



WESTERN CAPE

Implementation of school construction in the Western Cape

BACKGROUND

In February 2010, Aurecon was awarded a contract by the Provincial Government of the Western Cape to establish a Programme Implementation Unit (PIU) within the Western Cape Education Department (WCED) to assist in the implementation of school infrastructure projects.

- 1 Perspective of the new Claremont High School after a R10 m facelift
- 2 The old Barkly House Teacher's Training College before its transformation into the Claremont High School
- 3 Internal courtyard at the new Claremont High School

Some of the main aims of the PIU are to facilitate, implement and expedite infrastructure delivery for the WCED. This is achieved by acting as a second parallel delivery mechanism to the Department of Transport and Public Works (DTPW) which continues to implement the majority of the WCED's projects as the primary delivery agent.

PROJECT DESCRIPTION

Now halfway through the three-year contract period, the PIU has been involved in the implementation of a wide range of projects at over 200 schools, totalling over R250 m, including:

- construction of two new schools

- construction of 120 classrooms at 64 overcrowded primary schools
- construction of additional facilities at 14 top-performing schools to allow for the enrolment of an additional class per grade
- renovation of a disused teachers' training centre into a new high school
- additions of various facilities such as halls, administration blocks, fields, laboratories, etc, at numerous schools
- planned maintenance at 39 schools
- placement or relocation of over 200 mobile (prefabricated) classrooms at over 100 schools, and the
- development of workshops and special facilities at schools for Learners with Special Educational Needs (LSEN schools).



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- 4 The new Khayelitsha COSAT school which opened in January 2011 after just five months of construction
- 5 The front entrance of Wallacedene Primary School, completed in late 2010
- 6 Additional classrooms at Mandalay Primary School in Mitchells Plain were designed to match the existing look of the school

In all this, Aurecon fulfils a programme and project management role. As such, a permanent programme office has been established within the WCED to assist in the coordination, communication, reporting, financial control and project information management of the programme.

The PIU also includes a team of technical advisors or specialists to provide technical oversight and input where

necessary. This team includes architectural (EHH Architects) and quantity surveying (De Leeuw Group) advisors. Specialist input for engineering, contractual, legal, environmental and community liaison matters is provided by Aurecon.

Each project is managed by one of a team of ten project managers who manage the day-to-day aspects of the project and facilitate communication between the WCED, the schools and the project professional teams. Different professional teams are appointed per project and contract directly through Aurecon to manage the planning, design, tender documentation and contract management at each school. Tenders are advertised by Aurecon, and CIDB prescripts are applied in the tender process and documentation. Once PGWC approval has been obtained

for a recommended tenderer, Aurecon contracts directly with the tenderer for the further roll-out of the project.

CHALLENGES, INNOVATIONS AND SUCCESSES

Fast-track delivery

One of the key aspects on this programme has been meeting some extremely tight delivery deadlines. It is not unusual for project expenditure to be restricted to one financial year, which often results in very tight project time lines. Compounding this is the need to often deliver a project in time for the start of a school year or new school term, which results in limited flexibility or ability to extend or overrun on a programme.

Two particularly successful fast-track projects have been the Khayelitsha COSAT and Claremont High Schools.



Both projects were allocated to the PIU to manage in late May 2010 with stipulated delivery for initial occupation by January 2011. Both high schools are STEM schools (Science, Technology, Engineering and Maths), which aim to attract top-end maths and science learners.

Design, documentation and approvals of the Khayelitsha COSAT school were fast-tracked and tenders closed in early August 2010, with a contractor on site shortly thereafter. Luckily the site was serviced and presented few constraints. Delivery of Phase 1 (ten classrooms and administration facilities) was achieved on time for occupation in January 2011, and practical completion for the full school for 600 learners, including a hall and sports field was achieved four months later. Several measures in design,

constructability, phasing, layout and documentation were implemented by the professional team to ensure this programme could be achieved.

