



Making a difference

ENERGYS

Over the past eighteen months, the SAICE-SABTACO ENERGYS project has benefited people all over the country in many ways:

- Fifty four retired engineers enjoyed a second lease on (their professional) life by being afforded the opportunity to apply their decades of experience in a useful and meaningful way
 - A hundred and fifty technical university students and graduates were given jobs and experienced mentors for their intern year
 - Service delivery in local government was improved, where it was sorely needed
- A few case studies follow, recounting instances where SMMEs were given opportunities to earn income, create jobs and become more familiar with the tendering system for government contracts.

SAICE-SABTACO se ENERGYS-program om af- en uitgetrede ingenieurs terug te lok om diens te doen in plaaslike owerhede het vroeg in 2006 onder die leiding van 'n vorige president van SAISI, Allyson Lawless, begin.

Die program se mikpunt is beter dienslewering deur munisipaliteite. Dit skep terselfdertyd die geleentheid vir tegnoloog-studente om hulle internjaar onder 'n bevoegde mentor af te handel. Befondsing kom onder andere van die sentrale regering se Departement van Plaaslike Bestuur en Behuising.

Tans is daar landwyd 54 senior ingenieurs en 150 studente en graduandi betrokke. Die program word uitstekend geadministreer deur Allyson en haar span

in Johannesburg.

Gedurende my jaar in De Aar by die Pixley ka Seme Distriksmunisipaliteit se Tegniese Afdeling, het dit vir my duidelik geword dat vir beter dienslewering in die Bo-Karoo (terloops, 'n gebied byna so groot soos die ganse KwaZulu-Natal), die alles-oorheersende behoefte is aan groter getalle tegniese opgeleide en ervare personeel. In al agt plaaslike munisipaliteite en die distriksmunisipaliteit is daar geen enkele professionele ingenieur in permanente diens nie en slegs twee met 'n formele tegnikus-agtergrond, beide by die distriksmunisipaliteit. Gelukkig is daar wel 'n aantal toegewyde amptenare wat hul bes doen om die wiele aan die draai te hou.

'n Bevreëdigende aspek van my diensyd hier was om geleenthede te skep vir klein entrepreneurs uit die voorheen benadeelde gemeenskap om meer vertrouwd te raak met die tenderstelsel, en om werkgeleenthede te verskaf.

VAN DER KLOOF ROADWORKS: THE JIM LYNCH STORY

Hennie Greeff managed to secure ringfenced funding for repairing storm damage to roads at four localities in the Pixley ka Seme District, in the aftermath of the unusually copious rains the Karoo was blessed with in the early months of the year 2006.

One such case was the washed-out one metre wide gravel shoulder between the edge of the tarred road surface and the existing concrete drain where the rather steep access road to Van der Kloof was in side cut.

Considering the abundance of hard dolerite stones in the area, and the fact that stone pitching was a well-established craft, it was decided to go for grouted stone pitching flush with the road surface, bedded in a 150 mm deep trench between

the edge of tar and the side of the concrete drain.

Where there was no existing concrete drain, it was decided to hand-dig a side drain after ripping with a tractor fitted with a single tine. The focus had to be on job creation, thus the requirement for hand-digging, for the benefit of the historically disadvantaged section of the community, including emerging contractors.

Considering the lack of sophistication of the targeted 'emerging' small contractors, the tender document was drafted to be as informal as possible without missing out on vital legal requirements. It turned out to be twenty pages long, which included five A4-size drawings.

Because of the limited size of the tender documents, it was practical to make them available in both English and Afrikaans. All eight documents taken from the Van der Kloof municipal offices were in Afrikaans. As the secretary explained, 'Nee wat, ons is hier mos almal Afrikaans.' It could just be that the English documents were censored by her, or at least hidden at the bottom of the pile.

Following the site meeting (compulsory for all prospective tenderers) fairly extensive re-arrangement of the section on hand-digging the side drain became imperative and a letter to tenderers was dispatched with additional contract data which was to form part of the contract.

The extent of the lack of sophistication of the tenderers became apparent in the tenders. The column for rates was ignored and only amounts for the various items of construction were entered. No one took any notice of the additional contract data.

