GROUP FIVE
structured ingenuity

CARBON DISCLOSURE PROJECT REPORT

Investor CDP Information Request

CDP 2011

May 2011

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Introduction

0. Introduction

0.1 Introduction

As one of the largest construction and materials manufacturing companies in Southern Africa, Group Five is a broad-based infrastructure company. It has balanced portfolio of businesses, offering multi-disciplinary construction and engineering skills and expertise to deliver any aspect of an infrastructural project, including concept development and design.

The group believes that the ability to operate in a disciplined and sustainable fashion over the long term is central to maintaining a competitive advantage in both buoyant and challenging market conditions.

Within this strategic context, we implemented a total quality management culture that underpins every aspect of our operations and reinforces the centrality of sustainability. This binds together often disparate business components and embeds the concept of a triple bottom line management culture, guided by disciplined behaviour and measured through clear targets.

With an annual turnover in the 2010 financial year of R11.3-billion, the group employs 12,497 people throughout its operations in Africa, the Indian Ocean Islands, the Middle East and Eastern Europe.

The group has been structured into five clusters:

- Construction materials
    - Head Office
    - Affrimix
    - Benoni Gold
    - Bernoberg Millings
    - Cosmos Building Supplies
    - Quarry Cats
    - Sky Sands
- Construction
    - Head Offices, Other Offices, Stores, Yards, Showrooms, and Workshops
    - Buildings Gauteng
    - Buildings KZN
    - Buildings Western Cape
    - Civil Engineering
    - Group Five Middle East LLC
    - Housing
    - Projects
- Engineering and Construction
    - Design and Project Management
    - Energy

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    - Oil and Gas
- Manufacturing
    - Everite and Everite Pipe
    - Group Five Pipe
    - Plant and Equipment, Barnes Reinforcing Industry, Structural Steel, Formwork
- Investments and concessions
    - Intertoll Africa
    - Intertoll Europe
    - Infrastructure Development Services
    - Property Development Services

Group Five has taken a holistic approach to the green journey since 2004. This green strategy integrates compliance with innovation on the various project sites and offices.

2004
South Africa's first Social Responsibility Index (SRI) is launched on the JSE.

2007
Group Five becomes a member of the WWF and participates actively in seminars and information sharing sessions.

2008
Group Five is one of fourteen 'best performers' on the SRI index out of a total of 105 companies reviewed.

2009
Group Five becomes a Gold Founding Member of the Green Building Council of South Africa. Group Five participates in the South African Carbon Disclosure Project for the first time.

2010
Group Five acquires a major share in Kayema, a company specialising in solar water heating systems.

0.2 Reporting Year

Enter Periods that will be disclosed
01 July 2009 - 30 June 2010

0.3 Country list configuration

Select country
South Africa
Lesotho

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Select country
Namibia
Mozambique
Zambia
Congo, Democratic Republic of the
Nigeria
Ghana
Burkina Faso
Qatar
UK
Mauritius
United Arab Emirates
Jordan
Hungary
Poland

0.4 Currency Selection

Select currency
ZAR (R)

Management

1. Governance

Group and Individual Responsibility (CDP 2010 Q1.1)

1.1 Where is the highest level of responsibility for climate change within your company?
Individual/Sub-set of the Board or other committee appointed by the Board

1.1a Please identify the position of the individual or name of the committee with this responsibility
Job title: Group Risk Officer.

Position in corporate structure: Executive Director of Group Five Construction (Pty) Ltd.

Individual Performance (CDP 2010 Q1.4-1.5)

1.2 Do you provide incentives for the management of climate change issues, including the attainment of targets?
Yes

If yes
1.2a Please complete the table.

Who is entitled to benefit from those incentives?	The type of incentives	Incentivized performance indicator
Board/Executive board	Recognition (non-monetary)	Communicating climate change issues.
Executive officer	Recognition (non-monetary)	Communicating climate change issues.
Management group	Recognition (non-monetary)	Communicating climate change issues.
Business unit managers	Monetary reward	Developing and construction of green buildings and renewable energy projects.
Environment/sustainability managers	Monetary reward	Successful implementation of green initiatives and carbon reduction strategies.
Risk managers	Monetary reward	Communicating climate change issues.

2. Strategy

Risk Management Approach (CDP 2010 Q2.1)

2.1 Please select the option that best describes your risk management procedures with regard to climate change risks and opportunities
Integrated into multi-disciplinary company-wide risk management processes.

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2.1a Please provide further details (see guidance)

i. The type of risks and opportunities considered for climate change include regulatory, physical climate parameters, and other climate related development.

ii. To help assess risks and opportunities at a company level, Group Five have implemented a total quality management system (TQMS) that underpins every aspect of our operations and reinforces the centrality of sustainability to the business.

A 'Green Team' consisting of champions of all operating divisions is responsible for the identification of opportunities and risks resulting from climate change, and ways to capitalize on the opportunities and mitigate the risks on a company level.

iii. Risks and opportunities are also assessed on an asset and project by project basis. During the tendering phase of a project, risks and opportunities inherent to each potential project is reviewed by the 'Risk Committee', consisting of members of our 'Executive Committee' and the Tax, Legal, Commercial and Risk departments at head office. A comprehensive review of commercial, financial, technical, operational, SHEQ and climate issues is performed prior to approving the project. Risks and opportunities for fixed operations and facilities are assessed by the 'Green Team'.

iv. Monitoring is done at the start of each project, on a project by project basis. The 'Green Team' meets every six weeks to discuss progress on the various initiatives in the different clusters and companies. Monthly contract and project review meetings are used to monitor and report progress on potential climate related risks and opportunities. The risk reporting framework is reviewed annually.

v. The group's total quality management system is certified and measured to formal standards. The relevant standards used as criteria to determine materiality/priorities are ISO 31000 (Risk Management), OHSAS 18000 (Safety, health and environment), and ISO 14000 (Environment). The Greenhouse Gas inventory is done in line with ISO 14064-1 and integration into the JD Edwards financial system, which is used at Group Five, is planned.

vi. The results are reported, on a monthly basis, to the management team of each business unit responsible for the project. Quarterly, these risks and opportunities are reported to the executive directors and board.

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Business Strategy (CDP 2010 Q1.2-1.3; Q9.1)

2.2 Is climate change integrated into your business strategy?
Yes

If yes: **2.2a Please describe the process outcomes (see guidance)**

i. The Group Five green strategy integrates compliance with innovation on the various project or contract sites and offices. The executive directors, together with the management committee, have integrated climate related issues into the business strategy, with a specific focus on the development and construction of green buildings and renewable energy projects. This resulted in the formation of the Green Team responsible for addressing and implementing climate related issues on a company-wide level.

Group Five also employ skilled personnel on a project basis capable of developing green buildings and renewable energy projects. Monthly feedback on green projects and climate related issues are communicated within the company via the green site on the company intranet and articles in the monthly company magazine.

ii. The strategy is influenced by the direct impact that climate change has on Group Five operations; this include physical climate change risks as well as regulatory risks such as increased energy costs and taxes on carbon intensive fuels. The increased demand for green buildings and renewable energy also influenced the strategy to create a dedicated division. The long term contracts are carefully worded to reduce weather related costs/penalties.

iii. In the short term, employees are educated on climate related issues via workshops and publications within the company. Light-bulb switching, motion sensors for lighting in rooms, and the restriction of the use of bottled water are some of the short term initiatives. On the project sites there is an increased shift towards using solar water heaters and solar powered temporary traffic lights on road construction projects.

iv. In the long term, the Energy division in the Engineering and Construction cluster, as well as the infrastructure development division, is responsible for identifying and implementing renewable energy projects (e.g. the Kalahari Solar Project). The demand for green buildings is on the increase, and internal procedures are continuously evolving to accommodate this. All of these initiatives require a multi disciplinary approach an innovative solutions and therefore this team was created.

v. Group Five are early movers in the green buildings and renewable energy field. Development of in-house skills and the company strategy to accommodate climate change gives Group Five a competitive advantage in these fields.

vi. Group Five is actively pursuing opportunities in the renewable energy sector in Southern Africa and acquired a major shareholding in Kayema, a locally based company that

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specialises in solar water heating. Another business decision in this year was to actively be involved in the Green Business Council and help develop green star rating tools for the South African environment. These decisions were influenced by the reputational risk and physical opportunity that climate change bodes for Group Five. Becoming a leader in green buildings and acquiring a stake in the associated products for green buildings (like solar water heaters) will aid in Group Five's reputation of becoming a greener construction company, and result in actual emission reductions when implemented in construction projects.

