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AFEC INTERNATIONAL

16 Classroom Primary School @ Kishoge

Architectural Statement

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Architectural Statement

This report is issued commercial in confidence.

Issue Record

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1.0 INTRODUCTION

The enclosed submission sets out AFEC Internationals' design approach to the proposed development of a new 16 classroom Primary School building at an existing greenfield site at the Thomas Omer Way, Kishoge, Lucan, Co. Dublin.

The proposed development comprises the construction of a new two storey 16 classroom Primary School building with all associated educational support spaces as per the Department of Education's schedule of accommodation for an educational facility of this type. The building will be a total of 3355m2 in size with accommodation as outlined below;

- 16 Classrooms @ 78m2 each
- GP Hall and Ancillary Accommodation
- SEN Unit – 2 Classbase and Ancillary Accommodation
- Staffroom
- Multipurpose Rooms and SET's
- Offices
- Storage
- Plant Rooms

The development is within previously undeveloped ground and is part of South Dublin County Council's Clonburris Special Development Zone (SDZ) which outlines the design intentions for the site and its adjoining areas into the future.

The site currently has no direct link to any public road and this application outlines the intention to form a secondary road off the main Thomas Omer Way, linking then to a local street which will provide access to the school site. The new secondary/link road will form the basis of future road expansion within the SDZ.

Other site works involve establishing a green western corridor between the school site and the adjacent Kishoge Community College which will form a new pedestrian and cycle link from the Thomas Omer way which will ultimately connect to the parkland envisaged in the expanded SDZ.

This building will be initially used as a 'decant hub', a facility to be used by similar sized educational facilities in the area which will be subject to a separate upgrade and remediation programme. This will require a full decant prior to works being undertaken, hence to need to provide a significant building to cater for this. This proposed building will subsequently be operated as an independent school serving the needs of the Lucan area, once it has fulfilled its use as a decant facility.

AFEC International leads an experienced multidisciplinary design team which comprises the following consultants for the delivery of this project to planning application stage;

Architects and MEP – AFEC	Consulting Engineers - MMOS
Road Engineers – PMCE	Planning Consultant – Ward Consult

2.0 LOCATION

2.1 - Location Overview

The subject site is located within a greenfield and undeveloped land parcel to the southern side of the Thomas Omer Way, a road which connects the R113 and the R136. The site is zoned for educational use as per the Clonburris SDZ. The Thomas Omer way at present has minimal secondary road connections, save for Lynches Lane to the west which connects Kishoge Community College. The site is located approximately 10 minutes from the M50 and 10 minutes from the N7.

The acquired site measures 1.16 ha / 2.86 Acres, with the application boundary of 1.91ha including works to provide a new access road and cycle and pedestrian connection to the west. The site is bounded to the west by Kishoge Community College, the north by Thomas Omer Way and undeveloped lands to the south and east.

A right of way exists to the north of the site which contains an Irish water owned gravity fed foul sewer line.

2.2 Site History

The site adjoins Kishoge Community College. Kishoge Community college was constructed in the mid 2010's and there is also Traveller accommodation constructed on the southern side of Kishoge Community College, along with two train stations, the one at Kishoge is not yet operational.

3.0 ARCHITECTURAL APPRAISAL

The design approach to the site has been informed by three distinct elements;

1- The planning strategy and guidance contained in the Clonburris SDZ

2- The need to apply Modular Building techniques to aid with the rapid delivery of the building stock, while retaining a high level of Architectural quality.

3- The accommodation schedule for a 16 classroom Primary School with a 2 classbase SEN

3.1 – Analysis of the SDZ

As this site will be the first development within the SDZ, there is already a robust template in place as to how SDCC envisage this site being developed. The site is zoned for educational development and with its adjacency to an existing post primary campus at Kishoge Community College, this site is perfectly suited to this type of development. The proposed development has been carefully designed having regard to objectives of the SDZ and detailed interactions with SDCC.

As outlined in Figure 3.1, an extract from the overall SDZ movement concept, direct access to the proposed site from Thomas Omer Way was not a part of the access strategy for the school site. It is now proposed to construct part of the proposed link route from Thomas Omer Way and the local street which will now provide the direct vehicular access to the school.

