



inspirational women

**transition/
change**



The real ornament
of woman is her
character, her purity

Mohandas Gandhi



metamorphosis from
mechanical shapes. The
symbolizes engineering, wh
flower-like shape represent
symbolises the evolution
moulded by their mentors
of engineers. It also repr
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In this booklet we celebrate the launch of the Women in Engineering Leadership Association (wela) by honoring the achievements of women in various disciplines of Engineering. Eleven dynamic and accomplished women from the Eastern Cape share their lives, achievements and wisdom. These women hail from diverse backgrounds, education and cultures, but share common traits – perseverance, drive and the will to succeed.

These traits are evident in the new intake of women engineering students at NMMU. Our research reveals that the current generations of first years want to be recognised as successful women in a man's world, they want to make a difference in their community and they feel that Engineering studies is a challenge they want to conquer.

With the establishment of wela, we aim to bring the different groups of women together (girls, students, working and aspiring engineers) to achieve the following:

- Establish Engineering as a desirable career aspiration field for girls and women
- Develop retention and growth strategies for women already studying in the field of Engineering
- Mentor, assist and advance women already employed in the field of Engineering
- Focus on academic, professional and personal development
- Be of service to the community

This project is housed under the MERSETA Chair in Engineering Development and we thank MERSETA for their financial support and for making wela possible.

Ann Lourens

HOD: Industrial Engineering
(pictured left)



THE LOGO: A metamorphosis from mechanical to organic shapes. The mechanical shape symbolises engineering, while the organic flower-like shape represents femininity. The logo symbolises the evolution of younger women, moulded by their mentors to grow into successful engineers. It also represents the evolution of an idea from the initial concept stages to the actual realisation of an engineering project. The logo radiates the association's initiative to change the engineering sector and establish a support structure for women in engineering.

Wela is the Xhosa word for change/transition.

(logo design: Milla Theron, NMMU Graphic Design student)



Jacqueline Barnett

Director: Innovation Support and Technology Transfer
Nelson Mandela Metropolitan University

What do you do?

I manage and commercialise the Intellectual Property of Nelson Mandela Metropolitan University. Basically this means that I encourage academics to think about patenting their research. Then I get the patents out into industry so they can be turned into useful products or processes – a process called “technology transfer”. However, not all Intellectual Property concerns patents, so I also ensure that the IP rights of the university are protected in research contracts we do with outside parties. We have to make sure we aren’t prevented from using our own research.

I am also involved in a lot of regional and national initiatives in this field so I arrange workshops and conferences nationally to train people, as well as work on ways to bring people together to create an innovation system in the region. I am also assisting other universities in the region to start their technology transfer activities.

What is most challenging about your job?

The most challenging part of my job is to keep all the balls in the air. I deal with so many different projects, different people and different contracts that I have to keep very good track of things – I think I have a filing cabinet in my brain! I also try and respond very quickly to people who have e-mailed me or requested something, but if all the projects or people need something at once it becomes tricky! And of course the people who are waiting for an answer don’t always understand that I am working on so many things at the same time, so they wonder why I haven’t finished writing their contract.

However, these challenges also mean that I am always doing different things and learning new things, so I don’t have time to get bored. I can also decide to pursue a particular project if I choose. This is not a problem as my activities are not cast in stone beyond a few requirements.

Describe a typical day

There is no such thing as a typical day! I could be in a formal committee meeting, arranging a workshop, discussing a patenting strategy with a patent attorney, meeting with an academic to discuss their latest invention, drawing up a research contract, editing a research contract, starting a

company, attending a company board meeting, writing a report, having a teleconference with the UK, writing a business plan, or travelling locally or overseas. Every day is different and most days are interesting and exciting.

Last year I spent a large amount of time travelling locally as there is so much happening in this area nationally as new legislation was promulgated last year. The national technology transfer community is very close knit, so we interact frequently to advise and learn, and the more experienced people also spend time helping new entrants to the community.

What advice would you give to women entering a male-dominated career environment?

