

Development of Business Management Skills for Small Contractors in South Africa – Can We Really Measure It?

Hauptfleisch, D.

The University of Free State, Bloemfontein, SOUTH AFRICA

(email: ach@ecospan.co.za)

Dlungwana, S.

Council for Scientific and Industrial Research (CSIR), Pretoria, SOUTH AFRICA.

(email address: sdlungwana@csir.co.za)

Abstract

Purpose of this paper – This paper demonstrates that programmes aimed at developing business management skills among small construction contractors, as promoted by some government departments and agencies, can be scientifically evaluated to determine the level of acquisition of such skills by business owners. **Methodology/Scope** – The research is based on data compiled during a pilot contractor development programme that was conducted and concluded in South Africa's Eastern Cape province in 2007. Another survey was later conducted in 2009. The programme, managed by the Council for Scientific and Industrial Research (CSIR), provided a structured training and mentoring programme to 54 small contractors. Contractor performance evaluation was conducted using questionnaire-based assessment methods. The pilot programme has been followed by a refined new programme of similar scope, running from 2008 to 2010. **Findings** – The research findings demonstrated gradual improvement of performance by contractors under the programme, giving credence to the effectiveness of the programme in terms of developing skills and delivering business results. These findings are finding application in a follow-up programme conducted by the CSIR. **Value** – This paper publishes research that can be useful to South African government departments and agencies in supporting activities aimed at minimising performance risks when awarding construction projects to small (emerging) construction contractors, and in promoting the government's socio-economic policies. Findings made in the pilot programme have been utilized in some public sector programmes and ongoing consultation between the CSIR and government agencies is taking place with aim of increasing adoption of the programme by government.

Keywords: small contractors (synonym: emerging contractors), skills, development, evaluation

1. Introduction

Numerous attempts by a variety of agencies were undertaken in South Africa to develop small (emerging) construction contractors (SCs) that were disadvantaged in the pre-democratic era in South Africa before 1994. Accelerated development of SCs generally had little success, mainly due to the fragmented nature of such attempts. An Integrated Emerging Contractor Development Model (IECDM) was created, in conjunction with the authors, to address the problems experienced in developing self-sustainable construction contractors for the construction industry. This model was developed by the Council for Scientific and Industrial Research (CSIR), as probably the first holistic approach. The Eastern Cape Development Corporation (ECDC) adopted the model and introduced it throughout the Eastern Cape Province, South Africa, as a skills development programme.

The problem to create an IECDM consisted of three sub-problems, being firstly to identify supportive legislation, secondly to identify all the possible role players that could be sourced in support of the holistic IECDM and thirdly to structure the programme, in such a way that the outcomes could be quantified/measured continuously and the results acted upon.

The Total Quality Management tool devised for the programme was based on the identification of knowledge areas and application thereof to be mastered by the SCs. These knowledge areas (45) were placed on an assessment schedule, with provision for non-quantified information to be provided. Each of the 45 knowledge areas was assessed monthly, according to a 10-point scale measurement by the relevant mentor for each contractor. Areas of weakness were identified for each contractor and acted upon. The data collected for all contractors was statistically processed and presented diagrammatically for each SC, each region and for the province as a whole.

The contributions of each role player/stakeholder in the IECDM are described, following Figure 1, which presents the complete model.

Figure 3 is a diagrammatic (overall) example of the quantified/measured data that was continually obtained as managerial input to control the programme during implementation.

Follow-up assessments regarding role player perspectives on the post-IECDM period have been done and are reported in the following sections.

The conclusions drawn and recommendations made are thus based on the programme as a whole, including the follow-up investigations done, particularly also discounting the qualitative data provided by mentors and SCs. It is therefore broader based than the confined information contained in this paper. The follow-up 2008 to 2010 programme, in which the outcomes of the pilot IECDM project are utilized, is briefly described.

Note: The terminology “small contractor” and “emerging contractor” is used synonymously.

