INFRASTRUCTURE DEVELOPMENT

IN

SOUTH AFRICA

Armand Venter

Infrastructure Development in South Africa

By: Armand Venter

Submitted in fulfillment of part of the requirements for the Degree of B.Sc (Hons) (Construction Management)

In the faculty of Engineering, Built Environment and Information Technology

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Mr JH Cruywagen

October 2009

Declaration by student

I, the undersigned, herby confirm that the attached treatise in my own work and that any sources are adequately acknowledged in the text and listed in the bibliography.

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Signature of acceptance and confirmation by student

Abstract

Title of treatise	:	Infrastructure Development in South Africa
Name of author	:	Mr Armand Venter
Name of study leader	:	Mr J H Cruywagen
Institution	:	Faculty of Engineering, Built Environment and Information Technology
Date	:	October 2009

The focus of this treatise is to look at the financial feasibility of infrastructure development in South Africa (mainly the improvement of transport facilities), and the impact it will have after completion of the main projects that's currently busy for ex. Gautrain, Gauteng Freeway Improvement Programme ect.

It also looks at the employment opportunities that major infrastructure projects provide and furthermore at other infrastructure developments in and around South Africa such as Electricity, Telecoms and Water projects.

It will see if all the hassle to improve major infrastructure is worthwhile and if it will actually make a difference to the economic growth in a developing country like South Africa.

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CHAPTER 1 - Introduction

1. Introduction

The focus of this treatise is to look at the financial feasibility of infrastructure development in South Africa (mainly the improvement of transport facilities), and the impact it will have after completion of the main projects that's currently busy for ex. Gautrain, Gauteng Freeway Improvement Programme ect.

It also looks at the employment opportunities that major infrastructure projects provide and furthermore at other infrastructure developments in and around South Africa such as Electricity, Telecoms and Water projects.

It will see if all the hassle to improve major infrastructure is worthwhile and if it will actually make a difference to the economic growth in a developing country like South Africa.

2. Statement of Problem

Is it feasible to carry out infrastructure development projects in South Africa where large sums of funding is necessary, and what is the impact on South Africa in its whole and more specific the impact on local communities where these projects take place ?

3. Statement of Sub-Problems

3.1) Procurement Procedures

How does the tendering procedure work and who is able and legally correct to tender?

3.2) Black Economic Empowerment and Community Involvement

How do BEE and Community Involvement requirements effect infrastructure development in South Africa?

3.3) Health and Safety

How do Health and Safety laws effect infrastructure development?

3.4) Infrastructure Investment and Economic Growth

How does investing in infrastructure development effect South Africa's economic growth?

4. Hypothesis

4.1) Procurement Procedures

It differs on each contract, but each project requires a certain level of rating by the CIDB for a company to tender for infrastructure projects.

4.2) Black Economic Empowerment and Community Involvement

4.2.1) A certain level of BEE has to be reached for a company to be able to do infrastructure projects.

4.2.2) A certain percentage of each contact value has to be done by local community contractors, this requirement is put in place to ensure that main contractors do get the local people involved.

4.3) Health and Safety

4.3.1) Health and Safety do affect a number of areas in infrastructure development.

4.3.2) If Health and Safety is not in place and up to standard, projects would be put on hold until all the requirements is met.

4.4) Infrastructure Investment and Economic Growth

4.4.1) Investing heavily into infrastructure development in South Africa is a stable and long term investment.

4.4.2) Infrastructure development in reality, effect economic growth in South Africa in a number of positive ways.

5. Delimitations

The ever changing industry itself and the regularity of amendments to policies and regulations.

6. Definition of Terms

6.1) BEE – Black Economic Empowerment

6.2) H&S – Health and Safety

6.3) CIDB – Construction Industry Development Board

6.4) GFIP - Gauteng Freeway Improvement Programme

6.5) CoA – Cost of Accidents

6.6) GDP – Gross Domestic Product

7. Assumptions

No assumptions have been made.

8. Importance of the Study

The importance of the study was to determine if it was sensible for the South African government to heavily invest into the infrastructure development as they plan to do and have done the past few years.

9. Research Methodology

9.1) Interviews with Appropriate People

9.1.1) Contracts Manager – Moseme Road Construction (Chris Kroon)

9.1.2) Project Manager – Lonerock Construction (Tommy Strydom)

9.1.3) General Manager – Moseme Road Construction (Eric Brough)

9.1.4) CIDB Representative

9.1.5) Nurcha Representative

9.1.6) Local Municipality Representative – Chief Mogale City (Mike Church)

9.1.7) EMPOWERISK – Winnie Mthembu (Health and Safety)

9.2) Literature

9.2.1) South Africa.info

9.2.2) SAFCEC Reports

9.2.3) GCC Tender Documentation

9.2.4) SABS Tender Documentation

9.2.5) Government Gazettes

CHAPTER 2 – PROCUREMENT PROCEDURES

1. Introduction

Procurement is by definition a process i.e. a succession of logically related actions occurring or performed in a definite manner which culminates in the completion of a contract.

There are a finite range of methods and procedures associated with the various procurement sub-processes.

2. Procurement procedures

Procurement procedures relate to the manner in which tender offers are solicited.

Open procedure

-Tenderers respond to public advertisement

Negotiated procedure

-Solicited from single source

Nominated procedure

-Establish electronic data base

-Invite tender offers from data base using search criteria and their position

-Reposition on data base after award

Qualified procedure

- Call for expressions of interest

-Prepare short-list

- Invite tenders from shortlist

Quotation procedure

-Solicit tender offers from not less than three people

Shopping procedure

-verbal offers obtained from three sources

-contract with lowest source

Proposal procedure using the two envelope system

-tenders submit financial and technical proposals in two envelopes

-financial proposal opened only after technical proposal is found to be acceptable

Proposal procedure using the two stage tendering procedure

-call for technical proposals

-invite financial proposal from selected tenderers who submitted proposals

3. Eligibility criteria

Conditions of tender state that only tenderers who are eligible to submit tenders may do so.

Tender documents must set out eligibility criteria for e.g. must have grading 5CE or higher.

4. Evaluation of tender offers

Table 1: Evaluation of tender offers

Method	**Criteria**
Method 1	Financial offer
Method 2	Financial offer and preferences
Method 3	Financial offer and quality
Method 4	Financial offer, quality and preferences

Construction Industry Development Board (2009)

Quality is the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs

Note Treasury refer to **functionality rather than **quality**

5. Addressing quality

Quality = totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs

Table 2: Addressing quality

Specifications	Specify requirements in scope of work
Life cycle costing	Incorporate in the evaluation of the financial offer
Qualified procedure	Invite offers only from prequalified tenderers
Eligibility criteria	Introduce quality into eligibility criteria
Undertakings at tender stage	Require tenderers to submit quality management plans with tender

Preference	Award a preference for attainment of quality standards
Evaluation criteria	Score quality in the evaluation of tenders

Construction Industry Development Board (2009)

6. Evaluating quality in tender offers

Quality criteria:

- relate directly to the contract and to matters that cannot directly be expressed in monetary terms
- enable the most economically advantageous offer to be established

Do not include in quality criteria:

- the composition of workforces in terms of race, gender or disability
- matters relating to the basic capability or capacity of the tendering entity to execute the contract.

Examples of quality criteria:

- technical merit;
- response to (ability to relate to) the proposed scope of work/project design

- aesthetic, functional, safety & environmental characteristics
- quality control practices and procedures
- reliability, durability
- organization, logistics and support resources relevant to the scope of work;
- qualifications and demonstrated experience of the key staff in relation to the scope of work;
- demonstrated experience of with respect to specific aspects of the project / comparable projects;
- running costs;
- after-sales service and technical assistance;
- delivery date, period of completion

7. Register of Contractors

A system created for contractors to register with the CIDB, therefore the Register of Contractors has been established to:

- support risk management in the tendering process
- reduce the administrative burden associated with the award of contracts
- reduce tendering costs to both clients and contractors

- enable effective access by the emerging sector to available work, as well as development opportunities
- assess the performance of contractors in the execution of contracts and thus provide a record of performance for contractors
- promote minimum standards and best practice of contractors
- store and provide data on the size and distribution of contractors operating within the industry, and on the performance and development of contractors and target groups

7.1. Who must register?

Any enterprise that tenders or enters into a contract for construction works with the public sector must be registered on the CIDB Register of Contractors. Joint Ventures established on a contract specific basis do not have to register, provided that each partner of the Joint Venture is separately registered.

7.2. The grading system

The Register of Contractors grades all contractors according to their capability to perform construction projects. A contractor grading designation is determined by assessing both financial and works capabilities. This is based on the contractor's past performance.

Financial capability is evaluated in terms of the contractor's Best Annual Turnover during the past 2 years, the largest works contract the contractor has performed in the past 5 years, and the value of

the available capital that a contractor is able to secure in order to perform a construction works contract. Available capital is determined by assessing the contractor's net asset value and financial sponsorships that they may have secured. Nett Asset Value is equal to the contractor's net assets minus liabilities.

Works capability is evaluated in terms of the largest contract the contractor has performed in the class of works applied for, as well as compliance with statutory requirements (e.g. registration with the Electrical Contractors' Board of SA). The contractor must also have the required number of qualified professionals in their employ for the grade applied for. These can be either full-time employees or full-time equivalent.

(Construction Industry Development Board – Tendering Procedures)

(2009)

7.3. What grade should you apply for?

There are nine grading levels. The different grades show the size of contracts a contractor is capable of doing. This is based on financial and works criteria. The financial criteria comprises: Best Annual Turnover, track record and available capital. Works capability assesses a contractor's track record and the number of qualified professionals in certain specialist categories (e.g electrical).

7.4. What class of works should you apply for?

You should apply for the class of works you are capable of doing. For example, if you do general building you should apply for general building and not civil engineering or specialist works.

You may register for more than one grade and class of works.

7.5. Potentially emerging status

In addition to the grade applied for, the contractor can also apply for recognition as a potentially emerging contractor. Potentially Emerging status indicates that the contractor has significant development potential, but has impediments that must be overcome. Potentially Emerging status also reflects the black majority ownership of the enterprise.

7.6. How your grade is reflected

The contractor grading consists of a combination of alphanumeric characters that represents the capability of the contractor in a particular class of works. Eg: 5GB represents a contractor that is capable of performing a contract to the value of R6.5m in a General Building class of works.

Tender value range refers to the contract value range a contractor is considered capable of executing. It is designated on a scale of 1 to 9 for a particular class of construction works. A contractor with a tender value range of 1 is considered capable of executing contracts up to R 200 000 in value. A contractor with a tender value range of 9 is considered capable of executing construction contracts of more than R 130 000 000 in value.

7.7. Benefits of the Register of Contractors:

The registers of contractors:

Enables effective targeting of contractors for development

Provides information about the size, distribution and capability of contractors

Facilitates sustainable empowerment

Establishes the foundation for implementation of a National Contractor Development Programme

Provides a risk management tool for contractors and clients

Helps contractors to build track record

7.8. Registration fees:

Contractor registration fees are payable for each application by a contractor, e.g. new registration applications, application to up-grade, for each class of works that a contractor wishes to register in. An annual fee which is due for the highest tender value range in which the contractor is registered. Contractors may register in more than one class of works, if they so wish. Fees payable are as follows:

- **Admin Fee** is payable for each class of works applied for as well as for each separate administration activities

- **Annual Fee** is payable each year based on the highest grade that the contractor is registered in any class of works except for Grade 1 registered contractors who are required to pay once for a period three years.

Table 3: Contractor registration fees schedule

Contractor Grading Designation	Upper limit of Tender Value Range Designation	Admin Fee for each Class of Work	Annual Fee for highest Class of Works
1	R 200,000	R 450	
2	R 650,000	R 450	R 250
3	R 2,000,000	R 750	R 350
4	R 4,000,000	R 750	R 900

5	R 6,500,000	R 750	R 1,750
6	R13,000,000	R 750	R 3,500
7	R40,000,000	R 750	R 9,000
8	R130,000,000	R 750	R 29,000
9	No limit	R 750	R 55,000

Construction Industry Development Board – Tendering Procedures (2009)

8. The Register of Projects

The Register of Projects has been established to:

- gather information on the nature, value and distribution of projects
- provide the basis for a best practice project assessment scheme to promote the performance of public and private sector clients in the development of the construction industry.

i-Tender

The i-Tender is an additional tool provided by the cidb to:

- enable employers to advertise tenders at no cost
- reduce the administration required for the evaluation and award of tenders

- allow contractors, employers and the public, access to accurate information regarding tender opportunities and awards, as well as contractors' track records and allow relevant parties to make informed decisions.

9. Summary

Procurement philosophy is aimed at broad-based BEE, thus, contributing to and achieving economic growth in our country and the Southern African region as a whole, by, for instance, training historically disadvantaged individuals (HDIs) to become economically active, by reducing unemployment and by stimulating growth in the small and informal sectors of our economy. In so doing, the provision of basic services, builds capacity and acts as a catalyst for development in other growth areas, creates employment, develops small and medium enterprises, alleviates poverty and elevates the status of women.

