
- Kerry Hughes (Governor)
- Tim Monk (School Business Leader)
- Murray Symes (Parent)

The Steering Group has met on a number of occasions as follows;
- Monday 15th January 2018 - Initial briefing session
- Monday 29th January 2018 - Design workshop to review initial options
- Monday 26th February 2018 - Design presentation of refined options prior to costing
- Monday 26th March 2018 - Final options and costing presentation

2.0 Existing Facilities

2.1. Buildings

The existing school consists of purpose-built single storey buildings grouped into 2 blocks. The first is the main building centred around an internal courtyard; the classrooms and hall are accessed by a narrow corridor. Administration and staff support areas are located at or near the entry. The building is set at 3 levels, with each traversed by internal stairs.

The second building block is the infant school classrooms, which consist of reception and 2 classrooms, all on a single level they are accessed from external doors for each classroom. Adjacent to this block is the sports hall.

Numerous ancillary buildings are dotted around the site including 2 temporary classrooms, pre-school, PTA room, a number of external sheds and the pool and change rooms.

All of the buildings on the site are in a tired condition and in some cases materials and building elements have well exceeded their intended life span. Subject to funding constraints, significant efforts are made to maintain the school buildings in a good state of repair.

A Good location
Poor condition

B Poor location
Poor condition

C Poor location
Temporary classrooms

D Good location
Fair condition

Figure 01 - Extract plan from F-02 showing existing buildings.

Refer to drawing F-02 for existing building appraisal.
Existing building inadequacies include;

- Life expectancy of key building materials and elements well exceeded,
- Failing of some building materials,
- Poor thermal performance,
- Poor internal circulation,
- Poor interconnectivity between classrooms and hall,
- Level access challenges between rooms,
- No external undercover access between classroom blocks and sports hall,
- Poor connection with central courtyard,
- Limited sense of arrival,
- Wayfinding within the school is poor,
- Poor location of the main building as it limits access to the site from a restricted point of entry,
- Inconsistent interface between buildings and outdoor areas.

GPS has provided an extract from the Asbestos Survey identifying what asbestos remains. It is understood this is limited to the soffit boarding to the building perimeter. In subsequent stages this will need to be verified and eventually a full Refurbishment and Demolition survey will be required.

2.2. Site

The existing school site area is 9,089 sqm and accessed along a narrow 3.6m wide entry from Wallingford Rd. The only road frontage for the site is the access point, with the remaining site boundary being shared with rear gardens of adjacent houses. The site runs east/west and is generally sloping from south to north with 2 distinct plateau levels with approximately 1000mm difference.

The eastern boundary is shared with Bourdillon Field, which has been identified as being included in the feasibility study. It is predominantly flat with an even gradient from north to south. With a site area of 8,040 sqm it provides a combined available site area of 17,129 sqm. Whilst the field is available it was an early project objective to retain if possible some of the field for public use.

Refer to drawing F-01 for site opportunities and constraints.

Figure 02 - Extract plan from F-01 showing the site

2.3. Refurbishment

The existing building fabric is tired, thermally inefficient and with outdated services. To provide for the next phase of a 30 – 40 year life cycle the buildings require an extensive level of refurbishment with everything except the building superstructure being replaced. This includes roof covering and build-up, windows and doors, finishes, mechanical and electrical services throughout.

2.4. Structural report

A visual structural assessment has been carried out on the existing buildings with no inherent structural defects found. The adaptive reuse and extension of the existing buildings is discussed in the structural report. The existing structure was not intentionally designed to accommodate another level, therefore this would not be possible without substantial and expensive structural modifications.

3.0 Operational and Site Logistics

3.1. Temporary school

It is a requirement that the school maintains as much as possible normal operations for the duration of the construction period. To facilitate this requirement the project will need to consider either a full or part temporary school or a phased approach to the works. In most cases this will mean a sequenced completion and operational hand over in phases. This study offers solutions to these project challenges which have been incorporated into the options.

3.2. Site access

Vehicular and main access to the existing school site is possible only via a narrow entry road off Wallingford road. The site is also accessed by walking from the east across Bourdillon Field. Access to Bourdillon Field is via a pedestrian track to the north and south. The southern track has restrictive vehicular access.

After detailed discussion and analysis it was agreed to not consider site access from Bourdillon Field in the study, due firstly to the potential complications of gaining acceptance and permission, and secondly the suitability of the lane for heavy construction vehicles.