2. Structural Interventions

Government, and other organs of state have made the following structural interventions, in order to create an “enabling environment” for the rapid development of, inter alia, construction contractors (summarised by Hauptfleisch, 2006:2-3). These interventions were assimilated where possible in the development of the IECDM:

2.1 Creating an enabling environment: construction industry development board (CIDB)

The South African Government has adopted legislation to create an enabling environment, from which inter alia flowed the Construction Industry Development Board Act (Act 38 of 2000). The CIDB mandate that followed from the above legislation is encapsulated in the following abstract in the Construction Industry Development Board: Annual Report (2004/2005:12):

- Provide strategic direction and develop effective partnerships for growth, reform and improvement of the construction sector;
- Promote sustainable growth of the construction industry and the sustainable participation of the emerging sector (small contractors).

2.2 Broad based black economic empowerment

Government initiatives are further supported by the Broad Based Black Economic Empowerment Act (No 53 of 2003) (BBBEE, 2003:2) that is in the implementation phase, and reads as follows: “To establish a legislative framework for the promotion of black economic empowerment; to empower the Minister to issue codes of good practice and to publish transformation charters; to establish the Black Economic Empowerment Advisory Council; and to provide for matters connected therewith.”

2.3 Construction education and training authority

The Skills Development Act (Act 97 of 1998) provides for the creation of a Sectoral Education and Training Authority (SETA) for each of the various economic sectors. The Construction Education and Training Authority (CETA) is responsible for training in the construction industry. A levy, expressed as a % of salaries and wages paid by employers, is placed in a fund that is applied in terms of stated guidelines, to ensure that education and training take place in the industry.

3. Structuring of an integrated emerging contractor development model

The enabling environment that has been created, as overviewed above, leaves the construction fraternity with the challenge to create a working model to achieve the stated objectives within the unique demographics of South Africa. The IECDM is a serious attempt to put such a working model to the test (Hauptfleisch, 2006:4-8).

Figure 1 is a diagrammatic presentation of the IECDM, depicting all the identified role players required in order to maximise the development of emerging contractors.