To ensure efficient and a least cost, efficient, effective and uniform procurement of all services and goods, required for the proper functioning, whilst developing, supporting and promoting broad based black economic empowerment, small, medium and micro enterprises. To ensure the effective and uniform management and disposal of goods and assets through the supply chain management process.

See annexure A and B for a detailed Preferential Procurement Policy Evaluation, example as done by SANRAL (The South African National Roads Agency Ltd).

10. Test of Hypothesis

It differs on each contract, but each project requires a certain level of rating by the CIDB for a company to tender for infrastructure projects.

Therefore according to chapter 2, the above stated hypothesis is true.

CHAPTER 3– Black Economic Empowerment

1. Introduction

Broad-based Black Economic Empowerment (B-BBEE) is an initiative launched by the South African Government to address the restrictions that exist within the country for Black individuals to participate fairly in the economy.

The BEE Act allows for the existence of the BEE 'Codes of Good Practice' which provide the structures for the Scorecards and certain rules associated with claiming BEE points.

BEE is essentially a buyers' club. If you have a BEE Certificate then your customers can claim BEE points on their BEE Scorecard for buying from your business.

You can get different level BEE certificates (from level 8 to level 1) depending on what contributions you have made to black people from your business. The better level of BEE Certificate you have the more BEE points they can claim.

When your customers are choosing which supplier to use they are likely to look at price, quality and service and your BEE Score. Depending on how important BEE points are to your customer, the more they will consider your BEE Score over the other three elements.

(BEESA Consulting – Andrew Bizzell (2009))

2. BEE's effect on Different sized Entities

The BEE Codes of Good Practice allow for three levels of measurement. The intention is to take into account the challenges faced by small businesses.

2.1 Exempted Micro Enterprises (EMEs)

It is unrealistic to expect a start up business to contribute to BEE as there are likely to be few employees. Most businesses try to limit their staff costs in the first few years and including additional senior staff of any colour can put the business in danger.

For this reason any business that turns over less than R5 million is exempted from being measured against any BEE Scorecard. They get allocated a Level 4 BEE status (100% procurement recognition) or a Level 3 BEE status (110% procurement recognition) if they have more than 50% black ownership.

EMEs are still required to produce a BEE Certificate to give to customers to confirm that they are Exempted. These certificates can be sourced from:

- www.exempt.co.za
- Accounting Offices
- Financial Auditor
- Verification Agency
- www.easyme.co.za

(BEESA Consulting – Andrew Bizzell (2009))

2.2 Qualifying Small Enterprises (QSEs)

Any business that turns over more than R5 million but less than R35 million qualify as a QSE.

QSEs tend to be family run businesses that would struggle to include additional people at ownership and Senior Top Management level. However, a white owned QSE can start to employ black staff, train black staff, buy from BEE Certified Suppliers and support black businesses and communities.

QSEs get scored against a QSE Scorecard and can choose to be scored against any 4 of the 7 sections on the Scorecard. The QSE Scorecard is easier to score points against than the Generic Scorecard.

2.3 Generic Enterprises

Any business that turns over more than R35 million per annum is measured against a Generic BEE Scorecard.

The same 7 sections are included on the Generic and the QSE Scorecards. The targets and the point allocations are different and Generic companies are measured against all 7 sections of the BEE Scorecard.

3. BEE Scorecard

As described above there are two types of BEE Scorecard; a QSE Scorecard and a Generic Scorecard.

The Scorecards provide the 7 elements against a company will be scored and give the targets and the associated points available.

Companies can then consider the elements and attempt to score points in each of the 7 elements.

The points in each element can be secured by achieving the required targets. Should you achieve a percentage of the target then the same percentage of points can be claimed.

The Scorecard is simply a framework against which your business can score points in order to secure a BEE Certificate.

Your BEE Certificate can then be used by your customers to claim BEE spend when they procure goods and services from your business.

4. BEE Verification

BEE Certificates can be issued by any Verification Agency so long as they are approved to do so by SANAS.

The Certificate can only be issued once a full verification has been performed and the documentation presented by your company has been verified.

On your certificate you should find the following information;

Company name and number

Type of Certificate (Group/Entity/Division)

BEE Category (QSE/Generic)

BEE Level (1-8)

Procurement Recognition %

Black Ownership %

Black Women Ownership %

Value Adding Supplier (Yes/No)

Certificate Issue Date

Certificate Expiry Date

You do not need to provide any additional information to your customers. Your BEE Certificate is regarded as sufficient as supporting evidence of your B-BBEE credentials.

(BEESA Consulting – Andrew Bizzell (2009))

5.How to develop a strategy

When you are either starting down the BEE road or if you are in the process of improving your score you need to have a strategy. Your BEE score will not manage itself and it is very dangerous to simply call a verification agency in to find out what score you achieved this year without managing it and being sure you have achieve your desired score before getting verified!

Someone in your business should have a sound understanding of BEE and be able to calculate your BEE score. There are software tools available to help in this process (see www.boxsmart.co.za for QSEs).

You need to choose which elements you are going to be scored against and then develop a strategy to ensure you score those points.

Your strategy may span a 12 month period, 5 year period or simply be a once off project;

Ownership – Once off project

Management Control – Once off project (with succession planning)

Employment Equity – 12 month period

Skills Development – 12 month period

Preferential Procurement – 12 month period

Enterprise Development – 5 year period

Socio-economic Development – 5 year period

You should note that each section is also scored against different periods. These tend to tie in with your strategy timelines.

If you want to do this properly it is advisable to call on consultants who can assist and share best practice tips and experience. As they

have been developing strategies for other businesses that can share in their experience of what does and does not work.

Consulting costs are not usually expensive with consultants charging between R800 – R1,500 per hour.

When choosing a consulting firm you should ask the specific consultant what experience they have and ask for references. There are examples of consultants providing in accurate information as BEE is a new issue and there is scope for interpretation which can lead to difficulties.

(*www.bee.co.za (2009)*)

6.BEE and the importance of Administration Systems

BEE is all about being strategic and having good administration systems in place.

This is good for South African business as typically we are weak on administration and having a good administration system will improve our businesses.

Without the documentation to prove your BEE activities you cannot claim the associated BEE points. All activities relating to BEE have to be documented and then provided as proof to a verification agency.

Should you choose to self assess (not use a verification agency) then you still have to produce evidence that support your claims.

Listed below are the administration systems you should have in place;

Ownership = none

Management Control – none

Employment Equity – Payroll system, Employment Documentation File

Skills Development – Skills spend tracker, Skills Documentation File

Preferential Procurement – Procurement system

Enterprise Development – Documentation File

Socio-economic Development – Documentation File

(*www.bee.co.za (2009)*)

7.Who should manage BEE in a Business?

You have three options when considering who should manage your BEE Score;

The Chief Executive Officer (CEO) in any business should take direct responsibility for the company's BEE Score. I have not seen any business succeed in driving BEE successfully without the CEOs direct involvement.

The CEO is likely to delegate certain operational responsibility to other staff members but the drive should come from them.

The best structure is as follows;

Chief Executive Officer – Ownership and Management Control

Chief Financial Officer – Preferential Procurement and Enterprise Development

Employment Equity Committee – Socio-economic Development, Skills Development and Employment Equity.

The Employment Equity Committee would need some training as they are likely to have limited experience in making strategic recommendations to the CEO on these issues. The CEO should sit in the Employment Equity Committee along with someone with HR experience (preferably the HR Manager).

If the company to too small for this type of structure then the responsibility would fall back on the senior executive team.

In very large businesses it is advisable to appoint a Head of Transformation.

(*www.bee.co.za (2009)*)

8.BEE and Transformation

It is important to note that BEE is not transformation. BEE is a reporting exercise and encourages specific activity in a business. However it is a quantative measure and does not take into account any qualitative elements.

If Transformation is not achieved then the business will struggle to maintain their BEE Score. This becomes more evident the larger the business.

Transformation, in essence, is the establishment of a fair working environment along with the removal of preconceptions and assumptions.

Once a staff team is operating together side by side with a common goal in mind and within a clearly understood corporate culture then you have achieved transformation.

Employment Equity numbers do come into the equation but reporting on Employment Equity is obviously not transformation.

9.Importance of Job Creation and Policies

South Africa remains committed to halving poverty and unemployment by 2014, despite the global economic downturn, says Planning Minister Trevor Manuel.(14 July 2009)

Outlining the government's Medium Strategic FrameWork (MTSF) in Pretoria on Tuesday, 14 July 2009, Manuel said its main focus was to minimise the impact of the economic crisis on the country's productive capacity, on jobs and on poverty reduction measures.

The downturn has cost South Africa 200 000 jobs so far this year.

"The challenge that presents itself to us, is that we cannot continue with the high levels of unemployment ... This is the kind of commitment that we must make."

Manuel (2009) said the government's focus would be on creating decent jobs, adding that this was consistent with President Jacob Zuma's promise to create half-a-million job opportunities by year's end.

Though these would tend to be short-term jobs originating from the state's infrastructure building programme, they would bring relief to families, and the two types of job-creation should therefore "be read together", he said.

"In the short run, much employment creation will likely come from activities that depend largely on government spending, especially public-employment schemes based in infrastructure construction programmes and government-supported community service and cultural activities," the framework says.

"The challenge is to fast-track these programmes in order to alleviate the suffering caused by the global economic downturn."

Manuel said low-import industrial activity, such as building houses, should be boosted to help create jobs and new infrastructure projects started to fill the void left by the completion of work for next year's soccer World Cup.

"We need to continue moving on infrastructure, otherwise we will fall into a procyclical trough at the end of the 2010 Fifa World Cup."

He said the medium-term strategy to create jobs would see the state seek to stimulate the car, chemical, metal fabrication, tourism, clothing and textile industries.

"Focus areas will also include agriculture, public services like health and education, private services such as the financial and other business services."

Manuel said the job creation drive – and the need to improve food security –- would likely include an agriculture reform strategy.

According to the document, this would address "the mass joblessness and poverty of the former bantustans".

He played down a firm target to get 30% of farm land into black hands by 2014, saying instead the important issue was to ensure that emerging farmers had the means to succeed and that land was used productively.

"We want to look beyond colour," he said.

The former finance minister reiterated that despite the recession, government remained committed to planned infrastructure expenditure of some R780-billion in the medium term, but government departments would have to cut unnecessary spending.

To this end, a comprehensive review of government spending would be completed before his successor, Pravin Gordhan, read his first budget.

Joel Netshitenze (2009), head of policy in the Presidency, said he hoped however that even in the coming months, departments could identify areas where they could save funds in order to focus more effectively in others.

The MSTF, a new planning blueprint introduced by Zuma's administration, aims to ensure that the government work in a coherent way in order to achieve its aims.

It identifies 10 strategic priorities, including economic and social infrastructure, rural redevelopment, food security and land reform, access to quality education, improved health care, and the fight against crime and corruption.

Manuel (2009), said that in order to achieve the government's commitments, it needed a vigorous analysis of its own performance. It would also require buy-in from social partners.

He insisted that the country's trade unions had agreed to the monitoring of teachers' performance to ensure "better outcomes" in education, but conceded that the mechanisms were still a matter of debate.

In the wide-ranging briefing, he also underscored a commitment from Gordhan to stick to inflation targeting, despite strong opposition from the Congress of SA Trade Unions (Cosatu).

"You don't abandon the approach to price stability because it is difficult to achieve."

He scoffed at a press report that the government's blueprint for dealing with the global downturn and the country's first recession since the early 1990s, developed with Nedlac, was in a state of "paralysis".

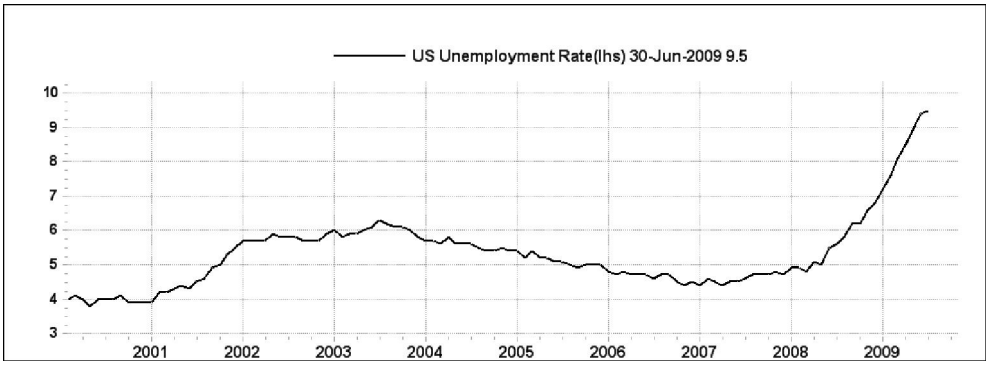
Admitting that the economic rescue plan was not taking shape "quite as speedily as we would like", he said he checked on the story and found it was a "fiction".