Access for the construction period would need to be shared with operational school access via the main entry road. It is believed this would be possible with appropriate controls and supervision. Whilst complex and probably demanding on both the school and contractor we ascertain that this is a viable solution.

4.0 Logistics and Phasing

Phasing Option A - Temporary school - refer to drawing F-03

A single phase option involving the establishment of a temporary school in the middle of the site with access via the northern boundary from a shared access entry. The existing school will decant to the temporary school while it is refurbished and extended. On completion the pupils will move back into the school and the temporary school removed. Work to outdoor areas and the access driveway will need to be carried out after the temporary school is removed. This phasing option is suitable for Option 1, 2 and 3.

Phasing Option B - Multiple phased project - refer to drawings F-04, F-05 and F-06

Staged phasing involving small phased sections of work. Phase 1 involves isolating a site for either a new building element or temporary facilities eventually connecting to the existing school. This is followed by Phase 2 which involves establishing a site in the SW corner; existing buildings are either demolished or refurbished. Phase 3 involves the demolition or refurbishment of the main existing school building and entry works. This phasing option is suitable for Option 1, 2 and 3 and provides an alternative to Phasing Option A as it allows for smaller portions of work to be carried out rather than one large project.

Phasing Option C - New school - refer to drawings F-07 and F-08

Located in the middle of the site a new 1 form entry school is constructed in one phase; once operational the existing school is removed. When required the new school can be extended to include 4 additional classrooms to become a 1.5 form entry school. Outdoor areas and works to the entry will follow the removal of the existing school. Phasing Option C eliminates the need for temporary facilities and complex phasing, making it only suitable for Option 4.

5.0 Options

Option 1 - Refer to drawing F-09

Option 1 is defined as a refurbishment and internal reconfiguration of the existing buildings to achieve a 1 form entry school (7 classrooms). Temporary classrooms are removed and internal circulation is improved with firstly a central corridor around the courtyard and secondly a connecting walkway to the junior classrooms providing them with undercover access. In the reconfiguration additional administration and a library room is provided. New toilets and change room are provided adjacent to the sports hall. This option includes new outdoor areas and sports fields. In this option the pool is retained however the pre-school is removed.

Option 2 - Refer to drawing F-10

This option is the same as Option 1 with the exception of 4 additional new classrooms, providing a total of 11 and achieving a 1.5 form entry school if this were deemed necessary in the future. In this option the pre-school function is retained and relocated.

Option 3 - Refer to drawing F-11

Option 3 is for a new 1 form entry (7 classrooms) incorporating a retained and refurbished junior school classroom block and sports hall. The new school connects to the existing building with a series of internal and external streets. The main classroom wings are linked by a central covered space. Administration and general use areas are located in the centre. New classrooms are lined along a corridor facing south with support facilities on the other side. Community access facilities and pre-school are centered around the main carpark providing accessibility out of hours. In this option the pool is removed and the pre-school is relocated.

Option 4 - Refer to drawing F-12

With the exception of the existing sports hall this option is for a new school that could be a 1.5 form entry school (11 classrooms) if this were deemed necessary in the future. The design principles are the same as option 3 however the school is pushed back into the site allowing for Phasing Option 3 to be achieved. The car park configuration is rotated and there are additional outdoor areas to the front of the site.

5.1 Options Analysis

	PROS	CONS
Option 1	• Max. utilization of the existing school buildings • Some improvement on internal operations and spatial qualities of existing buildings • Works could be phased in work portions • Least expensive option • Removal of pre-school allows opportunity for improved connection with outdoor areas	• Only partially addresses the spatial and operational shortcomings of main building • No new buildings • Phased works will result in prolonged construction period and increased disruption • No increase in parking and improved site access • Inherent risk of existing and unknown building issues • Requirement of temporary facilities – amount will depend on size of phases • Reliant on phasing and/or temporary school • No change to school entrance and presentation • Shared access with contractor during construction • Limited wheelchair access

