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NOT SO POOR RELATION

Design Engine's work to transform and update Oxford Brookes University builds on a reputation that makes the former poly considerably more than just a second fiddle to its illustrious neighbour. Clever design matches academic success

Words Hugh Pearman | Photographs Nick Kane

There's the Oxford everyone knows, or thinks they do from saturation exposure in films, TV dramas and documentaries down the years. In this context, even a relative newcomer like St Catherine's College ('Catz') by Arne Jacobsen – this year celebrating 50 years since its foundation – is hallowed. The received image of the city is all golden stone, quads, punts and floppy hair. But what about the academic Oxford that doesn't appear on telly? What about a seat of learning that is nearly 150 years old? We really should know more about Oxford Brookes University. And we will: the first phase of an ambitious £132m rebuilding programme by architect Design Engine is now complete.

Oxford Brookes followed a traditional UK pattern: founded as an art school, later merging with a technology school (John Henry Brookes was first principal of the merged organisation in 1934); moving to the outskirts to build a late 1950s campus as Oxford Technology College; then becoming Oxford Polytechnic in 1970, finally winning its university status along with a wave of other former polys in 1992, part of the John Major Conservative government's expansion of higher education.

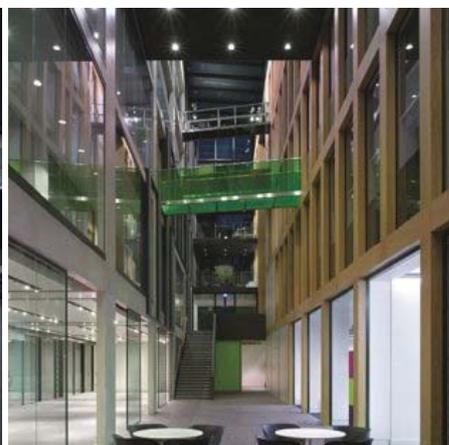
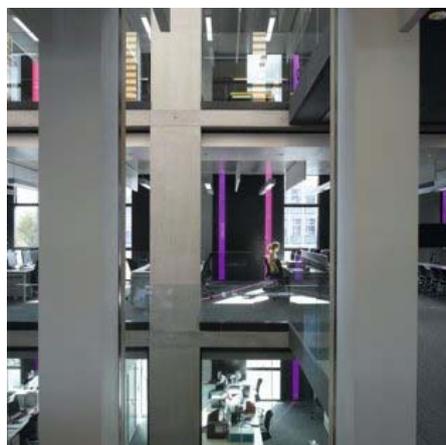
Like other former polys, Brookes (as it is generally known) has an architecture school in its built environment department; but unlike many of its 1992 peers, it enjoys a gratifyingly high reputation across all subject areas, typically coming top in the new universities' league tables and well in the top half of the tables overall. In contrast, its Cambridge equivalent, Anglia Ruskin University, is nearer the bottom of the rankings. But for all its success, Brookes has, physically, been strangely invisible.

Its two main campuses are out on the eastern edge of the city, in Headington on either side of the London Road. The entrance to the Gypsy Lane campus – the one considered here – is tucked apologetically down a side road of that name. That's very Oxford, and might be all right for the likes of Catz (see page 33), but these days a new university needs to be seen. Besides, most of the students arrive from the west, the city centre direction. So a new ramped entrance piazza from the London Road is being built, leading to an imposing new core building to the campus, containing a library, lecture theatre and students' union among much else – including the informal 'touch-down' spaces for laptop working and group discussion that are now a key part of many universities. So the entrance will move from one end of the campus to the other. That's still at the raw-concrete stage but the first building to be finished as part of Design Engine's programme contains the architecture and built environment school.

Design Engine is a Winchester-based practice, founded in 2000 and headed by Rodney Graham, Richard Jobson and Richard Rose-Casemore. That they are far from regional in reach is proved by their 2003 competition-and award-winning British Embassy in Sana'a, Yemen, as much as by such projects as housing and a school in Guernsey, and a refurbishment for the London School of Economics. Winchester University has provided several projects, but Design Engine stepped up a gear when it won the Brookes job against some serious competition. They won it in classic fashion by going for broke: you don't just want a new building here and a new building there, they said. You need to sort out your masterplan radically, get demolishing, go back to first principles.

This is what they have duly done. The original campus was designed and built from 1955 to 1961 under city architect EG Chandler, fully opening in 1963. Therefore it interestingly just predates the wave of posher bigger-budget 'plate glass' universities and colleges that began with Sussex University in the early 1960s (and Oxford University's own all-new college, Catz, 1960-64). In its way it is as orthogonally rigorous as Catz (though in parts considerably higher-rise); the high and low slab blocks laid at right angles to each other and defining generous courtyard spaces, originally finishing in a long row of single-storey workshops along the back. Ad-hoc additions down the years had done their usual work, obscuring the clarity of the original and reducing usable open space.

