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LIGHT INDUSTRY

Reworking local urban and industrial morphologies for a human scale and young imaginations, this primary school in Wakefield transforms anomie into engagement

Sandal Magna
Community
Primary School,
Wakefield, UK
Sarah
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Architects



With a change of government in the UK last year came a significant change in attitude to design and, specifically, to the design of schools. Finding political distance from the (albeit relatively) pro-design Labour position that the Tony Blair years established coincided neatly with the back to basics, there-was-nothing-wrong-with-my-chalk-and-talk-education stance of the Conservatives. Almost overnight the school-building bubble burst, with aspirations cut even deeper than the funding of the transformational new schools programme.

And so it is that already, after only a year of standing, the Sandal Magna Community Primary School feels redolent of another, bygone era. For this small, provincial one-form-entry primary school for 236 local three- to 11-year-olds wears design ambition on its sleeve.

Sandal is a quiet residential neighbourhood that lies south-east of Wakefield city centre in West Yorkshire, a short walk through the old mine workers' cottages, warehouses and factory sheds to the major new art gallery, the Hepworth (AR July 2011). The primary school serves the community that developed in the 19th century to the east of the original Sandal Castle settlement, which now includes Pakistani and more recent Eastern European migrants. A couple of streets away, two end-of-row terraced cottages have been neatly converted into a mosque. Sandal Magna has replaced the Victorian board school that had opened 120 years earlier.

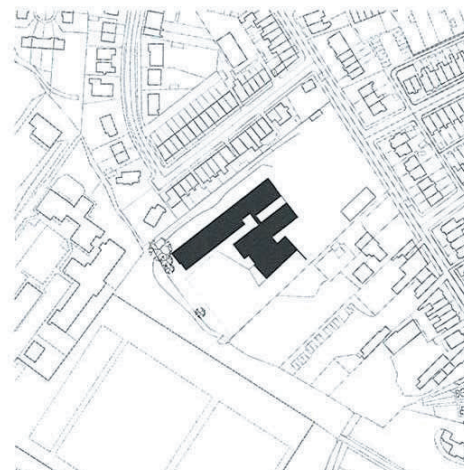
Thinking of the stolid grandeur of board schools, we readily get a sense of the moral and educational attitudes behind them – a belief in light and air, with lofty bright classroom spaces; of focusing minds on the 'master' teacher imparting knowledge of the world from the front of the class, with no low-level windows to distract pupils' concentration from the oratory; and of the importance of fresh air and exercise with access to grounds to run around but not to learn in. While applauding these attitudes to space and light, approaches to learning have opened up to take in a far wider range of possible learning experiences with the recognition that children learn all the time, not just when being instructed. The head teacher, and driving force behind this project by all accounts, Julia Simpson, was very much in favour of replacing the Victorian building, finding the large classroom spaces over-scaled and restrictive; cut off from the outside, and lacking in intimacy and warmth.

The Victorian schools were proud emblems of the new social institutions that entered and structured our communities during an era of industrial reform. An equal pride and vigour emerged in the post-war years with the creation of the welfare state and the leaner

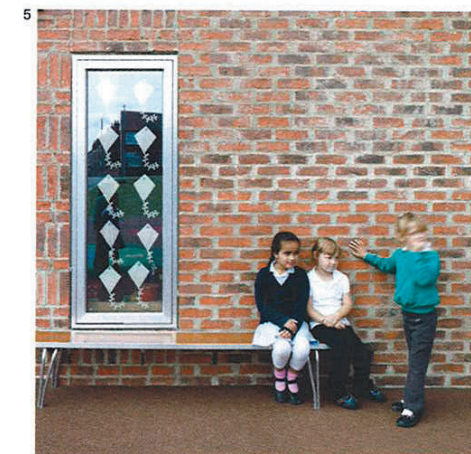
Modernist structures that were built for it. Now we not only expect these services as a right, but we recoil from their institutional aspects that can eclipse the core mission of the service itself. We do not like to feel intimidated and done-to by 'authority'. We no longer trust it, in the case of local authorities in particular. Instead we seek openness, identity, recognition, tolerance, flexibility and comfort from our institutions, all of which can be reflected and enhanced, or overlooked and dismissed in the buildings that house them.

