



June 2007

Ape shape: Proctor & Matthews' Gorilla Kingdom
Bob Harrison on Allies & Morrison's planetarium
Charles Rattray on Long & Kentish's Centre for Conservation
at the British Library • **Colin St John Wilson's last project**
Brendan Woods on Zürich: Kerez, Pool, Fuhrmann & Hächler
Studio E in Bexleyheath • **Workloads** • **External skin** • **Landscape**



BUILDING ■ Orderly eccentricity: Studio E Architects in Bexleyheath

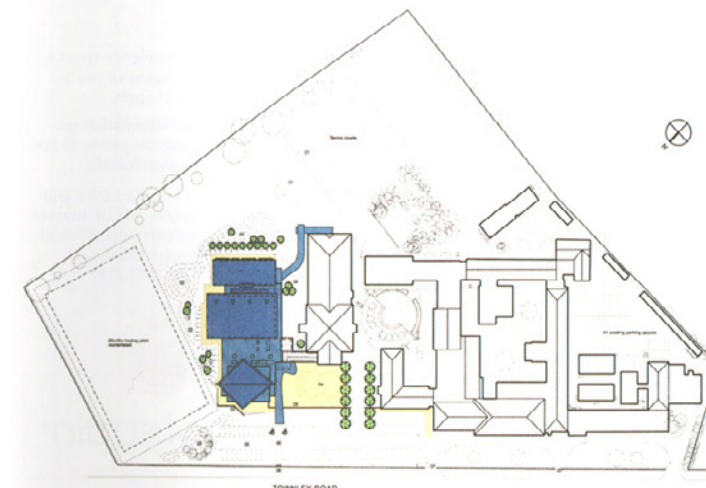
A range of buildings adds more than the sum of its parts to a 1930s school. Critique: Mark Dudek. Photos: Kilian O'Sullivan.

Townley Grammar School for Girls comprises a sequence of linked pavilions running along a busy suburban street in Bexleyheath. The original 1930s structures and the latest building by Studio E – a new performing arts centre with sports and science facilities – sandwich a two-storey

science and arts block designed in po-mo style. Complete with pediment and clock, gothic lettering on its face announcing its year of construction as 2000. Head teacher Linda Hutchinson whispers in a conspiratorial tone, 'it's by the local authority'.

It is a telling juxtaposition of architectural styles, both of which are recent, yet worlds apart in terms of aspiration and cooperative decision making. One, a place without any sense of individuality, the sort of anonymous 'spec' office building seen on a thousand industrial parks; the other a stylish contemporary building which exceeds the client's aspirations on a number of levels.

Hutchinson's enthusiasm and the sheer pleasure she exhibits as she shows me round is testament to the architect's care. Unlike with the earlier addition, the school chose its architect. It is clear how much this meant to her and to the school community in general. A traditional procurement process has ensured that enough time was available for a thorough consultation process to take place.



David Lloyd Jones of Studio E:
A crib for the head teacher to answer inquisitive visitors' questions: 'Why have the canopies got wiggly-wiggly legs... why aren't they straight and in line?'
Answer: 'Well, I suppose, they represent an escape from the straightjacket of rational justification.'

Every move we make in creating a building must be supported by reams of analysis. Design has to be reviewed against every counter option imaginable. Environmental impact, risk to life and limb, the challenge to those with disabilities, all have to be assessed; and costs have to be calculated and balanced. Is it 'fit for purpose'? Issues of how it feels, how it affects the occupants environmentally and how it contributes to the creation of a special space invariably bow to factors that are amenable to measure and analysis.

So are the wiggly-wiggly legs a minor act of rebellion against the orderly and precise? Maybe, but there is something else.

Of course, no decision is entirely objective. We might like to present it as a logical outcome of quantified analysis, but each decision also reflects a preview of the outcome where the designer subconsciously projects the consequences of a 'rational' decision in terms of its expressive potential as a component of the design. For example, in optimising the environmental performance of a building for any given location, function and climatic condition, the review of building and service design does not remorselessly focus on a single solution; it throws up a number of possibilities which are balanced against other possibilities. And implicit in each is particular expressive potential and architectural consequences.

