

## **Mutating Typology**

### **Seven Fountains Primary School, Kokstad, Kwa Zulu Natal**

Architects: East Coast Architects

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Strap: community school

Pull quotes:

- The architects conducted a skills and materials audit of the area
- Reflecting the nature of the present day South African society, economy and culture, the school is a robust hybrid

If one thinks in colonial terms the idea of community schools goes back to Henry Morris's principles enshrined in the notion of Village Colleges of the 1920s and 1930s. This idea was further developed in the 1960s in Britain as community schools which are institutions that are open beyond normal school hours for children, parents and even the local public at large. The intention was to ensure that families are drawn more into the school. Of course if one delves deep enough into cultures outside Europe, perhaps this conception may well have a longer history than in Britain. Indeed, with ever declining educational standards in England and general apathy, we in South Africa have a better chance of realizing the ideals of community school than there, and extending this notion beyond the British model. It is in this respect that the efforts of East Coast Architects in designing and building the Seven Fountains School assume special importance. It seriously takes on board the ideas of community empowerment, sustainability in terms of materials, methods of construction, water harvesting, passive solar energy, permaculture garden for growing vegetables, the use of building as a pedagogic tool for children and local people and as a catalyst for skills-formation in the community. It is a pioneering project that effectively interrogates the acceptable norms in school building and it provokes a near revolution in experimenting with building materials, appropriate technology and constructional processes. All this in turn has led to applied research on compressed earth blocks, energy conscious design, water conservation and recycling.

Set in the heart of a housing area traversed by an east-west and north-south pedestrian route, the elegant layout (Figure 1) makes a community square at the crossing. This square is then surmounted by the school, the permaculture garden, school and community playing fields. The school in turn is organized around four distinct courtyards for Grade R, Grade 1 and 2, Grade 3 and 4 and Grade 5 and 7 with a basket ball court. This arrangement ensures the young children may not be overwhelmed by the older ones. The general orientation of the classrooms is on the north facilitating winter solar gain and the access covered ways facing the courts are on the south (Figure 2 and 3). The summer and winter thermal strategies are intelligently conceived and are shown in the sections (Figure 4). The architects conducted a skills and materials audit of the area. Adobe construction was prevalent but as always stigma towards this form of construction needed to be overcome. Furthermore, the sundried adobe blocks made up of clay rich soil used by the locals and the detailing needs to be improved. A series of earth building workshops were held and fifteen local women were trained to produce 16, 000 adobe bricks to build the double storey multi purpose class room (4a in plans, also see detailed section, in figure 5). Dolomite stones excavated from the site were used for plinths terraces, retaining walls and pavings in the court yards where necessary. Gum poles and locally available thatch have been used where this was appropriate and the rest was built of load bearing construction from 100,000 clay bricks sourced from local manufacturers and using locally available contractors and labour force. Apart from passive solar design, there are provisions for solar water heating and photo-voltaic cells for street lighting of the perimeter. Another energy conserving measure is the provision of the built-in insulated hot boxes to cook rice and samp. Harvested rain water stored in underground reservoirs is pumped up to elevated water tanks by a judicious use of playground equipment such as the see-saw and the round-about supplemented by windmill pumps. There are also measures to control unnecessary use of electricity by not providing switches at entry to classrooms but at the area where the teacher operates so that he or she switches the light on only when needed. All these complex systems are well understood by the teachers and there are demonstrative models to explain how they work both to children and the visitors.

All in all this is a well conceived and thoughtfully executed project that commands the respect and affection of children, staff and local folk. Reflecting the nature of the present day South African society, economy and culture, the school is a robust hybrid consisting of traditional construction as well as some contemporary ones. The layout is resolved well in terms of circulation of public, visitors, children and staff. The *promenade architecturale* is in fact the locus of the layout. The hierarchy of open spaces functions effectively and as can be seen from the elevations and sections, the building sits happily in the terrain (Figure 6). Instead being a collection of idealized objects placed on the land, the layout reveals how the buildings grow out of the site, in the process amplifying and intensifying it. At a time when buildings have become so homogenized, it is refreshing to see a work that is based on the contingencies of local society, culture and modes of production. The project in its entirety is no less than a social landscape. It is a form of resistance that eschews the ideal in favour of the real and takes a position in relation to emergent typology of school buildings. Instead of accepting the stereotypical conjunction of programme and form, it inflects the paradigm to suit the reality of changing social pattern, available technology and hybrid nature of our institutions.

Nevertheless, one wonders whether the disparate ideas on sustainability, materiality, empowerment and the marshalling of local skills cannot be brought together much more cohesively and holistically than it is. Do we not know of so many overtly sustainable projects which simply end up being not more than a catalogue of sustainable devices? After all, one of the major roles of our profession is to bring coherence and order rather than merely give 'the pencil to user' as it were in the name of participation and empowerment. Undoubtedly, much enabling has been undertaken by the architects in this project but pioneering participatory work by architects such as Giancarlo de Carlo, Ralph Erskine and Lucien Kroll has suggested that participation demands much more by way of raising the sight of clients and users than conventional projects do.