Don’t let gender be an issue and don’t be a victim! I don’t allow the possibility that someone is treating me differently because I am a woman, even enter my thoughts. I enter discussions and meetings with this attitude. In one of my first jobs as a young engineer in 1995, I provided operations support for the commissioning manager of a new plant. I could see that some of the older contractors were taken aback but, once we’d had a meeting or two during which I completely ignored all comments that were not work-related, and ignored any looks or attitudes, we all got on fine. One needs to adopt a-bull-in-a-china-shop attitude sometimes – plough ahead regardless!

What do you do when you are not at work?

I do a fair bit of reading, and would like to start dancing again, but this is a very intense phase of life and career, so I battle to find a lot of personal time. My work is very time consuming and I do a lot of work after hours. One of my children is in Grade 7 and the other in Grade 9, so their activities also take up a lot of time. I have also started writing a proposal for my doctorate.

It is sometimes a struggle to fit it all in and I think I will need to take stock of my involvement in various things this year, as I tend to add activities but nothing falls off!

What characteristics and qualifications do you need for your current position?

There are no formal qualifications for doing technology transfer, but most positions require a postgraduate degree

in a scientific or technical field and a business qualification. An engineering degree is really useful as you have a broad understanding of many technical areas and can understand the purpose of an invention without knowing the details, and can often see the practical use for an invention. However, a person with a science degree and some industry experience can also make a good tech transfer person.

A business qualification is helpful because it gives you a broad understanding of business issues and helps you to speak the language of industry. I often feel like a translator between academic research and the legal profession, as well as between academic research and industry.

A person who enters this field must generally be able to think quickly, make decisions without perfect information, get a “feel” for something and go with it, and understand that relationships are the most important thing of all. A good contract will not survive a bad relationship.

What are your goals for the future?

My personal goal is to finish my doctorate and my professional goal is to see some of the small businesses we have created really take off. These businesses are already making a difference to the local economy and it is so heartening to see the fruits of academic research driving economic development and not being left on dusty shelves.

What is it like being a female in a typically male-dominated environment?

My current position is not male dominated, although the first two jobs I had shortly after graduating were definitely male dominated, and my studies were also male dominated. I don’t remember having a problem, although one sometimes needed a thick skin to ignore comments and jibes. One needs to give as good as one gets, though, and not be a victim.

If you weren’t in your particular career what would you be?

A lecturer and doing research at a university. Soon after I got involved in managing research, which led me to this career, I considered going back to a university engineering department as a lecturer. It is still something I would like to do but now I would probably lecture and research in technology commercialisation and not engineering.

“ ... 98% of my peers are male ... ”



Priscilla Weitz

Purchasing Manager Federal Mogul Sealing Systems

What do you do?

I am the purchasing manager at Federal Mogul Sealing Systems.

What is most challenging about your job?

The most challenging part is negotiating savings for all services and material purchased by the company. Monthly targets are set by the organization. Weekly progress meetings are held to ensure that these targets are met within the allocated time frame.

Describe a typical day

A typical day involves numerous administrative duties such as checking emails, meetings and conference calls, followed by material commodity analysis, resolutions of pricing issues and liaison buyers.

What advice would you give to women entering a male-dominated career environment?

You need to be focused, committed and not allow anything to distract you. Do not give up easily. It sometimes gets very tough but if you persevere you will reap the rewards. Always do your best, show integrity, be honest and open, respectful and ask for help when needed. Always look for the potential in others and encourage them.

What do you do when you are not at work?

I exercise at the gym at least three times a week. I lecture once a week at NMMU. The rest of my time I spend with my two sons and husband. I love playing and drawing with my kids.

What characteristics and qualifications do you need for your current position?

A BTech: Logistics or Operations Management. You also need to possess the following characteristic; self-motivated, dynamic, enthusiastic, conscientious, excellent planning and communication skills and goal-oriented.

What are your goals?

To complete my masters in Operations Management or an MBA.

This will open up a lot more doors for me secularly or offer an opportunity to lecture full-time.

What is it like being a female in a typically male-dominated environment?

It is tough, especially when you have sub-ordinates who are male.

