Sector focus

The group's capabilities have been refined to deliver comprehensive infrastructure solutions in sectors with high potential. The next few spreads outline the group's capabilities in its target sectors.

MINING

2008

Bogoso sulphide expansion contract – Ghana

This brownfields contract to increase output was the largest BIOX plant constructed at the date of completion.

2009

Tenke Fungurume mining contract – Democratic Republic of Congo

Supply, fabrication and installation of structural steel, platework, piping, electrical cabling and instrumentation, as well as installation of mechanical equipment.

2010

Kayelekera uranium contract – Malawi

Erection of piping, structural and mechanical equipment, heavy lifts, as well as electrical and instrumentation works. The plant consisted of 1 168 tonnes of steelwork, 711 tonnes of plate work, 27 kilometres of piping and 52 site-fabricated tanks.

2011

Kinsevere – Democratic Republic of Congo

The structural, mechanical, electrical, instrumentation and piping (SMEIP) supply, construct and commissioning of a copper plant to produce 60 000 tonnes grade A copper per annum.

CASE STUDY

Kibali gold contract – DRC

[Construction of new gold plant]

The contract comprises the construction of a new gold plant in the North East province of the Democratic Republic of the Congo (DRC) for a joint venture between Rand Gold, AngloGold Ashanti and Okimo, the state-owned DRC mining company. This is one of the largest mine construction contracts for the group in the DRC.

This gold concession was last mined in the 1960s. The restarting of this mine will involve open cast, incline shaft and vertical shaft mining. Road logistics is served by a gravel road from the Ugandan border, which requires careful planning.

In line with the group's strategy of intra-group engagement and offering sector solutions, we have secured a construction package that includes the majority of the civils surface work (bulk earthworks and terraces), the civils for a hydroelectric power plant, the process plant and a major portion of the tailings and the building of the plant itself. This includes the installation and erection of steelwork, plate work and mechanical and electrical equipment. The work will be undertaken by the group's Civil Engineering and Projects segments.

Challenges of the contract involve working in an extremely high rainfall and malaria area in a very remote location, which involves complicated logistics. As Group Five Projects has over six years' experience in working in the DRC, the group is well placed to address these challenges.

This contract demonstrates Group Five's comprehensive multi-disciplinary mining plant and materials handling construction expertise. This continues to be a differentiator in South African and African mining.

Key competencies

- Multi-disciplinary international mine and process plant constructor
- Consortium partner in engineer, procure and construct (EPC) mine construction
- Contract crushing and hauling services
- On-site services contractor
- Supply chain logistics into remote sites
- Supply of construction and mine housing systems
- Supply of construction steel

Key differentiators

- Experienced African mining and process plant constructor across 18 countries
- Strong repeat business client base
- Reputation for delivery of complex contracts in remote and difficult conditions

2012

Grootegeluk run of mine and waste contract – South Africa

The contract is to construct a sophisticated conveyer system to enable conveyance of coal from the Grootegeluk mine to the Medupi power station in Lephalale. The contract commenced in March 2011 and is due for completion in 2012.

INDUSTRIAL

2008

Highveld induction furnace – South Africa

Installation of a furnace and the supply of structural steel, handrailing, grating, piping and electrical and instrumentation works.

2009

Emirates Aluminium Smelter – UAE

Six packages ranging from a power plant and sub-station building to an anode bake furnace. We also constructed materials handling infrastructure.

2010

Matola cement mill – Mozambique

Demolition of the existing concrete structures, construction of new civil structures, installation of the mill and associated items, structural steel, mechanical items and piping.

2011

Sasol FT wax expansion – South Africa

Demolition of existing structures and the re-routing of services. Construction of bulk earthworks, access roads, underground drainage works, structural foundations and building extensions.

Key competencies

- Multi-disciplinary industrial plant constructor
- Factory layout design and build
- Construction services, including civils, building, mechanical and electrical works
- Resident multi-disciplinary maintenance and shutdown services contractor
- Supply of construction materials
- Supply of construction steel

Key differentiators

- Track record in civils, heavy mechanical, electrical and piping construction and services
  - Aluminium, steel, zinc and gold smelting
  - Petrochemical
  - Sugar
  - Paper
  - Cement

2012

Sappi Tugela Mill – South Africa

Supply of boilermaking, piping and mechanical fabrication and welding services to support the Sappi mill's engineering services and production maintenance units. This is an evergreen core contract established in December 1999.

CASE STUDY

Industrial services contracts

[The group is the largest multi-disciplinary industrial services contractor in South Africa]

Group Five Engineering and Construction Services (E&CS) is the largest multi-disciplinary industrial services contractor of its kind in South Africa. It provides a broad spectrum of specialist contracting services primarily to the oil and gas, pulp and paper, sugar and chemical industries. Services include preventative maintenance studies and cost compilation, maintenance, turnarounds, brownfield plant upgrades, petrochemical technology packaging, storage tank refurbishment and repair, as well as construction and maintenance services.