The Sandal Magna strives to shed authoritarian notions of the school as separate from, and better than, the community it serves, to be a place within and for the community. The architecture is a humane response to the aspirations of a school and the needs of the community. You feel it as soon as you walk into the reception in which none of the senses suggest that you have stepped into institutional, or alienating, territory. The materials, the light, the scale, the view and the smell all invite you.

The world you are welcomed into is one full of invitation and narrative, and the invitation for narrative; potent devices in a primary school. The stories start right here in the centre of the school, where a timber-clad tower rises at a slight but discernible angle out of the reception area, through the painted timber-boarded ceiling and high up above the single-storey school buildings. This is an elegant reinterpretation of Wakefield's industrial chimneys as a bell-tower housing the refurbished old school bell that is still



location plan



1. (Previous page) fluidly planned, humanely scaled and inviting, Sandal Magna aims to dispel notions of educational authoritarianism
2. Unlike its more stolid and homogeneous Victorian predecessors, Sandal Magna's tripartite cluster of low, linear elements spreads around its site. Recalling Wakefield's industrial chimneys, a timber-clad campanile anchors

the composition in the landscape
3. Low timber bleachers run along one edge of the playground, providing a softer surface for games
4. Courtyard spaces form enclaves for play and costume dramas
5 & 6. Cross walls of the linear blocks are composed of red fair-faced brick. Subtle textural bonding variations break up the mass of wall planes

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7. A timber-decked 'backstreet' runs along the edge of the playground. Various articulated timber facades reflect the internal programme
8. Factory-like rooflights scoop light down into the tall volume of the sports and assembly hall

used every morning, pulled from a fluffy rope end in reception.

The plan too finds its narrative structure in the historical context of the place, from the surrounding street typology of 'fronts' and 'backs' found in the rows of coal miners' terraced housing. Classrooms are conceived as the house 'fronts', opening directly on to external learning areas and their 'backs' opening on to a corridor (internal street) lined with the ancillary support spaces (group rooms, pupils' kitchen area, stores, IT area and library) that visually animate the 'backstreet' to the main playground through their articulated timber facades that change in treatment and rhythm in accordance with the internal programme. And in one literal moment of the narrative interpretation, a timber garden storage shed nestles within the facade.

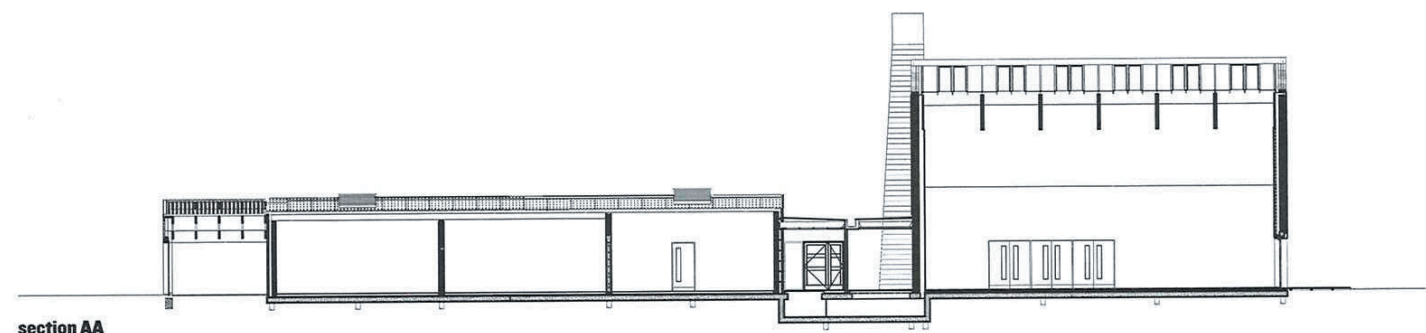
The obvious question at this point in the story is how far do you have to take a typology and how persistent do you have to be in its pursuit to create a rich and meaningful environment? In Wigglesworth's work the tension between the conceptual and pragmatic is often laid bare, perhaps because a focus on resolution could risk compromise. But if the story is strong and enthralling one longs for the rhetoric to stop and resolution to be gained through filtering and editing.