You have to earn respect and demonstrate that you are competent and in control of situations. The best advice ever is to always focus on your achievements and not on your failures.

If you weren't in your particular career what would you be?

A full-time lecturer or teacher in the field.

“ Do not
give up. ”



Sharnae Hopewell

Junior Engineer

Arcus Gibb

What do you do?

I am a civil engineer with Arcus GIBB (Pty) Ltd. I am employed in the human settlements services division, and am currently working for the sanitation department. At the moment my work revolves around bulk outfall sewers and wastewater treatment works. Prior to this, I spent some time in the Water Department working on rural water supply.

In general, my work includes tasks such as preparing tender documentation and calculating quantities for the schedules of quantities. Where necessary, I research and investigate design issues. I prepare design calculations, and collate data for use in permit applications in collaboration with our environmental services division. There is always project-related administration, and one has to liaise with various authorities and other service providers.

As an engineer, one must be able to produce drawings in order to communicate the design to other parties. I initially spent a number of years preparing drawings - for tender, construction or reports. As you progress in your career, this task is passed on to juniors, but I still control drawing registers and the allocation of drawing numbers.

What is most challenging about your job?

I am still learning, so I have to request help on new tasks. Senior engineers are not always able to afford juniors the time we actually need, which is frustrating for both parties. One has to learn quickly and move on, as there are always deadlines to meet. Managing your time becomes more challenging as the workload increases.

Describe a typical day

At the moment I am office-based. I deal with incoming emails and calls, and work on various designs. During the construction phase of a project it is necessary to liaise with the resident engineers on site. This may involve investigating certain issues, performing quick calculations, discussing the matter with more senior engineers and reporting back to the resident engineers. Often, the day does not play out as planned – you need to “roll with the punches”!

What advice would you give to women entering a male-dominated career environment?

As long as women make gender an issue, it will remain an issue! Forget about it – get on with your career! Stay true to yourself in all dealings with others. If you really are worth that which you believe yourself to be, you will be noticed and afforded opportunities. There's no need to force your way - surprise them by stealth!

What do you do when you are not at work?

I do some voluntary first aid duties, but that's about all at this stage. I have been a little too busy to fit hobbies into my schedule recently.

What characteristics and qualifications do you need for your current position?

In terms of qualifications, you must hold a degree in civil engineering – attained at an ECSA-accredited university. Characteristics such as personal integrity and willingness to take responsibility for your decisions are vital. You must work well in a team, but be self-sufficient and able to work alone and unsupervised.

What are your goals for the future?

I am working towards obtaining my professional engineer status. I'd like to study further once I have decided on a specific career path. Civil engineering is such a broad career – it offers so many different options and opportunities. I have not explored enough of these yet to settle on a specific area of interest.

What is it like being a female in a typically male dominated environment?

Well, you become accustomed to being the only female at meetings, courses and presentations. Jokes aside - it's not a big deal. As I stated, if you are competent, there's nothing stopping you from tackling any challenge. I have found that women who constantly make gender an issue in the work place usually have a chip on their shoulders, or are not quite up to the standard of their peers. There are many competent female engineers who are enjoying their careers, and who are making a difference in the lives of the people in the communities in which they work.

If you weren't in your particular career what would you be?

It would have to be something in the medical, analytical or investigative fields. I would probably have gone into forensic pathology.

“ ... surprise them by stealth! ”



Annelise Els-Botes

eNtsa Rep/Senior Lecturer
Nelson Mandela Metropolitan University

What do you do?

I am currently an advisor in the field of materials and metallurgy for the eNtsa Technology Station within NMMU as well as an Associate Professor in the Department of Mechanical Engineering. I am actively involved with supervision of postgraduate students within the Department of Mechanical Engineering and I serve as the Director of the Friction Processing Research Institute (FPRI). I also lecture Materials Science modules on various levels of study.

What is most challenging about your job?

As research is time consuming, managing tasks and projects within a certain time frame is often challenging, but not impossible.

