

Ingenium

BETT 2008 edition



Room for learning: meet the classroom of the future, here and now.

In 2001, Richmond upon Thames Council assembled a world class team to work on a vision for the classroom of the future.

The result is Ingenium – a completely new approach to classroom design reflecting the demands of 21st Century learning.

Core members of the design team were students from the three partner schools. They told us they didn't want a rectangular box with desks: they wanted to be able to arrange the space to suit themselves; to have the resources they needed to be available on demand; and above all they wanted to feel comfortable, in every sense, in their classroom.

It's long been known that the quality of the environment in which learning – or at

any rate teaching – takes place can make a real difference to student engagement and progress. For our design, what the students said they wanted was plenty of light, colour and air. What we have is a space that is beautiful, bright, exciting and colourful.

Top of the 'essentials' list for students was, believe it or not, a toilet. Traditionally an excuse to get out of an uninteresting lesson, they wanted to ensure that when nature called they didn't have to leave the action in the Ingenium for long!

Educators have long recognised that people learn in different ways. Traditional classrooms have responded less well to the kinaesthetic type of learner – that is, one who learns best when they can move around, with space to practise and model. Here, the balance is redressed: supporting different learning styles is central to the design of the Ingenium.

The learning space lends itself to co-operative, group-based activities, as well as

to presentations and performances. Four colour-coded zones comprising table, chairs and whiteboard are arranged around a central, panoramic whiteboard. Groups can interact and students can work in their own groups as appropriate. All the furniture can be stacked in a special area out of the way at the rear. Full AV and lighting facilities maximise the impact of students' learning on each other, creating a lively, exciting buzz.



The Classrooms of the Future Initiative was made possible through a grant from the Department for Education and Skills. The partner schools in the Ingenium Project are Grey Court Secondary School, Meadlands Primary School and Strathmore Special School, all in Ham, west London. Currently there are two classrooms, operating in Meadlands and Grey Court. We are committed to establishing a third classroom at Strathmore School.

The lead architect was John O'Mara of Future Systems and the classrooms were built by Diespeker GRP of Dewsbury.



These are some of the activities we were involved with in our first full year.

London Live: science day
London Grid for Learning

Royal Shakespeare Company workshops

Exploring African art and artefacts

Hosting a *Building Schools for the Future* group visit

Evening community photography sessions

Training classroom assistants and newly-qualified teachers

KS3 booster sessions for science and mathematics

The Times newspaper production activity

Activities for all subject areas (including Latin!)

The back page: making it happen

World class.

Our main source of ideas and inspiration for making Ingenium what it is today has been Professor Stephen Heppell, formerly of Ultralab.



Stephen is particularly interested in the design of spaces for learning, both real and virtual, and it is his continuing interest in Ingenium that remains a major source of inspiration for us.

We have also benefited from the involvement and support of Apple, Hewlett Packard, Microsoft, Mimio, Orange, Sony and Steljes.

I'll take one.

We're currently investigating marketing Ingenium as a build-to-order product. It's not much of a leap: the moulds for the glass fibre (GRP) walls and fixtures are still available for re-use, and replication costs would drop for each subsequent unit manufactured. Being modular in construction, the layout and facilities available could be enhanced to suit a range of uses. For example, what about a sprung floor so it could double up as a self-contained dance studio? Or a room for companies to explore new ideas in a secure environment?

Thinking ahead.

Making the most of the Ingenium involves understanding the special opportunities it affords. So all teachers using the space discuss their requirements with an experienced curriculum adviser, who is able to suggest ways in which the room can add value to the learning experience and offer another pair of hands if needed for the



activity.

As well as the teaching staff, the students of the partner schools continue to be a source of ideas and advice on how to develop the resource and maximise its impact on the rest of their school.

Look – no wires.

Anytime, anywhere learning is a well-worn phrase these days, and we wanted that philosophy to apply inside the classroom as well as outside. So all our equipment that can operate on batteries does, and our networkable equipment all communicates wirelessly. Of course, there are power and network points around for when you really need them, but most of the time we're glad not to have the clutter, and the restrictions of being tied down to one part of the room.

A space for all seasons.



When the weather's warm, we roll the doors back and the space outside becomes an extension of the classroom. That means we can make the most of a fine day, not just for routine activities but also for those

times when we just want to have fun!

Hope to see you.

We welcome visits by individuals and organisations that are interested in new spaces for learning and teaching. In the first instance, please contact the school at info@greycourt.richmond.sch.uk

Behind the scenes

Construction

The classroom is made from two 'shells' of prefabricated GRP fixed to a steel skeleton. The gap between the layers accommodates a loom (holding all the wiring) as well as insulation material. The whole unit is assembled on site and connected to existing amenities (gas, electricity, water and networking).

Environment



Heating is provided by a condensing gas boiler feeding an underfloor pipe running the perimeter of the classroom. Ventilation is via servo-controlled floor and ceiling vents, monitored for temperature and CO₂ level by the master environmental control program. Lighting is daylight balanced and semi-automatic, enabling a wide variety of moods to be created. If it starts to rain, the ceiling vents shut automatically. Manual adjustment of most aspects of the environment is possible.

Facilities



The tables and chairs are an original design by the Finnish architect and humanist Alvar Aalto. Whiteboard surfaces are ceramic in a metallic mesh and are suitable for use with magnets. The seats round the perimeter lift up for student storage. There are eight large store cupboards in the rear as well as a sink, drinking fountain, student toilet, adapted toilet and amenity store. There is a hearing induction loop installed and access to the classroom is via a wheelchair compatible ramp. The range of learning resources available is being constantly expanded and updated, but typically consists of a projector for the main whiteboard, digital cameras, laptops, classroom voting system, portable IWB with Bluetooth slate, satellite TV, and video production including colour keying.