The street trope continues throughout the school, both internally and externally, with strips of hard landscape splitting the layout

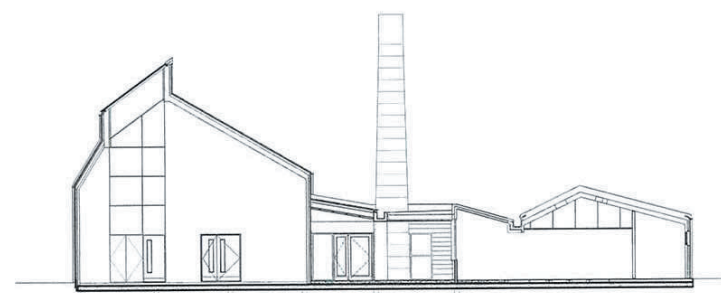
'The plan finds its narrative structure in the historical context of the place, from the surrounding street typology found in the rows of coal miners' terraced housing'

into three distinct bands of building, connected via an internal cross street that incorporates the entrance reception area. This linear plan has its grain perpendicular to the street from which you enter the site, along one of the paved landscape strips. This gives the rooms a roughly north-south orientation that is ideal for solar control. It also creates a high surface-to-volume ratio that seems anomalous with the low-energy sustainable design philosophy of the school but is offset by the ground-source heat pump, giving a low calculated carbon footprint for space heating of 3kg CO₂ per square metre.

The narrative continues through the material expression in the building. The cross walls to the linear blocks are all fair-faced red stock brick that are the closest match Wigglesworth could find to the existing school bricks. Some of these old bricks are used in the low gabion retaining walls on the