Describe a typical day

My working days are always organised to ensure that I complete all tasks and give all projects the necessary attention required to meet deadlines and complete all ventures adequately. Most days can be divided between four main activities:

- Planning of lectures,
- Project planning,
- Attending meetings
- Assisting postgraduate students with various queries.

What advice would you give to women entering a male-dominated career environment or to those considering a career in a male-dominated field?

It is often challenging being a competitor on any turf but staying focused and motivated is what ensures success and a sense of self actualisation. Being an Associate Professor in the Mechanical Engineering sphere, 98 % of my peers are male but with the good professional relationships, mutual aspirations and common goals that we share, it makes the rollercoaster more pleasant.

What do you do when you are not at work?

I am family orientated and take pleasure in spending time with my family and pets. I have a passion for good cuisine and spend my time perfecting my own delicacies. I enjoy a good read but the source is not always what you would expect as I find joy in comprehending various topics of research in my field of expertise.

What characteristics and qualifications do you need for your current position?

As in any profession, passion and patience is ideal in any environment. I have worked in industry and have assisted in various research projects thus my experiential input is of value to my peers. I have completed my doctorate in mechanical engineering although my expertise is focused in the field of metallurgy.

What are your goals for the future?

It has always been an aspiration of mine to own a confectionery or coffee shop. I often hunt down spots for good coffee (or similar hot beverages – actually anything with a good amount of cocoa) and pleasant pastries. Good food and good company is always delightful. My coffee shop will have both of these qualities.

What is it like being a female in a typically male-dominated environment?

I have trust in my knowledge yet I am always willing to be open to new ideas, thoughts and disciplines. This characteristic is advantageous in a male populated profession and complements the working atmosphere in a more productive and stimulated manner.

If you weren't in your particular career what would you be?

Definitely a coffee shop owner or a cordon bleu master chef!

“ ... assist in finding solutions ”



Kgantse Hlabahlaba

Manufacturing Capability Development Specialist Cadbury, Port Elizabeth

What do you do?

I am a capability development specialist at Legacy Cadbury, now known as Kraft Foods. I am responsible for coordinating and managing continuous projects. I also conduct efficiency studies on the line to identify bottlenecks for improvement, coordinate the training agenda to ensure that training needs are identified and addressed on the lines. I also set capacity standards for the machines and ensure that lines run optimally.

What is most challenging about your job?

It's selling ideas and suggestions to the operators on the lines, especially those that have been working on the lines for a long time. They are resistant to change. My responsibility as an industrial engineer is to introduce best practices.

Describe a typical day

On a typical day, I could plan to conduct an important study on a specific line, and only 10 out of 18 operators show up for work and two hours into the shift, there is a huge breakdown. Then I still have meetings to attend and a training session to facilitate.

What advice would you give to women entering a male-dominated career environment?

The fact that you are a woman does count. You need to work twice as hard to earn the respect and confidence. Men are very competitive and you need to gain as much knowledge as possible to be the best you can be. Respect yourself and never lose your values.

What do you do when you are not at work?

I like camping, playing pool and cooking. I am currently learning to play golf.

What characteristics and qualifications do you need for your current position?

A BTech in industrial engineering, and at least three years' working experience. You need to be able to work under pressure, communicate well and, most of all, have people skills. You also need to be able to work independently on projects.

What are your goals for the future?

I am currently doing a BTech in business administration at NMMU and my plan is to continue to MBA. I intend to work somewhere overseas for three

years while I study to become a professional chef. I would like to have my own restaurant where I will be the chef.

What is it like being a female in a typically male dominated environment?

It is very intimidating at first but it gets better with time. When I am in the boardroom, I forget about gender, I focus on the bottom line. I conduct myself professionally and with respect. As a result, my male colleagues respect me as well. I always contribute my share in the workplace; therefore I am treated as a "colleague" and not a female

If you weren't in your particular career what would you be?

I would definitely be a professional chef. Cooking is a passion that is very close to my heart. One day when I have my restaurant, my industrial engineering skills and MBA will come in handy to ensure the success of my business.

“... in the boardroom I forget about gender...”



Mieshkah Dolley

Material Handling Engineer

General Motors

What do you do?