Another strategic business decision was the creation of the project development team in the Energy division, dedicated to renewable energy. The role of this team is to play a bigger role in the early stage development of potential projects, rather than just focusing on the construction of approved projects. This decision to establish this team was underpinned by the large emission reduction targets pledged by South Africa and the barriers (regulatory and financial) associated development of renewable energy projects. Although this opens up huge opportunities in the renewable energy sector the framework for successful implementation is still being debated in various forums.

Engagement with Policy Makers (CDP 2010 Q9.10-9.11)

2.3 Do you engage with policy makers to encourage further action on mitigation and/or adaptation?
Yes

If yes: **2.3a Please explain (i) the engagement process and (ii) actions you are advocating**

Group Five is participating as an individual company in the WWF's One Planet Future forum. The topic of engagement is long term sustainability and creating awareness about international activities such as Copenhagen and Cancun meetings. The nature of engagement is by participating in discussions and sharing case studies. The nature of advice is centred on mitigation of carbon emissions in the construction industry and adaptation to climate change in building projects.

Group Five is a founding member of the Green Building Council of South Africa (GBCSA). Funding of this third party initiative has a wider impact on the construction industry in South Africa as a whole. GBCSA aims to lead the transformation of the South African property industry to ensure that all buildings are designed, built and operated in an environmentally sustainable way. The topic of engagement is the development of rating tools and standards for the construction industry. Group Five staff has been actively involved in the development of tools to date, including the recently launched multi-use-residential tool. Group Five employees are also part of the voluntary technical committee for the tool development programme of the GBCSA. The nature of the engagement is to provide practical content and technical input to the range of standards and rating tools. Group Five

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are endorsing uniform methodologies for evaluation of the green building sector in South Africa in order to encourage mitigation of greenhouse gas emissions.

Group Five participates in various forums in the power sector, including: the Department of Energy, NERSA, Eskom, Wind energy, and Solar energy. At these forums the barriers and solutions for the renewable energy sector in South Africa are debated, legislation and policy issues are discussed, and new technologies and products are revealed. Group Five has an interest in the advancement of this sector as this will provide construction opportunities which will require innovative solutions. Group Five are therefore actively involved in discussions and consulting, and endorse policy proposals that will promote renewable energy and mitigate GHG emissions.

Group Five also commented on the Green Paper on Carbon Tax directly and via SAFCEC through BUSA. Group Five participated in this voluntary public participation process in order to express its concerns for the impact that the Carbon Tax will have on the company. Group Five expressed its concerns for the lack of clarity presented in the Green Paper. We suggested clarification be provided on how issues like border tax and the scope of emissions that will be taxed, will be dealt with. Clarification will enable companies to better develop their green strategy and determine the impact that the national Carbon Tax will have on them.

Group Five was invited, and accepted, to participate in the carbon tax impact study to be performed by Treasury. Information is required about the likely response of business in South Africa to higher energy costs, their awareness of Government initiatives to mitigate against climate change, and their commitment and capacity to adapt. The study will provide an overview of the extent to which local firms have responded to higher electricity prices over the last 3 years, and will also consider the ability of firms to respond to further electricity price increases in future.

3. Targets and Initiatives

Targets (CDP 2010 Q9.2-9.6)

3.1 Did you have an emission reduction target that was active (ongoing or reached completion) in the reporting year?

No.

If you do not have a target:

3.1e Please explain (i) why not; and (ii) forecast how your emissions will change over the next five years

Setting a target is a complex undertaking that requires a significant internal reporting process. Group Five is a diversified construction services, materials and infrastructure investment group.

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Therefore the overall footprint is directly correlated to number and type of construction projects and contracts in a given year.

Large infrastructure projects are typically done in joint ventures agreements or consortiums which complicate data collection for carbon footprint calculations, and pose a barrier for the implementation of emission reduction initiatives and incentive schemes. In contrast, the fixed operations (permanent offices, asset management and manufacturing operations) have a fixed baseline and systems to calculate this part of the carbon footprint is less complex.

In the past two years greenhouse gas reporting has evolved, not just in Group Five, but also in the construction industry as a whole. Data collection systems and setting of consistent boundaries were some of the major hurdles to overcome. These issues resulted in inconsistent carbon footprint calculations that cannot be compared either with each other or used for target setting.

Over the next 5 years reduction from the F2010 baseline will be split between the fixed operations of the business and the projects/contracts. It is envisaged that the projects/contracts could reach a 3% relative emission reduction while the fixed operations could achieve a 3% absolute emission reduction.

Emission Reduction Initiatives (CDP 2010 Q9.7-9.9; Q16)

3.2 Does the use of your goods and/or services directly enable GHG emissions to be avoided by a third party?
Yes

If yes: **3.2a Please provide details (see guidance)**

Emissions are avoided by customers utilising the green buildings constructed by Group Five. The Nedbank head office in Sandton was constructed and completed during this financial year by Group Five. This building is expected to achieve a 30% energy saving through its lifetime when compared with conventional buildings. Actual savings has not been measured yet for this building seeing as construction was only completed at the end of the financial year; however the project team are in the process of measuring the actual savings. In general, commercial buildings consume on average 200kWh/m per annum. It is therefore expected that the Nedbank building (2,733 m^2 commercial retail usable area) will have savings in the range of 163,000kWh per year, which amounts to 169 ton CO_2e per annum with the baseline year being 2010. Ratings for the buildings are awarded by the Green Star Building Council of South Africa against the "Green Star SA – Office v1" methodology. Standards and methodologies used to estimate savings for this initiatives, and subsequent initiatives discussed in this question, are the same as used for the Group Five carbon footprint: *ISO 14064-1* and *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)*. Emission factors are also the same as used in this year's carbon footprint calculations. CDM methodologies are available to register and claim carbon credits from energy efficient green

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buildings. However, reductions will take place by owners/occupants utilising the building itself, and therefore these credits will belong to the owners of the building unless an agreement is made between the owners and Group Five.

With the stake Group Five has in Kayema (a solar water heating company), clients using the solar water heaters will save anything in the range of 1-2 MWh electricity per annum for residential installations. Six hundred residential and 200 commercial installations have been made in F2010, which amounts to savings of roughly 1000 tons CO_2e per year, over a period of 10 years. The CDM methodology used for calculating emission reduction and registering under the CDM for carbon credits are "AMS-I.J – Solar Water Heating Systems". This methodology has recently been revised and made it possible for such projects to register. To date no carbon credits have been claimed for implemented solar water heaters, but the project is under development to register under the CDM.