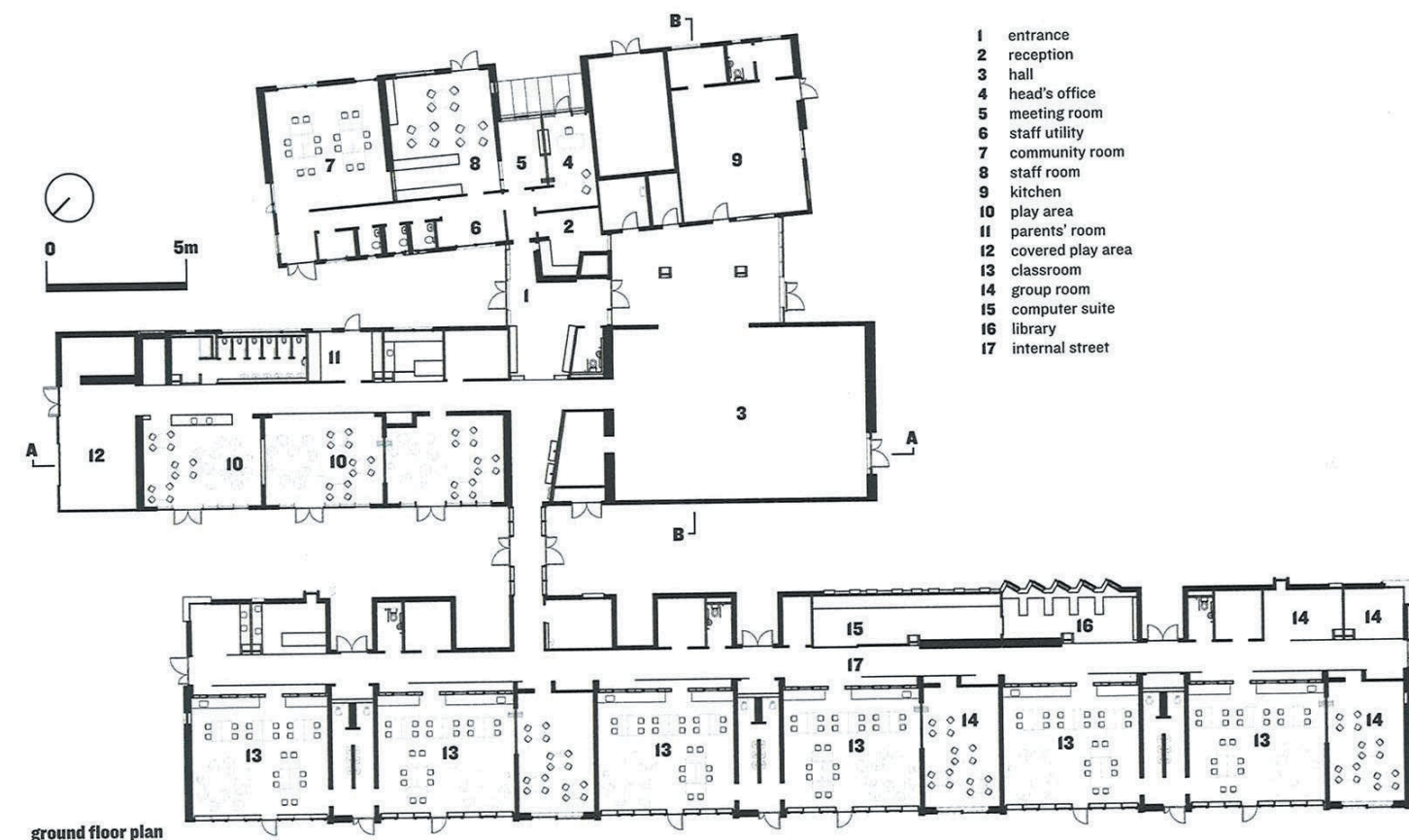


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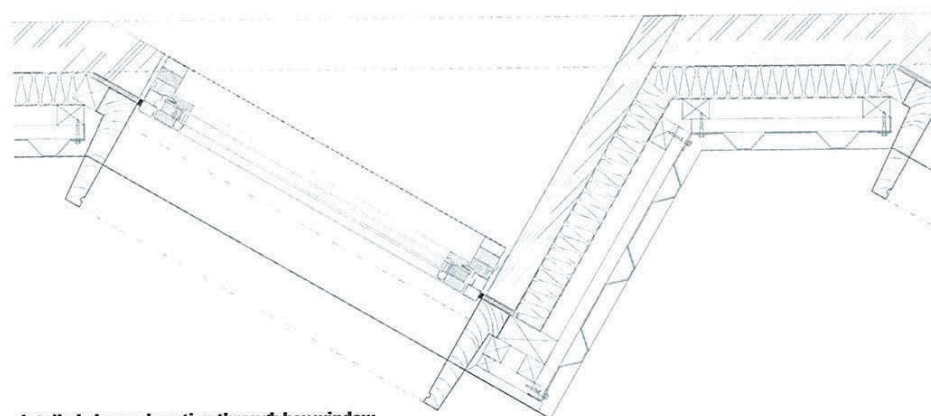
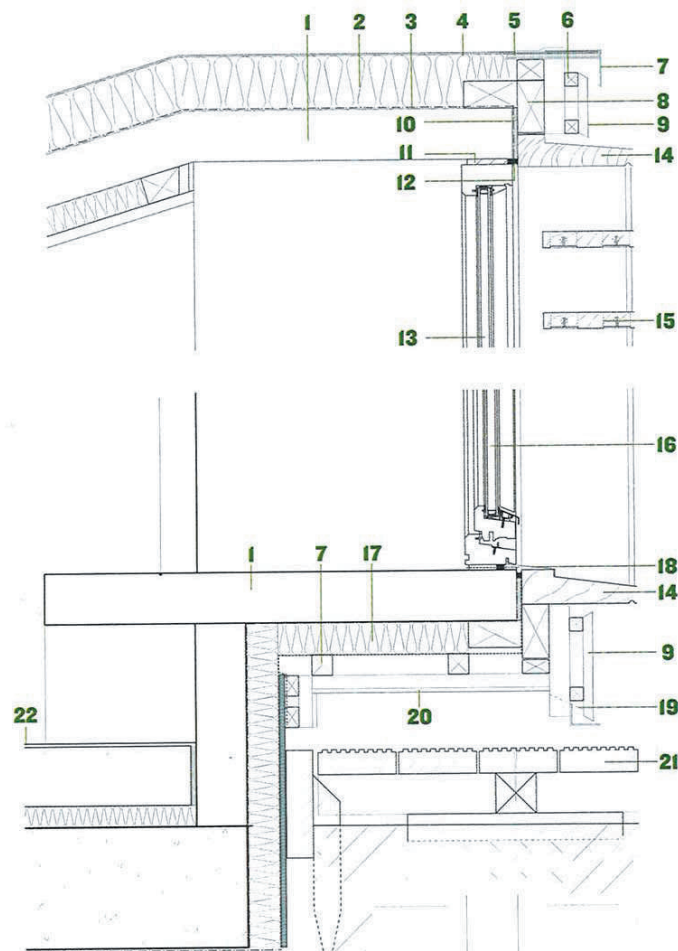
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ground floor plan