It was not always thus. Time was when aesthetics prevailed in design. Great value was given to harmony, spirituality, grace, flow, sequence and beauty. These days the promotion of such qualities tends to be suppressed during the design process. But once the building is up and occupied, right up there with convenience and function is delight, elegance, lightness, dullness, heaviness and inspiration. Everybody has a view on appearance and feel.

So the wiggly-wiggly legs are not just a *cri de coeur* against over justification. They may seem a little whimsical, but they are also intended to lift the spirits: a playful ingredient in a diet of rationalism. There are other such ticks in the design of the Townley building. For example, there is a painted dado to the ground floor decoration in the circulation areas above which pupils can hang their work. This does not terminate in a



straight line at hip height, but it has a raggedy edge which looks like the decorator has got so far and then gone off for a tea break. It underlines the painterly nature of both the wall finish and the work that will be displayed in the spaces. Curves are introduced into the forecourt to stress

the informality of the performance space. These are picked up in the delineation of the canopy roof.

All these may seem quirky during construction but, when seen together in their finished state, they add up to more than the sum of their parts and contribute lightness and individuality.

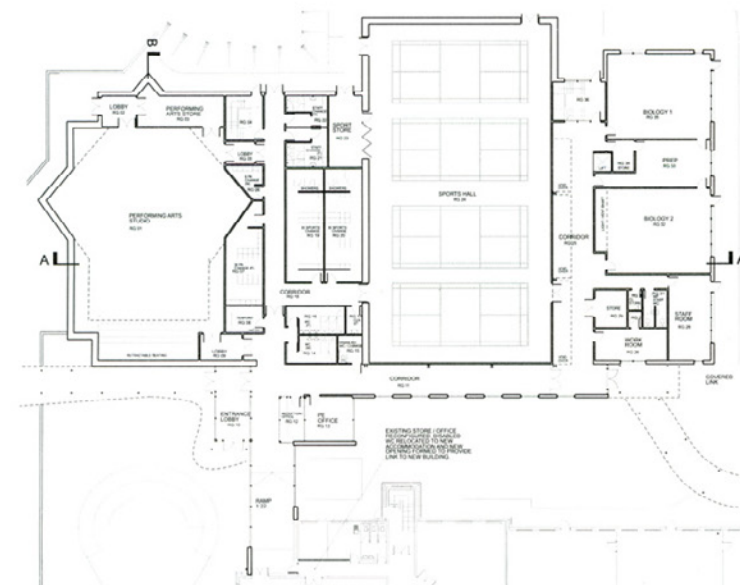
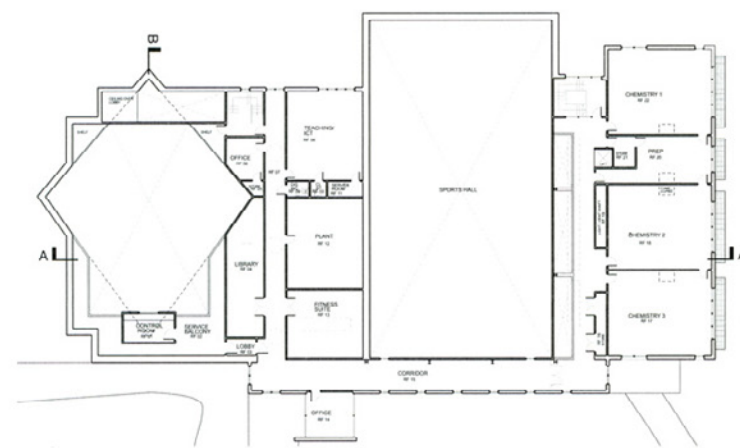
Above Geometric and colour juxtapositions lend an informal quality to the new buildings.

Below The new buildings define a new landscaped social space.

