

**EASTERN CAPE PROVINCIAL, DISTRICT and SCHOOL DEVELOPMENT
PROGRAMME, SOUTH AFRICA
22nd – 29th January 2001**

ASSET MANAGEMENT CONSULTANCY REPORT

Executive Summary

1. A User Orientated Approach: The issues concerned with education infrastructure are not limited to design and construction, but cover a wide range of activities from inception to completion and continuous maintenance. Such issues should ideally address social needs, management and cost-effectiveness in relationship to architectural and construction solutions. The long-term investment in primary school facilities requires a user-orientated approach by developing an on-going dialogue between the community, educators and designers. *Before ECPDSDP begins its physical construction programme a major workshop is required to explore all these concepts and to assist the Project Management Team to prepare a programme that reflects cost-effectiveness and a long-term sustainable approach to managing the provinces educational infrastructure.*

2. Preventive Maintenance: Re-occurring cost and the impact of maintenance may be considered as crucial to the success of the programme. A central part of the long-term investment in the fabric of the buildings is therefore the concept of preventive maintenance. The school staff and the communities need to be involved in monitoring the condition of the physical assets. Additional advantages of a physical maintenance programme are that positive communications can be established between the community and educators (at school level) with technical staff leading to an on-going consultation between teaching staff and designers. Such an approach can assist in maintaining or restoring morale in teaching staff and hence in the development of learner education which in turn leads to an improved learning as well as physical environment in the community. *Appropriate training and orientation is vital to the success of a preventive maintenance programme. Training should take account of not only the techniques of preventive maintenance, but also in social development, persuading communities that they share the responsibility for the school buildings. This approach would build upon the participation initiatives that were grounded in the Imbewu education programme.*

- *A series of workshops be held at district level to introduce this concept to District Education Inspectors, School Heads and Chairperson of the School Governing Body.*

- ***A short (3-5 day) training programme on how to Manage the School Assets for the above people be developed by the Education Department in conjunction with regional Technical Training Institutes.***
- ***An awareness campaign be mounted, making use of all forms of media to promote the concept of a government/community partnership for delivering and maintaining a quality education environment.***

3. Flexible Designs: In a province that enjoys a variety of climatic zones and a rich diverse cultural heritage a single school design may not be the most appropriate if available resources and value for money are to be taken seriously. Appropriate and where possible flexible designs are needed within the context of affordability, user requirements and regional location adjustments. As part of an integrated approach to school design, consideration may be given to adequate ventilation, light, the location of chalkboards and display boards, appropriate shelves and storage facilities and security. The provision of water and sanitation, with specific reference of female requirements should be a priority. An attempt should be made to treat the site as a pleasant physical setting for learning and an appropriate location for future expansion. Such facilities should be reflected in the overall building and site development costs. ***Cost-effective designs and methods of construction maybe explored. Existing norms and standards for school designs may require updating to reflect modern education practices. Existing school construction and management manuals may also be revised along the same lines.***

4. School Construction: The use of appropriate materials and construction techniques based on district requirements and community needs is crucial. Basically, two approaches are relevant: the provision of a solid construction (e.g. concrete or brick masonry) at a high capitol cost, needing minimal maintenance; and or alternatively, the adoption of cost-effective construction techniques which are familiar to the community (at reduced capitol outlay), requiring regular maintenance. ***Traditional methods of construction can be improved with innovative building techniques and preventive measures at reasonable cost. Designs for school infrastructure would have to be developed around the particular materials strengths and weaknesses.*** This approach can help to prolong the life of not just education buildings but many other forms of rural structures; reduce the environmental damage created by continuously re-building; and to reviving the local construction industry thus helping to create more job opportunities within the rural areas.