Based on the specialist expertise and onerous safety and quality control systems that are required in the industrial services market, the business also contracts as a specialist oil and gas and petrochemical constructor of larger contracts in collaboration with Group Five Civil Engineering and Group Five Projects. Recent contracts include the new multi-products pipeline pump stations and terminals for Transnet.

Core maintenance contracts include the Engen Refinery since 1996, the Chevron Refinery since 2006, the Sappi Tugela Mill since 1999, Huntsman Tioxide since 2003 and Shell depots since 2009.

Turnaround and shutdown experience includes Chevron refinery turnarounds since 2007, Sapref refinery turnarounds in 2004 and 2009, Engen refinery turnarounds since 1997, the South African Oil Refinery turnaround in 2009 and Sappi shutdowns since 1999.

The group's experience demonstrates its ability to support infrastructure from inception through construction to operations and maintenance.

POWER

2008

Aba power station – Nigeria

Design, supply and installation of three gas turbines, with a combined output of 120 megawatt for the Aba power station.

2009

Orapa Botswana IPP – Botswana

Engineering and design work, including conceptual works, as well as the procurement of two GE LM6 000 gas turbines.

2010

Sasol OCGT contract – South Africa

Engineer, procure, construct and commission, including performance testing the open cycle gas turbines as part of the Combined Cycle Power Generation Project at Secunda.

2011

Kusile power station – South Africa

Construction of site-wide civil works for a coal-fired power station using flue gas desulphurisation technology.

Key competencies

- Power plant co-developer, equity participant and turnkey design and build contractor
- EPC for thermal, liquid and gas power plants
- Solar, wind and mini hydro power plant contractor
- Operations and maintenance services
- Supply of construction steel and advanced building technology systems

Key differentiators

- Track record in engineer, procure and construct (EPC) power plant delivery in Africa
- Approved EPC contractor to General Electric (GE) and other technology providers
- Capability to co-develop contracts to bankability
- Capability to execute across Africa and Middle East
- Operations and maintenance systems

2012

Eskom's Kusile air cooled condenser columns – South Africa

Following Kusile's main civils works, the group is now building support columns for the air cooled condensers by using concrete sliding technology.

CASE STUDY

Namakwa Sands EPC power contract

[Furnace off-gas captive power plant]

Group Five Engineering and Construction Services (E&CS) was awarded this engineer, procure and construct (EPC) contract for Exxaro TSA Sands in December 2011. The contract involves harnessing furnace off-gas to generate electrical power using gas engines. Total plant electrical output will be 15 MW. The contract started in June 2012, with the expected completion date in June 2013.

All construction work has to be undertaken whilst the existing plant is in production, with the resultant safety requirements of a working site in place.

The contract involves collecting the furnace-generated off-gas, which is presently being flared into the atmosphere and using this fuel source to run gas engines capable of generating electrical power. The off-gas will be collected, mixed, scrubbed, cleaned and the moisture removed before being used in the gas engines. The group has been responsible for the detailed engineering and design for the gas handling and the complete power plant.

The technology to be used draws on the group's long term relationship with global power group General Electric, in particular their range of "Jenbacher" industrial gas-powered generators.

During 2011, the group constructed a similar plant for Exxaro at their Beatrix Mine.

The contract is a good fit with the group's sector focus on power and demonstrates the group's ability, particularly the EPC packaging of small to medium power plants using industrial waste, gas and liquid fuels.

OIL AND GAS

2008

Chevron maintenance shutdown – South Africa

Planned plant maintenance and repair.

2009

Engen maintenance shutdown – South Africa

Planned plant maintenance and repair.

2010

NMPP pipeline – South Africa

New multi-products pipeline designed to convey various petroleum products between Durban and Johannesburg.

2011

Sasol Alrode tanks – South Africa

Construction of a new fuel storage facility for Sasol in Johannesburg, using tank technology from HMT, our US-based liquid storage tank partner.

Key competencies

- Multi-disciplinary plant and infrastructure constructor
- Resident multi-disciplinary services contractor
- Refinery shutdown and turnaround contractor
- Specialist tankage design and build contractor

Key differentiators

- Dedicated oil and gas business
- Experienced shutdown and maintenance contractor to all oil and petrochemical majors
- Piping and steel fabrication facilities in compliance with ISO 3834
- Tankage and pipeline technology constructor and services

2012

NMPP pipeline pump stations – South Africa

This contract involved the construction of five large pump stations in KwaZulu-Natal for Transnet's NMPP pipeline. This required heavy civils, mechanical and electrical construction. Four of the group's business segments worked as part of the team. Post contract works are in progress.