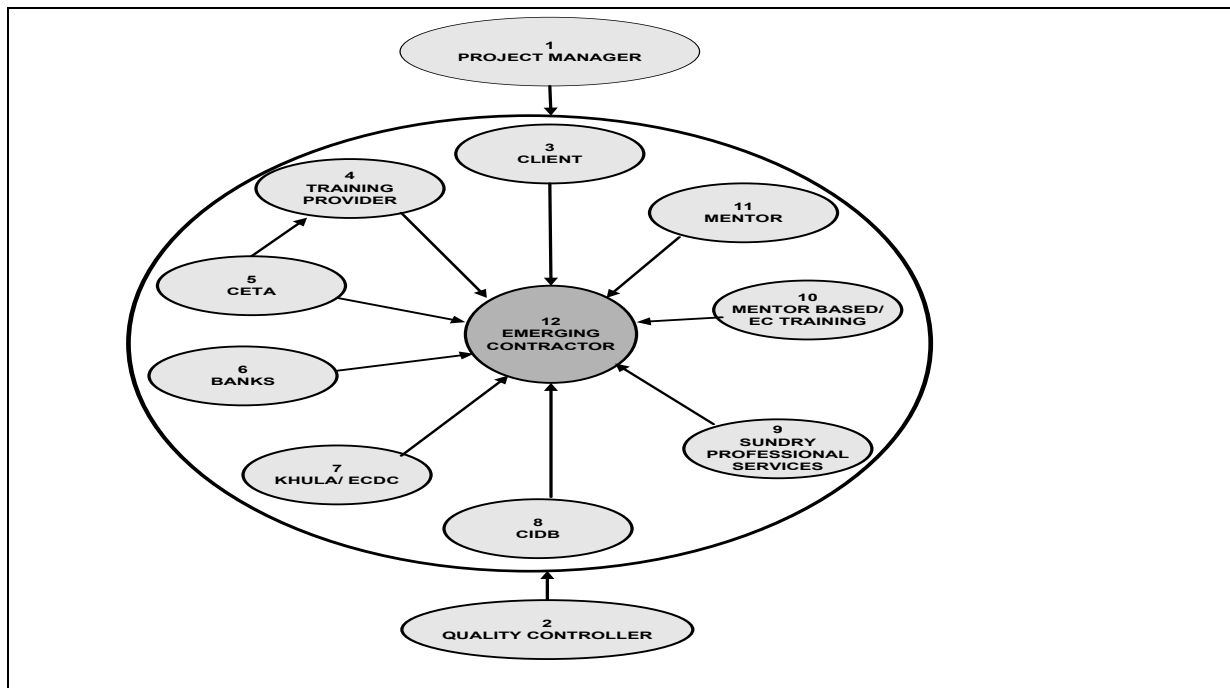


Figure 1: Integrated Emerging Contractor Development Model (Source: Hauptfleisch, 2006:5)

4. Selection of emerging/small contractors, mentors and training service providers

4.1 Emerging contractors (ECs)

Emerging Contractors for the programme were selected from applicants who responded to a comprehensive advertising campaign in the Eastern Cape. A good response was obtained and a final group of 54 was taken on board. The programme was then structured and launched from five centres.

4.2 Mentors

Mentors for the programme were selected by inviting applications via a province wide advertising campaign. All those who aspired to become mentors on the programme were subjected to the established Mentorship Accreditation Programme of the University of the Free State.

4.3 Training service providers

Three training service providers were selected from the CETA database in conjunction with CETA. Two of these were a source of continuous concern and turned out to be the weakest link in the programme, requiring constant management interventions to rectify.

5. Total quality management (TQM): quantification methodology and application of outcomes

5.1 Indabas (meetings) and TQM visits

In order to ensure that the required results were achieved a system of constant communication/contact was put in place. TQM being an important element of the IECDM, dictated that the entire development process of the contractors had to be managed constantly. Two activities were introduced to achieve this. Firstly, Indabas (meetings) were held in every centre, every three months, where all stakeholders were required to be present. Secondly, during the period between Indabas the TQM team visited every mentor, with the contractors assigned to each mentor present, in the offices of the mentor or on a construction project of the contractor, in order to monitor the progress of each contractor.

5.2 Manual for small construction contractors

The management team obtained permission from the Building Industries Federation South Africa (1990's), now Master Builders South Africa (MBSA), to adapt their Manual for Smaller Builders into a fit for purpose (for the IECDM) Manual for Small Construction Contractors (MSCC).

5.3 Quantified data: mentors' evaluation of emerging contractors and others

The MSCC was positioned to be a reference standard for the level of competency achieved by the contractors. The indexing of the manual was further used as reference for the monthly assessment made by mentors of each contractor's development level. Each knowledge area contained in the index as well as some others was taken up into a ten-point assessment measurement scale. This provided

the management team with a wealth of sensors (45 knowledge areas) relating to every aspect of each contractor's individual development. Figure 2 is an example of the typical documentation (only first page shown) completed monthly by the mentors.

The statistical data was processed further through a computer programme, specifically designed by the CSIR for the IECDM, and presented in easily understandable diagrammatic format (see example, Figure 3).

5.4 Quantified data: small contractors' evaluation of mentors and others

The small contractors were also afforded the opportunity to evaluate the mentors and other role players on the programme. Their feedback, reflecting the actual experience of the beneficiaries of the programme, was very valuable as quantified/measured input and provided very specific insights that were also used to assist with the management of the programme.

5.5 Management development programme

After approximately twelve months it became evident from the data obtained from the mentors that the formal training component presented by the training service providers was not going to be sufficient to create self-sustainable contractors.

Having established shortcomings, the management team introduced a further development tool that was named the Management Development Programme (MDP). The MDP was structured in the format of a simple bar chart for the remainder of the IECDM programme. The methodology followed was to place each item contained in the MSCC on the bar chart, where after each contractor's proficiency was evaluated by the mentor and the project team regarding each specific knowledge area in the MSCC.