Group Five is in the process of investigating passive sustainable housing. A passive house should save at least 75% of the energy usage of a standard Eskom-grid connected house. With the use of photovoltaic LED Lighting, solar geysers, and design criteria, we have managed to reduce the electrical consumption requirement to 17% of Eskom supply, bringing the house below the 25% required to term it a passive house. Group Five have managed to decrease the amount of peak heating required per day by 46% and peak cooling by 68%. By simply installing ceilings in low-cost housing projects, winter heating efficiency can be improved by roughly 70%, depending on the area of installation. Energy savings are very specific to a specific house, but can amount to roughly 5 MWh per year over the lifetime of the house (roughly 5.15 ton CO_2 per year over 10 years). Unfortunately, due to budget constraints imposed on Group Five by project developers and the government, none of these energy reduction measures are currently implemented into low-cost housing projects. Although no carbon credits have been claimed for this type of housing to date, once implemented, the owners of these houses could participate in a carbon credit scheme.

Group Five is part of project development teams responsible for development of various renewable energy projects. For every 1 MWh of renewable energy generated, 1.03 ton CO2 will be saved by displacing the current South African grid electricity. As an example, a solar project, for which a feasibility study was concluded, will be in the range of 125-150 MW, and therefore saving 1.4 million tons CO_2e per year over 10 years. CERs were considered at pre-feasibility stage of this project and a carbon eligibility study was conducted. The methodology used for calculating the savings is CDM methodology ACM0002 version 11: "*Consolidate baseline methodology for grid-connected electricity generation from renewable sources"*. The budgeted project development cost for this solar project is R 35 million of which Group Five has a 30% stake.

3.3 Did you have emissions reduction initiatives that were active within the reporting year (this can include those in the planning and/or implementation phases)
Yes

If yes, complete questions 3.3a and 3.3b:

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3.3a Please provide details in the table below

Activity Type	Description of activity	Annual monetary savings (unit currency)	Investment required (unit currency)	Payback period
Energy efficiency: Processes	A fuel switch from coal to biomass in the Everite boilers. This will reduce Scope 1 emissions and is a voluntary activity. This project has not been implemented yet, but is in the planning phase (eligibility study has been conducted). Once implemented the expected lifetime of the activity will be the same as the lifetime of the rest of the Everite facility (>10 years).			>3 years
Energy efficiency: Building services	Energy efficiency projects on buildings of sites and fixed operations which entailed light-bulb switching and installation of solar water heaters. These actions will reduce Scope 2 emissions of Group Five and will reduce emissions for as long as the lifetime of the specific product (roughly 6-10 years for a solar water heater and 1-3 years for a CFL). This project has been implemented during this financial year.			>3 years
Transportation: Fleet	Diesel consumption optimisation (fuel efficiency improvements). A voluntary research project was run with Naftech fuel enhancer on some of the Group Five equipment and fleet, and an average fuel consumption improvement of 4% was seen in initial testing. The expected lifetime is for as long as this product used in the company, although some			<1 years

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Activity Type	Description of activity	Annual monetary savings (unit currency)	Investment required (unit currency)	Payback period
	longer running trails suggest that the savings are only for the first two years of implementation. The product has not yet been implemented on a large scale within Group Five. Once this activity is implemented it will reduce the Scope 1 emissions of the company.			
Process emissions reductions	In line with Group Five's values and sustainable business approach we have decided to ensure that the steel we trade will come from a majority recyclable source. One of Group Five's subsidiaries, BRI, manufacturer and trader of reinforcing steel, has committed to procure a minimum of 90% recycled steel. Adhering to this commitment means that Scope 3 CO_2e emissions are 47000 tons per annum less than our competitors who trade with virgin steel from an identical market share perspective. F2010 is the baseline year.			<1 year

3.3b What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Dedicated budget for other emission reduction activities	General carbon management and reduction projects.
Employee engagement	Green Committee
Other	Dedicated business division involved in the development of renewable energy projects with a multi disciplinary approach.

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4. Communications (CDP 2010 Q22)

4.1 Have you published information about your company's response to climate change and GHG emission performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s)

Publication	Page/Section reference	Identify the attachment
In annual report (complete)	Pg 130-137	Group Five Annual Report 2010
Voluntary communications complete	Pg 44-45	Succeed Magazine June 2011 Editorial and Advertisement
Voluntary communications complete	Pg 36-37	Green Building Council of South Africa's 3rd annual Convention and Exhibition (20 - 22 September 2010) program

Risks & Opportunities

5. Climate Change Risk (CDP 2010 3-5)

5.1 Have you identified any climate change risks (current or future) that have the potential to generate a substantive change in your business operations, revenue or expenditure? Please identify the relevant categories:

☒ **Risks driven by regulation**
☒ **Risks driven by changes in physical climate parameter**
☒ **Risks driven by changes in other climate-related developments**

Risks & Opportunities

5.1a Please describe your risks driven by changes in regulation

ID	Risk Driver	Description	Potential Impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
1	Carbon Taxes	A tax on electricity from non-renewable resources of 2c/kWh became effective on 1 July 2009. This equates to roughly R20/ton CO_2 tax. The South African Government is investigating more broad based carbon taxes which could lead to the raising of this tax.	Increased Operational Cost	Current	Direct	Virtually certain	Medium-low
2	Carbon Taxes	A potential tax on direct emissions, or as proxy fuel consumption. The South African Government approved the medium to long term climate change model, called the Long Term Mitigation Scenarios (LTMS) as Government policy. This document mentions a carbon tax of minimum R100/tCO_2 by 2012, increasing to R750/ton by 2030. This number is also being used in various public consultation discussions by Treasury.	Increased Operational Cost	1-5	Direct	Very likely	High
3	Emission reporting obligations	The Department of Energy and The Department of Environmental Affairs are publishing a White Paper describing a national climate change policy for South Africa in 2011/2012, and a national greenhouse gas inventory in 2011/2012.	Increased Operational Cost	1-5	Direct	Very likely	Low

Risks & Opportunities

ID	Risk Driver	Description	Potential Impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
		This is likely to include electricity consumption and greenhouse gas reporting regulations. Negotiations with industry on greenhouse gas templates are expected in 2011/2012.					
4	Uncertainty surrounding new regulation	There remains a great deal of uncertainty regarding the scope, content and format of future climate change legislation in Africa. The nature of Group Five's business is that it moves into different regions on a temporary basis to execute projects. The company has methods in place in which it assesses the regulatory environment in a region before commencing work in that region. However, climate change introduces uncertainty in the process as potential climate change regulation may not be visible on the radar screen at the time that the tenders for large infrastructure projects are submitted or the contracts signed, but could impact the project budget at a later stage.	Inability to do business	Current	Direct	About as likely as not	Unknown

Risks & Opportunities

5.1b Please describe (i) the potential financial implications of risk before taking action; (ii) the methods you are using to manage this risk and (iii) the costs associated with these actions

1. In South Africa, a 2c/kWh on electricity became effective on 1 July 2009 as a levy on non-renewable sources of electricity. This equates to a R20/ton CO_2 tax. The financial implication of this risk for Group Five in F2010 was R1.6 million. This risk is being managed within the company by pricing the known cost of electricity into the cost of the project at tender stage, thereby passing the additional costs through to the client; there is therefore no direct cost involved to managing this risk. This does however make contracts more expensive, thus if Group Five can reduce non-renewable electricity usage it will become more competitive in the construction industry. For this reason Group Five established the Energy business division (within the Engineering and Construction Cluster). The cost to company for this action of establishing this division was roughly R1 million in F2010. This division will be responsible for identifying and participating in energy projects (renewable and non-renewable) in order for Group Five to start investing, and possibly generating, clean electricity.