CASE STUDY

New multi-products pipeline (NMPP) terminals

[Construction of two large petroleum storage and handling plants]

The NMPP pipeline for Transnet involved a number of phases. The main pipeline from Durban to Johannesburg started commercial operations in December 2011, followed by five large pump stations that were operational a few months later. The last stage was the construction of a large fuel handling facility at each end of the pipeline. The group is currently involved in the construction of two large petroleum storage and handling plants, due to be completed in December 2013.

Similar to the other phases of the NMPP contract, this phase also requires significant logistical planning. It involves Group Five Civil Engineering, Building and Housing, Projects and Engineering and Construction Services to provide a unified multi-disciplinary construction solution.

The storage and handling plant contracts include heavy concrete structures below and above ground, as well as water retaining tanks and extensive earthworks relating to the re-engineering of the existing site. Further large components are mechanical piping, equipment installation, electrical installations and instrumentation, as well as a fuel tank farm. Building works consist of sub-stations, administration buildings, laboratories, reservoirs, water sewer, fire articulation and associated road works.

The contract started in 2011. So far it has an excellent safety record, with five million injury-free man hours and an overall DIFR of 0.

Challenges have included fluctuations in scheduling and staffing required due to late and out of sequence construction information and material supply. To address this, the group has formed a core team with the client to enable accelerated deliverables and a cooperative construction schedule.

This contract demonstrates Group Five's ability to offer a complete construction package.

WATER

2008

Berg River dam – South Africa

65 metres high, 990 metres long concrete faced rock fill dam near Franschhoek to augment water supply to Cape Town.

2009

Vresap pipeline – South Africa

Supply and installation of 126 kilometres of pipeline as a water supply system for Sasol between the Vaal dam and Secunda.

2010

Olifantspoort water treatment works – South Africa

Extension of existing water treatment works for Polokwane to increase capacity by 20 megalitres per day.

2011

BG3 pipeline – South Africa

Group Five Pipe was awarded Rand Water's R124 million BG3 pipeline in 2008. It completed the manufacture, coating and lining of the entire pipeline. The pipes were the largest pipes with the thinnest walls ever to have been manufactured by the group, with new coating and lining technology used.

CASE STUDY

Sewage pump station relocation – KwaZulu-Natal

[Includes under-sea pump station shaft]

Due to the recent upgrading of the Durban Point Precinct close to the Durban Harbour, one of the municipality's sewage pump stations had to be upgraded and relocated closer to the harbour. Group Five Civil Engineering and Coastal teamed up for this contract.

The contract also involves the construction of a 1,2 metre diameter concrete pipe micro tunnel of 220 metres. Micro tunnelling over such a distance is a specialist task. In this case the pipe was jacked horizontally five metres below ground level from the existing overflow chamber to the relocated pump station. This allowed the installation of the pipe tunnel without the need for excavation or disruption to traffic and existing services.

The new pump station vertical shaft is 12 metres below sea level. This necessitated dewatering of the shaft before construction could start. The construction of the diaphragm walls and concrete plug required that approximately 2 300 m^3 of concrete had to be poured under water.

It is an extremely difficult and technical contract as the construction is carried out nine metres below sea level. The site is also very confined. Managing to operate in tight spaces and environmental and safety precautions are therefore key focus areas. Pleasingly, since starting the contract the group has had no environmental incidents and no lost-time injuries.

Water-related contracts are an important and growing sector in the group's strategy.

This contract demonstrates the group's ability to execute contract works in confined public areas safely and environmentally responsibly.

Key competencies

- Multi-disciplinary constructor of bulk water transport, treatment and storage systems
- Engineer, procure and construct (EPC) delivery of bulk water systems
- Design and manufacture of large bore spiral wound water pipes
- Supply of construction steel
- Supply of fibre cement pipe systems

Key differentiators

- More than 35 years' track record of delivery in water and marine civils sector, which includes some of the largest contracts in the SADC* region
- Dedicated pipe manufacture
- Specialist experience in building pipelines and water treatment facilities

* Southern African Development Community.

2012

Spring Grove dam – South Africa

The Spring Grove dam in KwaZulu-Natal is being constructed by Group Five Civil Engineering and Coastal in joint venture with Pandev, one of the group's long-standing enterprise development partners. The contract is on track for completion in 2013.

REAL ESTATE

2008

Bank of Tanzania – Zanzibar

Construction of the 12 000 m^2 branch office for the Bank of Tanzania, comprising a basement, ground floor and one tower.

2009

Moses Mabhida soccer stadium – South Africa

Construction of a 70 000-seater stadium, including hospitality boxes, an athletics track, sports field, basement parking and external works.

2010

Brandvlei Prison – South Africa

Demolition of an existing prison and construction of a new prison for 1 000 inmates.

2011

Khayelitsha District Hospital – South Africa

Construction of a new 230-bed hospital in Cape Town for the Department of Public Works.