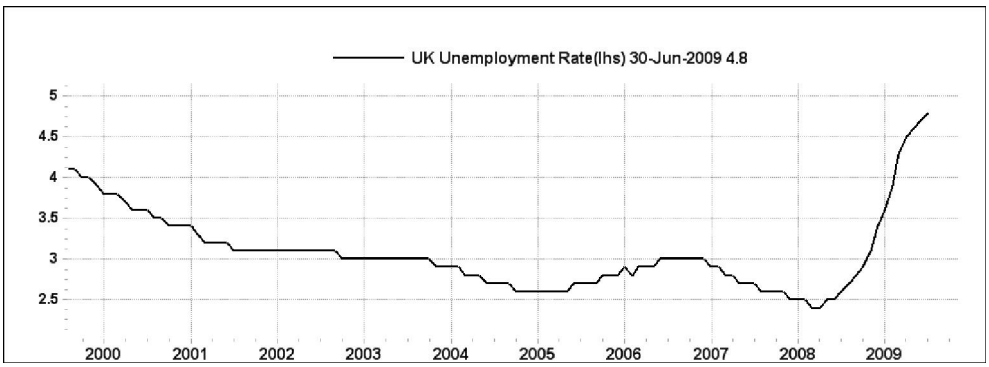
(www.southafrica.info (2009))

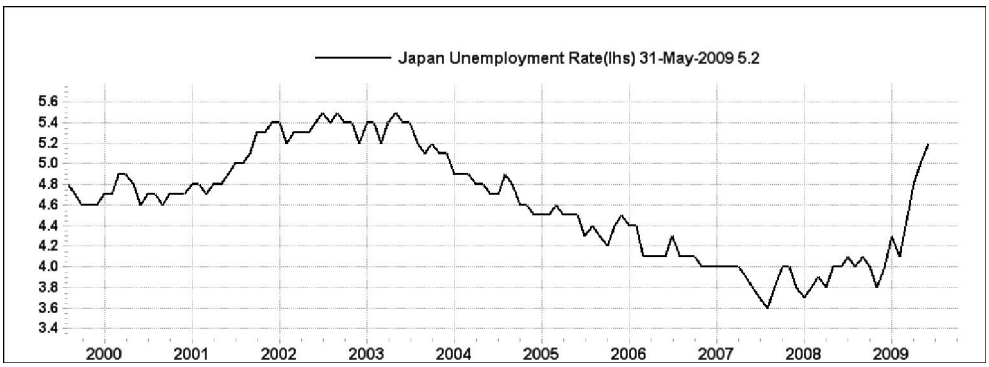
10. Unemployment Rate

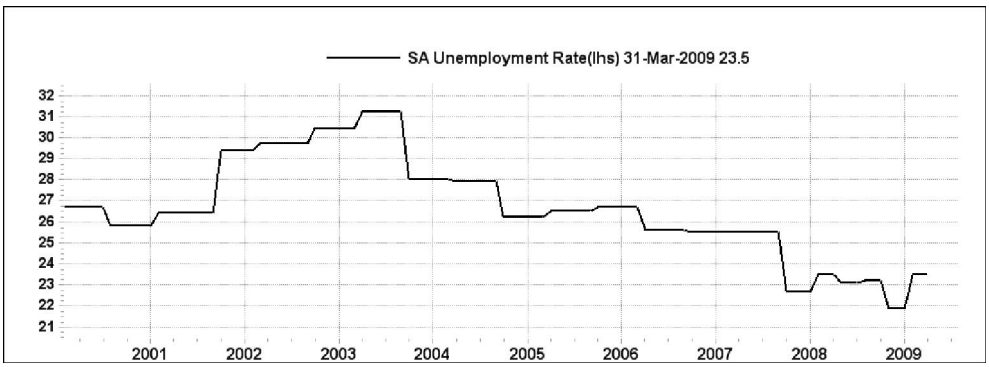
South Africa's unemployment rate compared to developed countries:

Figure 1: Comparison of unemployment rates









(Sanlam – Hot or Cold by Gerhard Cruywagen (2009))

11. Summary

South Africa's policy on BEE is not simply a moral initiative to redress the wrongs of the past. It is a pragmatic growth strategy that aims to realize the country's full economic potential.

No economy can grow by excluding any parts of its' people, and an economy that is not growing cannot integrate all of its' citizens in a meaningful way.

The constitution of South Africa promote the achievement of equality, legislative and other measures designed to protect or advance persons, or categories of persons, disadvantaged by unfair discrimination may be taken."

The Constitution forbids unfair discrimination on the basis of race, sex, colour, religion etc but allows by proper legislative controls and measures fair discrimination for the purposes of eliminating the disadvantages created by discrimination of the past. Three pieces of legislation enacted for these purposes are the Employment Equity Act (no. 55 of 1998); the Broad-Based Black Economic Empowerment Act (no.53 of 2003) and the Preferential Procurement Policy Framework Act (no. 5 of 2000).

12. Test of Hypothesis

12.1) A certain level of BEE has to be reached for a company to be able to do infrastructure projects.

12.2) A certain percentage of each contact value has to be done by local community contractors, this requirement is put in place to ensure that main contractors do get the local people involved.

Therefore according to chapter 3, the above stated hypothesis is true.

CHAPTER 4 – Health and Safety

1. Introduction

The Occupational Health and Safety Act No. 85 of 1993 (OHS Act) gives employers and employees the general guidelines which are needed in the workplace to protect employees from occupational hazards and risks which may cause them physical or physiological harm. The OHS Act aims to make sure that working conditions are acceptable. This means that everyone in the workplace must be aware of all hazards, as well as the health and safety standards which should be in place to prevent any unacceptable exposure to these hazards. With good planning, management systems and teamwork, most incidents can be prevented.

1.1 Planning

The employer needs to anticipate and/or identify all the hazards. This is done by surveying the workplace and getting information from specialists who are familiar with those hazards. People with the necessary knowledge and skills are appointed to carry out these tasks – e.g. health co-ordinators, safety co-ordinators, fire co-ordinators, trainers, health and safety representatives.

1.2 Management Systems

Once the hazards and risks are known a system of checks and controls must be put into place. This is to make sure that preventative or corrective action is defined and implemented. Safe work procedures should be designed and available and employee training must be given to everyone. Teamwork – safe workplace is to share the responsibilities. The employer should appoint employees who are familiar with the workplace, and who are willing to act as the link and co-ordinate health and safety needs. The employer must provide training and make sure that there is good communication and support at all levels within the workplace. To prevent incidents every person must know what is expected of them and why.

The health and safety representative is part of the work team and acts as a co-ordinator for health and safety. The most effective way to control hazards is to take action as soon as an unsafe act or condition is identified. The representative can act as the link between employees, the employer, and when necessary, the Department of Labour. The representative plays a vital role in carrying out all assigned duties, and assisting others to carry out their tasks and responsibilities. Problems are then quickly identified and auctioned. All representatives also serve on a health and safety committee.

Together with management they meet to discuss any problems and agree on the action that should be taken to create and maintain health and safety in the workplace. Good representatives are very valuable and help

to prevent incidents which could harm employees, contractors, visitors and/or the environment.

2. Safety and Environmental Check List

As mentioned above it is very important for a contractor to plan and have a system of checks and controls that he has to adhere to, so that he complies with all the health and safety rules and regulations.

2.1 Construction Occupational Health, Safety and Environment Check List

Checklist Categories :

a) Administrative & Legal Requirements
b) Education & Training
c) Public Safety, Security Measures & Emergency Preparedness
d) Personal Protective Equipment
e) Housekeeping
f) Working At Heights (incl. Roofwork)
g) Scaffolding/Formwork/Support Work
h) Ladders
i) Electricity
j) Emergency/Fire Prevention And Protection
k) Excavations
l) Borrow Pits
m) Tools
n) Cranes
o) Builders Hoist

p) Transport & materials Handeling Equipment
q) Site Plant And Machinery
r) Plant & Storage Yards/Site Workshop Specifics
s) Workplace Environment, Health & Hygiene

(Gauteng Provincial Government – Gert Venter (2008))

A detailed Construction Occupational Health, Safety and Environment check list is attached in Annexure C.

2.2 Government Policy on Environment Health & Safety

2.2.1 Why is it important to protect our environment?

The Constitution says that everyone has the right to a safe and healthy environment.

The quality of our environment affects all of us no matter where we live. The environment is our home. If it is not healthy, we will not be healthy either. When people abuse the environment, this affects us all. If water is polluted, if the air is full of smoke and chemicals, if food contains poisons, people (and plants and animals) get sick.

All people also have a responsibility to protect and use the environment in a way that will protect it for us, our children, and our grandchildren.

Many people do not understand why we need to worry about the environment. They think people's needs and environmental needs cannot

both be looked after, and that people are more important than the environment. They say that our major aim must be creating economic growth and jobs, and that the green (environmental) agenda must take second place. Some people feel hurt or insulted when others show concern over endangered species like rhinos when children do not have enough to eat.

But, the environment is really the whole planet on which we live. Everything (winds, trees, animals, insects, people, etc) forms part of the living system of earth. For example, trees are important because they make oxygen which helps us breathe. If too many trees are cut down for firewood or furniture this reduces the amount of oxygen going into the earth's system. Over time, this can have a very bad effect on people and animals. These are some examples of what is happening to the earth because it has been exploited and not protected: weather patterns have changed, there are more droughts and more floods, the temperature is rising and most important, the ozone layer that should protect us from the dangerous rays of the sun has been damaged and does not work as effectively as it did before.

So, it is important to protect the environment from being exploited and it is the reason why people now talk about the term sustainable development.

2.2.2 What is sustainable development?

Sustainable development is using the world's resources for development in a way that ensures that future generations can do the same. This means that resources can be used indefinitely because the type of development

balances the needs of humans, with the needs of the environment, in a manner that does not do excessive harm to the environment. For example, a sustainable forestry industry would mean not cutting down all the trees at the same time so that there are no trees left. It means cutting down some of the trees, which people may use for firewood and also planting new trees to replace those harvested, so that there will be trees in the years ahead.

The international importance of sustainable development was officially recognised by the world community at the first Earth Summit in Rio de Janeiro, Brazil, in 1992. The second Earth Summit took place in Gauteng in 2002. It was called the World Summit on Sustainable Development (WSSD) in recognition of the need for balance between environmental (or green issues) and human development.

Many countries have not yet begun to use the principles of sustainable development properly. These are the reasons why green activists argue for international agreements on cutting down pollution and looking after the wilderness that remains on earth.

South Africa has signed and ratified certain important international conventions that aim to protect the environment. One of the most important of these is the Convention on Biodiversity. The main purpose of this convention is to encourage governments to apply the principles of sustainable development in the running of their countries and the management of natural resources. *(Education Training Unit)*

2.2.3 What can councils and communities do to promote sustainable development?

Life on our planet is interconnected – for example, if we destroy all the trees in South Africa or Africa, it will contribute to global warming and affect people, not only on the continent but also across the world. Environmental awareness and action, however, start at local level. There are a number of issues that affect local communities, around which the council and communities should mobilise and take action such as:

- **A clean environment:** The council at hand has the legal responsibility to ensure that refuge is removed regularly, so that it does not become a health risk. However, communities and individual also have responsibilities to ensure that they do not litter. Companies and public institutions such as clinics and hospitals are also not allowed to dump hazardous materials such as chemicals or medical waste near human settlements. We all have a responsibility to keep our rivers clean.
- **Occupational health and safety:** The law protects all workers against hazards associated with work. We must ensure that all workers know their rights.
- **Using resources sustainably:** Councils make choices about service delivery which have implications for the sustainability of natural resources – for example, whether to use solar energy or electricity in their energy plans, whether to give permission for buildings in green spaces, providing facilities to enable communities to recycle, etc. Individuals and households also have responsibilities to use resources in a sustainable manner – e.g. using unleaded petrol, not wasting water or power, recycling, etc.

2.2.4 Government framework and responsibilities for environmental management

The National Environmental Management Act of 1998 provides a framework for the country in its approach to the environment. It covers the following areas:

- Land, planning and development;
- Natural and cultural resources, use and conservation;
- Pollution control and waste management.

A number of government departments have specific responsibilities to address different aspects to sustain our environment and safety. For example, the labour department has inspectors that go to places of work to see that workers do not work in conditions which is unsafe for them. The health department and municipalities take responsibility for hygiene, waste management, etc. The department of the environment and tourism as well as agriculture and water deal with pollution of rivers.

2.2.5 How can development workers assist in maintaining environmental health and safety?

Keep your eyes open for threats to community health such as:

- Uncontrolled waste dumps;
- Dumping of medical and chemical waste;

- Pollution of air and rivers and water supplies by factories;
- Use of banned pesticides by farmers;
- Unhygienic housing and slaughtering of animals for selling to the public;
- Broken sewage pipes and systems;
- Flow of human waste into drinking water supplies like dams and rivers.

Report any problems to your municipality or one of the relevant government departments.

3.National Occupational Health And Safety Policy

3.1 INTRODUCTION

The national Occupational Health and Safety (OHS) policy creates the framework within which the integrated system can be established. The Policy applies to all sectors of the economy. Its primary objective of the policy is to reduce the number of work-related accidents and diseases in South Africa by promoting a culture of prevention. Its secondary objective is to ensure equitable medical, compensation and rehabilitation benefits to the victims of work-related accidents and diseases.

In March 2003, South Africa ratified the International Labour Organisation's Occupational Health and Safety Convention 155 of 1981. This requires ratifying countries, after consulting organised business and labour, to develop and implement a national OHS policy.