2. A potential tax on direct emissions, or as proxy fuel consumption, would have had the financial implication in F2010 of R15 million if a R100/ton CO_2 tax was in place. This risk will be managed within the company by pricing the known cost of fuel into the cost of the project at tender stage, and during project execution through the contractual relationship with the client; there is therefore no direct cost involved to managing this risk. However, if Group Five want to stay competitive when fuel and energy taxes are implemented, it will have to reduce its direct emissions or reduce the profit margin on projects, as the combustion of diesel on construction sites (through either heavy equipment or generators) is one of the main contributing factors to the overall carbon footprint. The scope 3 emissions of diesel through the transport of building materials such as steel, cement and aggregate to site would also be affected. Also, building and construction materials in general have a large embedded carbon footprint. Carbon taxes on either the manufacturing or purchasing of cement, steel, and bitumen, will affect both the availability and cost of these items downstream in the value chain. Group Five are currently in the process of testing fuel additives to try and reduce diesel consumption and mitigate the risk of carbon tax. The initial test runs cost Group Five R180,000.

   Another way of managing risk is to move up and down the value chain. Group Five is increasingly delivering on this multidisciplinary strategy for example on a high rise building in Sandton - Quarry Cats aggregate made and supplied Afrimix concrete, along with Barnes Reinforcing Industries' and Group Five Formwork and Scaffolding. This strategy reduces earnings volatility within the construction sector by capturing multiple margin streams across the infrastructure value chain. However it also increased the sphere of influence on the overall carbon footprint as all the GHG emissions are direct emissions, whereas subcontractor emissions were indirect emissions. On the one side Group Five actively increases the contribution of the manufacturing and construction materials to the product

Risks & Opportunities

portfolio, and on the other side developing, investing in, and operating concessions and property assets. Potential direct regulatory risks can be quantified and controlled through this strategy.

3. Environmental reporting obligations are usually a precursor to taxes or regulated business practices. With the very likely carbon tax that is due for implementation in 2012, and the with the publishing of the White Paper on the national climate change policy of South Africa, emission reporting obligations for companies are bound to become compulsory in the near future. In future, the potential financial implications of neglecting this risk will most likely result in penalties or fines; however, currently there is no financial implication to this risk seeing as the national reporting obligations are not yet in place. Another aspect of this risk will be reputational as neglecting to report will reflect badly on Group Five and the managing skills within the company. Group Five is already in the process of calculating its footprint on an annual basis by making use of carbon consultants, and in-house resources. The construction industry, especially on large construction projects, forms consortiums and joint ventures. Splitting the greenhouse gasses generated through the development of a project are challenging and might require additional contract clauses in future once more accurate reporting becomes an obligation. The F2010 budget for calculating and reporting of carbon emissions were R2 million (this includes consulting fees, “green” marketing, and “green” events). Group Five are also in the process of adding the carbon reporting to the financial reporting system on the company’s intranet. This will also require training of employees to understand and operate the new system. For integration into the current financial reporting system and training, costs are estimated to be in the order of R60,000-R80,000.

4. There remains a great deal of uncertainty regarding the scope, content and format of future climate change legislation in Africa. The nature of Group Five’s business is that it moves into different regions on a temporary basis to execute projects. The company has methods in place in which it assesses the regulatory environment in a region before commencing work in that region. However, climate change introduces uncertainty in the process as potential climate change regulation may not be visible on the radar screen at the time that the tenders for large infrastructure projects are submitted or the contracts signed, but could impact the project budget at a later stage. The financial implication before taking action might be as high as R93 million if there is as little as 1% change in the total revenue of all the construction projects due to overrun on certain projects. This risk is being managed by drafting a clause into contracts before starting a project in order to exempt Group Five from any changes in regulation while the project is busy running. For this reason there is no cost associated with taking action on this risk.

Risks & Opportunities

5.1c Please describe your risks driven by change in physical climate parameters

ID	Risk Driver	Description	Potential Impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
1	Changes in precipitation extremes and droughts	Extreme weather events including excessive rain and droughts and can impact on our construction projects and project planning.	Reduced/disruption in production capacity	Current	Direct	Very likely	Medium
2	Changes in precipitation pattern	Wet weather can cause disruption of construction contracts as work plans are design according to existing precipitation patterns.	Reduced/disruption in production capacity	Current	Direct	Very likely	Medium
3	Induced changes in natural resources	Exposure of employees to tropical diseases, including malaria	Reduced/disruption in production capacity	Current	Direct	Very likely	Meidum

Risks & Opportunities

5.1d Please describe (i) the potential financial implications of risk before taking action; (ii) the methods you are using to manage this risk and (iii) the costs associated with these actions

1. Changes in precipitation extremes and an increase in the amount of rainy days during a contract can restrict working days not planned for at the tendering phase of the project. In a case study of the Central Ashanti project that Group five worked on, it was found that the contract made allowance for 2.5 "standing days" per calendar month. However, for each day of standing not planned for, it can cost Group Five roughly R300,000 per day. In the contract with the client it is stated that, if it can be proven by Group Five that there is substantial variance from the planned amount of rainy days, this additional cost of non-working days will have to be covered by the client. For this reason, if monitoring is done correctly throughout the life of the project by Group Five (which is compulsory for each project), this risk should have no financial implication for Group Five. The amount of rainy days are increasingly formalised upfront in contracts. The methods used to manage this risk are done by the 'Risk Committee' who consults the local weather bureau and assesses the specific weather patterns of in the region of the site prior to tendering and approving a project. During this assessment the average amount of rainy days are determined and drafted in to the contract with the client. This process is a standard and compulsory step for each contract and therefore there are no additional costs associated with these actions of managing the risk.

2. In another case study it was found that the change in precipitation patterns has disrupted road construction projects. On road-building projects, it is traditional to plan for no rainfall after April (in Gauteng area), in which case some works can be programmed on an accelerated basis to take advantage of the break in the wet weather. At the same time, certain types of road surfacing cannot be undertaken when night-time temperatures drop below 5 degrees Celsius, which normally happens after April. Late unseasonal rains, and hence the late start of the winter cold period, over the last 2 years have been assessed and result show that the assumptions made in programming road surfacing works have been incorrect, resulting in lower production as a result of wet weather, but permitting surfacing works to proceed for a longer period of time. The main impact is reduced productivity (approximately 20% compared with historical norms). On a major road project in Gauteng, a 1% loss in productivity translates into a cost of approximately R200,000, and therefore 20% is as much as R4 million, together with a potential late completion penalty of R120,000 per day. Methods used to mitigate the risks include: consultation with the weather bureau for short and medium term forecasting and planning, utilising of off-peak periods such as weekends and night-time to reduce loss of production (albeit at an increased cost as a result of overtime payments to staff), and increasing resources to improve utilisation of hot-mix asphalt capacity (albeit at an additional cost of equipment standby). Planning and prediction of weather patterns prior to the project results in no additional cost for Group Five, seeing as this is part of the normal planning process prior to construction. However, this case study

Risks & Opportunities

showed that utilising off-peak periods costs Group Five R100,000 for additional overtime payments to staff, and R1,2 million for additional equipment standby costs for increased resources.

3. The changing climate has been linked to spreading of malaria and other tropical diseases. Group Five has many projects in Africa, and more specifically in high risk malaria areas. Malaria is a big problem for Group Five seeing as if an employee has had malaria three times, they are not allowed to return to that site in the malaria risk area, which means the company has to appoint a different employee for that specific job, which can result in delays and loss of expertise. Evacuating a sick employee from a malaria area costs in the order of R700,000 per employee for Group Five. In order to manage this risk Group Five has started a "malaria prevention campaign". This campaign is multidimensional and entails supplying expatriate employees with free malaria prophylactic medication, mosquito repellent lotions, external "fogging" of resident camp site areas, spraying offices and sleeping quarters, treating malaria breeding areas, and having a dress code that requires employees to wear clothing that covers the whole body. The average cost for the malaria prevention campaign on a project site with a "project peak" compliment of 450 expatriates over a period of one year, would be roughly R1.8 million. Since implementing the campaign the relative incidence of malaria per project hour has been reduced.

