

**REMARKS BY THE MINISTER OF PUBLIC WORKS AND INFRASTRUCTURE SIHLE ZIKALALA
DURING THE UNESCO 9th AFRICA ENGINEERING WEEK AND AFRICA ENGINEERING
CONFERENCE, CSIR CONVENTION CENTRE, PRETORIA, 25 SEPTEMBER 2023**

Deputy President of the Republic of South Africa, His Excellency Paul Mashatile;

Ministers and Deputy Ministers in our midst;

President Elect of the World Federation of Engineering Organisation, Engineer Mustafa Shenu;

President of the Federation of African Engineering Organisation (FAEO), Engineer Papias Kazawadi Dedeki;

Chairperson of the African Engineering Steering Committee, Mr Martin Manuwaha;

President of the Engineering Council of South Africa (ECSA), Ms Refilwe Buthelezi;

CEO of the Engineering Council of South Africa, Dr Bridget Ssamula;

CEO of the Council for the Built Environment (CBE), Dr Msizi Myeza;

Senior Government Officials;

Members of the Media;

Distinguished Guests;

Ladies and Gentlemen;

It is an honour and joy to welcome you all on our shores as we open the UNESCO 9th Africa Engineering Week and Africa Engineering Conference taking place under the theme, “**Celebrating and Growing Engineering Excellence in the African Region.**”

To all our international guests from the global engineering community, welcome to your ancestral home where humanity’s umbilical cord is buried. It is at the tip of our continent that Africa fired humanity’s imagination.

Not far away from here, UNESCO has affirmed that we have the evidence of the earliest known life forms which are preserved and protected at the Cradle of Humankind World Heritage Site.

While science can fascinate and ignite our imagination, it is still the engineering profession that makes history by changing the world.

As one aerospace engineer, Theodor von Karman, puts it, “**Scientists study the world as it is; engineers create the world that has never been.**”

While your foundation is science, your orientation and passion remains the advancement of human civilisation, expanding goodwill, and improving the human condition.

It was your profession in ancient times that gave us engineering marvels like the Pyramids of Giza in Egypt, the Nubian Pyramids and Temples in Sudan, the rock-cut churches in Lalibela, Ethiopia.

We doff our hats to you for your enthusiasm, technical prowess, and ingenuity that today our children can be inspired to create a better world as we see in new engineering feats and marvels like the

planned Grand Ethiopian Renaissance Dam -Africa's largest hydroelectric plant - the Merdeka 118 Tower in Malaysia, and the Braila Bridge in Europe.

As South Africa, we also take immense pride in the ongoing work to construct one of the highest, cable-stayed, Msikaba Bridge, in Lusikisiki, Eastern Cape, to shorten and improve travel between Durban and East London by road. In 2018, we celebrated when engineers made it possible to drastically shorten the distance by 3 hours between Kosi Bay and Maputo through the completion of the Maputo-Katembe Suspension Bridge.

With the reality of rapid urbanisation and the global climate emergency threat, we look up to your profession to engineer climate-resilient human settlements and cities of the future anchored on a foundation of cleaner energy consumption, efficient waste management, recycling, and sustainable economic development.

As the Department of Public Works and Infrastructure, it is our wish that this Engineering Week will not only inspire our youth to take careers in the various engineering disciplines and professions. We also hope that South Africa will be able to use it as an opportunity to harness our developmental imperatives for South Africa's engineering profession.

Our country recognises and applauds the role played by the built environment sector, including engineers, in driving economic growth and providing essential services to the citizens of our nation.

We call on everyone, including the private sector, to join government in investing in the development of our engineering professionals so that the built environment sector can function effectively and optimally.

As leader of the South African Human Resource Council, Deputy President Paul Mashatile will concur that South Africa faces skills shortages and a lack of resources in the public sector. This does not only hamper our ability to deliver on critical infrastructure projects but also poses a threat to the long-term success of our nation.

While we have a number of engineering graduates each year, there is a significant mismatch between the skills they possess and the demands of the industry. This gap poses a major challenge for the development and progress of various sectors, including infrastructure, manufacturing, and technology.