I am an industrial engineer, working in material handling engineering (MHE).

Some of the MHE functions include:

- Determining part packaging and ensuring the safety of the part during transportation and storage
- Optimising the space available for material shipped in cases and containers
- Part presentation on line and in the stores
- Improvement of store layouts and part carriers

What is most challenging about your job?

The most challenging part of my job is accommodating everyone's views when a problem arises. Each person involved has different ideas on how they would like improvements to be made, which makes implementing a solution a challenge, as it has to work well for all parties affected.

Describe a typical day

We're currently busy with a project, so a typical day includes:

- Checking the correct part carriers are produced, in the correct quantities and are bought off by everyone involved
- Making improvements on issues that arise on a daily basis

- Ergonomic studies to ensure the safety of material handlers
- Attending meetings regarding different projects and assignments.

What advice would you give to women entering a male-dominated career environment?

There is no need to change your female characteristics in order to get things accomplished. Use the strengths you have to showcase your abilities. Stand behind your opinions and decisions, but also listen to the advice of others. In this way, the difference of gender is irrelevant.

What do you do when you are not at work?

Read, watch TV and movies and do taeko.

What characteristics and qualifications do you need for your current position?

Qualifications:

A diploma or BTech degree in industrial engineering

Characteristics:

People skills are important to communicate your requirements, as well as to help where there is a problem.

You also need a willingness to learn and the ability to analyse problems and come up with solutions.

What are your goals for the future?

I would like to start my MBA next year and further myself in the position I'm in, by learning as much as I can from those more experienced than myself.

What is it like being a female in a typically male-dominated environment?

It has its pros and cons. Many times it makes things easier as people are softer towards you. At other times it can be tough. It's not always easy understanding technical processes that seem to come naturally to males, but this also comes with experience within your job.

It can also be difficult as some people can take advantage of sympathy shown from your side, as well as underestimate your ability to do the job well.

If you weren't in your particular career what would you be?

A teacher.

“ ... listen to others ... ”



There is no
typical day!

Estelle Gathercole

General Manager

Automotive Industry Development Centre (AIDC)

What do you do?

I am the General Manager of the Automotive Industry Development Centre (AIDC), Eastern Cape. I also manage the portfolio of Skills Development and Training (Department), and have done so for the past seven years.

The AIDC is a government-owned service organisation providing best practice solutions in industry and government projects. The Eastern Cape office was established with funding from the Eastern Cape Development Corporation in November 2003. We serve the South African automotive industry, government departments and government agencies on a national basis with the aim to grow the SA automotive industry's global competitiveness; to support the government's automotive-related objectives and to contribute to the government and industry's goals of continuous growth and sustainable job creation.

The Skills Development and Training Department's (or SDT) major objective is to directly address critical and scarce skills shortages within the automotive and manufacturing sectors and alleviate poverty by increasing the employability of previously disadvantaged communities within Nelson Mandela Bay Municipality and the Eastern Cape. Skills development is of critical importance to the automotive industry. As a high tech, rapidly advancing sector, the industry requires constant skilling and re-training/training of its people and also requires engineers to meet those evolving needs. The strategy developed therefore was to focus on the development of relevant technical training capacity and programmes in formal tertiary and

Further Education Institutions and encourage the development of young engineers for industry (TEI Programme). This strategy has been implemented through the many SDT interventions at various FET and HEI institutions, including NMMU, where the programme has been running for seven years.

The TEI programme of SDT has achieved a number of valuable successes, some of these being:

- The development and implementation of NQF aligned courses at seven FET institutions within the Eastern Cape
 - The establishment of the first Advanced Manufacturing Technology Laboratory for Robotics and Mechatronics at NMMU
 - The establishment of the first professional degree in Engineering (BEng) Mechatronics at NMMU
 - The development and implementation of the first Certificate in Automotive Management at NQF6 (Rhodes Business School)
 - The development of a Tooling Design and Development Centre at Walter Sisulu University
 - The implementation of Mechatronics Learnerships NQF2-5 at East Cape Midlands College
- And outside of the TEI Programme with the support of the Nelson Mandela Bay Municipality (but linked to the Engineering Development Programme at NMMU);
- The design and development of an "Engineering Winter School" as part of the Automotive Experiential Career Development Programme

(AECDP), focusing on previously disadvantaged Grade 12 learners, which assists learners annually in mathematics and science. It also exposes them to engineering, technology and the automotive industry and secures bursaries for study at a tertiary institution and future employment.