NAME OF EC: _____
NAME OF MENTOR: _____
REGION: _____
DESCRIPTION OF PROJECTS: _____
DATE OF EVALUATION: _____

PROGRESS EVALUATION: NQF LEVEL 2

The progress evaluation is based on a 10-point scale for which minimum standards to be achieved are determined by the Mentor and Emerging Construction Contractor Programme: Setting of Minimum Standards for Quality Assurance of Integrated ECDP. Progress evaluation is also required regarding a number of items not contained in the above programme, i.e. technical advancement (See item 4).The 10-point tick box scale to be utilized as follows (benchmarks only provided, use entire scale for evaluation).

1 = The EC is not capable at all to execute this activity independently
5 = EC is capable to execute this function with assistance
10 = EC is capable to execute this function independently on a sustainable basis

ASPECTS TO BE EVALUATED: DEVELOPMENT OF BUSINESS PROCESSES

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

SECTION 1: RUNNING A SMALL BUSINESS

A. ADMINISTRATION:

1. The Business plan: Development achieved
Comments: _____

Figure 2: Mentor’s Monthly Evaluation of Emerging Contractor (Source: Hauptfleisch, 2006)

The mentors were then required to intervene and specifically oversee capacity creation in areas of weakness. This intervention is visually very evident from Figure 3, showing the specific impact of the MDP from June 2006 onwards.

6. Construction education and training authority (CETA)

6.1 The role of CETA

As the statutory body responsible for training in the construction industry, it was obvious that CETA participation should be sought in the IECDM. It was agreed with CETA that the contractors on the IECDM would be accepted for training in order to earn a qualification.

6.2 Training methodology

The training methodology followed consisted of a dual system, having a classroom training component and structured workplace experience, the latter supported by mentors.

7. Quantitative measured data: CSIR diagrammatic presentation and comments

All the data generated during the programme was continuously processed and reported on by the CSIR. This element of the programme is unique and the first known of its kind, applied in order to continuously track, assess and manage programme outcomes.

The most important outcome of the CSIR Report is that it conclusively shows that it is possible to set standards for all aspects of a development programme, measure the outcomes, assess deviations and take corrective steps based on the measured outcomes (TQM), during the life of the programme. One example of a diagrammatic presentation is shown in Figure 3, providing a perspective of the overall ability developed by the contractors during the programme (CSIR Close-Out Report, 2007:1-22). Table 1 provides the scoring and ranking scales, as was determined in order to reflect the contractors' ability to manage a small construction business.

7.1 Running a small business-global averages

When viewed across the overall performance for the time under review (see Figure 3), October 2006 represents the highest rating at 59.7% (average, approaching very good performance). When compared to the 24.9% recorded in August 2005, through to June 2006 (being “fair”), the performance regarding this indicator has increased by almost 35 percentage points since the inception of the programme, mainly during the period June 2006 to October 2006. This represents a substantial increase in the ability of contractors to run a small construction business. This strong improvement specifically coincided with the introduction of the Management Development Programme (MDP), requesting mentors to identify knowledge weaknesses and to take steps to rectify it (TQM), underscoring the mentors' contribution in capacity generation.