Risks & Opportunities

5.1e Please describe your risks that are driven by changes in other climate-related developments

ID	Risk Driver	Description	Potential Impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
	Reputational risks	A company's response to climate change can result in reputational risks.	Reduced demand for goods/services	Current	Direct	About as likely as not	Low

Risks & Opportunities

5.1f Please describe (i) the potential financial implications of risk before taking action; (ii) the methods you are using to manage this risk and (iii) the costs associated with these actions

Although difficult to quantify, Group Five runs a reputational risk for late delivery or overspending on projects due to unforeseen impacts of climate change. This reputational damage may impact on its ability to secure future contracts.

Indirect exposure to regulatory risks through suppliers and clients is a possibility as the nature of Group Five's primary business is involvement in the first stages of construction projects and contracts that would remain operational for years to come. Just as it is known that Group Five constructed the new Nedbank building in Sandton, which is the first green star rated building to be completed in South Africa, buildings perceived as inefficient and either designed or constructed by Group Five would carry a reputational risk. Although the long term emissions is the responsibility of the user, the realisation of projected savings will only be visible in accordance with international standards in the next 40-100 years.

If the company fails to get a contract due to reputational damage, there is a lost revenue impact that will impact on the profitability of the company. Group Five had roughly 150 construction projects running in F2010 that contributed 79% to the company revenue. If we where to lose as little as 1% of all their projects due to reputational risk it would amount to a loss in revenue of roughly R91 million. It is therefore important that the company takes all climate risks into consideration when tendering, planning and executing a project. All the possible risks to a specific project are reviewed by the 'Risk Committee' prior to tendering or commencing with a project. This action does not entail any additional costs as this is part of the normal risk management process. Another means to manage the risk was by appointing a carbon consultancy firm to calculate Group Five's carbon footprint and manage some of its climate related issues. An amount of roughly R2 million was made available for this in F2010, as well as for advertising and promoting Group Five as a construction company that is actively involved in adaptation and mitigation actions with regards to climate change. Goup Five regularly attend green building conferences both locally and internationally, and had a stand in F2010 at the Green Building Conference in South Africa.

6. Climate Change Opportunities (CDP 2010 6-8)

6.1 Have you identified any climate change opportunities (current or future) that have the potential to generate a substantive change in your business operations, revenue or expenditure? Please identify the relevant categories:

☒ **Opportunities driven by regulation**
☒ **Opportunities driven by changes in physical climate parameter**
☒ **Opportunities driven by changes in other climate-related developments**

Risks & Opportunities

6.1a Please describe your opportunities driven by changes in regulation

ID	Opportunity Driver	Description	Potential Impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
1	Voluntary Agreements	The South African Renewable Energy Feed-In Tariff (REFIT) programme offers opportunities in renewable energy. Group Five Energy is well positioned as a market leader with first mover advantage. The company has a large pipeline of potential projects ready to be implemented when the REFIT program becomes operational. Also during the year Group Five were: • Developing solar energy projects • Tendered on a wind farm in Eastern Cape	Increased demand for existing products/services	Current	Direct	Very likely	Medium-high
2	Voluntary Agreements	Group Five acquired the majority share in Kayema, a company specialising in solar water heating systems. This investment positions the company well to capitalise on the DSM funding program for solar water heaters.	Increased demand for existing products/services	Current	Direct	Very likely	Medium-high
3	Cap and trade schemes	South Africa is a non-Annex I country which ratified the Kyoto Protocol. It is therefore possible for companies to register Clean Development Mechanism (CDM) projects in South Africa. These can result in carbon credits for Everite and Kayema.	Increased demand for existing products/services	Current	Direct	Virtually Certain	Medium-high

Risks & Opportunities

6.1b Please describe (i) the potential financial implications of the opportunity before taking action; (ii) the methods you are using to manage this opportunity and (iii) the costs associated with these actions

1. The South African Renewable Energy Feed-In Tariff (REFIT) programme offers higher electricity purchase tariffs for independent power suppliers generating renewable energy. This incentive makes renewable energy projects much more viable aids in making renewable energy projects a good business investment. The potential financial implication before taking action is the lack of revenue and possible market share that may arise from the potential projects in the renewable energy sector. The newly created Energy division in the Engineering and Construction (E+C) cluster in Group Five has an aim to secure a large part of the estimated potential market share of R25 billion for renewable energy technologies in South Africa over the next three years (this is based on the 1000 MW renewable energy aim for South Africa as stated in the Integrated Resource Plan for Electricity). This E+C cluster was created in F2010 to manage the opportunity by providing procurement and construction support to dedicated renewable energy technologies. More than R1 million was spend by Group Five in F2010 to get the E+C division up and running. The key focus is on concentrated solar thermal power, wind energy and small hydro plants to be built in South Africa.

2. Eskom offers a rebate on solar water heaters (SWH) as part of their DSM funding program. With this rebate, return on investments in the SWH industry becomes very attractive. The potential financial implication before taking action is the lack of revenue and potential market share that may arise from investing in SWH projects or companies. Group Five is actively pursuing opportunities in the renewable energy sector in Southern Africa and has recently acquired a major shareholding in Kayema, a locally based company that specialises in solar water heating. Group Five had a 51% share in Kayema, which we purchased for R3,000,000. However, due to selling of shares, Group Five now only holds 25% of the shares in Kayema. It is estimated that Kayema will have show profit of roughly R8 million in F2010 and R11 million in F2011.

3. With Group Five investing in renewable energy projects and having acquired a share in Kayema (SWH company), it is possible to obtain carbon credits for these projects if registered under the Clean Development Mechanism (CDM). In general, for every 1 MWh of renewable energy generated, 1.03 ton CO2 will be saved by displacing the current South African grid electricity. The potential financial implication is very dependent on the specific project, but for a solar project that Group Five are busy developing, which will be in the range of 125-150 MW, the opportunity is worth roughly R210 million in carbon credits per year (saving 1.4 million tons CO_2e per year, over 7 years). This opportunity is being managed by the Engineering and Construction cluster who've already conducted feasibility studies for this project. Getting the project registered under the CDM will cost in the order of R1-3

Risks & Opportunities

million. Budgeted project development cost for a solar project is R 35 million (Group Five has a 30% stake in this project).

Another benefit from CDM was the construction contract that Group Five obtained from Gold Fields. This project was a R82 million construction job for the Beatrix Mine Methane CDM project.

Risks & Opportunities

6.1c Please describe the opportunities that are driven by changes in physical climate parameters

ID	Opportunity Driver	Description	Potential Impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
1	Other physical climate opportunities: Changes in frequency of extreme weather events	Rebuilding infrastructure after extreme weather events opens up opportunities to improve infrastructure, such as upgrades of drainage infrastructure, roads, embankments, and buildings.	Increased demand for existing products/services	Current	Direct	More likely than not	Medium-high

Risks & Opportunities

6.1d Please describe (i) the potential financial implications of the opportunity before taking action; (ii) the methods you are using to manage this opportunity and (iii) the costs associated with these actions

Africa is vulnerable to climate change, and the Copenhagen Accord provides funds for adaptation (The total available resources available in the Adaptation Fund under the UNFCCC are expected to be between USD 250-350 million by 2012). It is likely that a portion of these substantial funds would be allocated to infrastructure improvements such as improved water supply, sanitation, irrigation, embankment and sea level protection. Group Five is well positioned with both project experiences in countries throughout Africa but also in successful project delivery. Countries such as Ghana and Madagascar (countries in which Group Five has been active with construction projects) committed themselves to have mitigation action in the transport, energy and industrial & process sectors, as part of their Copenhagen Accord participation. This could open up opportunities in terms of funding for new infrastructure projects.

