



WELCOMING REMARKS

By

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At the

**OFFICIAL HANDOVER OF ENGINEERING EQUIPMENT AND
LAUNCH OF THE MATERIALS TESTING INSTITUTE**

MONDAY, 28 JUNE 2009

AT

11:00

POLYTECHNIC CAMPUS

Master of Ceremonies and *Deputy Dean*, Mr. Samuel John
Hon. Erkki Nghimtina, Minister of Works and Transport
H.E. Egon Kochanke, *Ambassador of the Federal Republic of Germany*
Mr. Momber, *GTZ Country Representative*
Professor Heinrich Semar, *GTZ Project Coordinator*
Mr. Otty Kaakunga, *Chief Executive Officer of the Namibia Standards Institute*
Distinguished Delegates representing Government Ministries and Parastatals
Members of the media
Ladies and Gentlemen

Every occasion at which we launch a new project is indeed a milestone in the Polytechnic's progress towards becoming a refined university of science and technology. Indeed, each step we take is a positive change for Namibia's socio-economic and technological development.

Some four years ago, the GTZ outlined its new areas for cooperation in Namibia: *land reform, economic development, HIV/ AIDS, and civil engineering*. Thus in 2006, GTZ, the Ministry of Works Transport and Communication at that time engaged the Polytechnic of Namibia in defining the technical cooperation. The study carried out at that time identified the immense need for qualified human resources in civil engineering. What brings us here today is the GTZ's concerted efforts to create long-term solutions in Namibia's economic development through the support of technical expertise. The Polytechnic has benefitted in three of the aforesaid areas: in *economic development* through the support of an expert to support innovation, in *land reform* in the form of experts and consultancies, and in *civil engineering* through education and training.

Through the collaboration amongst stakeholders, the need was identified to establish a dedicated and credible materials testing laboratory for the Namibian industry. We are thus very proud to officiate this function at which we shall unveil the state-of-the-art engineering equipment and launch the Materials Testing Institute.

Ladies and gentlemen,

Scientific evidence indicates that the world is undergoing major transformations in terms of engineering and technology systems, and in economic development. But Namibia is lagging behind in the indicators that will propel us to a new stage of development. According to the Global Competitiveness Ranking of 2009/2010, Namibia scores 2.8 out of 10 and is ranked lowly at 128 out of 133 countries in terms of the availability of scientists and engineers. There is thus a clarion call for our foresight and sustainable action to elevate our country through education and training.

At independence, there was no engineering training offered in Namibia. With the support of the Namibian government, the Polytechnic therefore took up the challenge to train engineers very early in its development in 1997, a year after our establishment as an autonomous institution. Starting with 64

students without a dedicated facility, the School of Engineering has grown to accommodate about 900 students in this great facility this year, in the disciplines of Architecture, Civil, Electrical, Electronic, Mechanical, and Mining Engineering. Consequently, the Polytechnic became the first and is now only institution that has produced engineers at degree level for a decade.

We offer both the Bachelor of Technology and the Professional Bachelor of Engineering across the aforesaid specialisations, as well as the Master of Transport Engineering, and Polytechnic students have been, and will continue to be, trained on new equipment, technologies and standards and systems.

The GTZ has supported academic partnerships, and in this case especially with Aachen University of Applied Sciences, with whom we are cooperatively developing the joint Bachelor degree. We also cooperate with other universities such as Technical University Darmstadt and Chulalongkorn University of Thailand, all with whom we have exchanged faculty and students, have jointly conducted in-service training and conduct research. Thus we wholeheartedly thank the Government of the Federal Republic of Germany and its functionaries who have meant so much to our development, viz. GTZ, CIM, DAAD, and DED, as well as our partner universities. Similarly, we thank the Namibian government and stakeholders who have added great value to our university and society, and welcome the collaboration to develop and create world-class standards in civil engineering.

Master of Ceremonies,

The range of the state-of-the-art equipment installed in this laboratory of the Materials Testing Laboratory, with high value, is donated by GTZ.

The equipment can be used for accurate testing in the fields of:

- Road Engineering
- Foundation Engineering
- Building Engineering

Thus, some of the tests to be conducted at this Institute comprise the following:

- a. soil mechanics and foundation engineering,
- b. evaluation of aggregates (e.g. asphalt and concrete)
- c. Bitumen and bituminous mixtures
- d. Road pavements
- e. Concrete and artificial stones
- f. Water.

Information on all tests that can be carried out at the “Materials Testing Institute” are **included** in the **pamphlet** “*Payments for Services of Polytechnic of Namibia*” **that is available from the Polytechnic.**

The **MTI has the following new equipment** to carry out tests:

1) Dynamic Plate Bearing Apparatus

- **Provides** an indirect method to determine compaction degree
- **Measures** bearing capacity of unbound material

2) Benkelman Beam

- **Determines load-bearing** capacity of roads by measuring deflection caused by a wheel load of 5 tons
- **Allows to** prognosticate the service life of road pavements by repeated measurements in periods of time
- **Serves as** alternative to Falling Weight Deflectometer

3) Balloon Density Apparatus

- **Determines** field density by measuring volume of excavated unbound material

4) Universal Soil Compactor/Universal Extruder

- **Determines degree of** compaction in combination with Balloon Density apparatus
- **Determines** compactability of unbound material

5) CBR Test Machine

- **Measures** bearing capacity of soils by determining CBR-value for pavement design
- **Evaluates** influence of water ingress (flooding)

6) Flow Table

- **Measures** consistency of fresh concrete
- **Provides information** about workability of concrete

7) Consistency container

- **Provides** additional information to 6)

8) Air Entrainment Meter

- **Determines** air content in fresh concrete
- **Allows to evaluate the** durability of hardened concrete (steel corrosion in coastal areas)

9) Cylinder Cupping Frame

- **Used to** prepare concrete cylinders for testing

10) Compressometer

- **Determines** stress/ strain-relations for hardened concrete
- Allows calculation of Young's modulus

11) Sand Equivalent Test Set

- **Determines** fine particles in granular soils and fine aggregate which may damage concrete and asphalt

12) Methylen blue Test Set

- **Determines** limit value **that** must be observed to prevent damage to concrete

13) Flakiness Sieves

- **Provides information about** percentage of grains with unfavorable shape (breaking under loading)

14) Standpipe Permeability Test Cell

- Measures permeability
- **Allows to evaluate** water flow in sub grade
- **Allows to calculate resistance to** hydraulic shear failure in building construction

15) Triaxial Testing Equipment

(Highly sophisticated equipment)

- **Determines** cohesion and friction angle for earthstatic calculations (e.g. stability of excavations and slopes, permissible angle to prevent earth slides, permissible loading of subgrade by buildings)

Given the broad range of equipment, the Materials Testing Institute will be a world-class laboratory that will provide the following comprehensive services:

- a. testing and certifying
- b. quality assurance and inspections
- c. staff training and design support
- d. research and consultancy.

The diversity of the construction industry can thus be covered through the Institute. Requests for services have already been received from the Namibian mining industry to support ongoing projects, and from the construction industries in neighbouring countries such as Angola. There are several laboratories performing materials tests in Namibia but the country needs a comprehensive, high quality environment offering the aforesaid services at international standards. The Institute will not compete with local laboratories and will employ qualified engineers and technicians, and will become the main testing body for all of civil engineering services. In this respect, we shall support the Namibian technical bodies, such as the Standards Institute, in delivering quality services to the Namibian industry.

Finally, let me once again thank the Namibian government for the steadfast and professional support, and the German government for the complementary collaboration.

I welcome you all warmly and thank you for your kind attention.

- End.