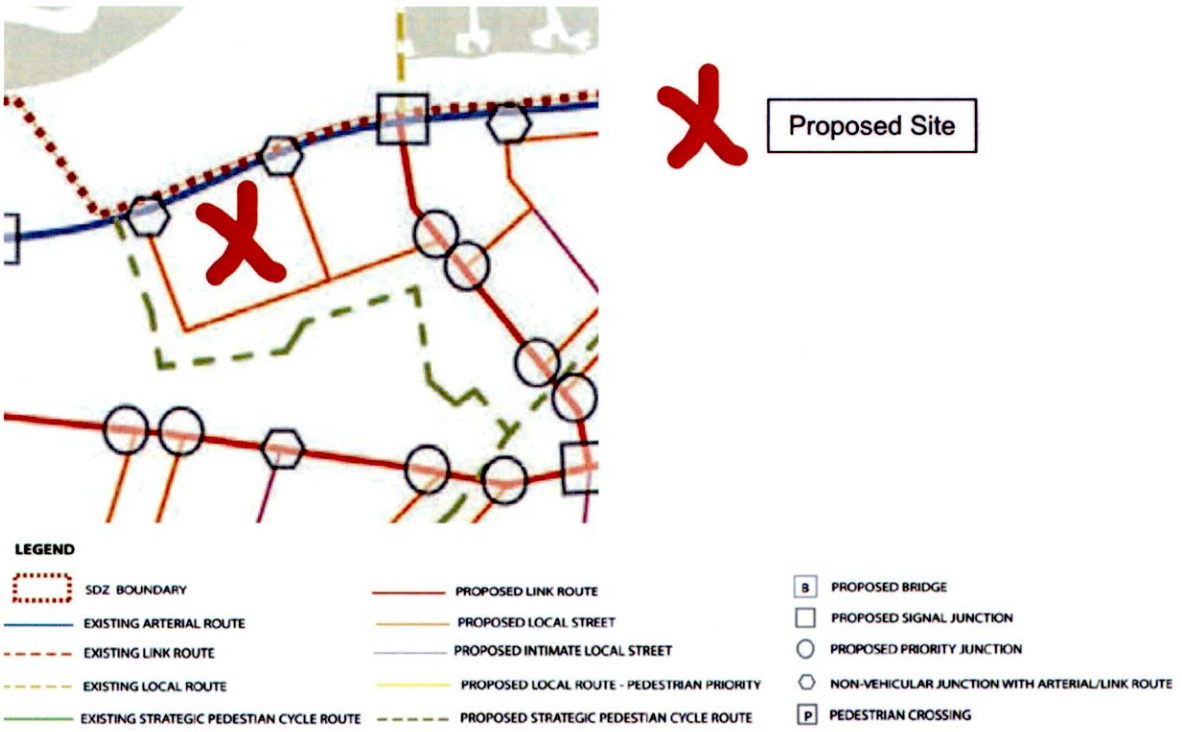


Figure 3.1 – SDZ Movement Concept

The main vehicular entrance and access to the south, allied with the need for the building to be located as north west as possible, dictated a certain design approach for the building itself, which is suited to the requirements of the SDZ.

The main vehicular car park access visitor entrance will be located to the south. The 2 classbase SEN which will require siting adjacent to the main vehicular set down, has taken a southerly location which retains this logical connection to the vehicular approach. The GP Hall, which will be considered as an inherent part of the community, is also located on the southern side to avail of the adjacent parking infrastructure that will be vital to the successful use of this asset outside school hours. The ballcourts will be located on the northeast corner of the site and sited together. This being a key requirement for school management and supervision and located strategically so they will not be overshaded by the proposed building, and be at risk of icing up during winter months, during low sun conditions, which is also a key school management objective.