Increased regulatory requirements and prescribed standards will benefit the business as new business opportunities and larger tenders could arise. These would range from new housing requirements, through commercial buildings to new road infrastructure. It is estimated that buildings consume 40-50% of the world's energy through their construction and ongoing operation. Green buildings can reduce the consumption of energy to less than half of a conventional building. Group Five is at the forefront of not only the construction, but also the design and development of green buildings.

Apart from climate change and the need for adaptation, the Millennium Development Goals (reducing poverty by 2015) is an additional driver for governments in Africa to invest in public infrastructure such as water, electricity, transport, healthcare, education and administration. Group Five as a market leader in multi-disciplinary construction works is well positioned to deliver on these key contracts in a sustainable manner. Infrastructure contracts currently being rolled out include conventional, coal-fired and nuclear electricity power; road networks; railway expansion; commuter schemes; port and harbour developments; large pipelines; water and waste water treatment plants and water storage facilities.

The potential financial implications before taking action on these abovementioned opportunities are the lack of revenue and possible market share that may arise from green buildings and infrastructure upgrade projects. If Group Five increase the amount of projects in F2010 by 10% with additional green buildings and infrastructure upgrading projects, it could amount to an estimate of R930 million in additional revenue for the company.

The method used to manage this opportunity is by the development of the Engineering and Construction (E+C) cluster, which resulted in a cost to company in F2010 of more than R1 million in order to establish this cluster.

Risks & Opportunities

6.1e Please describe the opportunities that are driven by changes in other climate-related developments

ID	Oppertunity Driver	Description	Potential Impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
1	Changing consumer behaviour	Group Five is actively involved in the renewable energy sector in Southern Africa, and with changing consumer behaviour there will be an increased demand for renewable energy rather than fossil fuel energy.	Increased demand for existing products/services	Current	Direct	More likely than not	Medium-high
2	Changing consumer behaviour	A demand for green buildings for both commercial and residential properties will result in retrofitting and upgrading existing property assets as well as innovative new developments.	Increased demand for existing products/services	1-5 years	Direct	More likely than not	Medium

Risks & Opportunities

6.1f Please describe (i) the potential financial implications of the opportunity before taking action; (ii) the methods you are using to manage this opportunity and (iii) the costs associated with these actions

1. Group Five is actively involved in the renewable energy sector in Southern Africa, and with changing consumer behaviour there will be an increased demand for renewable energy rather than fossil fuel energy. The potential financial implications before taking action on these abovementioned opportunities are the lack of revenue and possible market share that may arise from these projects. Management of this opportunity is done by Group Five's new Engineering and Construction (E+C) cluster that are gearing up to offer engineering, procurement and construction support to dedicated renewable energy technologies. The key focus is on concentrated solar thermal power, wind energy and small hydro plants to be built in South Africa. The Group Executive Committee (Exco) and Management Committee (Manco) have approved the initiative of creating a new concept that takes our sector focus forward in a new Engineering and Construction (E+C) business. The E+C business is intended to add to the Group's penetration of markets and add new prospects and opportunities to the group. The key E+C sector focus will initially include, but not limited to: renewable and gas fired power generation and green business opportunities. During the year, Group Five also made a strategic investment in Kayema; a dedicated solar water heating and energy efficiency development company. This has prepared the group to participate in a national energy efficiency programme based on clean renewable energies, which include the implementation of solar water heating in commercial sectors. Group Five had a 51% share in Kayema, which we purchased for R3,000,000. However, due to selling of shares, Group Five now only holds 25% of the shares in Kayema. It is estimated that Kayema will show profit of roughly R8 million in F2010 and R11 million in F2011. The Infrastructure Development cluster is leading the development of the first large-scale Concentrated Solar Thermal Power (CSP) plant South Africa. Budgeted project development cost for this solar project is R 35 million in which Group Five has a 30% stake.

2. A demand for green buildings for both commercial and residential properties will result in retrofitting and upgrading existing property assets as well as innovative new developments. There is no potential financial impact to Group five before taking action on this opportunity, just the possibility of a possible loss in new market share that may arise from the green buildings sector. The green star rating system, developed by the Green Building Counsel of South Africa in conjunction with Group Five, has been adopted by a number of government agencies for the design of their new offices. Group Five has, through early adoption, a competitive advantage in submitting designs for these concessions. The green star rated tenders have already been submitted for the new offices of Munitoria and the Department of Environmental Affairs and Tourism in Tshwane as well as the KwaZulu- Natal Legislature. In the Western Cape, Group Five formed part of the development team for the Gugulethu shopping centre which was built and is operated on sustainable energy saving principles.

Risks & Opportunities

The energy-saving alternatives applied to Gugulethu Square included an energy efficient water-cooled air conditioning system, a rainwater system, intelligent lighting and tilt-up concrete façade construction requiring no external painting and less transport in the construction phase. Other measures were the use of on-site material for backfilling, re-use of 4 000m² brick paving from the site on which the centre has been developed, salvaging of demolished material for community use, and the introduction of operational waste management systems. Demolished concrete was set aside for re-use under roads and for some concrete work. Recycling crushed concrete into bricks specified for the project also meant reduced waste to landfill and less new materials. All costs associated with green building design and construction is paid for by the client. However, it cost Group Five around R200,000 in F2010 to train and equip personal for working on green building sites.

Emissions

7. Emissions Methodology

Base Year (New for CDP 2011)

7.1 Please provide your base year and base year emissions (Scope 1 and 2)

Base Year	Scope 1 Base year emissions (metric tonnes CO2e)	Scope 2 Base year emissions (metric tonnes CO2e)
2009	46,541.78	64,463.94

Methodology (CDP 2010 Q11)

7.2 Please give the name of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

ISO 14064-1
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

7.3 Please give the source for the global warming potentials you have used

Gas	Reference
Methane	IPCC Third Assessment Report (TAR – 100 year)

7.4 Please give the emissions factors you have applied and their origin; alternatively, please attach an Excel spreadsheet with this data

Fuel/Material/ Energy	Emissions Factor	Unit	Reference
Diesel/Gas oil	2.71	kg CO2e per litre	CO2 emission factor 74,100 kg/TJ; Calorific value 43 MJ/kg (2006 IPCC Guidelines for National Greenhouse Gas Inventories, Vol. 2)
Motor Gasoline	2.27	kg CO2e per litre	CO2 emission factor 69,300 kg/TJ; Calorific value 44.3 MJ/kg (2006 IPCC Guidelines for National Greenhouse Gas Inventories, Vol. 2)
Bituminous Coal	2.44	metric tonnes CO2e per metric tonne	CO2 emission factor 96,100 kg/TJ; Calorific value 25.8 MJ/kg (2006 IPCC Guidelines for National Greenhouse Gas Inventories, Vol. 2)
Liquefied petroleum gas (LPG)	2.98	metric tonnes CO2e per metric tonne	CO2 emission factor 63,100 kg/TJ; Calorific value 47.3 MJ/kg (2006 IPCC Guidelines for National Greenhouse Gas Inventories, Vol. 2)
Natural Gas	0.0507	metric tonnes CO2e per GJ	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Vol. 2
Other: Septic Tanks	0.1	metric	http://www.decentralizedwater.org/documents/DEC1R0