Increasing student numbers meant overcrowding at pinch points – such as a blind corridor off to the right of the main recreation which is the main pedestrian route through much of



of single-storey workshops along the back. Further additions down the years had done their usual work, obscuring the clarity of the original and reducing usable open space. Increasing student numbers meant overcrowding at pinch points – such as a blind corridor off to the right of the main reception which is the main pedestrian route through much of the complex. This existing entrance lobby isn't too bad apart from being cramped: its forthcoming role as side door makes sense.

Design Engine's response, following and modifying a 2007 masterplan by RMJM, judiciously prunes out some later additions, returns to the 1950s plan, and re-energises it with new buildings and a new circulation sequence. The orthogonal plan is made to work harder by sliding new buildings alongside the old and interlocking them. By upping the density of the built forms, it is possible to provide very generous public spaces – either new, as is the case with the entrance piazza, or reconfigured, as with the central courtyard.

Key to the whole plan is the new large entrance building, from which will radiate what Jobson calls the 'pegs' of new and refurbished buildings. In its thinking, this is very like the classic airport when the time comes to expand: new and upgraded habitable jetties must be integrated with a bigger and better central terminal. Where the original Chandler plan comprised essentially discrete linked buildings, the Design Engine plan attempts the double task of homogenising and bulking out the built forms while making them more permeable.

When I visited, building work was in full swing on the new ramped approach piazza and central building, on the site of the now-demolished original range of low workshops. I was struck by the scale of the work: this is anything but apologetic. In its raw concrete state the 'forum', with its hanging lecture theatre (reminiscent of the 'egg in a box' auditorium of London's Royal Festival Hall) and impressive cantilevers, looks set to achieve the necessary presence that a confident academic institution should want. As Design Engine's associate director John Ridgett says of this muscular interior: 'It's a sculpted space, not just a box of gap'.

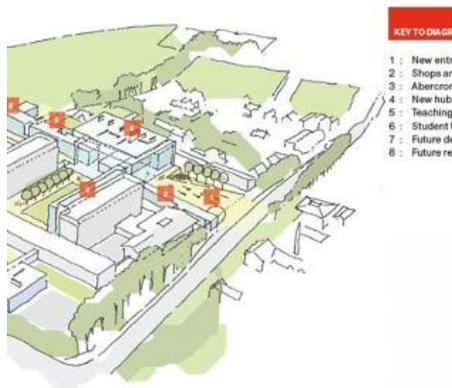
Planning objections from nearby residents meant that the bulk of the new central building had to be reduced and broken down towards the rear: this, I think, has been a good thing urbanistically and coincidentally gives the building's emerging facade here something of that acceptably overwrought in-out 1950s feel.

The entrance with its flanking colonnade doubles as a natural ventilation system inlet for the main lecture theatre: a labyrinthine series of air inlets beneath the plaza will supply cool air in summer and warmer air in winter. A rooftop chimney will exhaust hot air in summer and reclaim heat in winter. Overall the building is, as you'd hope, very energy-efficient, targeting a BREEAM 'excellent' rating. The ramped plaza delivers visitors to first floor level, from where you continue round the complex, dropping down or stepping up as necessary. Or, staying in the open, a broad diagonal cut-through at the main corner is made into the relandscaped main courtyard, right at the point where a now-demolished 1970s building previously lurked.

At present the construction workers' village occupies most of the courtyard but the first phase of the development – a new blade-building slid alongside the eastern one of the original pairs of four-storey slab blocks – is finished and there to be seen. The Abercrombie Building, as it is known, now has an atrium street formed between the old and new blocks, with the new one maintaining the generous ceiling heights of the old but with wider openings to the atrium. The original very tired exterior cladding has come off the atrium-facing side of the building, and the rough concrete frame clad in American white oak. The proportions of the original crude frame are however noble; this device works well. In contrast, the concrete quality of the new building is exceptionally good, and is left exposed where possible. Bridges of two types span the atrium: access bridges of partly-structural glass (the single-piece coloured glass balustrades serve to stiffen the bridges which also have glass floors on a light steel framing) and 'study bridges' – effectively broad decks at either end of the space. These are sitting-out areas, suitable for discussions or teaching in small groups. Large studios, seminar rooms and academics' offices give onto the atrium: either via high glass balustrades or (where sound isolation is necessary) full-height glazing.