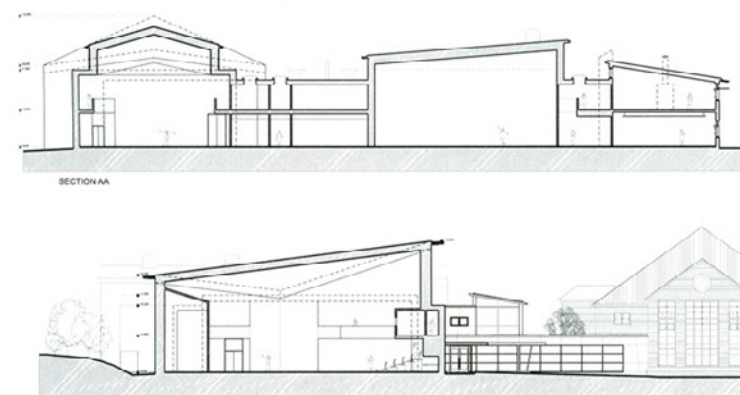
Opposite Performance space and location plan.



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Above Ground and upper level showing the sequence of performance space, sports and science facilities.
Below Long and cross sections through the range of new facilities and performance space respectively.



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Everyone felt included. As a result the new building functions extremely well.

However this is not a straightforward extrapolation of DfES Area Guidelines, like so many new school buildings, a sort of curriculum plan in three dimensions. Instead the building has something of a quirky, unusual presence; indeed it contains a number of design features which are hard to explain and appear a little illogical. For example the curving canopy, which provides the covered external areas requested by the students, is supported on what appear to be wobbly yellow legs, set at every angle except vertical. They may seem a little whimsical, but as architect David Lloyd Jones puts it 'they are intended to lift the spirits: a playful ingredient in a stodgy diet of rationalism'.

There are other such idiosyncracies. The performing arts studio is not simply a rectangular box; rather it is formed out of two superimposed volumes, a conventional rectangular form and a lozenge shape, both of which interlock at 30 degrees to form balconies and recesses internally,



and intriguing planar collisions externally. There is a further major twist to its external appearance which is not immediately apparent. The walls of the lozenge are slightly canted outwards, giving the building's mass a lightness like a stranded boat.

When seen together, these eccentricities create a distinctive sense of place around and within the new building. Yet they are carried out in a subtle way so that the building never takes on an ungainly or disorientating appearance. A combination of natural timber cladding, brickwork and a laminate panel cladding system in a range of complementary colours gives a warm, tactile quality. The wide, naturally-lit and ventilated corridors provide social



places in their own right, which are used to display student art projects.

The lightness of the new building makes a welcome contrast to the lumpy, dated buildings across the rest of the school campus. The whole composition is given visual and functional cohesion by the curving external canopy which runs across the site from the entrance lobby to the perimeter wall at the front, and from the rear entrance across to the science block at the back. Excavated materials are formed into planted mounds on the north-east and south-east sides, which soften the impact of the building in the landscape.

This is a state-funded school building and inevitably there were some financial concessions. Generations of students using the sports hall will have no windows to enjoy views of the sky and green fields – a result of one of those sad compromises school designers know so well. Yet, despite the financial straightjacket, inventive design takes the building beyond the usual measurable and quantifiable criteria which dictated school building during the catastrophic Thatcher years. That's not to say there's not still a prevailing mentality suggesting that children do not deserve or understand good design. Today these orthodoxies, if not managed skillfully, place constraints on good design. As David Lloyd Jones says, 'Every move that a designer makes in creating a school building of this type must be supported by reams of analytical analysis'.

The architect's agenda here is clear: school building needs something more than the strictly rational. If designing a modern school is just about logical decisions, fulfilling the meaningless DfES-speak 'fit for purpose' criteria, then it omits the age-old qualities of great public architecture – such admittedly subjective attributes as harmony, grace, beauty, even (dare we say it) spirituality. You can't measure it, yet it is to be found here; students and staff certainly recognize it and they are delighted.

Mark Dudek is an architect, education specialist and author of the newly published *Schools and Kindergartens – a Design Manual*.