Emissions

		tonnes CO2e per person per year	9/DEC1R09.pdf
Other: Explosives (ANFO)	0.167	metric tonnes CO2e per metric tonne	AGO 2006a and the Australian Department of Climate Change
Other: South African Grid Electricity	1.03	metric tonnes CO2e per MWh	Eskom Annual Report 2010
Other: Ghana Grid Electricity	0.08	metric tonnes CO2e per MWh	http://solomononline.com/documents/Whitepapers/Lube_CEI_AM_WWW.pdf
Other: Mauritius Grid Electricity	0.952	metric tonnes CO2e per MWh	http://solomononline.com/documents/Whitepapers/Lube_CEI_AM_WWW.pdf
Other: UAE Grid Electricity	0.458	metric tonnes CO2e per MWh	http://solomononline.com/documents/Whitepapers/Lube_CEI_AM_WWW.pdf
Other: Jordan Grid Electricity	0.633	metric tonnes CO2e per MWh	http://solomononline.com/documents/Whitepapers/Lube_CEI_AM_WWW.pdf
Other: Hungary Grid Electricity	0.415	metric tonnes CO2e per MWh	http://solomononline.com/documents/Whitepapers/Lube_CEI_AM_WWW.pdf
Other: UK Grid Electricity	0.539	metric tonnes CO2e per MWh	Defra 2009
Other: Poland Grid Electricity	0.897	metric tonnes CO2e per MWh	http://solomononline.com/documents/Whitepapers/Lube_CEI_AM_WWW.pdf

8. Emissions Data

Boundary (CDP 2010 Q10.1)

8.1 Please select the boundary you are using for your Scope 1 and 2 greenhouse gas inventory
Operational Control

Scope 1 and 2 Emission Data (CDP 2010 Q10.2-10.3; Q12.1; Q13)

8.2 Please provide your gross global Scope 1 emissions figures in metric tonnes CO2e
69,463.70

Emissions

8.3 Please provide your gross global Scope 2 emissions figures in metric tonnes CO2e
84,483.82

8.4 Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions which are not included in you disclosure?
Yes

If yes: **8.4a Please complete the table**

Source	Scope	Explain why the source is excluded
Afrimix and Quarry Cats Office and sites	Scope 1 and 2	Incomplete information for the period in question
Group Five Pipe - Office and Factory Cape Town	Scope 1 and 2	Incomplete information for the period in question

Data Accuracy (CDP 2010 Q12.12; Q13.8)

8.5 Please estimate the level of uncertainty of the total gross global Scope 1 and 2 emissions figures that you have supplied and specify the sources of uncertainty in your data gathering, handling and calculations

Scope	Uncertainty range	Main sources of uncertainty	Please expand on the uncertainty in your data
Scope 1	More than 5% but less than or equal to 10%.	Data Gaps Data Management Assumptions	Data gaps may occur due to some requests that may not have reached every part of the organisation despite every caution being taken to ensure this. Data management is also a problem on project sites where Group Five is part of a joint venture. It is not always clear what emissions belong to which party of the joint venture, and therefore assumptions is often made about the usage of fuels.
Scope 2	More than 5% but less than or equal to 10%.	Data Gaps Data Management Assumptions	Data gaps may occur due to some requests that may not have reached every part of the organisation despite every caution being taken to ensure this. Data management is also a problem on project sites

Emissions

			where Group Five is part of a joint venture. It is not always clear what emissions belong to which party of the joint venture, and therefore assumptions is often made about the usage of electricity.

External Verification or Assurance (CDP 2010 Q20)

8.6 Please indicate the verification/assurance status that applies to your Scope 1 emissions
Not verified or assured.

8.7 Please indicate the verification/assurance status that applies to your Scope 2 emissions
Not verified or assured.

Carbon Dioxide Emissions from Biologically Sequestered Carbon (CDP 2010 Q17)

8.8 Are carbon dioxide emissions from the combustion of biologically sequestered carbon (i.e. carbon dioxide emissions from burning biomass/biofuels) relevant to your company?
No

9. Scope 1 Emissions Breakdown (CDP 2010 Q12.2-12.6)

9.1 Do you have Scope 1 emission sources in more than one country or region (if covered by emissions regulation at a regional level)?
Yes

If yes: **9.1a Please complete the table below**

Country/Region	Scope 1 metric tonnes CO2e
South Africa	66829.03
Ghana	318.96
Burkina Faso	156.56
United Arab Emirates	602.18
Hungary	1475.66
Poland	81.31

9.2 Please indicate which other Scope 1 emissions breakdowns you are able to provide (tick all that apply)

☒ **By business division (9.2a)**
☐ **By facility (9.2b)**

Emissions

☐ **By GHG type (9.2c)**
☐ **By activity (9.2d)**

9.2a Please break down your total global Scope 1 emissions by business division

Business division	Scope 1 emissions (metric tonnes CO2e)
Construction Materials	18218.24
Construction	25399.19
Engineering and Construction	107.61
Manufacturing	21264.27
Investments and Concessions	4474.38

10. Scope 2 Emissions Breakdown (CDP 2010 Q13.2-13.5)

10.1 Do you have Scope 2 emissions sources in more than one country or region (if covered by emissions regulation at a regional level)?

If yes: **10.1a Please complete the table below**

Country/Region	Scope 2 metric tonnes CO2e
South Africa	80998.87
Ghana	0.03
Mauritius	17.27
United Arab Emirates	118.54
Hungary	632.76
Poland	2716.35

10.2 Please indicate which other Scope 2 emissions breakdowns you are able to provide (tick all that apply)

☒ **By business division (10.2a)**
☐ **By facility (10.2b)**
☐ **By activity (10.2dc)**

10.2a Please break down your total global Scope 2 emissions by business division

Business division	Scope 2 emissions (metric tonnes CO2e)
Construction Materials	11519.97
Construction	10735.00
Engineering and Construction	62.92
Manufacturing	41901.18
Investments and Concessions	20264.75

Emissions

11. Scope 2 Contractual Emissions (CDP 2010 Q14)

11.1 Do you consider that the grid average factors used to report Scope 2 emissions in question 8.3 reflect the contractual arrangements you have with electricity suppliers?
Yes

11.2 Has your organization retired any certificates, e.g. Renewable Energy Certificates, associated with zero or low carbon electricity within the reporting year or has this been done on your behalf?
No

12. Energy (CDP 2010 Q12.8; Q12.10; Q13.6)

12.1 What percentage of your total operational spend in the reporting year was on energy?
More than 0% but less than or equal to 5%.

12.2 Please state how much fuel, electricity, heat, steam, and cooling in MWh your organization has consumed during the reporting year

Energy Type	MWh
Fuel	168120.78
Electricity	84483.82
Heat	59206.01
Steam	0
Cooling	0

12.3 Please complete the table by breaking down the total "Fuel" figure entered above by fuel type

Fuels	MWh
Diesel/Gas oil	158594.01
Motor Gasoline	9526.78
Sub bituminous coal	58956.66
Liquefied Petroleum Gas (LPG)	249.53

13. Emissions Performance

Emissions History (CDP 2010 Q19)

13.1 How do your absolute emissions (Scope 1 and 2 combined) for the reporting year compare to the previous year?
Increased

If emissions have increased, decreased or remained the same overall:

Emissions

13.1a Please complete the table

Reason	Emissions value (percentage)	Direction of change	Comment
Other: More complete emission data reporting in F2010 than previous year	39	Increase	Although the absolute emissions increased, Group Five has implemented some emission reduction activities during F2010 and therefore there were actually a decrease in emissions when compared to "business as usual". This year there was more complete emission reporting which adds considerably to the increase in absolute emissions. The nature of the construction business is also ever-changing, and therefore the amount of projects differ from one year to the next, making it difficult to try and decrease the company's absolute emissions. It is much more realistic to try and decrease intensities relative to "business as usual".
	18	Decrease	Energy efficient lighting and other reduction measures implemented at the Group Five CBS office resulted in a 18% electricity reduction from the "business as usual".