What is most challenging about your job?

I don't believe I have any challenge that stands above the others. This type of job brings many challenges, but I believe that the challenges we face help us learn and grow. Challenges heighten our commitment to our work by forcing us to sharpen our focus and critically analyse situations and develop resolutions. Working without the occasional challenge would allow us to drift into complacency and I think, ultimately boredom!

Describe a typical day

There is no typical day! That is what I enjoy most about my job. The SDT projects, while all focusing on the development of human capital, are all very diverse. I am fortunate enough to be able to engage and work with learners and students; universities and FET colleges; teachers and lecturers; industry and government. In other words, I get to wear a different hat every day! I also work with my fellow colleagues at the AIDC who are engaged in our other two key focus areas – supply chain development and supplier development. (The majority of project staff engaged at AIDC are engineers). We all work typically within a project management environment, and essentially our primary task is to design, develop, implement and manage projects and programmes for the benefit of industry and its people.



Estelle Gathercole

General Manager

Automotive Industry Development Centre (AIDC)

What advice would you give to women entering a male-dominated career environment?

When one ponders how many years we have to work, the most fulfilling career is one that not only showcases your achievements, successes and your take-home salary. The most fulfilling is one where you are happy in what you do! You have to follow your ambitions, regardless of what stereotype the job carries. Engineering is just one of those environments, for example, that has always been "archetypically masculine". We have inherited the perception or belief from an archaic social system that "some jobs women don't do". I believe we need to leave that myth behind. If you carry this thinking with you, you are already at a disadvantage. In many instances you will find yourself in an environment that is predominantly male. If you believe in yourself and your capabilities, your colleagues will do likewise. In many of these organisations, women have broken that glass ceiling and are not subjected to the prejudices that women have experienced in the past. More and more women are entering previously "male dominant" environments, and those "environments" will soon be a thing of the past!

What do you do when you are not at work?

Apart from reading, and reading, and reading ... and spending time with my dogs, I enjoy walking, and love the outdoors. Any spare time I can afford, I enjoy exploring new off-the-beaten-track trails and places.

What characteristics and qualifications do you need for your current position?

A qualification in either human resources, social science, psychology, management, industrial relations, or engineering is suited to this field. A project management and/or business management qualification is an advantage. What one needs above all however, is a passion and commitment to the development of people and, as in any job, a profound enjoyment of what you do. Given that technology and engineering is such a rapidly advancing discipline you need to understand that it is a continuous learning process. You must keep in step with the advances, interpret the different needs and requirements of the sector within which you work and make sure that you are able to translate correctly and implement the correct training and/or programmes.

What are your goals for the future?

There are many things I would like to see happen. I think it is imperative that we include learners/secondary education into our skills thrust given that the HR pool at Grade 12 level is not growing sufficiently in order to cultivate entrance into TEI's. Focus is becoming more pronounced on capacitating learners and educators to ensure increased pass rates, particularly in mathematics and science.

It is important, given the changes in the manufacturing environment, to retain a competitive edge. People need to acquire more than one skill set to ensure employability. People require a "basket" of skills to ensure that, their skills are more transportable. Routine skills are disappearing and training should become more focused on future trends. There are many considerations in terms of future manufacturing trends. These need to be incorporated into the training models of tertiary institutions (greening technology, telematics, innovation etc). I would like to see this effected and be part of that change.

What is it like being a female in a typically male dominated environment?

The AIDC was not voted the "Best Company to Work For" for nothing! I am fortunate to work with male colleagues who are not gender prejudiced. I have always felt part of the team. We all share a similar vision and recognise each other for the value that we bring to the company. I must stress here though that the AIDC has a large number of female engineers in its employ, and the numbers are growing!