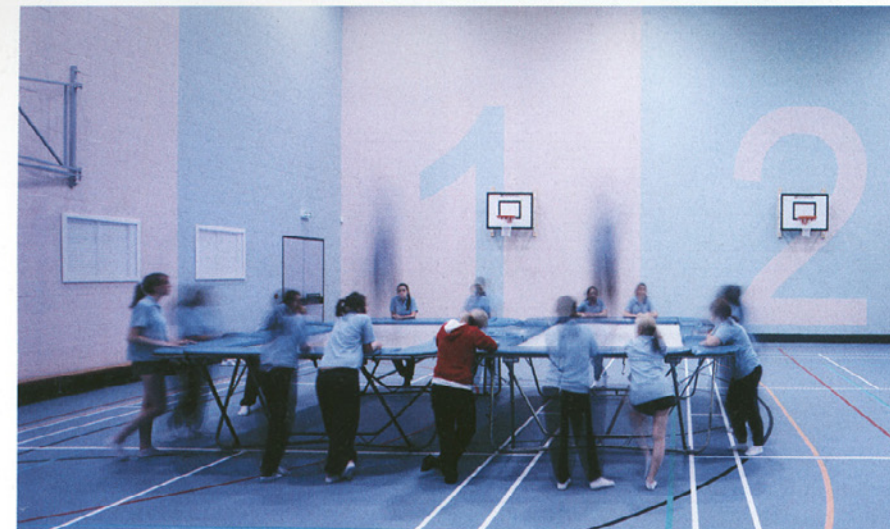
Above External walkway, linking corridor and science laboratory; science, sport and performance facilities form a range of new buildings.

Below The covered walkway forms an entrance canopy and connects the new facilities with the existing buildings.

Project team
Architect: Studio E Architects; design team: David Lloyd Jones, Diana Hare, Ian Crookford; cdm planning: MPA; contractor: R Durnell & Sons; landscape: Jenkins & Clarke; m&e: Downie Consulting Engineers; qs: MPA; specialist lighting: Chris Victory; acoustics: Colin Beak; structural engineer: Price & Myers.

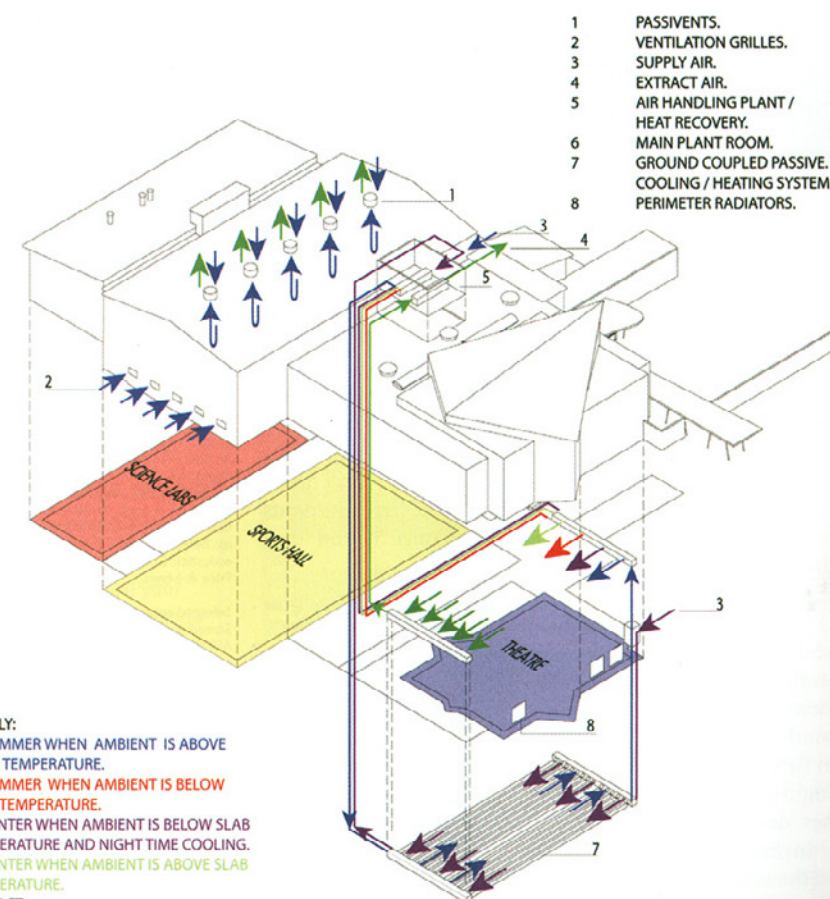
Selected suppliers and subcontractors
Screeding: Advance Screeding; brickwork: ALV Brickwork; Sika rendering: Aquarend Group; formwork: Ashford Formwork; retractable seating: Auditoria Services; ceramic tiling: B Patient; roofing: Briggs Roofing & Cladding; painting: Brook Decorations; carpentry: CP Carpentry Contractors; basketball goals: Continental Sports; wc cubicles and benching: Decra; fire-rated screens: Fenddor Hansen; concrete floors: Finlay Breton; Bauder sedum roof: GRM Roofing Co; lifts: Gartec; flooring and marking: Gymtech; latchway access: HCL; acoustic windows: IAC; canopy roof sheeting: Industrial Construction; landscaping: Kingston Garden Services; laboratory furniture: Klick Technology; plastering, drylining: LTW; canopy and structural steel: Larkin Structures; cladding: Lee Smith Carpentry; brise soleil: Levelux; lighting rig: Lighting Logic; mirrors: MA White; balustrades, handrails: M Steels Engineering; Metsec and support: Medway Fabrications; folding partitions: Movawall Systems; Unistrut supports: On Site Services; tarmac: O'Rourke Construction & Surfacing; groundwork: PJ Denton; electrical services: Paro; Corian reception desk: Premier Joinery; fire protection: Sanders Fire Systems; windows and doors: Sealite Windows; floor finishes: Heckmondwike; air testing: Stroma Technology; matting: Treadsafe Southern; mechanical services: Vivathorn; rooflight: Vulcan Roof glazing Systems; architectural metalwork: WJ Cope (t/a Artsroll).