3.2 THE MAGNITUDE OF THE OHS PROBLEM IN SOUTH AFRICA

Occupational accidents and disease impose an unacceptably high cost on South Africa. The cost is estimated to equate to 3.5% of the national Gross Domestic Product (GDP). Costs to employers include property damage, lost production time, lost skills as well as the cost of engaging and retraining replacements. Costs to workers and their families include permanent disabling injuries, debilitating disease, loss of employment and loss of breadwinners.

Prior to 1994, the regulation of occupational health and safety was marked by government indifference, employer neglect and a widespread disregard for the fundamental rights of workers and their communities. There was minimal investment in the government agencies charged with regulating OHS. They lacked the personnel, other resources and the skills to implement effective prevention strategies.

The absence of an integrated policy and framework has had the consequence that the very considerable developments that have been introduced since 1994, have also had the result of exacerbating inconsistencies in the regulation of OHS in different sectors.

(Kwazulu–Natal Department of Health)

3.3 MAJOR OHS CHALLENGES

The major challenges that must be addressed in improving OHS performance are -

• Developing appropriate institutional arrangements to minimise overlaps, gaps and duplication;
• Establishing appropriate funding mechanisms for prevention agencies;
• Expanding occupational health services;
• Dealing with the consequences of the HIV epidemic on levels of work related injury and disease;
• Servicing SMMEs and the informal sector and protecting workers in marginal employment and vulnerable workers;
• Improving OHS skills and human resources in the public and private sector;
• Developing a culture of prevention among employees and workers;
• Improving research capacity; and
• Developing a comprehensive reporting system and database for work related accidents and disease.

3.4 BENEFITS OF AN OHS POLICY

The effective prevention of work-related accidents and ill-health will have enormous social and economic benefits. These include improvements in productivity and competitiveness and the quality of life of the working population. Adequate OHS policy and standards are required for South Africa's continued integration into

the world economy. The effective management of many safety hazards will contribute to improved levels of public safety. The effective control at source in workplaces of hazardous substances will improve levels of public health and minimize environmental pollution.

3.5 POLICY PRINCIPLES

The core principles informing the proposed policy are -

- universal coverage – OHS legislation must cover workers and employers in all sectors of the economy and in all forms of employment relationships;
- universal application of core rights and duties – the core rights and duties of employers, workers and the State must be spelt out in legislation;
- the prioritisation of prevention and the promotion of a culture of prevention – Avoidable accidents and diseases must be eliminated through the joint efforts of all stakeholders
- appropriate and fair compensation and rehabilitation benefits – the provision of meaningful, accessible and equitable compensation and rehabilitation to workers in all sectors of the economy and in all forms of employment relationships;
- application of the “polluter pays” principle - The trend to shift the social costs of occupational accidents and diseases from employers to employees families and government must be reversed with employers taking greater responsibility as appropriate

.

3.6 IMPLEMENTATION

It is proposed that national legislation should be enacted to establish the national integrated OHS system and a national OHS Authority to implement that system. The Authority would have the status of an organ of state located within the national public administration but outside of the public service. The Authority would be accountable to the Minister of Labour and be responsible for taking the steps required to establish an integrated national OHS regulatory system. It is envisaged that the Authority would be responsible for developing uniform national OHS prevention and compensation legislation and for developing strategies to promote, monitor and enforce compliance with those statutes. International best practice shows that the establishment of a national OHS authority allows for major OHS problems to be identified and prioritised and for resources to be utilised in the most beneficial manner.

The Policy proposes that OHS activities should continue to be funded through a combination of financing through the fiscus, employer compensation contributions and other employer levies and donations. International best practice reveals that effective OHS systems utilise a portion of employer contributions to the compensation fund for prevention activities.

4. Summary

- An understanding of construction H&S is hampered by a lack of available statistics, and in particular that from the Compensation Commissioner.

- H&S in the construction industry in South Africa lags significantly behind that in developed countries.

- The construction industry currently has the third highest prevalence of HIV positive workers, and the industry faces increasing lost workdays due to absenteeism and productivity decreases, together with skills shortages, and increased costs of construction due to rising overheads.

- The CoA is estimated to be around 5% of the value of construction costs which ultimately is passed onto clients.

- Inadequate or the lack of H&S negatively affects other project parameters i.e. productivity, quality and cost.

- The total CoA exceeds the cost of H&S, and therefore, H&S is in essence a profit centre.

5. Test of Hypothesis

5.1) Health and Safety do affect a number of areas in infrastructure development.

5.2) If Health and Safety is not in place and up to standard, projects would be put on hold until all the requirements is met.

Therefore according to chapter 4, the above stated hypothesis is true.

CHAPTER 5 – Infrastructure Investment and Economic Growth

1. Introduction

The relationship between infrastructure and economic growth has, in recent years, become one of the most important economic topics in both academic and policy circles. The Accelerated and Shared Growth Initiative - South Africa (ASGI-SA) has identified inadequate infrastructure as one of the six most important constraints to growth in South Africa. The National Treasury has allocated R416 billion to spending on infrastructure development and maintenance, broadly de.ned, in the current three-year budget cycle (National Treasury, 2007). This after a period from 1976 to 2002 when annual infrastructure investment fell from 8.1% to 2.6% of GDP, with per capita expenditure falling from R1 268 to R356 (Fedderke and Bogetic, 2006a).

2. Policy Implications

2.1 Public versus private provision

The first issue requiring attention is the division of infrastructure provision between the public and private sectors. Infrastructure provision was historically seen as largely the province of the

state, in part due to the economies of scale implicit in this area. Since the late 1970s, however, increasing attention has been paid to the role of the private sector (Noll, 1999). In contemporary South Africa, this is an important issue, with several key parastatal infrastructure providers having been partially privatised in the past decade (such as the Airports Company of South Africa and Telkom) and several private providers having entered infrastructure markets (such as Cell-C and Neotel). There are a wide range of complex issues implicit in any discussion of the relative merits of public, private and mixed provision of infrastructure and related services. A comprehensive discussion of these issues falls beyond the scope of this paper and would indeed constitute a separate report in its own right. A detailed exposition of this debate can be found in Kessides (2004) and Guasch (2004). In this paper, discussion is limited to highlighting a few of the most crucial issues.

Firstly, the international consensus amongst economists is increasingly moving toward the view that private sector infrastructure provision should generally be preferred to public sector, except potentially in cases where the industry in question is a natural monopoly.(Kessides, 2004). This describes an industry in which provision is only profitable if one firm controls the entire market. Eskom is often cited as the quintessential example of a natural monopoly, as the cost of constructing and maintaining a nationwide electricity grid is so high that it may not be profitable for two firms to construct separate grids. A similar argument might potentially be advanced in the cases of the Portnet, Spoornet and the Airports Company of South Africa. Secondly, however, there are no one-size-fits-all rules regarding the appropriate ownership structure for infrastructure provision. While the majority of evidence points to public provision as relatively inefficient and

unreliable (and hence detrimental to growth), there are cases in it remains preferable to private provision (Newbery, 2001). In particular, appropriate regulation of private providers is important. At minimum, this means that government regulators must have the organisational capacity (Stern, 2000) and political will (Estache, 2002) to enforce regulations. Attempts should be made wherever possible to ensure that privatised infrastructure provision is subject to competitive pressures, rather than simply replacing a state-owned monopoly with a privately-owned monopoly (Noll, 2000).

2.2 Funding

Whether infrastructure investment is funded by the public or private sector, the source of funds for this investment is of crucial importance, as funding decisions may have significant and sometimes detrimental macroeconomic effects. Borrowing from overseas sources requires significant interest and capital repayments in foreign currency, which may push down the value of the rand. Domestic borrowing, on the other hand, may make it more expensive for firms to borrow capital for other investment projects and thereby "crowd-out" other investments by the private sector.

Infrastructure funding is largely provided by South Africa's national government. Parastatal companies also undertake infrastructure development in some sectors, while other initiatives include the

government's Expanded Public Works Programme, and public-private partnerships.

The government has courted foreign direct investment to lure investors into areas that need infrastructure, and foreign companies often build, own and operate facilities. The government has introduced a policy of broad-based black economic empowerment (BBBEE), which requires foreign companies to go into partnership with local businesses, shifting company ownership patterns.

In 2006 parastatals such as the power utility Eskom and transport group Transnet were earmarked to receive 40% of the R372-billion the government set aside for infrastructure development. Eskom is to spend R84-billion, mostly on energy generation, transmission and distribution. Transnet is to spend R47-billion, with R40-billion of this going to harbours, ports, railways and a petroleum pipeline.

The Airports Company of South Africa (Acsa) will spend R5.2-billion on airport improvement and the Dube Trade Port, while R19.7-billion will go to water infrastructure.

In 2006, South Africa's Public Investment Commission (PIC) announced plans to create a continent-wide, 25-year equity fund to mobilise local and international investment for infrastructure development in Africa. PIC includes the Government Employees Pension Fund and has around R600-billion in assets under management, making this the largest fund-management initiative in the country.

PIC will spend around R1-billion on property development - mostly in shopping centres in South Africa's townships and rural areas -

over the next three years. Its "Project Rural" will merge its Community Property Fund with Government Employees Pension Fund retail.

The government's budgeting of a massive R372-billion for upgrading and building new infrastructure over the next three years is set to be a powerful growth driver for South Africa's construction industry, and its infrastructure spending plans are attracting growing interest from the investment community.

This points to the importance of carefully selecting the most appropriate form of generating the available funding.

(www.MediaClubSouthAfrica.com (2009))

2.3 Location

It is immediately apparent to even a casual observer that the location of new infrastructure projects is a crucial determinant of their growth impact. For example, find that transport costs are a crucial determinant of industry location decisions in South Africa, with higher transport costs resulting in greater geographical concentration. This was one of the many considerations ignored by the apartheid-era designers of the “border industry” strategy, where political considerations won out over economic sensibility. While it is clear that location is an important consideration in infrastructure investment decisions, there is relatively little available empirical evidence regarding the criteria upon which locational decisions should be made - pointing to the need for

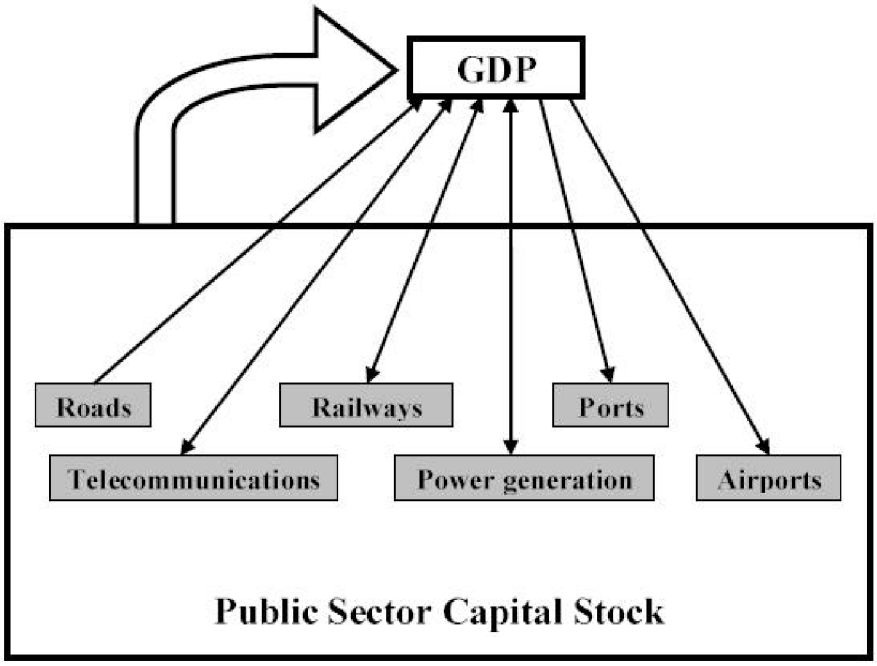
further research in this area. At minimum, policy-makers need to be aware that infrastructure location is an important determinant of growth in and of itself and plan accordingly.

2.4 Type

Recent studies of the infrastructure-growth relationship find that the direction of forcing varied across different infrastructure measures:

- aggregate public sector investment and public sector fixed capita stock drive GDP;
- roads (total road length, paved road length, number of passenger vehicles) drive GDP;
- GDP drives ports' freight handling levels and airports' passenger levels;
- The direction of forcing is ambiguous for measures of railway, power generation and telecommunication infrastructure.

These findings are presented graphically underneath.



(Figure 2: Graphic representation of the "forcing" relationships in Perkins, et al (2005))

The paragraph and figure above provide clear evidence that not all infrastructure types are equal when it comes to growth effects. The most consistent finding across all the available papers is that road infrastructure exerts a far more robust impact on growth than other forms of physical infrastructure.

These studies thus provide some guidance to policy-makers regarding the relative importance of different types of infrastructure. Furthermore note that sequencing may be of crucial importance, particular types of infrastructure may be particularly important at particular times. More generally, interaction effects between different types of infrastructure may be of relevance. Integrating a rural area into a national transport grid while leaving it without electricity or telecommunications

infrastructure, for example, may yield very poor growth returns. The issue of interaction is one requiring further investigation in the South African context.