The contract, which was mainly for labour, supervision, transport and equipment, therefore had to be limited to stone pitching, which was not affected by the additional contract data. Acting on the Tender



► **Figuur 1** Hans van Petrusville met groen oorpak en Trinity agter met wit oorpak



Figuur 2 Hans se werkspan in aksie

Figure 3 Desmond Hugo of Vosburg and some of his team members

Figure 4 A total of 4 500 top-quality concrete kerbs were completed

Figure 5 Quality kerb blocks at Vosburg

Figuur 6 Keurtjieskloof: die terrein vir die voetpad

Evaluation Committee's recommendation, the Tender Adjudication Committee of the Pixley ka Seme District Municipality identified Lynch Construction from Petrusville, a village fifteen kilometers from Van der Kloof, as the preferred tenderer. Their tender was well balanced and provided for the possibility of a reasonable profit if all went well.

Legal requirements stipulated that tenderers had to produce a tax clearance certificate, submit proof of an application for registration with the Construction Industry Development Board (CIDB), have a competent assessor prepare a risk assessment, and submit a health and safety plan for the construction. A further requirement was that during the construction period, a health and safety file had to be kept on site and regularly updated.

At our meeting with representatives of the Department of Labour at De Aar, their Mr Anthony Olifant hinted that the engineer (me) was, in this case, the obvious 'competent person' referred to in the Act. After having been appointed in writing by Messrs Lynch Construction as their risk assessor, I produced an assessment and a health and safety plan on behalf of the tenderer, which was approved by Mr Olifant for the Department of Labour.

As negotiations proceeded, it began to emerge that Jim Lynch, the owner of Lynch Construction, could neither read nor write. At the first meeting he brought his son along, and at the next meeting his wife and daughter accompanied him. He was, however, able to 'draw' his name when required to sign a document. The site instruction book entries were later on to be signed for by his 'wife', Ms U A Remmelien.

With the signed contract for R94 775 (plus VAT) in his pocket, Jim Lynch set off to procure bridging finance for the initial period of construction. He had to buy orange-coloured overalls of the correct sizes

for his team of sixteen workers (one guy was far too portly and had to be exempted), his CIDB registration Category CE 1 cost R450 and his daily expenses were to be of the order of R1 000, mainly for wages. There were also the requirements for gloves and boots for his workers. The first payment certificate would only be due after two weeks and would, of course, be based on the amount of completed construction of acceptable standard. Another week or so for processing by the client would take his accumulated negative cash flow to about R15 000.

ABSA Bank in Petrusville – where he had his savings account – refused any assistance. My efforts at talking to the bank manager was met with a locked door and a messenger scurrying to and fro between us. Eventually the manager informed me, via the messenger, that 'Mr Lynch knows why he has been refused a loan'. That left Mr Lynch with no other option than to avail himself of the kind assistance of Helpmekaar Finansiële Dienste in Petrusville who lent him R4 000 at an interest rate of about 30% per month.

Shortly after the nomination of Lynch Construction as preferred tenderer, we were stopped in the street in Petrusville by one of the other (unsuccessful) tenderers to tell us that a big protest meeting was due to take place in Petrusville that evening because Lynch Construction could not possibly be eligible for getting the contract. We explained that, as far as we were concerned, all the paperwork had been done and all legal requirements met and that they would be well advised to forget about a protest meeting and get ready for a similar contract that was due to be advertised within a week or two. Fortunately nothing more was heard about the protest meeting.

Meantime construction had started at Van der Kloof with fourteen men and two female flag wavers, all resplendent in their brand-new orange-coloured overalls (except for the portly guy) and only two wheelbarrows, picks and shovels. This was serious, for success hinged entirely around production. A pick and spade which we had with us increased his excavating complement by 50% and we enquired from local farmers about the availability of disused tools in



their sheds.

On next visiting the site, we were pleased to find that Lynch Construction had six wheelbarrows and more than enough picks and shovels and consequently production was impressive. Mr Lynch explained that his foreman, Johnny Moos, was lending him these tools and barrows. The very next day a telephone call from a Van der Kloof town councillor revealed a very concerned individual. It transpired that Mr Moos was the organiser of a job creation programme of the municipality for street resurfacing in Van der Kloof and that their production was hampered by their being short on wheelbarrows and other tools. It could well be that Mr Johnny Moos reckoned that the indifferent rate of progress in street surfacing did not warrant the excessive amount of equipment available there.