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Sports hall ventilation

The sports hall, with its four badminton courts, is designed without windows or rooflights for economy and to meet the needs of various sports. Without these conventional elements to source natural ventilation an alternative was needed. The choice lay between a forced air mechanical ducted system or a purpose-designed ventilation strategy using the natural buoyancy of air movement and the pressure differentials caused by wind. The latter course was chosen as it uses less energy and is more cost effective. Air is introduced and extracted, employing pressure differentials, through four ventilation towers (Passivents) located along the ridge of the roof for normal air quality ventilation purposes. The louvres are motorised and controlled by sensors. During the summer additional air can be introduced at low level through motorised louvres located in the north-facing external wall. The air mixes and rises as it warms up and is extracted through the ventilation towers. This in turn pulls more fresh air into the hall.



SUPPLY:
IN SUMMER WHEN AMBIENT IS ABOVE SLAB TEMPERATURE.
IN SUMMER WHEN AMBIENT IS BELOW SLAB TEMPERATURE.
IN WINTER WHEN AMBIENT IS BELOW SLAB TEMPERATURE AND NIGHT TIME COOLING.
IN WINTER WHEN AMBIENT IS ABOVE SLAB TEMPERATURE.
EXTRACT:
EXTRACT AIR FROM THEATRE.

Above/right Sports hall and performing arts studio and diagram showing ventilation and cooling strategy.



Performing arts studio

The performing arts studio provides for a wide range of activities with differing requirements for seating, staging, lighting and acoustics. The studio is accordingly designed to be as versatile as possible while retaining a strong architectural presence. To provide this versatility it is designed without natural daylight. Heating and cooling demands vary widely according to season and type of performance. This type of space is conventionally designed with full air conditioning. Here the heating, cooling and ventilation system is based on low-energy passive solar principles. Beneath the concrete floor slab and surrounded by sand and cement fill is a series of 500mm concrete pipes running the length of the building and connected at each end by header ducts. In summer, or when the heating load of the studio requires, external air is forced through this labyrinth, where it takes up the chill from the ground mass and passes into the studio space. Warm air is extracted at high level. Air can be circulated in this way as required during the day and at night when air temperatures have dropped to lower the temperature of the ground mass and the building structure so that the following day the studio space can be cooled again. During winter, when the studio needs to be heated, the same system is used, but with the air tempered to 18°C. Perimeter radiators along the west wall of the studio provide top-up heat when required. Heating is supplied by a modulating condensing boiler arrangement.

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