The R10 m renovation and extension of an old teachers' training college into the new Claremont High School for 500 learners similarly followed an accelerated design, documentation and tender process. A contractor was on site in August 2010 and delivery was achieved for the school to take occupation by January 2011, with final works being completed by March. Renovation projects always present challenges, and numerous unexpected hurdles were indeed encountered along the way, ranging from the discovery of a freshwater spring beneath the building's foundation to encountering asbestos insulation which had to be removed by specialist

contractors. To deal with the myriad issues typical of renovation projects, the Principal Agent placed a resident architect on site to manage daily queries. The success of this project in terms of timeous delivery was largely due to the excellent teamwork which developed between the professional team and the contractor.

Capitalising on economies of scale

School projects are frequently grouped by the WCED into programmes, depending on the nature of the project or the source of the funding. One such example is the "Relief Programme" which comprised the construction of 120 classrooms at 64 overcrowded primary schools. Each school was provided with between one and four new classrooms. It was decided to group school projects geographically

into clusters whereby certain benefits could be achieved, including:

- reduction in the management effort of numerous small contracts, both on a programme level and in terms of site management by the principal agents

7 Impendulo Primary School – one of 64 schools for which additional classrooms were added under the Relief Programme

8 The structure of the Programme Implementation Unit (PIU)

- increased contract values which allowed for a higher grading of contractor to be targeted, and
- the benefit of economy of scale both in construction costs and professional fees.

A total of four sites per contract seemed to be the optimum size in order to increase the contract value, while not exceeding the capacity or capability of the target group of contractors to resource multiple sites simultaneously.

This approach proved successful, although a number of issues arose and had to be dealt with along the way, for instance:

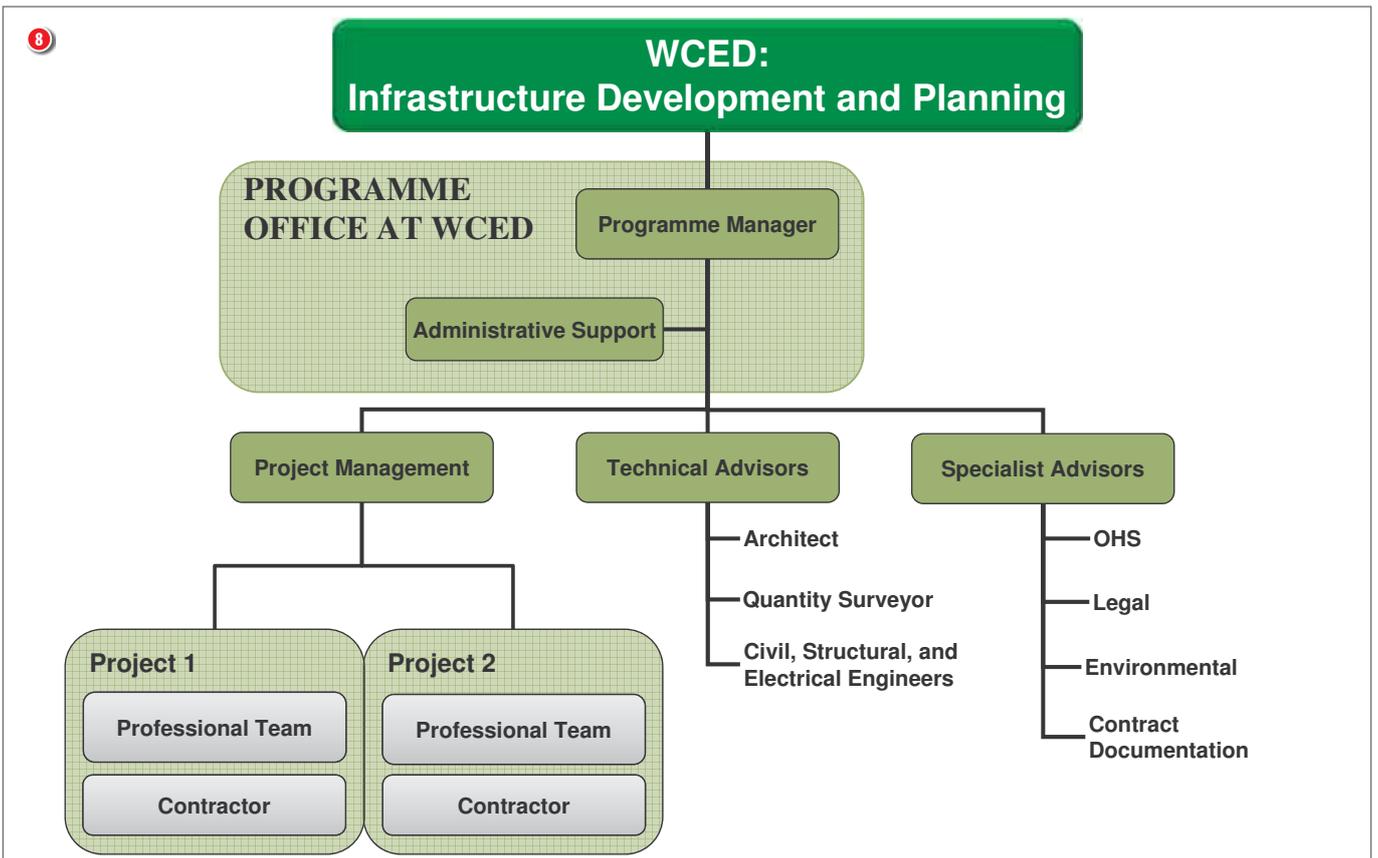
- Although a Community Liaison Officer (CLO) had been allowed on each contract, several communities demanded a dedicated CLO for each site, leading to additional costs on the programme.
- Contracts where sites were further apart proved challenging to some of the contractors.