Mr Lynch being a house builder at heart, it took some effort to convince him that the prescribed grout mix of one part cement to four parts sand (SABS 1200 DK-1996 Section 3.2.2) was not outrageously strong (and expensive). He was only convinced when he was reminded that, as far as he was concerned, the cement was provided free, according to the contract.

A payment certificate for R20 249,25 was agreed upon and signed by Mr Lynch with no knowledge of what it was about, apart from our verbal communication. Allowing one week for processing by the client, three weeks into construction Messrs Lynch Construction had produced a surplus over expenses of R5 000. The quality of his work was good and members of the public at Van der Kloof had com-

mented favourably on the pleasing results of the construction. There was little reason to expect anything but a successful outcome for contractor, client and the public.

WERKGELEENTHEID VIR HANS VAN PETRUSVILLE

Hans, 'n man in sy laat dertigerjare, sy vrou Dina en hulle kinders woon in 'n sinkhuisie in 'Die Plakkerskamp'. Dina vertel hoe bitter koud dit in die winter in die huisie word, maar sy hou alles silwerskoon en vee ook elke more rondom die huis.

Hans kan nie lees of skryf nie, maar kan wel sy naam 'teken' – H A N S. Hy het 'n bakkie, 'n selfoon en 'n bankrekening, en sy vennoot Trinity kan lees, 'n kontrak verstaan en ook taamlik goed skryf.

Jacques, 'n boer van naby Petrusville wat saam met Hans grootgeword het, het Hans aan my voorgestel vir die werk om die reserwe oor twee kilometer van die pad tussen Petrusville en Colesberg skoon te kap. Die digte stand van doringbome in die reserwe het meegewerk om ernstige stormskade aan die pad te veroorsaak tydens die swaar reën vroeg in 2006.

Jacques, 'n gekwalifiseerde landbou-ekonoom, het baie tyd saam met Hans deurgebring om 'n goeie kwotasie voor te berei, en die tweemaandekontrak is toe aan Hans en sy span van sewe mans en een vrou toegeken. Hulle het met mening ingeklim en die werk binne drie weke tot 'n baie bevredigende standaard afgehandel. Hans is betaal volgens sy kontrak en nadat hy met sy werkers afgereken het, het hy brood op die tafel om sy familie te versorg.

Hans het aan my gesê dat hy nog nooit tevore enige kontrak geteken het nie, en dat hy baie in sy skik was met die uitkoms van hierdie een.

KERB MANUFACTURE AT VOSBURG

Desmond Hugo from Granaatbosstraat in Smartietown at Vosburg was successful with his labour-only quote for producing concrete kerbs at R15,00 per kerb for the proposed street works in the township.

Forty welded steel forms, concrete aggregates (stone and sand), cement, water and tools were to be provided by the Kareeberg Local Municipality. Desmond and his thirteen workers, nine of whom

were women, would share the R520 per day and he, as foreman and entrepreneur, would receive an extra R80 per day – R600 in total.

When we arrived at the District Municipality the first few batches of concrete had been produced, and it was obvious that something had gone horribly wrong. It transpired that the incorrect coarse aggregate (stone) size had been provided to Desmond, and in his frantic efforts to produce a workable mix, the resultant cube strength was well below the required standard of 25 MPa.

We recommended that the correct size coarse aggregate be ordered from De Aar Stone Crushers and prescribed a trial mix which was very successful. Cube crushing strengths were monitored during the five months of cube manufacture, courtesy of the Rocla and Grinaker laboratories in De Aar.

With crushed dolerite coarse and fine aggregate of superb quality produced by De Aar Stone Crushers, the correct mix proportions and careful monitoring of cube strengths, the kerbs produced by Desmond Hugo and his team right up to when the final batch of the 4 500 kerbs was delivered during November 2006 was comparable to the best to be found anywhere in South Africa.

A R67-million road building contract for surfacing of the road between Britstown and Vosburg started at the beginning of 2007, and Desmond Hugo and his team were well placed to be employed in concrete work on this project.