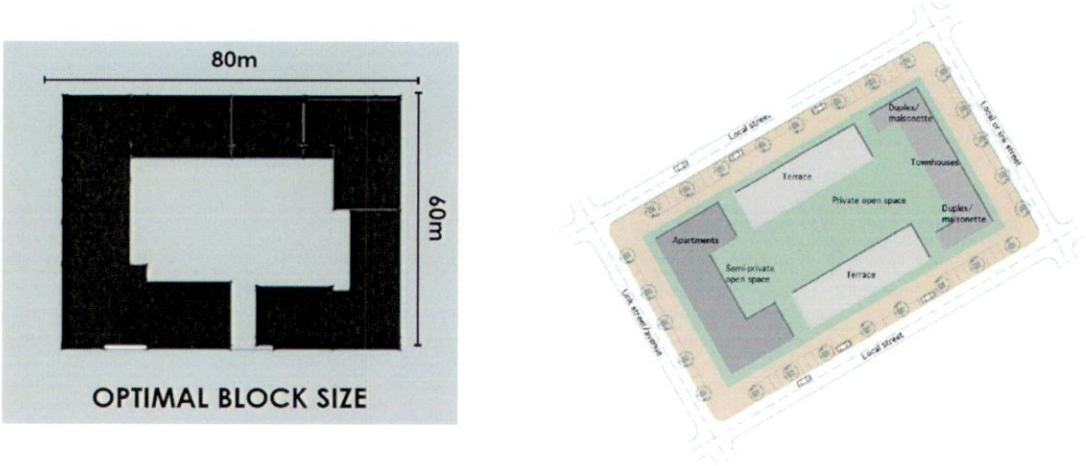


Figure 3.2 – Block Sizes outlined in SDZ

The arrangement of the proposed school building refers to elements of optimal block sizes as referenced in the SDZ. While it is noted these blocks relate to residential developments, the layout of this proposed 16 classroom primary school has adopted elements of this block arrangement which is suited to the specific accommodation requirements of a 16-classroom primary school and its external uses.

The intention for the northern block of this proposal to be the more prominent and elongated block, addressing the Thomas Omer Way was considered in detail.

The need for the SEN to relate closely to the main vehicular entrance and set down to the south, meant that a scheme to elongate the northern block, while retaining the SEN its southern location was challenging. Delivering an elongated northern block, while adhering to the other design parameters resulted in a compromised plan, which restricts future expansion. A key DoE strategy on new projects is to ensure the proposal can cater for 30% future expansion. This proposal now identifies the north-eastern elevation of the northern wing as the key area for the location of the future expansion. This also will allow the SEN to continue in use without being impacted by any future development works. See figure 3.3

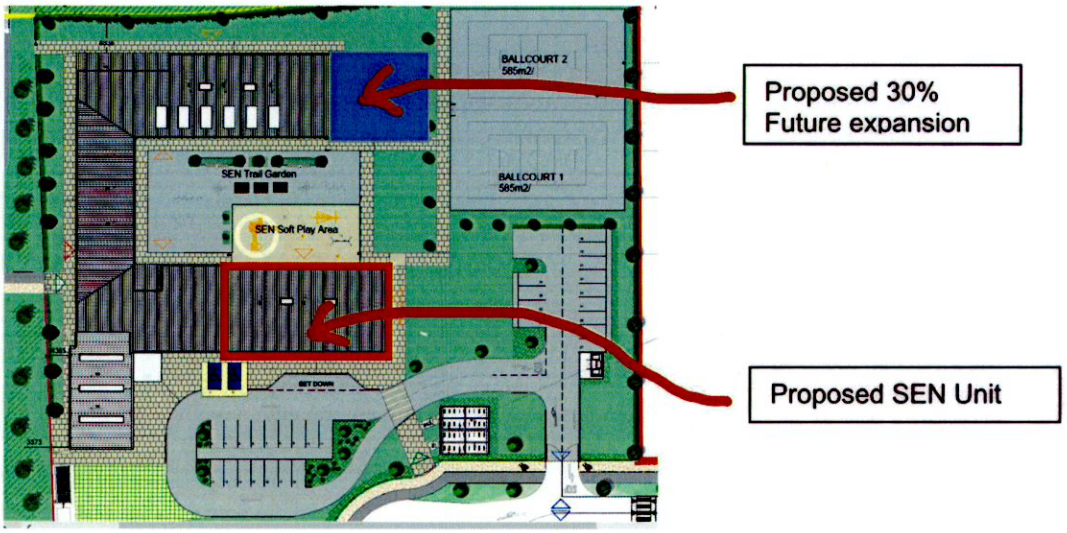


Figure 3.3 – Proposed Site Layout Plan

The landscaping arrangement also intends to be closely aligned with the requirements of the SDZ. The northern section of the site will aim to be as open as possible to the Thomas Omer Way. The existing tree line to the extent of the application boundary to the road, which contains young tree species, will be removed and will give the sense of connection between the site and road which is a key objective of the SDZ. The right of way which contains important public infrastructure will be subject to low level planting to maintain this sense of openness. A secure fence will be located at the school building level which is c. 1790mm below the footpath level at Thomas Omer way. This fence is will be crucial in providing a secure site for the school and considering the level difference and added height of the boundary wall with Thomas Omer way, this secure fence will not be visible.