3. Targets of Accelerated and Shared Growth

Government's investigations, supported by some independent research, indicate that the growth rate needed for us to achieve our social objectives is around 5% on average between 2004 and 2014. Realistically assessing the capabilities of the economy and the international environment, we have set a two-phase target. In the first phase, between 2005 and 2009, we seek an annual growth rate that averages 4,5% or higher. In the second phase, between 2010 and 2014, we seek an average growth rate of at least 6% of gross domestic product (GDP).

In addition to these growth rates, our social objectives require us to improve the environment and opportunities for more labour-absorbing economic activities. More broadly, we need to ensure that the fruits of growth are shared in such a way that poverty comes as close as possible to being eliminated, and that the severe inequalities that still plague our country are further reduced.
Our vision of our development path is a vigorous and inclusive economy where products and services are diverse, more value is added to our products and services, costs of production and distribution are reduced, labour is readily absorbed into sustainable employment, and new businesses proliferate and expand.

(South African Government Information – www.info.org.za (2009))

4. Summary

While South Africa was hoping to maintain its five percent economic growth rate in 2008 and 2009, global economic conditions had forced the downward revision of expected growth.

"Depending on international developments, gross domestic product growth is expected to recover to above 4 percent in 2010 and beyond." says Manual on the 20 October 2008.

Economic growth in the seven richest countries, which make up half of world economic output, may well be zero or negative next year. Overall global growth is expected to fall from 5% in 2007 to 3.9% this year and could even drop as low as 3% in 2009.

"However, South Africa's longer-term economic expansion rests on sound economic policies, healthy public finances and resilient financial institutions."

The healthy state of South Africa's financial sector relative to that of the United States, Germany and Britain, among others, would help the country escape the worst effects of the global economic downturn.

However, decreasing export demand, financial volatility, exchange rate fluctuations and uncertain economic conditions in the future would have an effect on South Africa's economy.

"The proposed fiscal framework for the 2009 Budget takes into account both slower economic growth and the need to support continued infrastructure investment and social development in a context of heightened uncertainty.

Further pressuring GDP growth was the Eskom debacle, which cost the South African economy billions of rands in lost revenue after unscheduled blackouts in January and February significantly disrupted business, especially mining, operations in the country. The country's GDP plunged to 2.1% in the first quarter following the power disruptions.

"The South Africa economy has grown by an average of 5 percent a year for the past six years. During this period, investment increased from about 15 percent of GDP to more than 22 percent. The unemployment rate declined from about 29.3 percent in 2003 to 23 percent today.

"Nevertheless, employment is still unacceptably high, and a critical objective of an economic policy over the next five years is to create work opportunities, according to Manual (2008).

For the creation of jobs, however, the South African economy needed to grow, as well as to refocus on developing more labour-intensive projects.

In order to foster greater GDP growth, the government was committing funds to improve South Africa's competitiveness globally.

"It is important to recognise the causes and consequences of South Africa's aging physical infrastructure and poor skills base,". "Decades of underinvestment in physical infrastructure, from electricity generation to water supply, roads and rail have constrained the economy's ability to grow more rapidly."

Decades of apartheid education, and limited progress in improving the quality of post-1994 education, had reinforced skills shortages that likewise inhibited economic growth.

Navigating through such a changed economic environment would be a tough challenge, but the government would continue to expand and improve public services, and **invest** in the **infrastructure needed for growth.**

5. Test of Hypothesis

5.1) Investing heavily into infrastructure development in South Africa is a stable and long term investment.

5.2) Infrastructure development in reality, effect economic growth in South Africa in a number of positive ways.

Therefore according to chapter 5, the above stated hypothesis is true.

CHAPTER 6 – Summary / Conclusion

1. Procurement Procedures

As seen in chapter 2, there are numerous procedures and criteria that determine if a contractor is able to tender for infrastructure contracts, therefore a contractor should critically focus to ensure that he complies with all the different aspect and that he doesn't fall behind and become uncompetitive in a fast growing industry.

2. Black Economic Empowerment and Community Involvement

As stated in chapter 3, black economic empowerment plays a vital role in the everyday tasks of a contractor in the industry. It is very important for a contractor to reach a satisfying level of BEE standard to be able to claim BEE point and to tender for infrastructure project. As stated above the level of requirement differs from client to client, but a clear indication of how it's calculated by SANRAL can be seen in Appendix A and Appendix B.

3. Health and Safety

As clearly seen in chapter 4, health and safety and all the aspects associated with it, clearly has an influence in each and every sector of the construction industry as a whole especially in the development of infrastructure. In Appendix C, it is clearly shown what needs to be looked at in order to be competent to carry out the works and if this is not done the work in progress can be stopped until everything is sorted out.

4. Infrastructure Investment and Economic Growth

As indicated in chapter 5, infrastructure development is a sustainable long term investment that positively affects the economic growth of South Africa and therefore in return increases the economic wealth of the population, this is not a quick solution but to improve GDP but a far better one.

5. Conclusion of Main Problem

It is shown throughout this document that it is feasible to commit to infrastructure development projects in South Africa if all the necessary procedure and guidelines is followed and adhered to.

It is also clear that infrastructure development in South Africa has a major impact on local communities as well as the entire country, and partakes greatly in decreasing unemployment which also helps to sustain and positively grow the economy of South Africa.

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ANNEXURE A

Preferential Procurement Policy Evaluation

A.1 Financial (N_{fo})

- Maximum points: 90,0
- Formula: $N_{fo} = 90^* [1- (P - P_m)] / P_m$

Where N_{fo} = Number of points awarded for financial offer

P = Tender sum (Excl VAT)

P_m = Lowest acceptableTender Sum (Excl VAT)

A.2 BEE Scorecard (N_b)

- Maximum points: 7
- Formula: As per Form D1 (Attached as Appendix B) converted to 7 points.

Tenderer	BEE Scorecard (Nb)							Total %	Points (Max 7)
	Bos	Bcs	Bees	Bsds	Bps	Beds	Brs		
Black Top Surfaces	21.20%	7.30%	8.55%	7.55%	4.00%	0.00%	0.00%	48.60%	3.40
Group Five	14.83%	5.15%	2.56%	7.85%	4.86%	6.01%	4.00%	45.26%	3.17
WBHO	18.75%	5.88%	5.88%	8.70%	4.03%	10.00%	2.40%	55.64%	3.89
Concor	11.94%	3.25%	5.14%	10.58%	5.89%	1.00%	3.60%	41.40%	2.90
Globul Roads	22.00%	7.00%	6.00%	5.00%	3.50%	15.00%	5.00%	63.50%	4.45

A.3 Labour Maximisation (N_{pl})

- Minimum specified (hourly paid): 4% of tender sum
- Maximum points: 3
- Formula: $N_{pl} = 3^* \ \frac{(D - 4)}{(8 - 4)}$

Where N_{pl} = Number of points awarded for targeted labour

D = Tendered Contract Participation Goal for targeted labour

If D exceeds double the minimum specified, the maximum points are allocated.

If D is less than the minimum specified, no preference points are allocated.

A.4 Total Tender Evaluation

The total allocation of points is summated thus:

$N = N_{fo} + N_b + N_{pl}$

ANNEXURE B

FORM D1: PREFERENCING SCHEDULE: TENDERERS BEE SCORECARD

In the event of a single firm:
Scorecard Points $=7 \times [0{,}25(B_{os}) + 0{,}10(B_{cs}) + 0{,}10(B_{ees}) + 0{,}20(B_{sds}) + 0{,}20(B_{ps}) + 0{,}10(B_{eds}) + 0{,}05(B_{rs})]$

In the event of a JV:
Scorecard Points $=7 \times \{0{,}25[(\%JVa(B_{osa})+(\%JVb)(B_{osb})] + 0{,}10[(\%JVa)(B_{csa})+(\%JVb)(B_{csb})] + 0{,}10[(\%JVa)(B_{eesa})+(\%JVb)(B_{eesb})] + 0{,}20[(\%JVa)(B_{sdsa})+(\%JVb)(Bsdsb)] + 0{,}20[(\%JVa)(B_{psa})+(\%JVb)(B_{psb})] + 0{,}10[(\%JVa)(B_{edsa})+(\%JVb)(B_{edsb})] + 0{,}05[(\%Jva)(B_{rsa})+(\%JVb)(B_{rsb})]\}$

Where:
B_{os} = Score for ownership
B_{cs} = Score for control
B_{ees} = Score for employment equity
B_{sds} = Score for skills development
B_{ps} = Score for procurement
B_{eds} = Score for enterprise development
B_{rs} = Score for residual
%JV = Percentage share in joint venture agreement

	OWNERSHIP (B_o)		WEIGHTING (a)	% TENDERED (b)	% TARGETS (t) *	SCORE (a x b/t) (Max = a)
1	Voting rights	Voting rights in the hands of black peoples	4		30	
		Voting rights in the hands of black women	2		10	
	Economic interest	Economic interest in which black people are entitled	5		30	
		Economic interest in which black women are entitled	2		10	
		Economic interest in which designated groups specifically black employees are entitled	5		10	
	Realisation Point	Ownership fulfilment	1	Provide Details	No restriction	
		Net Equity Value (In accordance with code 100 of DTI Code of Good Practice)	6		30	
	TOTAL		25	(B_{os})		

	CONTROL (B_c)		WEIGHTING (a)	% TENDERED (b)	% TARGETS (t) *	SCORE (a x b/t) (Max = a)
2	Board	Members of the board who are black people as % of board	3.5		40	
		Members of the board who are black women as % of board	1.5		20	

Members of the board who are black women as % of board	1.5		20		
Executive Management who are black people as % of Executive Management	3.5		25		
Executive Management who are black women as % of Executive Management	1.5		10		
TOTAL		**10**	**(B_{cs})**		

EMPLOYMENT EQUITY (B_{ee})		**WEIGHTING (a)**	**% TENDERED (b)**	**% TARGETS (t) ***	**SCORE (a x b/t) (Max = a)**
Black Senior Management as % of total senior management	**2**		25		
Black Women in Senior Management as % of total senior management	**1.5**		10		
Black middle Management as % of total middle management	**2**		30		
Black Women in middle Management as % of total middle management	**1.5**		12		
Black junior Management as % of total middle management	**2**		65		
Black Women in junior Management as % of total middle management	1		27		
TOTAL		**10**	**(B_{ees})**		

SKILLS DEVELOPMENT (B_{sd})		**WEIGHTING (a)**	**% TENDERED (b)**	**% TARGETS (t) ***	**SCORE (a x b/t) (Max = a)**
Direct training costs as % of payroll	2		2.5		
% of above on black people	2		70		
% of black people spent on black women	1		25		
% of black people spent on black management	1		25		
% of black management spent on black women management	0.5		20		
Learnerships as % of employees	1		2.5		
Black learnerships positions as % of total learnerships	1.5		70		
Black women learnerships positions as % of total black learnerships	1		35		
Learnerships for designated groups as % of total black learnerships	1		30		

Bursaries	Bursary expenditure on black students, as % of payroll	2		0.3	
Mentorship	Implementation of an approved and verified mentorship programme	2	Provide Details	Yes	
TOTAL		**15**	**(B_{sds})**		

PROCUREMENT (B_p)	**WEIGHTING (a)**	**% TENDERED (b)**	**% TARGETS (t) ***	**SCORE (a x b/t) (Max = a)**
Total procurement on BBBEE-accredited companies (measured as per the table in the charter) as a % of procurement	20		70	
TOTAL	**20**	**(B_{ps})**		

ENTERPRISE DEVELOPMENT (B_{ed})	**WEIGHTING (a)**	**% TENDERED (b)**	**% TARGETS (t) ***	**SCORE (a x b/t) (Max = a)**
Inputs : The 12 criteria listed under section H of the ED document be used as a checklist for compliance	5		Yes	
Turnover Ratio : Total annual turnover of the developing orgaisation divided by the total annual turnover of the established organisation	5		5	
Output : Measured in terms of the measurement matrix	5		Annual GDP Growth	
TOTAL	**15**	**(B_{eds})**		

RESIDUAL (B_r)	**WEIGHTING (a)**	**% TENDERED (b)**	**% TARGETS (t) ***	**SCORE (a x b/t) (Max = a)**
CSI as a % of payroll (Charter council to issue guidance defining sector specific CSI as distinct from general CSI and prescribe the % of total CSI spent to be applied to each category)	5		0.25	
TOTAL	**5**	**(B_{rs})**		

* These are 4 Year targets applicable up to 31/12/2010

Refer to charter for definitions of all indicators, sub-indicators and subsub-indicators

[NOTE : The tenderer must attach the joint venture details (if any)as well as all supporting documents as proof for all tendered values in above tables]

ANNEXURE C

2.2.1 ADMINISTRATIVE & LEGAL REQUIREMENTS

OHS Act Section/ Regulation	*Subject*	Requirements	*Yes/No*	*Remarks*
Construction Regulation 3	**Notice of carrying out Construction work**	Department of Labour notified Copy of Notice available on Site	Y Y	
General Admin. Regulation 4	***Copy of OH&S Act (Act 85 of 1993)**	Updated copy of Act & Regulations on site. Readily available for perusal by employees.	Y Y	
COID Act 130	***Registration with Compens. Insurer.**	Written proof of registration/Letter of good standing available on Site	Y	
Construction Regulation 4 & 5(1)	**OH&S Specification & Programme**	OH&S Spec received from Client OH&S programmed developed Approved for implementation Updated regularly	Y Y Y Y	
Section 8(2)(d) Construction Regulation 7	***Hazard Identification & Risk Assessment**	Hazard Identification carried out/Recorded Risk Assessment and – Plan drawn up/Updated RA Plan available on Site Competent person appointed in writing as risk assessor. Employees/Sub-Contractors	Y Y Y Y Y	