If you weren't in your particular career what would you be?

Right now I am extremely content with what I do, but this question got me thinking! I honestly cannot see myself outside of this arena just yet ... not just yet!

“There is no typical day!”



Onke Ngacu

Civil Technician

Arcus GIBB

What do you do?

I am a civil technician in the infrastructure/ human settlement division for a big consulting firm in the Eastern Cape that has been around for at least 52 years.

I qualified through NMMU as a technician so I spend most of my time either on site inspecting projects or in the office doing design, presentations or writing reports and attending to client queries and needs. I am also involved in a bit of marketing. On site I normally dress in jeans, t-shirt and helmet to do survey work (checking levels), construction progresses, project management and design.

What is most challenging about your job?

What I mostly find challenging is the pressure we often get from clients. When a client wants something they do not always appreciate how long it takes to compile it and often give unrealistic deadlines. Meeting those deadlines is not always easy and sometimes you go without sleep for nights in a row. Recently, at three months pregnant, I had to work through the night, present my document to the client, effect the changes and re-submit the same day. You also have the challenge of bringing in new jobs.

Describe a typical day

We have the luxury of flexi-time, which means I come into the office anytime before 9am and leave anytime after 4pm, as long as I have worked my full eight hours. I work for a great company! On a good day I will arrive at the office at 8am with no clients

or contractors to meet. Then I head off to the site to check the progress and monitor the work. On my return, I will continue with design work or administration of projects. No one warns technical people about the amount of time you will spend dealing with people, paper work and travelling! There are also meetings and presentations to attend to either with the client or internally in your specific company.

What advice would you give to women entering a male-dominated career environment?

I have found that women have more pressure to constantly prove themselves. Men still undermine our capability as women. Of course your age and experience have a large impact on how seriously they take you. I love this field and cannot imagine any other suitable position for me. However, men still think it is just their field. According to surveys, even the salary structures are such that men are normally paid more in this field than women.

What do you do when you are not at work?

I am a single mother of one and expecting another in a few weeks so when I am not studying towards my urban engineering BTech qualification, I spend time with my son. I also enjoy walking, reading and writing. I have started enjoying the wonders of Google. I spend quite a lot of time at night, when everyone has gone to bed, searching just about anything and everything. I love home decor, Christian articles on life generally and keeping up to date with South African news.

What characteristics and qualifications do you need for your current position?

The minimum qualification is a diploma in civil engineering.

Most companies will often do a psychometric test to see which side of the brain you use ... unfortunately most of the time engineers lack social skills but are good planners.

But above all, one needs to be participative, resilient, creative, have an inquisitive mind, listen and focus. Networking is important as sometimes you need the added assistance of outsiders to seek solutions.

What are your goals for the future?

I would like to be a project manager in my company. Hopefully someday, I will own my own business and use the skills I have picked up over the years either in the public service, my own construction company or as a consultant.

What is it like being a female in a typically male dominated environment?

Men do not understand things such as pregnancy, maternity leave and safety on site. This is testing at times.

You have to constantly prove your capabilities.

If you weren't in your particular career what would you be?

I do not see myself doing something completely different. I could possibly be a stay-at-home mom running small businesses such as selling exclusive clothing. I would also enjoy consulting in this field at my own pace.

I love
this field ...





Hannalie Lombard

Senior Lecturer
Nelson Mandela Metropolitan University

What do you do?

I lecture and conduct research in the challenging and stimulating Department of Mechanical Engineering at Nelson Mandela Metropolitan University.

What is most challenging about your job? Or, what is the most challenging part of your job?

The most challenging part is continually adapting to new technology. The best part of my job is that numerous opportunities are available to develop individual research fields and expertise.

Describe a typical day

I usually get in early to read and respond to all new emails so that I can complete all administration required for the day.

Then I can:

- Handle queries of students and numerous phone calls
- Organise and attend meetings
- Read articles and conduct laboratory work regarding research interests
- Plan research activities and assist in finding solutions for research problems
- Analyse of data, write reports and seek funding for projects
- Evaluate work done by students
- Prepare for lectures the following day once I am home.