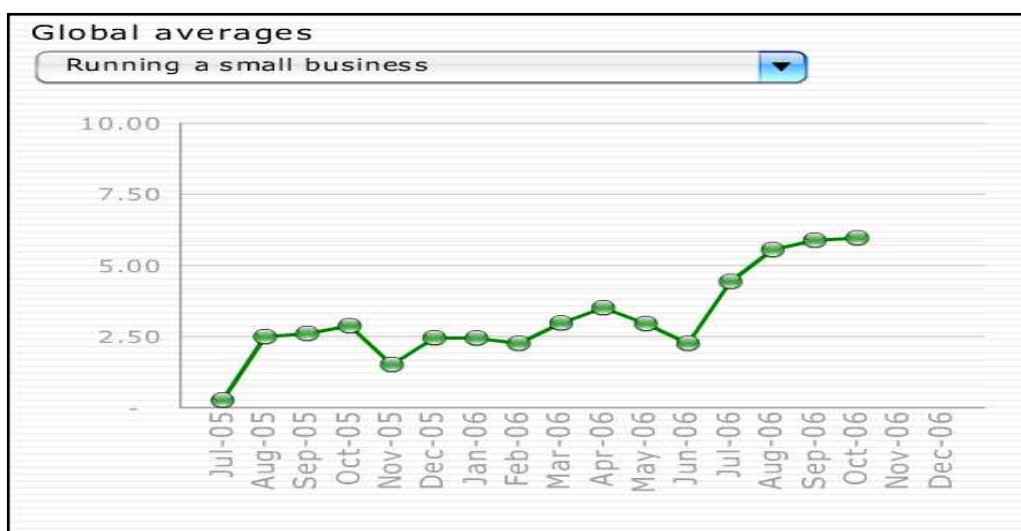


Figure 3: Running a Small Business – Global Averages (Source: CSIR, 2007)

Table 1: Scoring and Ranking

Score	Performance
0-20%	Poor performance (contractor is not capable to execute an activity independently)
21-40%	Fair performance
41-60%	Average/good performance (contractor is capable to execute and activity with assistance)
61%-80%	Very good performance
81-100%	Excellent performance (contractor is capable to execute activities independently and in a sustainable manner)

Source: CSIR 2007

8. Follow-up surveys

Further fairly comprehensive studies were undertaken, following the official completion of the programme in November 2006, in order to obtain a final perspective from the participants, dealing with aspects not contained in the CSIR Report. This survey (Close-out Stakeholder Questionnaires) leads to two further reports, firstly reflecting views of mentors and training providers and secondly the views of the SCs. These reports generally comment favourably on the IECDM. Some of the resultant data, based on inputs obtained from the main beneficiaries of the IECDM, the SCs, is reflected in Sections 1 and 2 below (ECDC, IECDM Close-Out Report, 2007: 19-20).

Section 1 requested the respondents to rate the overall performance of the model. The scoring system utilised was based on a 1-10 rating with: 1-2 = poor, 3-4 = fair, 5-6 = average/good, 7-8 = very good, 9-10 = excellent

- Question 1.1: Rate the overall IECDM programme in terms of delivering on the key objective being enterprise development of emerging contractors. The average score was 8, thus falling into the range of “very good”.
- Question 1.2: Rate the mentoring programme introduced by the project team in terms of value adding beneficiation of the emerging contractor. The average score was 9.3, thus falling into the range of “excellent”.
- Question 1.3: Rate the management of the IECDM by the ECDC appointed project team. The average score was 8.33, thus falling into the range of “excellent”.
- Question 1.4: Have you as the emerging contractor noticed significant growth of your enterprise regarding sustainability and viability as a construction enterprise. The average score was 8, thus falling into the range of “very good”.
- Question 1.5: Rate the CETA learnership in terms of the value adding beneficiation it has provided for the emerging contractor. The average score was 8.33, thus falling into the range of “excellent”. The emerging contractors have indicated a high level of satisfaction with the learnership qualification. This in contradiction of the 6.33 scored for the same element by the mentors. Based on the scores received and the comments, it may be said that although the

emerging contractors felt they gained from the learnership the mentors questioned the lack of practical application on site of the modules taught on the learnership.

- Question 1.6: Rate the overall TQM process in terms of the value adding, providing corrective measures and to guide the mentor/emerging contractor /training provider relationship. The average score was 8.67, thus falling into the range of “excellent”.
- Question 1.7: Has the introduction of the Manual guideline document (MSCC) created a sound knowledge base for the mentor/contractor relationship. The average score was 9, thus falling into the range of “excellent”.