OHS Act Section/ Regulation	***Subject***	**Requirements**	***Yes/No***	***Remarks***
		informed/trained		
Section 16(2)	***Assigned duties (Managers)**	Responsibility of complying with the OH&S Act assigned to other person/s by CEO.	Y	A.Venter
Construction. Regulation 6(1)	**Designation of Person Responsible on Site**	Competent person appointed in writing as Construction Supervisor	Y	F.Koch
Construction. Regulation 6(2)	**Designation of Assistant for above**	Competent person appointed in writing as Assistant Construction Supervisor	Y	G.Kriel
Construction. Regulation 6(6)	**Designation of safety officer**	Competent person appointed as full time or part time construction safety officer.	Y	1 fulltime, 2 part-time.
Section 17 & 18 General Administrative Regulations 6 & 7	***Designation of Occupational Health & Safety Representatives**	More than 20 employees - one OH&S Representative, one additional OH&S Rep. for each 50 employees or part thereof. Designation in writing, period and area of responsibility specified. Meaningful OH&S Rep. reports. Reports actioned by Management.	Y Y Y	3 appointed.
Section 19 & 20 General Administrative Regulations 5	***Occupational Health & Safety Committee/s**	OH&S Committee/s established. Members appointed in writing. Meetings held minimum	Y Y Y Y	

OHS Act Section/ Regulation	***Subject***	**Requirements**	***Yes/No***	***Remarks***
		three monthly. Minutes kept. Actioned by Management.	Y	
Section 37(1) & (2) Construction Regulation 5	***Agreement with Mandatories/ (Sub-)Contractors**	Written agreement with (Sub-)Contractors List of (Sub) Contractors displayed. Proof of Registration with Compensation Insurer/Letter of Good Standing Construction Supervisor designated Written arrangements re. OH&S Reps & OH&S Committee Written arrangements re. First Aid Written arrangements re. Construction Vehicles & Mobile Plant Monthly internal audits carried out on principle contractor and sub-contractors.	Y Y Y Y Y Y Y Y	
Section 24 & General Admin. Regulation 8 COID Act Sect.38, 39 & 41	***Reporting of Incidents (Dept. of Labour)**	Incident Reporting Procedure displayed. All incidents in terms of Sect. 24 reported to the Provincial Director, Department of Labour, within 3 days. (Annexure 1)(WCL1 or2) Cases of Occupational	Y Y	Nothing to report.

OHS Act Section/ Regulation	***Subject***	Requirements	***Yes/No***	***Remarks***
		Disease Reported Copies of Reports available on Site Record of First Aid injuries kept		
General Admin. Regulation 9	***Investigation and Recording of Incidents**	All injuries which resulted in the person receiving medical treatment other than first aid, recorded and investigated by investigator designated in writing. Copies of Reports (Annexure 1) available on Site Tabled at OH&S Committee meeting Action taken by Site Management.	Y Y Y Y	
Construction Regulation 5	**OHS File**	OHS file kept on site Updated regularly	Y Y	
Construction. Regulation 8	**Fall Prevention & Protection**	Competent person appointed to draw up and supervise the Fall Protection Plan Proof of appointees competence available on Site Risk Assessment carried out for work at heights Fall Protection Plan drawn up/updated Available on Site	N/A	

OHS Act Section/ Regulation	***Subject***	**Requirements**	***Yes/No***	***Remarks***
Construction. Regulation 8(5)	**Roofwork**	Competent person appointed to plan & supervise Roofwork. Proof of appointees competence available on Site Risk Assessment carried out Roofwork Plan drawn up/updated Roofwork inspect before each shift. Inspection register kept Employees medically examined for physical & psychological fitness. Written proof on site	N/A	
Construction. Regulation 9	**Structures**	Information re. the structure being erected received from the Designer including: - geo-science technical report where relevant - the design loading of the structure - the methods & sequence of construction - anticipated dangers/hazards/special measures to construct safely Risk Assessment carried out Method statement drawn	Y Y Y Y	

OHS Act Section/ Regulation	***Subject***	**Requirements**	***Yes/No***	***Remarks***
		up All above available on Site Structures inspected before each shift. Inspections register kept		
Construction. Regulation 10	**Formwork & Supportwork**	Competent person appointed in writing to supervise erection, maintenance, use and dismantling of Support & Formwork Design drawings available on site Risk Assessment carried out Support & Formwork inspected: - before use - before pouring of concrete - weekly whilst in place - before stripping/dismantling. Inspection register kept		May be used at later stage.
Construction. Regulation 14	**Scaffolding**	Competent persons appointed in writing to: - erect scaffolding (Scaffold Erector/s) - act as Scaffold Team Leaders - inspect Scaffolding weekly and after		May be used at a later stage.

OHS Act Section/ Regulation	***Subject***	**Requirements**	***Yes/No***	***Remarks***
		inclement weather (Scaffold Inspector/s) Written Proof of Competence of above appointees available on Site Copy of SABS 085 available on Site Risk Assessment carried out Inspected weekly/after bad weather. Inspection register/s kept		
Construction. Regulation 15	**Suspended Platforms**	Competent persons appointed in writing to: - control the erection of Susp.platforms - act as Susp.platforms Team Leaders - inspect Susp.Scaffolding weekly and after inclement weather Risk Assessment conducted Certificate of Authorisation issued by a registered professional engineer available on Site/copy forwarded to the Department of Labour The following inspections of the whole installation carried out by a competent person	N/A N/A	

OHS Act Section/ Regulation	***Subject***	Requirements	***Yes/No***	***Remarks***
		- after erection and before use - daily prior to use. Inspection register kept The following tests to be conducted by a competent person: - load test of whole installation and working parts every 12 months - hoisting ropes/hooks/load attaching devices quarterly. Tests log book kept Employees working on Suspended Platform medically examined for physical & psychological fitness. Written proof available		
Construction. Regulation 11	**Excavations**	Competent person/s appointed in writing to supervise and inspect excavation work Written Proof of Competence of above appointee/s available on Site Risk Assessment carried out Inspected: - before every shift - after any blasting	Y - Y	Experience.

OHS Act Section/ Regulation	***Subject***	Requirements	***Yes/No***	***Remarks***
		- after an unexpected fall of ground - after any substantial damage to the shoring - after rain. Inspections register kept Method statement developed where explosives will be/ are used	Y Y Y	
Construction. Regulation 12	**Demolition Work**	Competent person/s appointed in writing to supervise and control Demolition work Written Proof of Competence of above appointee available on site Risk Assessment carried out Engineering survey and Method Statement available on Site Inspections to prevent premature collapse carried out by competent person before each shift. Inspection register kept	N/A	
Construction. Regulation 17	**Materials Hoist**	Competent person appointed in writing to inspect the Material hoist Written Proof of Competence of above appointee available on	N/A	

OHS Act Section/ Regulation	***Subject***	Requirements	***Yes/No***	***Remarks***
		site. Materials Hoist to be inspected weekly by a competent person. Inspections register kept.		
Construction. Regulation 24	**Water Environments (Incl. Caissons & Cofferdams)**	Competent person appointed in writing to supervise, control & inspect work on or over water and the construction, installation/dismantling of caissons/ cofferdams Written Proof of Competence of above appointee available on Site Risk Assessment carried out. To be inspected daily by a competent person. Inspections register kept		
Construction. Regulation 19	**Explosive Powered Tools**	Competent person appointed to control the issue of the Explosive Powered Tools & cartridges and the service, maintenance and cleaning. Register kept of above Empty cartridge cases/nails/fixing bolts returns recorded Cleaned daily after use	N/A	
Construction. Regulation 18	**Batch Plants**	Competent person appointed to control the operation of the Batch		

OHS Act Section/ Regulation	***Subject***	Requirements	***Yes/No***	***Remarks***
		Plant and the service, maintenance and cleaning. Register kept of above Risk Assessment carried out Batch Plant to be inspected weekly by a competent person. Inspections register kept	N/A	
Construction. Regulation13	**Tunnelling**	Complying with Mines Health & Safety Act (29 of 1996) Risk Assessment carried out	N/A	
Construction. Regulation 20/ Driven Machinery Regulations 18 & 19	**Cranes & Lifting Machines Equipment**	Competent person appointed in writing to inspect Cranes, Lifting Machines & Equipment Written Proof of Competence of above appointee available on Site. Cranes & Lifting tackle identified/numbered Register kept for Lifting Tackle Log Book kept for each individual Crane Inspection: - All cranes - **daily by operator** - Tower Crane/s - **after erection/6monthly** - Other cranes - **annually**	Y Y Y Y Y	

OHS Act Section/ Regulation	***Subject***	Requirements	***Yes/No***	***Remarks***
		by comp. person - Lifting tackle (slings/ropes/chain slings etc.) - **3 monthly**		
Construction. Regulation 22/Electrical Machinery Regulations 9 & 10/ Electrical Installation Regulations	***Inspection & Maintenance of Electrical Installation & Equipment (including portable electrical tools)**	Competent person appointed in writing to inspect/test the installation and equipment. Written Proof of Competence of above appointee available on site. Electrical Installation & equipment inspected after installation, after alterations and quarterly. Inspection Registers kept Portable electric tools and -lights and extension leads identified/numbered. Monthly visual inspection by User/Issuer/ Storeman Register kept.	Y Y Y Y Y	CoC received.
Diving Regulations	**Diving Operations**	Competent person appointed in writing to Supervise Diving Operations and ensure maintenance, statutory inspection and testing by an Approved Inspection Authority of equipment used	N/A	
Construction Regulation 26/	***Designation of Stacking &**	Competent Person/s with specific knowledge and	Y	

OHS Act Section/ Regulation	***Subject***	**Requirements**	***Yes/No***	***Remarks***
General Safety Regulation 8(1)(a)	**Storage Supervisor**.	experience designated to supervise all Stacking & Storage Written Proof of Competence of above appointee available on Site	Y	
Construction. Regulation 27/ Environmental Regulation 9	***Designation of a Person to Co-ordinate Emergency Planning And Fire Protection**	Person/s with specific knowledge and experience designated to co-ordinate emergency contingency planning and execution and fire prevention measures Emergency Evacuation Plan developed: - Drilled/Practiced - Plan & Records of Drills/Practices available on Site Fire Risk Assessment carried out Fire equipment Inspector appointed in writing. All Fire Extinguishing Equipment identified and on ***register***. Inspected weekly/ monthly. Inspection Register kept Serviced annually	Y N Y Y Y Y Y Y	Not yet practiced.
General Safety Regulation 3	***First Aid**	Every workplace provided with sufficient number of First Aid boxes. (Required where 5 persons or more are employed)	Y Y	

OHS Act Section/ Regulation	***Subject***	Requirements	***Yes/No***	***Remarks***
		First Aid freely available Equipment as per the list in the OH&S Act. One qualified First Aider appointed for every 50 employees. (Required where more than 10 persons are employed) List of First Aiders and Certificates Name of person/s in charge of First Aid box/es displayed. Location of F/Aid box/es clearly indicated. Signs instructing employees to report all Injuries/illness including first aid injuries	Y Y Y Y Y Y	4 appointed.
General Safety Regulation 2	**Personal Safety Equipment (PSE)**	PSE Risk Assessment carried out Items of PSE prescribed/use enforced Records of Issue kept Undertaking by Employees to use/wear PSE	Y Y Y Y	
General Safety Regulation 9	***Inspection & Use of Welding/Flame Cutting Equipment**	Competent Person/s with specific knowledge and experience designated to Inspect Electric Arc, Gas Welding and Flame Cutting Equipment Written Proof of	N/A	

OHS Act Section/ Regulation	***Subject***	Requirements	***Yes/No***	***Remarks***
		Competence of above appointee available on site Equipment identified/numbered and entered into a register Equipment inspected monthly. Inspection Register kept		
Hazardous Chemical Substances **(HCS)** Regulations Construction Regulation 23	***Control of Storage & Usage of HCS and Flammables**	Competent Person/s with specific knowledge and experience designated to Control the Storage & Usage of **HCS** (including Flammables) Written Proof of Competence of above appointee available on Site Risk Assessment carried out Register of HCS kept/ used on Site	Y - Y Y	
Vessels under Pressure Regulations	**Vessels under Pressure (VUP)**	Competent Person/s with specific knowledge and experience designated to supervise the use, storage, maintenance, statutory inspections & testing of VuP's Written Proof of Competence of above appointee available on Site Risk Assessment carried out	N/A	