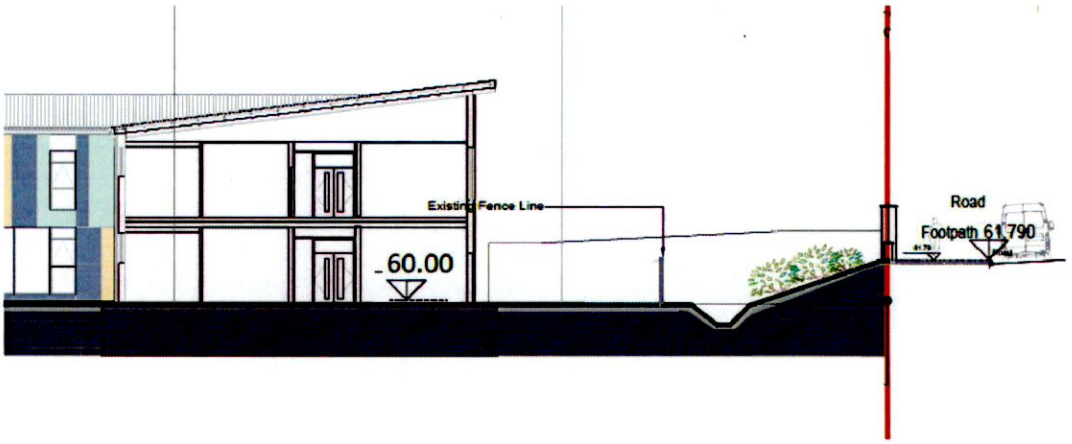


Figure 3.4 – Site Section to Thomas Omer Way

3.2 – Utilising Modular Construction

As part of the intention to the deliver this building in an expedited manner, the use of Modular construction has been identified as the desired approach in achieving this.

Modular construction is a process where a building is constructed off site using controlled plant conditions before being transported and assembled at the desired location.

The design of this building has taken into account how a modular construction approach will be reflected on the layout, and volume of this structure. The building form has taken a linear, shallow plan which is suited to industry standard pod sizes, which are based on the maximum permitted load that can be transported on public roads. The design has integrated a u-shaped floor plate where the 3 individual wings which are connected at 90-degree angles. The GP Hall element has been designed as a standalone entity with a minimal connection to main school building. This is to allow the main school building retain as much of the modular ethos as possible, with the GP Hall then to act as a standalone structure utilising more traditional construction techniques, which allows the space to retain the double height volume typical of this space, which can be more challenging to achieve in a modular form.

Figure 3.4 – Modules delivered to site

Where traditional basic modular construction utilises simple architectural detailing and styles, it is intended that this building will be of high architectural quality with robust detailing to give the building a level of quality in line with traditional school building stock.

It is also a prerequisite that the modular building system will be in compliance with the current TGD L in terms of energy performance and NZEB compliance. The fabric of modern modular building systems is of a very high quality. With the advantage of having a controlled factory environment for the delivery of building elements, the ability to deliver the sections of the external building fabric in a repetitive and consistent way, guarantees more consistency in ensuring that the build ups are that as what were specified, and is often an issue on traditional in-situ construction. Allied with this, the modular system will adopt heating systems and renewable technology which will further reinforce the strong ethos of sustainable construction offered by these systems. For this development, it is anticipated that packaged Biomass heating plant will be provided on the site which will provide a low carbon and energy efficient heating system for the building.

PV Panels will be provided on the south/courtyard facing monopitch roof of the northern block, which will provide the renewable technologies needed to achieve Part L compliance.

4.0 DESIGN REFERENCES

Considering the intent to utilise modular construction for the delivery of this building, the selection of materials is crucial to optimise the modular approach for rapid delivery; while giving the building the sense of quality and permanency, not always associated with modular buildings. In essence, the intention is to deliver an enhanced modular building system that will reflect typical modern school building stock.