Key competencies

- Developer, equity participant and turnkey design and build contractor in real estate developments
- Design to build contractor, with particular green building expertise
- Public private partnerships (PPPs)

Key differentiators

- Design to build capability
- In-house financial structuring capability for PPP delivery
- Large building capacity and track record
- International delivery capacity
- Green building contractor

2012

Crystal Park affordable housing – South Africa

Over 4 000 units in Benoni in Gauteng secured by the group. To be included in the order book post year end. Group Five Motlekar is the developer and Group Five Housing the contractor. The contract is expected to continue until July 2017.

CASE STUDY

Construction of healthcare facilities

[Strong healthcare position in the real estate sector]

Both the private and public sectors continue to focus on the improvement of healthcare facilities.

The government in particular is aiming to address the backlog of public healthcare facilities. Included in the programme are contracts under a public private partnership (PPP) model. Whilst the timing of these tenders is uncertain, the group has the capability and experience in concessions contracts and in the construction of hospitals.

The group was recently responsible for the construction of seven high-profiled healthcare-related contracts to the value of R1,1 billion. Four of these contracts are greenfields sites. Three involved additions and alterations that took place in tight timelines at fully-operational hospitals.

New Mantsopa Hospital in the Free State is a joint venture with enterprise development partners of the Department of Public Works and the Free State provincial government.

Three hospitals in Gauteng (Netcare Femina, Netcare Linmed and Lenmed private hospital) require significant additions and alterations.

One new 230-bed hospital (Khayelitsha Hospital) in Cape Town for the Department of Public Works.

Two facilities in KwaZulu-Natal (Pomeroy Community Health Centre and GJ Crookes Hospital) require the construction of either new facilities or additions to facilities. These are both joint ventures with the group's enterprise development partners.

One of the group's significant healthcare contracts completed last year was the construction of the new **Netcare Hospital at Waterfall City in Gauteng.**

Healthcare-related contracts demand high quality and performance. The group has established a strong reputation in this field.

Mining	Industrial	Power	Oil and gas	Water	Real estate	**Transport**

TRANSPORT

2008

Durban harbour entrance widening – South Africa

Durban harbour widening by 100 metres. Removal and replacement of existing northern breakwater, extension of southern breakwater and deepening of harbour entrance by three metres to a depth of 19 metres.

2009

King Shaka International Airport – South Africa

Design and construction of an international airport in KwaZulu-Natal.

2010

Gauteng Freeway Improvement Project – packages A and E – South Africa

Packages included lane additions and improvements to interchanges as part of SANRAL's freeway improvements.

2011

Gauteng Freeway Improvement Project – package E – South Africa

Extensive lane additions and improvements to interchanges as part of SANRAL's freeway improvements.

CASE STUDY

Koeberg interchange – Cape Town

[A critical road upgrade]

The Koeberg interchange carrying more than 200 000 vehicles per day had been operating below acceptable service levels for many years prior to the award of the 2010 FIFA Soccer World Cup. The time pressure to achieve the improvement to both the N1 and the M5 freeways prior to the event required quick action and innovative design from Group Five and its joint venture partner, Power Construction. Alternative technical solutions were proposed during tendering, which contributed to the group securing the contract.

Ramp A was opened on schedule in time for the 2010 FIFA Soccer World Cup and Ramp B was opened to traffic in June 2011, four months ahead of schedule.

The design challenges of threading two new intersecting ramps, each approximately 700 metres long, at a third level above the existing interchange, required the design of elements such as piers and capping beams, to allow repetitive use of formwork and the aesthetically pleasing precast u-beam structures. This allowed maximum off-site production which minimised the build programme and reduced traffic disruption. The contract used the largest pre-cast beams to have ever been constructed in South Africa.

The construction team had to overcome enormous challenges, such as several buried and unrecorded services. This even included a buried old naval oil pipeline still full of oil from the second World War!

An entire riverbed had to be relocated during winter, which required careful hydraulic control and innovative use of labour-intensive gabion baskets.

This contract demonstrates the group's ability to construct technically complex infrastructure upgrades in a working urban environment through the use of specialist technologies.

Key competencies

- Co-developer, equity participant and turnkey design and build contractor in transport concessions
- Engineer, procure and construct (EPC) delivery of transport infrastructure
- Multi-disciplinary constructor of roads, railways, ports, harbours and airports

Key differentiators

- International experience across Africa, the Middle East and Europe
- Reputation for timeous and technically complex delivery
- Large contract capability
- EPC competence

2012

Chota Motala Interchange – South Africa

This contract in KwaZulu-Natal comprises an upgrade of the freeway from a four-lane carriage way to a six-lane free flowing and remodelled interchange. The interchange consisted of two major structures, including the demolition and the reconstruction of the grade separation bridge and an incrementally launched fly-over bridge, as well as all associated works.