OHS Act Section/ Regulation	***Subject***	Requirements	***Yes/No***	***Remarks***
		Certificates of Manufacture available on Site Register of VuP's on Site Inspections & Testing by Approved Inspection Authority (AIA): - after installation/re-erection or repairs - every 36 months. - Register/Log kept of inspections, tests. Modifications & repair		
Construction. Regulation 21	**Construction Vehicles & Earth Moving Equipment**	Operators/Drivers appointed to: - Carry out a daily inspection prior to use - Drive the vehicle/plant that he/she is competent to operate/drive Written Proof of Competence of above appointee available on Site Operators/ drivers in possession of medical certificate of fitness Record of Daily inspections kept	Y Y Y Y Y	
General Safety Regulation 13A	***Inspection of Ladders**	Competent person appointed in writing to inspect Ladders Ladders inspected at arrival on site and monthly there after.	N/A	

OHS Act Section/ Regulation	***Subject***	Requirements	***Yes/No***	***Remarks***
		Inspections register kept		
General Safety regulation 13B	**Ramps**	Competent person appointed in writing to Supervise the erection & inspection of Ramps. Inspection register kept.	N/A	
Mine Health & Safety Act	**Borrow pit**	Competent person appointed as Mine manager Risk assessment carried out for each borrow pit Inspection register kept	N/A	

2.2.2 EDUCATION & TRAINING

OHS Act Section/ Regulation	***Subject***	Requirements	***Yes/No***	***Remarks***
Section 7(1)	*Company OH&S Policy	Policy signed by CEO and published/Circulated to Employees Policy displayed on Employee Notice Boards Management and employees committed.	Y Y Y	
Section 13(a)	***Company/Site OH&S Rules	Rules published Rules displayed on Employee Notice Boards Rules issued and explained to employees: written proof	Y Y Y Y	

OHS Act Section/ Regulation	***Subject***	**Requirements**	***Yes/No***	***Remarks***
		Follow-up to ensure employees understand/adhere to the rules.		
Section 13(a) Construction Reg. 7(8)	***Induction & Task Safety Training	All new employees receive OH&S Induction Training. Training includes Task Safety Instructions. Employees acknowledge receipt of training. Follow-up to ensure employees understand/adhere to instructions.	Y Y Y Y	
Section 8(e),13(a)	***General OH&S Training	All employees receive basic OH&S training: written proof Operators of Plant & Equipment receive specialised training Follow-up to ensure employees understand/adhere to instructions.	Y Y Y	Weekly toolbox talks
Section 13(a)	***Occupational Health & Safety Promotion	<u>Incident Experience Board indicating e.g.</u> * No. of hours worked without an Injury * No. of days worked without an Injury Star Grading - Board kept up to date. Safety Posters displayed & changed regularly	 Y Y	

OHS Act Section/ Regulation	***Subject***	Requirements	***Yes/No***	***Remarks***
		Employee Notice Board for OH&S Notices. Site OH&S Competition. Company OH&S Competition. Participation in Regional OH&S Competition Suggestion scheme.		

2.2.3 PUBLIC SAFETY, SECURITY MEASURES & EMERGENCY PREPAREDNESS

Subject	***Requirement***	***Yes/No***	***Remarks***
***Notices &Signs General Safety Regulations.	Notices & Signs at entrances / along perimeters indicating **"No Unauthorised Entry".** Notices & Signs at entrance instructing visitors and non - employees what to do, where to go and where to report on entering the site/yard with directional signs. e.g. **"Visitors to report to Office"** Notices & Signs posted to warn of overhead work and other hazardous activities. e.g. **General Warning Signs**	Y Y Y	
Site Safeguarding	Measures in place to protect members of the public passing / entering the site. **Traffic Accommodation Proposals** approved and in use on site.	Y Y	
***Security Measures**	Access control measures/register in operation Security patrols after hours/weekends Sufficient lighting after dark Guard has access to telephone/other means of	Y Y Y Y	

Subject	*Requirement*	*Yes/No*	*Remarks*
	emergency communication		
*Emergency Preparedness	Emergency contact numbers displayed near Telephone Emergency Evacuation instructions posted up on all notice boards (including employees' notice boards) Emergency contingency plan available on site/in yard Doors open outwards/unobstructed Emergency alarm audible all over (including in toilets)	Y Y Y - -	
*Emergency Drill & Evacuation	Adequate No. of employees trained to use Fire Equipment. Emergency Evacuation Plan available, displayed and practised.	Y	

2.2.4 PERSONAL PROTECTIVE EQUIPMENT

Subject	*Requirement*	*Yes/No*	*Remarks*
*PPE needs analysis	Need for PPE identified and prescribed in writing.	Y	
*Head Protection	All persons on site wearing Safety Helmets including Sub-contractors and Visitors (where prescribed)	Y	
*Foot Protection	All persons on site wearing Safety Footwear including Gumboots for concrete / wet work and non-slip shoes for roof work.	Y	
*Eye and Face Protection	Eye and Face Protection (Goggles, Face Shields, Welding Helmets etc.) used when operating the following: * Jack/ Kango Hammers	Y	

Subject	*Requirement*	*Yes/No*	*Remarks*
	* Angle / Bench Grinders * Electric Drills (Overhead work into concrete / cement / bricks * Explosive Powered tools * Concrete Vibrators / Pokers * Hammers & Chisels * Cutting / Welding Torches * Arc Welding Equipment * Skill / Bench Saws * Spray Painting Equipment etc.		
*Hearing Protection	Hearing Protectors (Muffs, Plugs etc.) used when operating the following: * Jack / Kango Hammers * Explosive Powered Tools * Wood/Aluminium Working Machines e.g. saws, planers, routers	Y	
*Hand Protection	Protective Gloves worn by employees handling / using: * Cement / Bricks / Steel / Chemicals * Welding Equipment * Hammers & Chisels * Jack / Kango Hammers etc.	Y	
*Respiratory Protection	Suitable/efficient Respirators worn correctly by employees handling / using: * Dry cement * Dusty areas * Hazardous chemicals * Angle Grinders	Y	

Subject	*Requirement*	*Yes/No*	*Remarks*
	* Spray Painting etc.		
*Fall Prevention Equipment	Suitable Safety Belts / Fall Arrest Equipment correctly used by persons working on / in unguarded, elevated positions e.g.: * Scaffolding * Riggers * Lift shafts * Edge work * Ring beam edges etc. Other methods of fall prevention applied e.g. catch nets	N/A	
*Reflective vest	Required when working next to a public road.	Y	
*Protective Clothing	All jobs requiring protective clothing (Overalls, Rain Wear, Welding Aprons etc.) Identified and clothing worn.	Y	
*PPE Issue & Control	Identified Equipment issued free of charge. All PPE maintained in good condition. (Regular checks). Workers instructed in the proper use & maintenance of PPE. Commitment obtained from wearer accepting conditions and to wear the PPE. Record of PPE issued kept on file.	Y Y Y Y Y	

2.2.5 HOUSEKEEPING

Subject	*Requirement*	*Yes/No*	*Remarks*
*Scrap Removal	All items of Scrap / Unusable Off cuts / Rubble and redundant material removed from working areas on a regular basis. (Daily).	Y	

Subject	*Requirement*	*Yes/No*	*Remarks*
System	Scrap / Waste removal from heights by chute / hoist / crane. (Nothing thrown / swept over sides). Scrap disposed of in designated containers / areas. Removal from site/yard on a regular basis.	N/A Y Y	
Stacking & Storage **(See Section 1 for Designation & Register)**	<u>Stacking:</u> Stable/* On firm level surface / base. Not leaning / collapsing. * Irregular shapes bonded. * Not exceeding 3 x the base. * Stacks accessible * Removal from top only <u>Storage:</u> Adequate storage areas provided. * Functional - e.g. demarcated storage areas/racks / bins etc. * Special areas identified and demarcated. e.g. Flammable Gas, Cement etc. * Neat, safe, stable and square. * Store/storage areas clear of superfluous material. * Storage behind sheds etc. neat/under control * Storage areas free from weeds, litter etc.	 Y Y Y Y Y Y Y Y Y Y Y Y Y	
***Waste Control/Reclamation	Re-usable Off cuts and other re-useable material removed daily and kept to a minimum in the work areas. All re-useable materials neatly stacked / stored in designated areas. (Nails removed / bent over	N/A	

Subject	*Requirement*	*Yes/No*	*Remarks*
	in re-useable timber). Issue of hardware/nails/screws/cartridges etc. controlled and return of unused items monitored.		
Sub-Contractors (Housekeeping)	Sub-contractors required to comply with Housekeeping requirements.	Y	

2.2.6 WORKING AT HEIGHTS (including Roofwork)

Subject	*Requirement*	*Yes/No*	*Remarks*
Openings	Unprotected openings adequately guarded/fenced/barricaded/catch nets installed Roof work discontinued when bad/hazardous weather Fall protection measures (including warning notices) when working close to edges or on fragile roofing material Covers over openings in roof of robust construction/secured against displacement	N/A	

2.2.7 SCAFFOLDING / FORMWORK / SUPPORT WORK

Subject	*Requirement*	*Yes/No*	*Remarks*
Access/System Scaffolding	Foundation firm / stable Sufficient bracing. Tied to Structure/prevented from side or cross movement Platform boards in good condition/sufficient/secured.		To be used at a later stage.

Subject	*Requirement*	*Yes/No*	*Remarks*
(See Section 1 for Designation & Register)	Handrails and toe boards provided. Access ladders / stairs provided. Area/s under scaffolding tidy. Safe/unsafe for use signs Complying with OH&S Act/SABS 085		
Free Standing Scaffolding	Foundation firm / stable Sufficient bracing. Platform boards in good condition/sufficient/secured. Handrails and toe boards provided. Access ladders / stairs provided. Safe/unsafe for use signs Height to base ratio correct Outriggers used /tied to structure where necessary Complying with OH&S Act/SABS 085		
***Mobile Scaffolding**	Foundation firm / stable Sufficient bracing. Platform boards in good condition/sufficient/secured. Handrails and toe boards provided. Access ladders / stairs provided. Area/s under scaffolding tidy. Safe/unsafe for use signs		
***Mobile Scaffolding**	Wheels / swivels in good condition Brakes working and applied. Height to base ratio correct.		

Subject	*Requirement*	*Yes/No*	*Remarks*
	Outriggers used where necessary Complying with OH&S Act/SABS 085		
Suspended Scaffolding	Outriggers securely supported and anchored. Correct No. of steel wire ropes used. Platform as close as possible to the structure. Handrails on all sides All winches / ropes / cables / brakes inspected regularly. Scaffolding complies with OHS Act (Act 85/93) Winch/es maintained by competent person		
Formwork / Support Work	All components in good condition. Foundation firm / stable. Adequate bracing / stability ensured. Good workmanship / uprights straight and plumb. Good cantilever construction. Safe access provided. Areas under support work tidy. Same standards as for system scaffolding.		
Special Scaffolding	Special Scaffolding e.g. Cantilever, Jib and Truss-out scaffolds erected to an acceptable standard and inspected by specialists.		
Edges & Openings	Edges barricaded to acceptable standards. Manhole openings covered / barricaded. Openings in floor / other openings covered, barricaded/fenced. Stairs provided with handrails. Lift shafts barricaded / fenced off.		

2.2.8 LADDERS

Subject	*Requirement*	*Yes/No*	*Remarks*
*Physical Condition / Use & Storage **(See Section 1 for Designation & Register**	Stepladders - hinges/stays/braces/stiles in order. Extension ladders - ropes/rungs/stiles/safety latch/hook in order. Extension / Straight ladders secured or tied at the bottom / top. No joined ladders used All ladders stored on hooks / racks and not on ground. Ladders protrude 900 mm above landings / platforms / roof. Fixed ladders higher than 5 m have cages/Fall arrest system	N/A	

2.2.9 ELECTRICITY

Subject	*Requirement*	*Yes/No*	*Remarks*
*Electrical Distribution Boards & Earth Leakage	Colour coded / numbered / symbolic sign displayed. Area in front kept clear and unobstructed. Fitted with inside cover plate / openings blanked off / no exposed “live” conductors / terminals/Door kept close Switches / circuit breakers identified. Earth leakage protection unit fitted and operating. Tested with instrument: Test results within 15 – 30 milli-amps Aperture/Opening/s provided for the plugging	Y Y Y Y Y - Y	

Subject	*Requirement*	*Yes/No*	*Remarks*
	in and removal of extension leads without the need to open the door		
*Electrical Installations & Wiring	Temporary wiring / extension leads in good condition / no bare or exposed wires. Earthing continuity / polarity correct: **" Brown is live, Blue is not, Green and Yellow earth the lot"** Cables protected from mechanical damage and moisture. Correct loading observed e.g. no heating appliance used from lighting circuit etc. Light fittings/lamps protected from mechanical damage/moisture.	Y Y Y Y Y	
*Physical condition of Electrical Appliances & Tools	<u>Electrical Equipment and Tools:</u> (includes all items plugging in to a 15 Amp supply socket) Insulation / casing in good condition. Earth wire connected/intact where not of double insulated design Double insulation mark where no earth wire. Cord in good condition/no bare wires/secured to machine & plug. Plug in good condition, connected correctly and correct polarity.	Y Y Y Y Y	

2.2.10 EMERGENCY/FIRE PREVENTION AND PROTECTION

Subject	*Requirement*	*Yes/No*	*Remarks*
*Fire Extinguishing Equipment	Fire Risks Identified and on record <u>Fire Extinguishing Equipment available for:</u> * Offices	Y Y	