To overcome these challenges, it is important that the Council for the Built Environment, working ECSA and the academic institutions, should invest in appropriate education and training, and provide opportunities for professional development, structured candidacy and mentorship, and creating an enabling environment for innovation and collaboration.

The 2023 UNESO Engineering Week must also help us address the challenge of the gradual shift and limited emphasis on practical training and hands-on experience. We are concerned that a number of our engineering graduates possess sound theoretical knowledge but struggle to apply it effectively in real-world scenarios. This hinders their ability to contribute to projects and finding innovative solutions to complex problems.

Working together, we should support internships, apprenticeships, and industry collaborations to benefit our engineers and bridge this gap.

We must move with speed to create an enabling environment for innovation and collaboration within the public sector. This can be achieved through the establishment of research and development centres,

the promotion of cross-sectoral collaborations, and the implementation of policies that incentivise innovation and entrepreneurship.

By fostering a culture of innovation, we can harness the creativity and expertise of our engineering professionals to address the unique challenges facing our nation and our continent.

In this regard, it is important that as a country we grow the training and production of South African engineers with expertise in emerging technologies such as BIM, artificial intelligence, renewable energy, and cybersecurity.

By equipping our engineers with the necessary skills and knowledge, we can drive innovation and attract investment on the African continent.

In addition to technical skills, there is a need for engineers to possess strong leadership, communication, and problem-solving skills. The ability to effectively work in teams and collaborate with stakeholders is essential for successful project implementation.

Incorporating these soft skills into engineering education and professional development programs will help address this gap and produce well-rounded engineers.

To address the aforementioned gaps, we recommend the following:

1. We need to enhance the collaboration between academia, industry, and government. This will ensure that engineering curricula are aligned with industry needs and that graduates are equipped with the skills demanded by employers.
2. We must also invest in continuous professional development programs. Let us expand and strengthen mentorship initiatives to allow engineers to continuously upgrade their skills and stay abreast of emerging trends.
3. It is vital to create a supportive ecosystem for innovation and entrepreneurship in the engineering sector. The CBE working with other government entities such as National Youth Development Agency (NYDA) must lead such initiatives. This can be achieved through incentives such as grants, tax breaks, and access to funding for research and development projects.
4. It is important that we encourage engineers to take risks and pursue entrepreneurial ventures. This will foster creativity, job creation, and economic growth.

Ladies and Gentlemen, the South African government is funding and implementing several programmes that are aimed at addressing infrastructure challenges in municipalities.

We call on the engineering profession to assist our developmental state in responding to some of the challenges that are affecting local government. These include:

- Lack of engineering skills in municipalities.
- Managing the growth of high-density developments and modelling future scenarios to address infrastructure failures caused by the effects of population growth.
- Fixing the nation's failing infrastructure to reduce health hazards associated with failing infrastructure, such as wastewater treatment plants and sewage lines.
- Improving infrastructure maintenance.
- Better transit options to avoid current clogging of the roads where lives are lost as road users compete for usage of the roads.

Distinguished Guests, we are honoured today to have the Deputy President of South Africa who is also the Leader of Government Business to address the Engineering Week.

The Deputy President is a developmental activist and leader who is continuously seized with the questions of developing skills for the future for our nation in his capacity as Chairperson of the HRDC.

He is a father, husband, and a seasoned leader of the African National Congress who has held various senior positions in the ruling party and in government. His experience in government includes all three spheres of government including having been a Premier of this province of Gauteng and being our former Minister of Arts and Culture.

Deputy President, as I call you on the stage to address the engineering profession and stakeholders, I am reminded that today we are in the right company – a company of professionals who love solving problems. I'm told if there are no problems, engineers create them.

And here's food for thought to you and our nation which comes from Richard Lamm, an attorney and former Governor of Colorado, who once said:

“All we know about the new economic world tells us that nations which train engineers will prevail over those which train lawyers. No nation has ever sued its way to greatness.”

Ladies and Gentlemen, join me in welcoming the DP!

I thank you!