Emissions Intensity (CDP 2010 Q18)

13.2 Please describe your gross combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per unit currency total revenue

Intensity Figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Explanation
13.58	Ton CO_2	Million R turnover	48	Increase	This year there was more complete emission reporting. There was also a total revenue decrease of 6%, although there was an increase in profit margin from 6.6% to 7.7%.

13.3 Please describe your gross combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per full time equivalent (FTE) employee

Intensity Figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Explanation
21.21	Ton CO_2	FTE employees	67	Increase	This year there was more complete emission reporting. There was also 17% less FTE employees although total

Emissions

					employees only decreased by 11%.

13.4 Please provide an additional intensity (normalized) metric that is appropriate to your business operations

Intensity Figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Explanation
12.32	Ton CO_2	Total Employees	56	Increase	This year there was more complete emission reporting. There was also 11% decreased in total employees.

14. Emissions Trading (CDP 2010 Q21)

14.1 Do you participate in any emissions trading schemes?

No, and we do not currently anticipate doing so in the next 2 years.

14.2 Has your company originated any project-based carbon credits or purchased any within the reporting period?

No

15. Scope 3 Emissions (CDP 2010 Q15)

15.1 Please provide data on sources of Scope 3 emissions that are relevant to your organization

Sources of Scope 3 emissions	Metric tonnes CO2e	Methodology
Business Travel: Road	7,863.20	Standard: Greenhouse Gas Protocol Corporate Value Chain (Scope 3). Travel claims gave the distance travelled by employees, and an average motor gasoline fuel consumption of 10 km/L was assumed and used with IPCC emission factors for motor gasoline.
Business Travel: Air	1,144.57	Standard: Greenhouse Gas Protocol Corporate Value Chain (Scope 3). Travel agents supplied all the business air travel data for the different destinations. GHG Protocol Initiative emission factors were used for long-, medium-, and short-haul flights.
Transportation and distribution	143,176.34	Standard: Greenhouse Gas Protocol Corporate Value Chain (Scope 3). Travel distances were obtained from the different suppliers and an average diesel fuel consumption of 1.82 km/L was assumed with IPCC emission factors for diesel.

Emissions

Fuel and energy related activities (diesel and motor gasoline usage by sub-contractors)	10,056.28	Standard: Greenhouse Gas Protocol Corporate Value Chain (Scope 3). Diesel and motor gasoline figures were obtained from sub-contractors and emissions calculated with IPCC emission factors.
Fuel and energy related activities (electricity usage by sub-contractors)	168.78	Standard: Greenhouse Gas Protocol Corporate Value Chain (Scope 3). Electricity usage not paid for by Group Five, but by a third party, is obtained and emission factors for the specific grid are used to obtain the relevant emissions.
Use of sold products: Vehicles using toll roads	5,379,495.53	Standard: Greenhouse Gas Protocol Corporate Value Chain (Scope 3). All the toll roads have records of the amount and specific class of vehicle that used the road. Emission factors from Defra is used for the specific vehicle classes and multiplied by the length of the toll road.
Purchased goods and services: Petroleum	22,641.07	Standard: Greenhouse Gas Protocol Corporate Value Chain (Scope 3). Petroleum production emission intensity were obtained from Shell's 2010 CDP report and multiplied by the amount of litres of petroleum products purchased. Emission factor used is: 0.35 ton CO2/tonne product
Purchased goods and services: Aggregate	3,627.50	Standard: Greenhouse Gas Protocol Corporate Value Chain (Scope 3). Volumes of the building material were recorded from all the sites. Life cycle emission factors (including embodied carbon) were obtained from the "Inventory of Carbon and Energy" study on construction material done by the University of Bath (2011). Emission factor used: 0.0052 ton CO2/ton product
Purchased goods and services: Cement	279,853.34	Standard: Greenhouse Gas Protocol Corporate Value Chain (Scope 3). Volumes of the building material were recorded from all the sites. Life cycle emission factors (including embodied carbon) were obtained from the "Inventory of Carbon and Energy" study on construction material done by the University of Bath (2011). Emission factor used: 0.74 ton CO2/ton product
Purchased goods and services: Concrete	26,078.49	Standard: Greenhouse Gas Protocol Corporate Value Chain (Scope 3). Volumes of the building material were recorded from all the sites. Life cycle emission factors (including embodied carbon) were obtained from the "Inventory of Carbon and Energy" study on construction material done by the University of Bath (2011). Emission factor used: 0.107 ton CO2/ton product
Purchased goods and services: Steel	866,205.18	Standard: Greenhouse Gas Protocol Corporate Value Chain (Scope 3). Volumes of the building material were recorded from all the sites. Life cycle emission factors (including embodied carbon) were obtained from the "Inventory of Carbon and Energy" study on construction material done by the University of Bath (2011). Emission factor used: 1.46 ton CO2/ton product
Purchased goods and services:	1,112,273.22	Standard: Greenhouse Gas Protocol Corporate Value Chain (Scope 3). Volumes of the building material were recorded from all the sites. Life

Emissions

Bricks		cycle emission factors (including embodied carbon) were obtained from the "Inventory of Carbon and Energy" study on construction material done by the University of Bath (2011). Emission factor used: 0.24 ton CO2/ton product
Purchased goods and services: Sand	8,385.25	Standard: Greenhouse Gas Protocol Corporate Value Chain (Scope 3). Volumes of the building material were recorded from all the sites. Life cycle emission factors (including embodied carbon) were obtained from the "Inventory of Carbon and Energy" study on construction material done by the University of Bath (2011). Emission factor used: 0.0051 ton CO2/ton product
Purchased goods and services: Stone	19,631.90	Standard: Greenhouse Gas Protocol Corporate Value Chain (Scope 3). Volumes of the building material were recorded from all the sites. Life cycle emission factors (including embodied carbon) were obtained from the "Inventory of Carbon and Energy" study on construction material done by the University of Bath (2011). Emission factor used: 0.079 ton CO2/ton product
Purchased goods and services: Slag	2,552.11	Standard: Greenhouse Gas Protocol Corporate Value Chain (Scope 3). Volumes of the building material were recorded from all the sites. Life cycle emission factors (including embodied carbon) were obtained from the "Inventory of Carbon and Energy" study on construction material done by the University of Bath (2011). Emission factor used: 0.083 ton CO2/ton product
Purchased goods and services: Municipal Water	8,358.91	Standard: Greenhouse Gas Protocol Corporate Value Chain (Scope 3). Volumes of the municipal water usage were recorded from all the sites. Emission factor from Defra, adjusted for the South African grid, was used for water treatment. Emission factor used is: 1.84 ton CO2/kl

15.2 Please indicate the verification/assurance status that applies to your Scope 3 emissions
Not verified or assured.

15.3 How do your absolute Scope 3 emissions for the reporting year compare to the previous year?
Increase

If emissions have increased, decreased or remained the same overall:
15.3a Please complete the table

Reason	Emissions value (percentage)	Direction of change	Comment
Other: More complete emission data reporting in F2010 than previous year	6,357	Increase	Although the absolute emissions increased, Group Five has implemented some emission reduction activities during F2010 and therefore there were actually a decrease in emissions when compared to "business as usual". This year there was more complete emission reporting which adds considerably to the increase in absolute emissions. The nature of the construction

Emissions

			business is also ever-changing, and therefore the amount of projects differ from one year to the next, making it difficult to try and decrease the company's absolute emissions. It is much more realistic to try and decrease intensities relative to "business as usual".