- 1 entrance
- 2 reception
- 3 hall
- 4 head's office
- 5 meeting room
- 6 staff utility
- 7 community room
- 8 staff room
- 9 kitchen
- 10 play area
- 11 parents' room
- 12 covered play area
- 13 classroom
- 14 group room
- 15 computer suite
- 16 library
- 17 internal street



detailed plan and section through bay window



- 1 cross laminated timber
- 2 100mm insulation
- 3 vapour barrier
- 4 roofing membrane
- 5 ply support
- 6 softwood battens
- 7 aluminium edge trim
- 8 50 x 100 softwood framing
- 9 18mm mitred edge cedar board
- 10 10mm insulation
- 11 planed timber packer
- 12 10mm silicone sealant
- 13 fixed window
- 14 cedar window board reveals
- 15 cedar slats to form louvres
- 16 openable window
- 17 60mm insulation
- 18 aluminium flashing
- 19 insect mesh
- 20 sheet cladding
- 21 external decking
- 22 rubber tile flooring

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north-west classroom wing, where the site begins to drop – Sandal can be seen inscribed in some of the coping bricks on top of this wall, a moment of thoughtful detail that keeps the thread of the history on the site possible.

The predominance of brick within the building has a marked and grounding effect upon the school. The use of brick also brings thermal mass that helps to stabilise temperatures and in the very fine hall, the beautiful perforated bonding pattern of the higher level brickwork provides acoustic dampening. The brick is complemented by the bare cross of laminated timber that spans between the heavy cross walls, forming the northern pitch to the classrooms.

With the street typology creating structure to the building and materials bringing texture and warmth, it is light that brings the whole to life. Contrasting qualities of light add character to different spaces in the school and set apart the 'special' places such as the hall, dining and library areas. The classrooms are all north-facing and not all as well-lit as they could be, requiring artificial light even on a bright sunny day, which compromises the carbon target (19kg per square metre for electricity). However, the animation of the 'backstreet' corridor through the south-facing rooflights along its length creates a positive contrast. There are hints of the Victorian legacy in the neutral regular lighting of the classrooms, separated from the bright distractions of display pinboards, specialist activity and withdrawal spaces.

The library is a delight among these. Not much more than a bay off the corridor, its rhythm and tempo set it apart. Full-height triangular bays articulate the playground wall, creating a string of low-level window seats to the long edge of the room. A simple shelving system for books makes up the dividing partition to the corridor, introducing another scale and texture. There is a poem by a pupil, written in exquisite handwriting and framed on the library wall. One passage reads:

'I can see the children playing outside.
There are seats near the window and
there are different shapes and sizes.
There are lots of books I like to read.
I can see pictures in my mind about
the stories I read.'

And it concludes: 'Without the library
I wouldn't be writing this poem.'

These simple observations tell of much of the pleasure, and success, of this school. Reminiscent of the best of the Hampshire Schools lineage, it is through attention to scale and detail, to character and place, that the building invites enquiry and engagement from its users, just as a good book does from its readers. As the general feeling of the internal spaces is domestic, so the exterior evokes workshops and factories. The whole adds up to an artful composition that romantically reinterprets the typologies of peripheral urban settlements to create a secure and nourishing environment that is both familiar and distinctive.



**9. Projecting window
bays are appropriated
for gossip and relaxing.
Polycarbonate walls
are both tough and
translucent; materials
generally have a dignity
and robustness and
are thoughtfully applied
and combined
10. Classrooms are linked
by a long, luminous
internal street
11. Typical classroom**

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