The arbitrariness with which forms come together, for instance, the relation between multi-purpose classroom and the rest of the building, both in plan and in the third dimension, is also questionable. Here one is not implying a criticism of some of the organic forms used, but the interrelation between them which is resolved with great skill in many schools we know, for instance, the Strawberry Vale School in Victoria, British Columbia, by Patkau Architects. In this building one notices the considerable reciprocity between small classrooms, the large multipurpose rooms and the internal circulation (Figure 7). The East Coast Architects come very close to doing so with respect to open spaces between buildings and the ordering of movement but the same resolution is not there in the interiors. While the problem of daylight in the classrooms is discussed by the architects and the consultants, they have conventional fenestrations. One misses the richly varied internal spaces that we know is possible in school buildings. Furthermore, surely, even in the harsh light we get in this part of the world, a luminous, visually calm classroom, amplified by the tactile quality of the materials used is possible.

One certainly appreciates the architects' engagement with the crafts of construction and the wish to escape the tyranny that building industry can be. But surely there is a potential here for engaging more with the expressive potential of materials and for transforming constructional necessity into poetry.

The matter of harmony between parts cannot simply be dismissed as being a western conception as this is no more so than the conception that abstraction is western. We all know that abstraction can be traced back to Islamic art and even to African art and artifacts. Neither is the need to get discrete elements to cohere a mere western preoccupation. In all architecture it touches the very matter of the act of dwelling or 'being at home' understood instinctively in all African settlements but it took sometime for European philosophers such as Heidegger and architectural theorist such as Norberg-Schulz to articulate it.

Perhaps the relative lack of unity in the formal aspects of this building is something one encounters in any process that undergoes mutation and that subsequent projects will get increasingly more refined. Therefore one looks forward with eagerness to future outputs from the East Coast Architects who have built empathetically and shown an outstanding commitment to our profession's possible contribution to achieving a better South Africa.

We thank Professor Raman for taking time out to have a look at 7 Fountains Primary School and for the many positives he has picked up on. We do however feel it necessary to respond to some of the negatives.

The physical, political and economic context within which 7 fountains was born:

- An inspiring but 'traumatised' school community that had found itself evicted from its host farm (7 Fountains) after 65 years in 2003 when enrolment went from 14 to 250 shortly after occupation of 4500 RDP houses at the nearby Shayamoya Township outside Kokstad KZN – Only one primary school had been built in the new township.
- A surrounding community, severely economically stressed by high levels of unemployment (65%), migrancy (men work in Port Shepstone or Pietermaritzburg), HIV/Aids (up to 70%), cost of utilities (R400/month for heating paraffin for un-insulated houses) and separation/alienation (Shayamoya is on the edge of town – a typical 'location').
- A broader Kokstad community that seemed to be part 'hustle and bustle Transkei trading town-Lusikisiki' and part 'congenial midlands, dairy/beef farming town-Rosetta/Nottingham Road.
- A hostile and extreme climate where learner absenteeism rises to 30% during winter months and snow falls on high ground at least annually. Summer sees temperature rise to 35+ and fierce thunder storms are often accompanied by hail - all quite alien to us from the coast.
- Conservative space and material norms and realistic budgetary limits placed on construction to promote replication by other agencies – especially government – within a pragmatically conservative learning/teaching paradigm.
- A sense of urgency and a demanding programme brought on by the dire circumstances of the school community – in an abandoned single sex hostel hastily converted to use as premises by parents at the beginning of the school year. Classrooms had leaking roofs. There were few windows, no water, electricity or sanitation and no trees or shade.
- A local Municipality buckling under a diminishing rates base, increased demand for its services and skills loss. Services to the town and surrounds (especially Shayamoya) had become unreliable with water routinely shut off in Shayamoya during daylight hours

While we agree with Professor Raman's criticism of the casual assemblage of form making, much of this is intentional and informed by 'the comfortable fit' that sun-slope eastern cape villages achieve. The tall, round, mud building is 'separate' but 'clumsily co-joined' as an imposition on the rectilinear forms - as are the initiation huts one sees on the fringes of the same villages. The mud structure also evokes the ancestor honouring, solitary roundhouse among the more numerous 'i4corners' (rectangular houses) that make up most rural and peri-urban zulu umuzi's (households/homesteads).

We intentionally used standard steel windows but in so doing hoped to illustrate that by flipping an industrial central pivot on its side, easterly (morning) and westerly (evening) breezes in summer can be dragged into the north facing classrooms and that by pop-rivetting on simple bent sheet metal external light shelves, natural light can be reflected deeper into teaching spaces to achieve a reduction in the reliance on artificial lighting.

We are also in agreement with the Professor's notions of 'building as showcase' for 'sustainability' products. We too are cynical about the claims made for devices and techniques (greenwashing). Our approach for 7 Fountains was driven primarily by passive techniques – orientation, insulation, shading – and secondly by considerations around the unreliability and high cost of municipal services to the school, opting for intensive rainwater harvesting to ensure free, reliable water for sanitation, hygiene and vegetable gardening.

While we too applaud and admire the inclusive design and construction work of Erskine and Kroll, we question the relevance of their approach in the local context where we believe 'communities' suffer a 'crisis of ownership' when it comes to institutional buildings – as much a legacy of our apartheid past as of deeply rooted traditional paternalism. We opted instead for an inclusive, transparent design process that allowed positive relationships to grow between ourselves as 'designers' and our client community, between donors and recipients, between government departments and various invested NGO's, between contracting parties and consulting professionals. As architects we accepted our responsibility to design - we saw the process as inclusive but not participatory. Teachers often qualified their acceptance of our ideas with the statement ' . . . we have never been asked before'. In the end we were informed more by the simple humanism, decency and innovation of Rural Studio than by the sophisticated and stylised anarchy of Lucien Kroll.

East Coast Architects  
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