Subject	*Requirement*	*Yes/No*	*Remarks*
(See Section 1 for Designation & Register)	* General Stores * Flammable Store * Fuel Storage Tank/s * Gas Welding / Cutting operations * Where flammable substances are being used / applied. * Construction Vehicles (if required by H&S Plan)	Y Y Y - Y Y	
***Maintenance**	Fire equipment serviced minimum annually/preferably 6 monthly	Y	
***Location & Signs**	<u>Fire Extinguishing Equipment:</u> * Clearly visible * Unobstructed * Sign posted including "No Smoking" / "No Naked Lights" where required. (Flammable store, Gas store, Fuel tanks etc.)	 Y Y Y	
***** Storage Issue & Control of Flammables (incl. Gas cylinders	Storage Area provided for flammables with suitable doors, ventilation, bund etc. Flammable store neat / tidy and no Class A combustibles. Decanting of flammable substances carried out in ignition free and adequately ventilated area. Container bonding principles applied Only sufficient quantities issued for one day's usage Special gas cylinder store/storage area. Gas Cylinders stored / used / transported upright and secured in trolley/cradle/structure and ventilated. Types of Gas Cylinders identified/stored separately Full cylinders stored separately from empty	Y Y N/A	

Subject	*Requirement*	*Yes/No*	*Remarks*
	cylinders		
*Storage, Issue & Control of HCS **(See Section 1 for Designation & Register)**	HCS storage principles applied: products segregated Provision made for leakage/spillage containment Emergency showers/eye wash facilities provided HCS under lock & key controlled by designated person Decanted/issued in containers with information/warning labels Disposal of unwanted HCS by recognised disposal agent	Y Y Y Y Y Y	

2.2.11 EXCAVATIONS

Subject	*Requirement*	*Yes/No*	*Remarks*
Excavations deeper than 1.0 m. **(See Section 1 for Designation & Register)**	Shored / Braced to prevent caving / falling in. Provided with an access ladder. Excavations guarded/barricaded/lighted after dark in public areas Soil dumped at least 1 m away from edge of excavation On sloping ground soil dumped on lower side of excavation	- Y Y Y Y	

2.2.12 BORROW PITS

Subject	*Requirement*	*Yes/No*	*Remarks*
Borrow pit areas **(See Section 1 for Designation & Register)**	Borrow pit area fenced off to prevent access. Signage posted in strategic places. No steep slopes and vertical excavations Is the borrow pit self draining Soil dumped at least 1 m away from edge of excavation On sloping ground soil dumped on lower side of excavation	 N/A	

2.2.13 TOOLS

Subject	*Requirement*	*Yes/No*	*Remarks*
*Hand Tools	Shovels / Spades / Picks/ Brooms: * Handles free from cracks and splinters * Handles fit securely * Working end sharp and true Hammers: * Good quality handles, no pipe or reinforcing steel handles. * Handles free from cracks and splinters Handles fit securely Chisels: * No mushroomed heads / heads chamfered * Not hardened * Cutting edge sharp and square Saws:	 Y Y Y Y Y Y Y Y Y	

Subject	*Requirement*	*Yes/No*	*Remarks*
	* Teeth sharp and set correctly * Correct saw used for the job	Y Y	
*Explosive Powered Tools. **(See Section 1 for Designation & Register)**	Only used by trained / authorised personnel. Prescribed warning signs placed / displayed where tool is in use. Inspected at least monthly by competent person and results recorded. Issue and return recorded including cartridges / nails and unused cartridges / nails / empty shells recorded. Cleaned daily after use.	N/A	

2.2.14 CRANES

Subject	*Requirement*	*Yes/No*	*Remarks*
Tower Crane **(See Section 1 for Designation & Register)**	Only operated by trained authorised operator with valid certificate of training Structure - no visible defects Electrical installation good/safe Crane hook: Throat pop marked/safety latch fitted/functional SWL/MML displayed Limit switches fitted/operational Access Ladder fitted with backrests/Fall arrest system installed Lifting tackle in good condition/inspection colour coding current	N/A	
*Mobile Crane	Only operated by trained authorised operator with valid certificate of training Rear view mirrors		

Subject	*Requirement*	*Yes/No*	*Remarks*
(See Section 1 for Designation & Register)	Windscreen visibility good Windscreen wipers operating effectively Indicators operational Hooter working Tyres safe/sufficient tread/pressure visibly sufficient No missing Wheel nuts Headlights, taillights operational Grease nipples and grease on all joints No Oil leaks Hydraulic pipes visibly sound/no leaks No corrosion on Battery terminals Boom visibly in good condition/no apparent damage Cable/sheaves greased/no visible damage/split wires/corrosion Brakes working properly Crane hook: Throat pop marked/safety latch fitted/functional SWL/MML displayed By-pass valves operational Deflection chart displayed/visible to operator/driver Outriggers functional used	N/A	
***Gantry Crane**	Only operated by trained authorised persons Correct slinging techniques used Recognised/displayed on chart signals used Log book kept/up to date	N/A	

Subject	*Requirement*	*Yes/No*	*Remarks*
	Prescribed inspections conducted on crane &lifting tackle "Crane overhead" signage, where applicable Crane hook: Throat pop marked/safety latch fitted/functional SWL/MML displayed/load limiting switches fitted/operational		

2.2.15 BUILDER'S HOIST

Subject	*Requirement*	*Yes/No*	*Remarks*
Builder's Hoist **(See Section 1 for Designation & Register)**	**"Hoist In Operation"** – sign displayed. General construction strong and free from patent defects. <u>Tower:</u> * Adequately secured / braced. * At least 900 mm available for over travel. * Barricaded at least 2 100 mm high at ground level and floors. * Landing place provided with gate at least 1 800 high. <u>Platform:</u> * No persons conveyed on platform * Steel wire ropes with breaking strain of six times max. weight. * Signal systems used. * Goods prevented from moving / falling off. * Effective brake capable of holding max. weight.	N/A	

2.2.16 TRANSPORT & MATERIALS HANDLING EQUIPMENT

Subject	*Requirement*	*Yes/No*	*Remarks*
*Site Vehicles	All Site Vehicles, Dumpers, Bobcats, Loaders etc; checked daily before used by driver / operator by means of a checklist and results recorded. All site vehicles equipped with **Rotating light and Construction Vehicle sign**. Equipped with acoustic signalling device and reverse alarm Inventory of vehicles used/operated on site No persons riding on equipment not designed for passengers. No persons are allowed to be transported in the load space of a truck or bakkie. Site speed limit posted and not exceeded. Drivers / Operators trained / licensed. No unauthorised persons allowed to drive/ operate equipment.	Y Y Y Y Y Y Y Y Y	

2.2.17 SITE PLANT AND MACHINERY

Subject	*Requirement*	*Yes/No*	*Remarks*
Asphalt cutting machine	Operator Trained. Only authorised persons use the machine. Emergency stop switch clearly marked and accessible. Area around the machine dry and slip/trip free/clear of offcuts All moving drive parts guarded/electrical supply cable protected Operator using correct PPE - eye/face/hearing/foot/hands/body.	N/A	

Subject	*Requirement*	*Yes/No*	*Remarks*
*Electric Arc Welder	Welder Trained. Only authorised / trained persons use welder. Adequately earthed. Electrode holder in good condition/safe Cables, clamps & lugs/connectors in good condition. Area in which welding machine is used is dry/protected from wet. Welder using correct PPE - eye/ face/foot/body/respirator. Screens & warning signs placed	N/A	
*Compaction Machines	Operator Trained. Only authorised persons use the machine. Emergency stop switch clearly marked and accessible. Operator using correct PPE - eye/face/hearing/foot/hands/body.	Y Y Y Y	
*Compressors	Relief valves set and locked / sealed. Maximum Safe Working Pressure (MSWP) indicated on face of pressure gauge face: not on glass cover. All drives adequately guarded. Receiver/lines drained daily Hoses good condition/clamped, not wired	N/A	
Concrete Mixer / Batch Plant	Top platform provided with guardrails. Dust abatement methods in use. Operators using correct PPE - eye / hands / respirators. All moving drive parts guarded.	N/A	

Subject	*Requirement*	*Yes/No*	*Remarks*
	Emergency stops identified / indicated and accessible. Area kept clean/dry/and free from tripping and slipping hazards. Banksman identified and crane signals displayed and used.		
***Gas Welding / Flame Cutting Equipment	Only authorised/trained persons use the equipment. Torches and gauges in good condition. Flashback arrestors fitted at cylinders and gauges. Hoses in good condition/correct type/all connections with clamps Cylinders stored, used and transported in upright position, secured in trolley / cradle / to structure. Fire prevention/control methods applied/hot work permits	N/A	

2.2.18 PLANT & STORAGE YARDS/SITE WORKSHOPS SPECIFICS

Subject	*Requirement*	*Yes/No*	*Remarks*
Section 8(2)(1) General Machinery Reg.2(1): **Supervision of the Use & Maintenance of Machinery**	Person/s with specific knowledge and experience designated to Supervise the Use & Maintenance of Machinery Critical items of Machinery identified/numbered/placed on register/inventory Inspection/maintenance schedules for abovementioned Inspections/maintenance carried out to above schedules Results recorded	N/A	
General	Schedule D Notice posted in Work areas	N/A	

Subject	*Requirement*	*Yes/No*	*Remarks*
Machinery Reg. 9(2): **Notices re. Operation of Machinery**			
VUP Reg. 13(1)(b): **Supervision of the Use & Maintenance of Vessels under Pressure (VuP)**	Person/s with specific knowledge and experience designated to Supervise the Use & Maintenance of VuP's VuP's identified/numbered/placed on register/Manufacturers plate intact Inspection/maintenance schedules for abovementioned Inspections/maintenance carried out to above schedules Results recorded/Test certificates available	N/A	
Lock-out procedure	Lock-out procedure in operation	N/A	
Ergonomics	Ergonomics survey conducted – results on record. Survey results applied	N/A	
Demarcation & Colour Coding	Demarcation principles applied All services, pipes, electrical installation, stop-start controls, emergency controls etc. colour coded to own published or SABS standard Employees trained to identify colour coding	N/A	
Portable & Bench Grinders	Area around grinder clear/trip/slip free Bench grinders mounted securely/grinder generally in good condition/No excessive vibration On/Off switch/button clearly demarcated/accessible Adequate guards in place Toolrest – secure/square/max. 2 mm gap Stone/disk - correct type and size/mounted correctly/dressed Use of Eye protection enforced	N/A	
Battery Storage & Charging	Adequately ventilated, ignition free room/area/no smoking sign/s Batteries placed on rubber/wooden surface Emergency shower/eye wash provided No acid storage in area	N/A	
Ancillary Lifting Equipment	Chain Blocks/Trifors/jacks/mobile gantries etc. identified/ numbered on register Chains in good condition/links no excessive		

Subject	*Requirement*	*Yes/No*	*Remarks*
	wear Lifting hooks – throat pop marked/safety latch fitted SWL/MML marked/displayed	N/A	
Presses/Guillotines/Shears	Only operated by trained/authorised persons Interlocks/lock-outs fitted	N/A	

2.2.19 WORKPLACE ENVIRONMENT, HEALTH AND HYGIENE

Subject	*Requirement*	*Yes/No*	*Remarks*
*Lighting	Adequate lighting in places where work is being executed e.g. stairwells and basements. Light fittings placed / installed causing no irritating/blinding glare.	Y	
*Ventilation	Adequate ventilation / extraction / exhausting in hazardous areas e.g. chemicals / adhesives / welding / petrol or diesel/ motors running and in confined spaces / basements.	Y	
*Noise	Tasks identified where noise exceeds 85 dBa. All reasonable steps taken to reduce noise levels at the source. Hearing protection used where noise levels could not be reduced to below 85 dBa.	 Y Y	
*Heat Stress	Measures in place to prevent heat exhaustion in heat stress problem areas e.g. steel decks, when the WBGT index reaches 30. (See Environmental Regulation 4) Cold drinking water readily available when extreme temperatures are experienced.	Y Y	
*Ablutions	Sufficient toilets provided – 1 per 30 employees (National Building Regulations prescribe chemical toilets for Construction sites) Toilet paper available.	Y Y Y	

Subject	*Requirement*	*Yes/No*	*Remarks*
	Male/ Female use indicated. Facilities for washing hands provided Soap available for washing hands Means of drying hands available Sufficient showers provided. Changing facilities / area provided Ablution facilities hygienic and clean.	Y Y Y - Y Y	
*Eating / Cooking Facilities	Adequate storage facilities provided. Weather protected eating area provided, separate from changing area Refuse bins with lids provided. Facilities clean and hygienic.	N/A	
*Pollution of Environment	Measures in place to minimize dust generation. Accumulation of empty cement pockets, plastic wrapping / bags, packing materials etc. prevented. Spillage / discarding of oil, chemicals and dieseline into storm water and other drains prevented.	Y Y Y	
*Hazardous Chemical Substances (See Sect 1 for designation and register)	All substances identified and list available e.g. acids, flammables, poison ect. Material Safety Data Sheet (MSDS) indication hazardous properties and emergency procedures in case of incident on file and readily available. Substances stored safely.	Y Y Y	