5. School mapping: Educational infrastructure, classrooms, playing fields, school offices, water and sanitation facilities, electricity and communication systems and the like are expensive to provide. The nature of the Eastern Cape rural terrain and the wide spread of population make it even more so. Therefore, given the limited resources available for expanding the facilities and the need to ensure an equitable spread it is of vital importance that the planning process be

supported with accurate forecasts of population density and trends along with a detailed picture of what educational facilities exist, where and what condition they are in. This will enable the ECED to prioritise locations for new infrastructure and if maintained on an annual basis will prove to be an invaluable long-term planning tool. ***Consideration to be given for providing technical supports and further training to the Directorate of Physical Planning and the EMIS section of ECED.***

6. Management Capability: The management and co-ordination of the building programme is a critical factor for the success of ECPDSDP. Present management arrangements are good but greatly over stretched and cannot be considered adequate given the difficulties in implementing construction in the rural outlying areas. Moreover, a diverse approach, innovation in design, building techniques and methods of construction would require a careful management structure to ensure the quantity and quality of construction. Specific training needs may be assessed and be incorporated into the overall work programme, particularly if community based cost-effective construction techniques are to be enhanced. ***Consideration be given to rationalising existing procedures and in training staff. Greater use of private consultants may also be considered to ensure value for money and quality control within the construction component.***

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1. Introduction

1.1 This purpose of this mission was to examine opportunities for support to the Eastern Cape's Education Department (ECED) with specific reference to the provision of primary education physical assets (e.g. classrooms, toilets, water supply and furniture). Various existing approaches in the provision of primary school construction were reviewed.

1.2 Working closely with members of the Education Department's Physical Planning Directorate seven schools were visited, three in the Lusikisiki district and another four between the towns of Flagstaff and East London. These visits provided an overall picture of the varying forms of delivery process currently employed by the ministry and other funding agencies. Discussions were also held with engineers, architects and managing agencies as well as with government departments at central and regional levels and with the users themselves (educators and learners).

1.3 These visits and discussions make it possible to advocate for the DFIDSA supported PDSDP to promote an approach for supplying educational physical requirements that ensures equity, is appropriate and reflects a realistic approach to asset management that is supportive to existing good practice, innovative and cost-effective. Also to build upon the positive aspects of community involvement in primary education that has been inspired by the Imbewu project. Consideration has also been given to a strategy that would make maximum use of indigenous architectural concepts and artisan skills.

2. Implementation of Educational Buildings

2.1 The Directorate of Physical Planning has prepared a detailed design guide for the typical Eastern Cape primary school. This document is provided to the various Primary Agencies that are contracted to implement the physical construction programmes. The Primary Agencies are the ones responsible for producing the actual individual site plans, which vary only in actual layout form, long linear formations, divided linear formations or "u" formations.

2.2 The new primary schools being constructed by the department, with their own internal funding or with external financial support all follow virtually the same specifications. Concrete block or brick masonry walls, timber or mild steel roof trusses and purlins covered with corrugated iron or asbestos sheets. Masonite or softboard ceilings. Windows are mild steel and glass, doors and frames are usually hardwood, occasionally the frames are of concrete. Floors are concrete generally covered with vinyl tiles. Rainwater is collected through a system of metal or plastic guttering and tanks. Sanitation is usually a series of dry pit latrines. Electricity is connected to most schools either from the grid or where this is not possible byway of a dedicated solar generating system. Majority, if not all, of the materials are generally imported to the site from nearby urban centres.

2.3 The only variation is the actual finish, schools constructed by the Japanese government and European Union are incredibly expensive, whilst a large percentage of communities still rely on poorly constructed mud facilities making it very difficult to identify any form of equality within the education sector.

2.4 The ECED has been funding quite a major refurbishment programme for existing primary schools. This has usually resulted in a 3-4 classroom block being erected with reduced specifications. These structures are labelled as "emergency classrooms". The basic concept seems to be that they are a stopgap until funds become available to build to better specifications. Experience tends to suggest that such stopgap initiatives by default become permanent as funds are rarely available to go to the next stage. Hence it may be considered to be uneconomical to continue with this approach.

3. Schools Visited

3.1 The schools visited ranged from a dilapidated mud and corrugated iron structure to an extremely elaborate sophisticated Japanese funded school. (US\$ 15 million for 45 schools).