It is the intent of the design and delivery of this building that the finished product should be indistinguishable from a traditional built school building, and mirror where possible high end architectural design and finishes.

Figure 4.1 – New School Building – Carrigaline, Co. Cork

General school design often tends to be fluid and flexible and is often cognisant of its surrounding areas and environment, but tend to deliver a fresh and vibrant building with clever use of materials and building form. Window design on school buildings is generally quite consistent and is closely aligned with Department of Education guidance to ensure maximum daylighting and natural ventilation are delivery to each classroom.

There is flexibility on secondary rooms or circulation spaces to provide alternative glazing arrangements that can be of high Architectural value.

Figure 4.2 – Aeriel view of a new school complex

Proposals for an enhanced modular system also focus on other important areas of the building envelope which align with new school installations. The roof installation also being an area of particular focus.

An architectural roof system would often comprise of an insulated roof panel system with a metal profiled outer skin providing a seamed appearance, and gives the building a modern and sleek architectural appearance.

The department of education also prefer their building stock to be as low maintenance as possible. Therefore, the roof construction should avoid unnecessary parapet construction and flat roofs where possible. Eliminating the need for roof access and fall arrest systems are also preferable.

Figure 4.3 – Ennis Hospital – Cladding Panel system

Examples of public buildings which utilised cladding panels which gave the effect of a high-end render finish were carefully considered within the design of the building. As outlined in figure 4.3, the ability to provide a striking eternal façade with a complimentary mix of dark and bright colours was a key design objective. The use of a material that provided this effect , and was at the same time was more conducive to the delivery of a modular construction, ie less site based work was important. In this instance a high-pressure laminate cladding panel is proposed for full extent of the elevations to give the building its distinct look.

5.0 BUILDING MATERIALS

Wall Cladding and finish will utilise a high-pressure laminate cladding system, utilising a colour palette as indicated on the enclosed architectural elevation drawings.

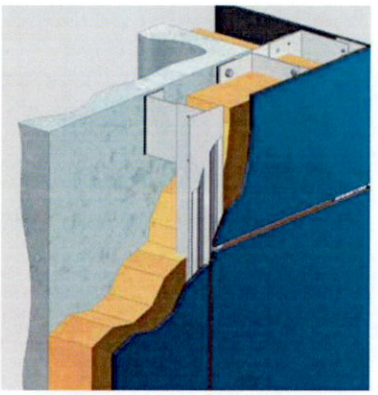
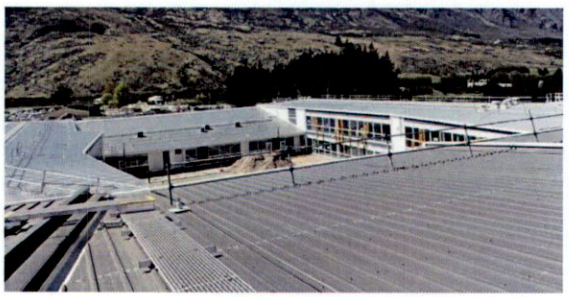


Figure 5.1 – 3d Visualisation of cladding panel arrangement and fixing detail

The roof system will be delivered in the form of an insulated profiled roof cladding panel as outlined in section 4.and as illustrated indicatively in figure 5.2



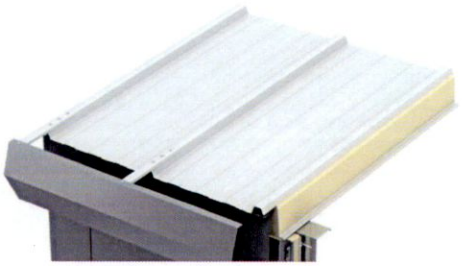


Figure 5.2 – Profiled Roof Cladding system

6.0 CONCLUSIONS

The design of this building has been carefully considered, in the first instance to provide a long term, high functioning educational facility for the Department of Education and the surrounding areas of Kishoge, Balgaddy and the greater Lucan area.

The understanding of modular building techniques, in a way that ensures that the design is harmonious with the systems offered by modular building practices, has also been carefully integrated into the design, whilst still retaining a high level of Architectural quality.

As this building will a gateway building of sorts ahead of the long term roll our of the SDZ, it should become a key piece of infrastructure and become and an exponent of high quality design for the present and onwards to the delivery of the SDZ as a whole.