

Engineering Job Shadowing Initiative 2019

A Day in the Life of a Consulting Engineer

SUMMARY

The Mott MacDonald Africa (Pty) Ltd Young Professionals (YPs) invited learners from Sivananda Technical High School in Kwa-Mashu, to participate in the Consulting Engineers South Africa (CESA) Young Professionals Forum (YPF) Job Shadow Initiative.

The goal of the CESA YPF Job Shadow Initiative was to expose and entice learners to the Engineering field, but more so to Consulting Engineering. The Grade 11 pupils were allowed the opportunity to imagine, live, work and play Engineering – opening their minds to a world of endless possibilities.

The programme included an overview of the services offered by the Mott MacDonald Group, technical and software presentations from the office YPs; and interactive activities. The day's exercises aimed at demonstrating the importance of leadership, communication, team work and the need for research developments on sustainable and climate resilient structures. In the previous Job Shadow Session learners were chaperoned to a site visit before heading off home.

All staff were delighted to host the learners.



Mott MacDonald Africa (Pty) Ltd staff setting-up boardroom for learner arrival

LEADERSHIP AND COMMUNICATION

The second exercise for the day was aimed at highlighting the importance of good leadership and clear communication required within the Consulting Engineering field.

Learners were split into two (2) teams and tasked with identifying a team leader who was then given five (5) seconds to observe an unknown sculpture. Team leaders would have to guide their teams in replicating the sculpture within 20 minutes.

The task was used to illustrate the importance of teamwork, clear communication and strong leadership required when Consulting Engineers visit Client's or Client Sites and have to re-affirm their team members of what the requirements and challenges are for their tasks.



Sculpture



Work in Progress

LEARNERS' ARRIVAL



Nine (9) Grade 11 pupils from Sivananda Technical High School in Kwa-Mashu arrived at the Mott MacDonald Africa (MMA) DBN Office on the morning of 24 July 2019. They were offered a light breakfast to help them gear up for the fun-filled activities ahead.

Amahle Ngema: "I was so excited to be a part of Job Shadow Day; and was looking forward to seeing what the Engineers had planned for us."

SUSTAINABILITY AND CLIMATE RESILIENCE

The importance of continued research into Climate Resilience and Sustainability was emphasised to the learners. Learners were given a task to design and build a single span bridge model, spanning 40cm and 10cm wide using only recyclable materials to reflect on some of the pros and cons of using sustainable materials. Models were put to the test by loading with some interesting reading material.

Materials list:
1.Paper straws
2.Woven string
3.Paper masking tape



SPOTLIGHT ON INNOVATION

In the Consulting Engineering field, it is found that Client requirements normally outweigh the resources available to satisfy the need. Learners were tasked with building the tallest tower model which can support its own weight using a limited amount of building material. The learners were given some spaghetti and marshmallows to complete the exercise which enthused innovation to beat their competitors.



Lindokuhle Simelane: "There was too much pressure, too little material, but we worked as a team, got it done and won the challenge!"

SITE VISIT



ENGINEERING PRESENTATIONS

Learners given presentations on various Engineering Disciplines within Mott MacDonald by some office Young Professionals (YPs).



Water Engineering



Transport Engineering



Structural Engineering



Building Information Modelling (3D Modelling)