Option 2	• Increase to 1.5 form entry with new classrooms • Some improvement on internal operations and spatial qualities of existing buildings • Works could be phased in work portions with new classrooms providing decanting options • Preschool is relocated to have independent access • Improved connection to outdoors for some classrooms	• Limited spatial and operational shortcomings of main building • Phased works will result in prolonged construction period and increased disruption • No increase in parking and improved site access • Some reuse of existing buildings • Inherent risk of existing and unknown building issues • Requirement of temporary facilities – amount will depend on size of phases • Reliant on phasing and/or temporary school • No change to school entrance and presentation • Shared access with contractor during construction • Limited wheelchair access
Option 3	• New entrance and increased car parking • Improved vehicular access • Improved connection to outdoors for some internal spaces • Preschool is relocated to have independent access • Sports hall and main hall to have out-of-hours access • Substantial new building facilities • Adaptive reuse of best existing buildings – infant block and sports hall. • Improved internal circulation linking new and existing buildings • Two way traffic access to site	• Phased works will result in prolonged construction period and increased disruption • Requirement of temporary facilities – amount will depend on size of phases • Reliant on phasing and/or temporary school • Shared access with contractor during construction • Higher costs
Option 4	• New entrance and increased car parking • Improved vehicular access • Improved connection to outdoors for all internal spaces • Preschool, sports and main hall to have independent access • Sports hall and main hall to have of hours access • Optimal layout based on sound design principles. • Opportunity to provide all new buildings • No phasing except for externals which can be done in summer • No need for temporary facilities. • Flexibility for 1 or 1.5 form entry within option • Two way traffic access to site	• Shared access with contractor during construction • Awkward access to temporary outdoor facilities • Higher costs

6.0 Design Methodology

Although only a feasibility study with limited architectural design output required we believe it is important to identify at an early stage clear and concise design objectives for the project. Establishing a clear architectural ambition for the project is important in ensuring it can be passed onto the next stage of the project. Elements of the design methodology have been intimated and peppered through this exercise.

The spatial arrangement of the school has been broken down into the key elements associated with urban design strategies. In approaching the school as a town or village this allows the hierarchy of space to be tangible and inherit a narrative.

Centred around a town square (or piazza) streets (corridors) will link the various functions with the classrooms (home). Each space will adopt a typology representing each element; materials, scale and colour will be carefully collated to achieve a particular architectural response supporting each function.

Sustainability will be at the forefront of the proposal to create an environmentally responsive design. Clearly visible it is intended the school will be an educational tool allowing pupils to interact and observe how a building can make a positive and meaningful contribution to the environment. Environmental features will be built into the design including water harvesting, renewable energy production, and use of sustainable materials.

With careful consideration and the creative application of architectural elements it is possible to achieve a high level of design ambition within a project without significantly adding to the project budget.

Figure 03 - The town square

Figure 04 - The street

Figure 05 - The home

7.0 Landscape and Outdoor Areas

Building Bulletin 99 identifies 5 outdoor play environments which should be provided in a primary school, these are: a sports pitch, a games court, hard and soft play and habitat areas. These areas are allowed for in the options. The outdoor environment provides a crucial learning and play environment for children.

The feasibility study suggests following the principles of Learning through Landscapes which:

- Advocate the benefits of outdoor learning and play at school and pre-school
- Inspire and enable the design and development of outdoor environments to support children's development.
- Inspire and enable teachers and early years practitioners to develop the confidence, ideas and skills they need to make better use of outdoor spaces.

Engagement with the outdoors as a learning environment gives the opportunity for children and staff to enjoy and value nature; encourages social development and interaction; gives the freedom to play and opportunities for community engagement. Simple interventions such as moulding small hills and ridges can bring a different level of interaction with the outdoors, encouraging children to run, roll and play. Equally important are areas of refuge and calm. Providing covered outdoor play space would allow for outdoor play and fresh air even on rainy days.

Figure 06 and 07 - Examples of outside activities

8.0 Conclusion and Recommendations

The feasibility study is conclusive in that with the addition of Bourdillon field the school can continue to flourish in the current location. Benchmarked against current school design standards it has been proven a new or refurbished/ reconfigured school can be comfortably accommodated on the site. This study has also proven that the school can continue to operate on the site during the construction period for each of the options, some more successfully than others. However, this is not without its complexities and a phased build will incur additional costs compared to building on a new greenfield site.

Whilst we have presented four clear options there are many permeations and hybrids within these. As the study progressed, it became increasingly obvious that Option 4 would offer the least disruption and most value for money. This option would provide flexibility for a new school which could be either a 1 form entry or 1.5 form entry school depending on future needs.