Despite the above, the majority of the 64 schools had their classrooms delivered on time and within budget, with a few remaining problematic contracts finishing slightly behind the rest.

A similar approach of clustering projects was also adopted for the implementation of the planned maintenance programme at 39 schools, with similar success.

Norms, standards and other requirements

The aim of the PIU has never been to reinvent the wheel. Rather, it has been to achieve any possible time, cost or efficiency benefit on behalf of the Client without comprising the integrity of Government's processes or the quality of the end product. As such, projects are structured to match those delivered through other conventional delivery mechanisms. For instance, the norms and standards for schools are applied on all projects to ensure quality end products and



uniformity, and standardisation between schools. While layout design is approved by the WCED at concept stage, drawings and designs are submitted for approval to DTPW as the ultimate custodian of the facilities on behalf of the WCED. Local authorities are also provided with courtesy drawings for scrutiny and comment.

Along the way, some peculiarities have been encountered relating to zoning, sub-division or ownership of existing educational facilities. These matters are dealt with between the PIU, WCED and DTPW property on a case-by-case basis.

All permanent construction to date has been of a conventional nature (brick and mortar), although the WCED has expressed interest in investigating appropriate certified/standardised alternative construction technologies to expedite delivery and/or reduce costs in future.

At a contractual level, the PIU implements similar contractual requirements in terms of utilisation of local labour as are required on other provincial projects. The involvement of local communities is usually facilitated through the School Governing

Bodies who identify appropriate CLOs for the projects. As with most projects, those projects which have the buy-in of the local community from the beginning inevitably have proven to be the most successful.

Financial Expenditure

Financial performance is always a critical Key Performance Indicator. The PIU assisted the WCED in achieving, for the first time, a 100% spend on their budget for the 2010/2011 financial year. Moreover, only a few months into the current financial year, and everything already appears on track

for the WCED to match their achievement with an even larger budget this year.

CONCLUSION

The need within both the Western Cape, and indeed the country as a whole, for delivery of educational infrastructure is immense. There are tremendous pressures on thinly stretched resources to deliver, expand and maintain educational infrastructure. Mechanisms such as the WCED PIU offer a viable alternative or additional delivery mechanism to assist in expediting infrastructure delivery. □

PROJECT TEAM

Client

Western Cape Education Department (WCED)

Programme Management Unit

Programme and Project Managers	Aurecon SA (Pty) Ltd
Architectural Technical Advisor	EHH Architects
Quantity Surveying Technical Advisor	De Leeuw Group
Engineering Technical Advisor	Aurecon SA (Pty) Ltd

Project Teams

Professional Teams (all disciplines)	Numerous Professional Service Providers
Contractors	Numerous Contractors

Source:

http://www.saice.org.za/downloads/monthly_publications/2011/2011-Civil-Engineering-august/files/res/downloads/book.pdf