Design for a Post-Primary School
Kingswood, Tallaght 2012

ARPL - STAGE 2 COMPETITION BOARDS
Awarded Entries

COMMENDED - STAGE 1

de Paor Architects
Gilroy McMahon NPS GROUP
KMD Architecture

SHORTLISTED

Michael Kelly, Architect
BDP
Grafton Architects

2ND PLACE (joint)

Coady Partnership Architects
de Blacam & Meagher Architects

WINNER

ARPL Architects
The outdoor rooms are defined by flowers... offer flowers.

Smaller formal sitting areas are created through the shaping of small retaining walls which modulate the site slope at key points.

The careful scale of the resulting external spaces avoids the play areas becoming a scaleless expanse of open ground without extensive maintenance.

**Flexible Structures**

The flexibility lies in two areas: the number of repetitive components and the configuration of these components. These two variables allow designs to be developed for schools of different sizes by increasing or decreasing the number of key components used.

Similarly by setting the kit of parts on different grid configurations of different site types. The strategy allows for plans suited to square sites such as Kingswood or more linear type locations.

The potential use of the split level steps in the central space offers a potential solution for different site contouring.

The neutral grid and component approach to built form delivers this development flexibility.

**A Hub Model**

This conceptual strategic layout is this design seeks to give a sense of...

The model we have chosen to design is based on pupil hubs as small schools within a school. 60-70% of a pupil's time is spent in general classrooms.

Specialist teaching spaces which require additional equipment is then assigned to specialist teaching and different sites.

The simple definition of front and back sets the initial structure for applying this solution to different locations.

The core of the school is the central dining and social space. Arranged as a village square the central space is accessed from all parts of the school.

The PE, social and staff support spaces are all grouped around the core and entrance to allow full community use of these clusters form the key elements of the school day.

**Site Overview & Strategy**

The number of pupils involved in this project and the needs of the users led the main hographical site design, landscape, and internal compositions, formed by the site topography, and the resulting buildings are in harmony with the site's context.

The central area of the resulting planning is the school's heart with its public facilities, such as the library, hall, and music room, fronting onto the town square, small village greens offering light and greenery and a network of lanes and alleyways.

**Post Primary School, Kingswood Tallaght**

One thousand pupils is the equivalent of a small community.

Our proposals lay out the school as a small town plan with its main public facilities of library, hall and music room fronting onto the town square, small village greens offering light and greenery and a network of lanes and alleyways.

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Ground Floor Plan & Southwest Elevation
Each teaching hub has open social and breakout spaces at its heart. This combines working and sitting spaces with toilets, lockers and pastoral rooms. All these spaces benefit from daylighting through windows or rooflights.

The classrooms have openable sliding screens alongside the main room to offer an option of alternative forms of teaching through semi-open plan spaces.

PLACES OF LEARNING - social and breakout space, first floor
The conceptual idea of the hubs as a basis for the organisation of the school is intended to give a sense of identity and scale to the pupils. This idea is to be reinforced by a colour and art strategy which gives a unique quality to each space.

Based on a rainbow range of colours we have formed four distinct colour palettes from blue/purple through green/turquoise yellow and red. Each cluster of spaces takes on a separate character easily identifiable within the structure of the school. This colouring will be applied through the facade treatment, floor and wall finishes and hopefully will involve ceramic panels created between the artist and the pupils.

As pupils move through the school circulation a form of wayfinding defines routes and the special social places around the building. This identity carries through to the outside with elements of landscape and wild flowers being identified with each place.

The architecture, colour art and landscape all work to further the treatment of the building as an assembly of places rather than just a large schedule of accommodation.
PLACES OF LEARNING - social and breakout space, ground floor

ENVIRONMENTAL STRATEGY
- high levels of insulation
- high thermal mass
- natural ventilation via windows and high level vents
- radiant panels ensure thermal comfort
- shade from roof overhang and shelf louvre reduces overheating

LIGHTING STRATEGY
- even natural light from windows and rooflights
- sensor controlled low energy light fittings
- up and downlighting ensures glare free interiors

CONSTRUCTION AND PREFABRICATION
The proposed structure of the school programme is a solution which offers the potential for accelerated construction periods. The key to this is the use of prefabricated off-site manufacture of all key components combined with a non-wet trade approach to superstructure. To achieve this we have considered the use of:

A precast concrete frame and slab based on a rigorous application of a 7.15 metre grid throughout. This grid is applied to all aspects of the school ensuring efficient modular manufacture. Steel frame will be employed where larger spans are required to the gym hall and main dining spaces.

External walls will be carried out in a prefabricated Timber Structurally Insulated Panel system. Consideration will be given to the off-site installation of windows and external finishes.

A limited range of window sizes will be employed to ensure efficient cost effective manufacture.

Internal walls and finishes will be of dry construction using metal studwork with acoustic infill and high impact board finishes.

Clear services distribution routes are defined along the circulation grid to allow easy installation and subsequent maintenance of main services.

MODULAR CONSTRUCTION
The design solution offers the potential for off-site modular construction for approximately 85% of the school area. Initial discussions however suggested this will not meet the required budget and there may be issues on detailed room dimensions. We consider there is scope for detailed discussion if the design is pursued.

SOCIAL AND BREAKOUT SPACE

GENERAL CLASSROOM

PASTORAL ROOMS

MAIN CIRCULATION

MAIN CIRCULATION LANDSCAPED COURT

MUSIC/ LIBRARY

GENERAL PURPOSE / DINING HALL

Ceiling mounted multi service panels

- combined radiant panel
- low energy lighting
- sprinkler head
- acoustic panel

COURTYARD CLADDING

- glazing system
- coloured panels external wall in full

LARGE SPAN ROOFS

- large span steel trusses
- steel purlins
- profiled metal decking
- single ply roof on insulation board

EXTERNAL MATERIALS

Materials have been chosen to deliver a functional robust built fabric compatible with the ambition for a predominately drybuild construction. The principal cladding materials combine to create a neutral framework of self-weathering timber with window and coloured panel assemblies of fibre cement. The timber is used to clad approximately 25% of the external elevations.

The colouring strategy allows for each hub to have a different group of related colours based on three colours to each group. This range of colours is deliverable using standard panels colours. A concrete plinth provides the lighter materials with a robust base limiting damage from impact and from water at ground level.

This arrangement delivers a pattern and colour palette which reinforces the architectural concept of identifiable teaching clusters while providing a low cost low maintenance solution.

Conscious consideration has been given to the insulation of this concrete plinth to ensure an effective approach to reducing heat transfer through the building.