What advice would you give to women entering a male-dominated career environment?

I suggest you read the book "Winning in a Man's World: Advice for Women Who Want to Succeed and the Men Who Work with Them" by Renee Weisman.

What do you do when you are not at work?

I spend time with family, cycle and read.

What characteristics and qualifications do you need for your current position?

- A PhD qualification
- A desire to share your love of a subject(s), to students at their level of understanding as well as committed educational and research scholarship.
- Leadership.

“ ... listen to others ... ”



Violet Lupuwana

Industrial Engineer - Body Shop, Polo Vivo
Volkswagen Group, South Africa

What do you do?

I am an industrial engineer at Volkswagen South Africa.

What is most challenging about your job?

Having to deal with people who have been in a job and are resistant to change is challenging. You have the responsibility of convincing and influencing people to buy into your improvement ideas and implement changes in the working environment.

Describe a typical day

A typical day for an industrial engineer would be studying and spending time on the production line. It's about looking for better ways to do things and making improvements in your assigned area of work (e.g. production line). You get involved with workshops that focus on productivity improvements, line balancing, work content reduction, improving ergonomics and focuses on reducing any of the nine types of waste on the line. So, on a daily basis you search for improvement opportunities, document them and implement them.

What advice would you give to women entering a male-dominated career environment?

Go for it! It is exciting and you feel so much more powerful. You will surprise yourself everyday.

WARNING! Please don't ever fall into the temptation of losing your feminine spirit just because you are in a male-dominated world. Look good, feel good and be confident in yourself as a woman engineer. Don't get rid of those stilettos. After a day in safety boots (and maybe overalls), don't forget to put on that sexy

dress, wear your stilettos and grab your clutch bag! At the end of the day, you are still a woman.

You don't need to prove yourself to these men. Just be the best you can. Remember not to be afraid of applying yourself.

Just a word of advice ... You will make mistakes, we all do, so don't ever let the fear of making mistakes stop you from applying yourself. Know that mistakes are a part of life. It is how we learn. It is challenging, but once you overcome the challenges you can feel very proud of yourself.

What do you do when you are not at work?

I love spending time with my family and going to gym. I like motivating my children and taking them out. I also love doing community work and having social outings with my friends.

What characteristics and qualifications do you need for your current position?

You need a minimum of a diploma in industrial engineering as well as being proactive, forward-thinking and able to work under pressure. You need people skills, negotiation skills, good communication and presentation skills and confidence. You must also apply yourself and be conscientious. Be aggressive in wanting to get things done, because you have to ensure implementations.

Be a go-getter. Don't forget to be AMBITIOUS. Make things happen for yourself girlfriend!

Believe in yourself and continually remind yourself what you are made of. You have what it takes to be successful. Go for it!

What are your goals for the future?

I would like to go back to the FMCG industry and be a manager of a continuous improvement department. I would also like to venture into a logistics planning role or marketing role. That would be my plans for the next five to seven years.

Im possibly ten years, I would like to be a house wife and also play a coaching role for the younger generation. I would love to facilitate career and motivational talks to youngsters with the Department of Education or an institution such as Nelson Mandela Metropolitan University focussing on the township and rural areas. I would like draw our jewels from the townships and rural areas and present them to potential sponsors. I believe our engineers are out there but are not able to study due to financial restrictions. I have a great passion for empowering people!

What is it like being a female in a typically male dominated environment?

It feels great! When we are at work there are no males or females, only engineers. I enjoy joking with my male colleagues by saying age and gender only count outside the company gates. When we are at work, we are all equal engineers.

If you weren't in your particular career what would you be?

I would be assisting in my husband's businesses, maybe in a marketing or public relations role. I trust my selling and influential skills.

“...do not lose your feminine spirit ...”



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metamorphosis from mechanical to organic shapes. The geometric shape symbolizes engineering while the organic flow-like shape represents humanity. The logo symbolises the evolution of younger women hold onto the pillars of growth into success.

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