KEURTJIESKLOOFVOETPAD EN -PADWERK

Die gemeenskap van Keurtjieskloof (voorheen die 'bruin' werkers se woonplek naby Van der Kloof) moet drie kilometer ver loop om in Van der Kloof te gaan werk of inkopies te doen. Die teerpad daarheen is kronkelend, steil en met smal skouers, en dus gevaarlik, en ons beoog om 'n voetpad teen die hang van die berg te bou wat 'n halwe kilometer korter sal wees, met 'n gemaklike helling. 'n Deel van die voetpad sal dien vir die vissermanne wat in die reuse- Van der Kloof dam gaan lyn natmaak om vir hulle families 'proteïne' te vang.

Die terrein waaroor die voetpad moet



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gaan is baie rof en is op sekere plekke met groot doleriet-rotsblokke besaai. By ons vergadering met die gemeenskap van Keurtjieskloof het ons voorgestel dat ten minste drie verteenwoordigers van die gemeenskap met ons die roete van die voorgestelde pad sal stap om dan terugvoering aan die gemeenskap te gee oor die wenslikheid, haalbaarheid en veiligheid van die projek. Die verteenwoordigers moes kennis hê van klipwerk en die berge ken.

Almal was vol geesdrif vir die voetpad, en die eerste tender vir die deel van die pad wat in die hang van die berghelling uitgegrawe kan word, is aan 'n plaaslike klein kontrakteur toegeken. Die deel oor die rotsblokke sal 'n verhewe voetbrug wees wat tans in samewerking met 'n plaaslike ingenieursfirma (staalwerk) beplan word.

Dit kan moontlik prakties wees om langs die pad bome te plant en te besproei met 'n pyplyn waarby 'n waterdrinkplek aangesluit kan word.

Die skouers van die teerpad na Keurtjieskloof, omtrent een meter wyd tussen die rand van die teer en die bestaande beton-kantsloot, het sowat veertig jaar nadat dit destyds tydens die bou van die Van der Kloofdam gebou is, gevaarlik uitgespoel. 'n Plaaslike SMME-kontrakteur is aangestel om die skouers met gevlodderde klipbestrating te herstel. Terselfdertyd is die bestaande skramreling skoongemaak en geverf, en 'n aantal vrot pale vervang. Alle werk, insluitend die meng van dagha, is met die hand gedoen om maksimum werkgeleentheid aan die plaaslike inwoners te bied.

Die verskaffing van fasiliteite van 'n goeie gehalte en deeglike onderhoud van die

► **Figuur 7** Verteenwoordigers van die gemeenskap van Keurtjieskloof na 'n vergadering met hulle

Figuur 8 Die uitgespoelde skouer

Figuur 9 Philipstown: wal met grafte regs

Figuur 10 Uitgraving vir oorloop met Pramberg agter

Figuur 11 Rietfontein dam-oorloop

bestaande infrastruktuur kweek 'n trots en selfrespek wat die gemeenskapslewe verryk.

STORMWATERBEDREIGING BY PHILIPSTOWN

Tydens die swaar reën in die eerste helfte van 2006 is huise in die Philipvale-gedeelte van Philipstown oorstrom. Die oorsaak was 'n ou dam langs Philipvale wat nie oor genoegsame oorloopkapasiteit beskik nie, met die gevolg dat die surpluswater na sommige huise afgekeer is.

Ons het 'n tache-opmeting gedoen en 'n kontoerplan van die dam en omliggende terrein voorberei. 'n Hidrologiese ontwerp het die vereiste grootte oorloopkapasiteit gelever en ons kon 'n geskikte ontwerp doen.

Tydens ons opmeting het ons vasgestel dat, onderkant en direk teenaan die klein uitlooppyp van die dam, 'n uitgestrekte ou begraafplaas geleë was. Kleinklaas, ons stafman vir die opmeting, het vertel dat al sy direkte voorouers ook in die begraafplaas lê. Materiaal uit die uitgraving vir die nuwe oorloopstruktuur word gebruik om 'n stewige wal te bou wat vloedwater van die begraafplaas sal wegkeer.

Al die werk word met die hand met pik, graaf en kruiwa gedoen ter wille van werkskepping vir die inwoners van Philipvale, vir wie werkgeleenthede uiters skaars is. ■