Emerging from the cramped corridor of the existing internal route into the broadened building feels good. So does the way existing studios in the built environment schools are just left as they were, but opening onto a different world, a modern version of themselves. Externally, the high-performance cladding system – predominantly mid-grey – has that modish joggled-fenestration, coloured-glass insertions look to it. It's a trope of our times and it's perfectly OK but it's not exactly original. However, one must remember that these flanks of the 'pegs' are not the main event, and will defer to the considerably more adventurous facades of the new main building. These are only just starting to become apparent so judgement must wait: the computer renders make them look rather too busy but I suspect that as built, their size and scale will make better sense. Design Engine's plans to connect the various spaces visually, inside and out, through a snaking ribbon of oxidising steel, are promising: the parts already installed have considerable presence.

Oxford's academic poor relation, then – the one-time horny-handed tech college alternative to the privileged elite in town – is transforming into something rather interesting. Some lesser new universities once put too much faith in supposedly regenerative architecture, but here the academic excellence came before the big build. It's the right way round. Design Engine is responding not only to the inherited built condition, but to the other known condition of high quality teaching and engaged students. If the original client and architect – Brookes and Chandler – could see the way their creation is



regenerative architecture, but here the academic excellence came before the big build. It's the right way round. Design Engine is responding not only to the inherited built condition, but to the other known condition of high quality teaching and engaged students. If the original client and architect – Brookes and Chandler – could see the way their creation is turning out, I reckon they'd be quietly satisfied.

Database

Oxford Brookes university

Facade:

The facade design refers to the concept of a glazed box (the library) at the heart of the campus with a series of solid 'pegs' intersecting the box. This relationship allows buildings with different functions to come together, one 'peg' being the Abercrombie Building. The extension and existing building are separated by a fully glazed atrium that links them visually and physically. The facade arrangement includes a complex layering of structural and planning grids to offer flexible planning behind.

The different facade types used in the new building include:

- > Fibre-concrete cladding: A unique cladding material consisting of 13mm thick reinforced concrete cladding panels fixed back to a rain-screen support system.
- > Unifised curtain-walling: SSG curtain-walling with fixed clear and coloured glazing, manual and automatic opening windows and fibre-concrete cladding. Factory-assembled units installed in 2m by 4m sections has ensured a high quality product and fast installation.
- > Pre-cast exposed concrete cladding: Reveals on the outside the material used for the structure.
- > Coloured glass rain-screen cladding: Focchi developed a bespoke system ensuring the panels remain in place if the bonding system fails. Focchi also used this concealed clip system for the SSG glass units.
- > Glass louvres: Proprietary system by Colt offering efficient ways to open the top of the atrium for ventilation.
- > Sky-frame sliding door system: Very slim framing members with large areas of opening panels.

Design Engine is working closely with facade specialist Focchi from Rimini, which is designing, assembling and installing all the facade except the pre-cast concrete cladding. This has been made in the innovative Laing O'Rourke precast concrete factory near Nottingham.

In numbers:

£132m overall cost; £16.2m for first phase; 4,800m² in first phase; 3 'pegs' of new buildings; 1 new core building; 18,167 students at Oxford Brookes; 47 out of 122 Sunday Times ranking

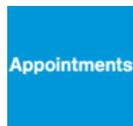
Credits:

Client: Oxford Brookes University
 Architect and interior designer: Design Engine Architects
 QS: Turner and Townsend
 Contractor: Laing O'Rourke
 Civil and structural engineer and facade consultant: Ramboll UK
 M&E engineer: Grontmij
 Landscape architect: Land Use Consultants
 Acoustic consultant: Sandy Brown Associates
 Signage consultant: Holmes Wood
 Lighting consultant: Speirs and Major
 Access consultant: QMP
 Planning consultant: West Waddy ADP
 Original masterplan: RMJM

Facades and external doors: Focchi
 Green roofs: Blackdown
 Flat roofs: Rock
 Maintenance and access systems: Façade Hoists
 External works: Laing O'Rourke
 Concrete frame: Expanded
 Pre-cast concrete stairs: Bison
 Structural steelwork: London Engineering
 M&E: Crownhouse
 Platform lifts: ECA
 Specialist steelwork: Glazzards
 Glass bridges: Littlehampton Welding
 Ceilings and drywalls: BDL
 Internal cladding: SAS
 Joinery: MJM
 WC fit-out: MJM
 Internal doors: SJ Eastern
 Sliding partitions: Alcowall
 Ironmongery: Timbmet Door Solutions
 Access control: Contract Security
 Fire shutters: Cooper Fire
 Raised access flooring: Kingspan
 Fire stopping: Kilnbridge
 Lighting: DAL, Zumtobel, Enliten, Encapsulite, Insta
 Audio visual: ProAV
 Blinds: Levolux

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