3.2 The mud and corrugated iron structure visited was in danger of collapse; the one toilet block had already collapsed.

3.3 Two schools were visited where the Department has funded the building of "Emergency Classrooms" these are used to replace the mud structures or in situations where tornadoes have blitzed an area. The specifications are very basic, metal frames in-filled with thin masonry walls, masonite or buffalo board ceilings, no internal or external plaster, metal frame roof clad with corrugated iron, cement floor topped with vinyl tiles, metal and glass windows, wooden doors and frames, masonite chalkboards and one medium size water tank and limited guttering, no verandas.

3.4 Two schools were also visited where the Department has assisted the communities to build a basic three-classroom block. The walls are of 190 mm

hollow concrete blocks, pre-fabricated timber roof trusses covered with corrugated iron sheets, casement style metal and glass windows, wooden doors and frames and a 75 mm thick cement screed floor. There are no ceilings, verandas, plaster or paint. The community manages the money and assumes much of the implementation responsibilities. The Department provides technical support by way of basic Management and Construction Manual and regular visits by Works Inspectors, who are not actually technically qualified.

3.5 One school constructed with European Union financial support was visited. These have superior specifications, face brick walls, pre-fabricated timber roof trusses covered with corrugated asbestos sheets, masonite or softboard ceilings, two classrooms divided by a concertina wall that opens up to create a large hall, metal frame and glass windows, concrete door frames with hardwood doors, softboard display panels, masonite chalkboards, internal walls half plaster and paint, half face brickwork, deep veranda, rainwater collection system and a good supply of pit latrines for sanitation. (The Department has used this design and specifications when constructing some secondary schools).

3.6 The Japanese government built the last school visited. They utilised US\$ 15 million on 45 schools, or approximately R. 2.5 million per school. The Department is not sure just how much of these funds were utilised for actual construction purposes as there were several studies funded from the same source. Also the schools were handed over to the Department fully furnished. The finish on these schools is vastly superior to anything else that the Department is doing. The basic design is the same as with the EU but the walls are faced pre-coloured concrete blocks, all other components are the best that money can purchase in South Africa. The community had to supply the boundary fence, which at the school visited was timber pole with 5 strands of barbed wire.

4. Observations on Construction Delivery Processes

4.1 In an ideal world every child would enjoy the luxury of a Japanese or EU style school. However, with the best will in the world, the ECED is not now, or in the foreseeable future likely to have access to the resources that would enable that scenario to become reality.

4.2 A huge proportion of the primary school age children in Eastern Cape access the system and remain dependent for their education upon very basic mud constructed infrastructure. This is likely to continue for many years to come unless the enormous gulf between this type of infrastructure and the extremely expensive schools is bridged.

4.3 Irrespective of the style of construction method used in any particular school, the most obvious observation has to be the almost total lack of respect the average Eastern Cape community has for the educational infrastructure

within their area. Every school visited showed evidence of being vandalised and elements being stolen.

4.4 The mud-constructed school had lost its entire solar electricity system and all of its textbooks. Another school (secondary) had lost 8 computers and every day the surrounding community empties the rain water collection tanks, ensuring that 700 pupils have no access to drinking water unless the Principle utilises the meagre school funds to hire a tanker on a daily basis. The brand new EU funded school had lost 2 whole sections of fascia board along with the rainwater collection gutters and hangers. These types of vandalism and theft were evident in every visit.

4.5 Evidence from around the world suggests that where social infrastructure is concerned it is not the amount of money that is used but how it is used that may gradually change community attitudes. If a government department adopts a delivery process that effectively bypasses the community then the community is unlikely to feel any affinity for the completed facility. Eastern Cape (and one suspect that the situation remains so in the other provinces) is still recovering from a devastating period in their history. During this time the disadvantaged sections of society were encouraged to strike out against an oppressive regime by smashing the educational infrastructure as the then education policy was seen to be a major weapon being used to oppress them.

4.6 The delivery process utilised for educational infrastructure (and indeed all forms of social infrastructure) can be instrumental in helping communities to overcome this now misguided attitude. The process can become one of healing and to assist in the regeneration of community respect. It can also go along way to assisting members of the community to gain viable technical skills and thus improve the generally economic situation by creating job opportunities within the community.

4.7 The process employed by the Department to assist 287 communities (The MEC Discretionary Project) to build 3 classrooms on their school compounds has the qualities to achieve the above. The present classroom design and specifications are extremely basic in style and finish but they are sound and built with permanent materials. The Department provides the community with R. 75,000. The community manages the entire construction process with technical and management assistance from the school Principle and a Works Inspector who is engaged on contract by the Department.