Section 2 took into account the business development of the emerging contractors; the response was requested as a yes or no to the question put forward:

- Question 2.1: Asked whether the IECDM had improved the business skills of the emerging contractor to manage their enterprises effectively. 100% responded with “yes”. 0% responded with “no”.
- Question 2.2: Asked whether the emerging contractor was now in a position to execute projects of larger capacity as a result of the knowledge gained through the IECDM. 100% responded with “yes”. 0% responded with “no”.
- Question 2.3: Asked whether the emerging contractor was able to tender and compete more efficiently for construction projects post IECDM than prior to the IECDM. 100% responded with “yes”. 0% responded with “no”.
- Question 2.4: Asked whether the emerging contractor felt the knowledge base regarding the construction industry has been enhanced as a result of their participation in the IECDM. 100% responded with “yes”. 0% responded with “no”

A small survey was undertaken 12 month after completion of the programme. Some of the responses obtained from 16 contractors within a limited time frame (30,8% response) are provided in Tables 2 and 3.

Table 2: Emerging Contractors’ Personal Development

QUESTION		PERCENTAGE			
		None	Slightly	Moderately	Considerably
1	How much value would the extension of the mentoring process have added to the success of your business if it was continued for another year?	-	12.50	12.50	75
2	Have you developed the ability to tender on your own?	-	12.50	37.50	50
3	Have you developed the ability to do your own accounts?	-	-	62.50	37.50

Table 3: Rating of Overall Programme (10-point Scale)

QUESTION		PERCENTAGE ON 10 POINT SCALE				
		1-2	3-4	5-6	7-8	9-10
1	Rate the overall IECDM programme in terms of delivering on the key objectives being enterprise development of emerging contractors	-	-	37.50	50	12.50
2	Rate the mentoring programme introduced by the project team in terms of the value adding beneficiation of the emerging contractors	-	12.50	25	37.50	25
3	Rate the management of the IECDM by the ECDC appointed Project Team	-	-	37.50	37.50	25

A further limited survey was conducted in December 2009 amongst small contractors that took part in the pilot programme 3 years after completion of the programme. Responses were obtained from 20 contractors (out of the 54 participants) that could be reached (37% response). Table 4 thus provides the perspectives of contractors, almost four years after the commencement of the pilot project.

Table 4: Contractors' progress 36 months after completion of the programme (subject to availability of work (recession))

Question nr	Question	YES	NO
1	Has your ability to manage your business improved over the last 12 months?	19	1
2	Are you now capable to execute/take on contracts larger than those 12 months ago?	10	10
3	Has your ability to prepare tenders further improved over the last 12 months?	17	3
4	Are you now capable to employ more people, including sub-contractors and their staff, than 12 months ago?	12	8

Table 4 illustrates the results of the questionnaires for 20 contractors who were interviewed telephonically. It was not possible to interview all the contractors mainly because some telephone numbers have since changed; the sample therefore represents those contractors that could be tracked. Almost all contractors interviewed (95%) felt that the IECDM programme contributed immensely to the general development of their business skills and construction knowledge, which has improved

their ability to manage their businesses. 50% of interviewed contractors indicated that they have grown their companies by one or two CIDB grades between the time of interview and the beginning of the programme. A similar number of contractors felt that although there has been a lot of learning, the CIDB grading level has remained unchanged. Much of this was attributed to lack of work as a result of highly competitive market environment and lack of transparency in awarding tenders which they blamed on corrupt practices by procurement authorities.

Some 85% of contractors stated that their pricing and tendering skills have improved greatly and were now able to price their own tender documents instead of hiring consultants. A smaller portion of this group, however, admitted that in some bigger projects they still needed outside help but were able to check if the rates and the prices were realistic. Some 60% of the contractors stated that they have managed to employ more labour than before, and this figure corresponds closely to the 50% of contractor that have managed to increase their CIDB grades.

Overall, it appears that even three years after the completion of the IECDM programme there has been remarkable improvement on the skills development of contractors and contractors have survived under a very difficult market environment. It seems that skills would develop at a much faster rate if contractors can have easier access to construction projects during the programme.

9. General comments regarding statistical data

From a purely methodology perspective, it is important to note that the data contained in all the reports represents the *perspectives* of mentors and SCs. The data contained was not tri-angulated. However, the feedback from mentors and contractors, over a large geographical area, without personal contact with each other, consistently confirmed the same trends, supporting the reliability of the data.

10. Follow-up programme 2008 to 2010

The follow-up programme of 2008 to 2010, based on the experience and outcomes of the pilot programme, inter alia introduced the following practice:

- The small contractors enlisted were selected to ensure that the majority has construction contracting experience.
- The training providers were rigorously selected and their contribution and training progress tightly monitored.
- The accredited mentors active on the programme are monitored continuously for diligent support to the contractors.
- The TQM reporting and other reports reflecting programme progress is more widely distributed to shareholders.

- The project management services provided by the CSIR management team had to be extended to counter the weaker client (ECDC) management contribution to the overall management of the programme.
- The measurement instruments for the programme have been refined, making possible a reduction in sensors without sacrificing quality. The measurement scales were reduced from 10-point scales to 5-point Likert-scales. Concurrent with this change a more sophisticated computer programme has been introduced. The latter provides rapid visual diagrammatic presentations of the measured development progress made by the contractors. The measurement scales and computerized processing and presentation of data are now in a format that is also available for application in other programmes.

11. Conclusions

- The research conducted during the creation and practical implementation of the IECDM (as a holistic integrated programme in practice) and the ensuing results, conclusively showed that the elements contained in the model are vital to achieve successful outcomes resulting from the creation of an enabling environment for small/emerging contractor development in South Africa.
- The programme has to be rigorously managed. This requires that a competent project manager and management team be appointed to manage the programme on a day-to-day basis.
- An important principle underlying the IECDM is recognised, namely that it is a training and development programme with the objective of creating sustainable construction businesses. Training and development has a price tag and satisfactory results are achieved more effectively and efficiently when programmes have the necessary financial resources and the full commitment of all stakeholders.
- The principles applied in this programme are generic and could be applied to other industries such as agriculture, trade, light engineering, etc.
- **All elements of the programme have to be supported by quantified Total Quality Management processes and managed each step of the way so that corrective action may be taken in time. Regular progress reports and management action plans, based primarily on quantitative/measured data, supported by qualitative data were key elements of the programme. By having established measurement tools, utilized through-out the programme, it became possible to manage the development of the small contractors scientifically.**

References

- Building Industries Federation South Africa. Undated, during 1990's. *Manual for Smaller Builders*. Midrand.
- Construction Industry Development Board. 2004/2005. *Annual Report 2004/2005*. Pretoria.
- Eastern Cape Development Corporation (ECDC). 2007. *Integrated Emerging Contractor Development Model (IECDM): Close-Out Report*. East London.
- Hauptfleisch, A.C. 2006. *Integrated Emerging Contractor Development Model*. University of the Free State. Johannesburg.
- Hauptfleisch, A.C. 2008. *The Role of Total Quality Management as a Key Intervention in Small Construction Contractor Development in South Africa*. 5th Post Graduate Conference, Construction Industry Development Board. Bloemfontein.
- Hauptfleisch, A.C, Verster, J.J.P and Lazarus S. 2008. *The Quantification of Outcomes in Emerging Construction Contractor Development*. ASOCSA Conference, Cape Town.
- Republic of South Africa. 2003. *Broad Based Black Economic Empowerment Act (No 53 of 2003)*. Pretoria. Government Printer.
- Republic of South Africa. 2000. *Construction Industry Development Board Act (No 38 of 2000)*. Pretoria. Government Printer.
- Republic of South Africa. 2003. *Skills Development Act (No 97 of 1998)*. Pretoria. Government Printer.
- Council for Scientific and Industrial Research (CSIR). 2007. *Close-Out Report: Emerging Contractor Development Model for the Eastern Cape Development Corporation*. Pretoria.