4.8 Early evidence suggests that the majority of communities have responded in a responsible manner and have or are producing quite reasonable classrooms, some have gone so far as to augment the government contribution with their own funds so that they can improve on the general finish. A few communities have not been so motivated and in fact have been unable to complete the project to even the most basic of specifications.

4.9 With some minor modifications and an improved monitoring system this approach to delivering primary school facilities offers the department an opportunity to provide a more equitable spread of meagre resources and to also engender a sense of responsibility and respect within a large number of communities.

4.10 The cost of one Japanese funded school, (6 classrooms, office and toilet facilities) could fund approximately 100 classrooms through this type of delivery mechanism. ECED may wish to give considerable thought to making this approach the standard for the entire education sector. The PDSDP is an ideal vehicle for the ECED to conduct the necessary research and development activities to enable this approach to be nurtured.

4.11 This short mission also observed another worrying aspect of the present primary education scenario. That is the manner in which location of new infrastructure is decided. Whilst moving around the province there was ample evidence of young children walking long distances and some communities appearing to have excessive educational facilities compared to numbers of children and so on. Also there is not much evidence of any long term projections of population growth or decline being part of the where to locate new infrastructure decision making process. This would suggest that the EMIS system require some attention and possible strengthening to enable it to become an all round planning tool.

5. Possible Improvements

5.1 The present departmental-community primary school delivery partnership is quite basic. To take it to scale and for it to maximise its impact it will be necessary to make some modifications and adjustments, which may include the following.

5.2 To maximise both short and long-term benefits to the education process there is the need for more emphasis to be placed on educating and training the community. This may be done through a major awareness campaign using various forms of media. Also the Imbewu model for community involvement in primary education would ideally become a major component in any form of effort, irrespective of where the funding originates, will become the norm.

5.3 It may be sensible to prepare alternative designs for primary schools. Designs reflecting aspects of localised traditional architectural heritage and also support improved pedagogical practices. Such design variations may be promoted through a demonstration construction programme, which would build a series of education facilities for the ECED to use as exemplars.

5.4 The Construction Manual needs to be strengthened by adding more technical information in a diagrammatic format.

5.5 The EMIS cell be given further training and the information gathering, storage and retrieval processes be strengthened to make for a more rounded planning tool.

5.6 The Directorate of Physical Planning (ECED) will require to be strengthened with an additional cadre of technically sound people. This cell must be adequately resourced to enable the members to make regular monitoring visits to all ongoing sites and to be in a position to continuously visit communities in the pre and post construction periods. This will encourage the communities to support the ongoing education process.

5.7 To determine just what is required to maximise the impact and encourage the equitable usage of future physical educational resources it is suggested that before initiating the PDSDP the ECED organise a workshop to explore with the various stakeholders how the future educational infrastructure programmes will be planned, delivered and managed. (A draft concept note on how such a workshop may be organised and possible outcomes is attached as Annex One).

6. Future Technical Assistance Input

6.1 The above concepts were discussed and explored in detail with the Director and Deputy Director of Physical Planning in the ECED. Both feel that the approach is very relevant to the situation and supports the idea of the construction component of PDSDP being the vehicle in which to develop the approach. As such they have requested that DFIDSA support the initiative by way of the TA budget.

6.2 They are proposing to hold the initial workshop (Annex One) from the 15th-17th March 2001 and will be requesting DFIDSA for technical assistance to help prepare the workshop programme, make technical presentations and in writing up the workshop outcomes. This will require approximately one-month input.

6.3 Providing the workshop endorses the concept of preparing alternative designs and then constructing a series of exemplars they are requesting further technical assistance to help develop and organise the demonstration construction programme. Which they would like to commence in June/July 2001 at the latest.

6.4 As this envisaged programme progresses the ECED will make further requests for technical assistance to help them develop community and artisan training packages and to prepare technical support and advocacy literature.

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Roger RM Bonner
Building Adviser (Social Infrastructure)
IUDD/DFID
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