

# OUR MANAGEMENT REPORT

*UTM-FKA is the Host Institution of ASEAN University Network/ Southeast Asia Engineering Education Development (AUN/SEED) in Civil Engineering Discipline*

# Our Management Report

UTM-FKA started as a Department of the Faculty of Engineering in 1972, and became a Faculty in 1975. It has 5 departments, 8 laboratories with a Research Institute, 3 Centres of Excellence and 4 support units, including the administration and academic offices.

Currently UTM-FKA has 2175 students, with 675 of them doing Masters and another 280 pursuing PhD. In addition, UTM-FKA has the most number of international students pursuing Civil Engineering discipline in Malaysia. We have about 300 students coming from as far as China, Yemen, Iran, Saudi Arabia, Iraq, Libya, Kazakhstan, Bangladesh, and Indonesia.

UTM-FKA strives hard to provide quality education to prepare our students for professional position in civil engineering fraternity, including industry, commerce and academic, to face the challenge from the government to produce human capital with a first class mindset.

This leads to UTM-FKA having to keep its quality management system of ISO 9001:2008 and ISO 17025, thus maintaining to be the first civil engineering faculty in Malaysia to obtain both certifications since 1999.

**1 out of 4**

Malaysian civil engineers is from UTM-FKA

**1126** Enrolment of Postgraduate Students

**300** International students from various countries

**1st** First faculty in Malaysia to establish and maintain Quality Management System (ISO)

**1020** Enrolment of Undergraduate Students

**44%** Postgraduate Students

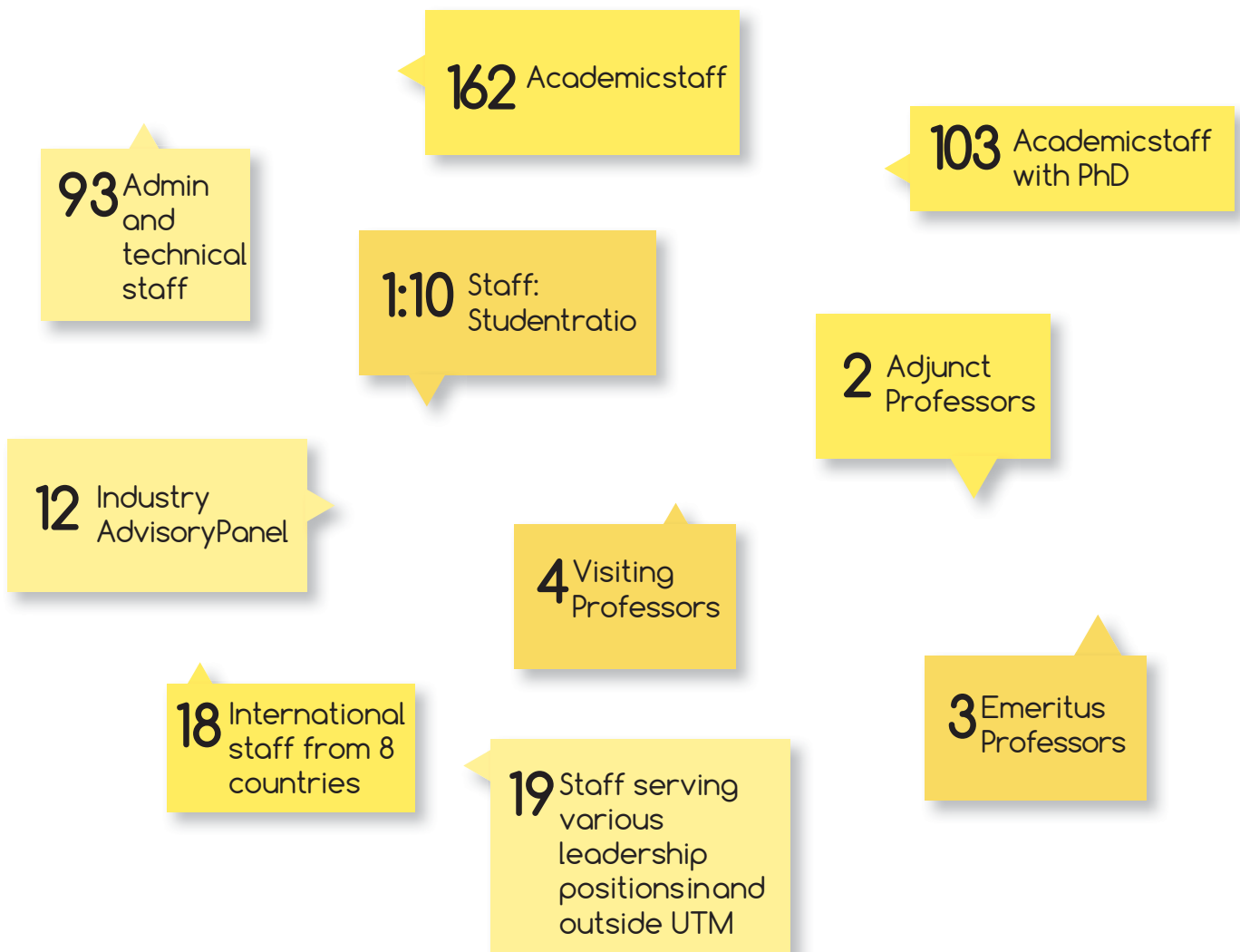
## Human Capital Management and Development

The Human Capital Division plans, executes and monitors the management and development of staff and activities at UTM-FKA. By the end of 2012, UTM-FKA had 162 academic staff and 93 non-academic staff in its payroll.

Out of this number, 20 are full professors, 46 Associate Professors, 59 Senior Lecturers, 26 lecturers and 11 Tutors.

In order to place UTM in the global limelight, UTM-FKA had also appointed many eminent persons such as 3 Emeritus Professors, 4 Visiting Professors, 2 Adjunct Professors and an External Examiner, Prof. Nethercot, a prominent international figure. UTM-FKA has also appointed 12 distinguished figures to be its Industry Advisory Panels, Industry Advisory Panel to indicate our seriousness in getting feedbacks from stakeholders to ensure continual quality improvement of graduates.

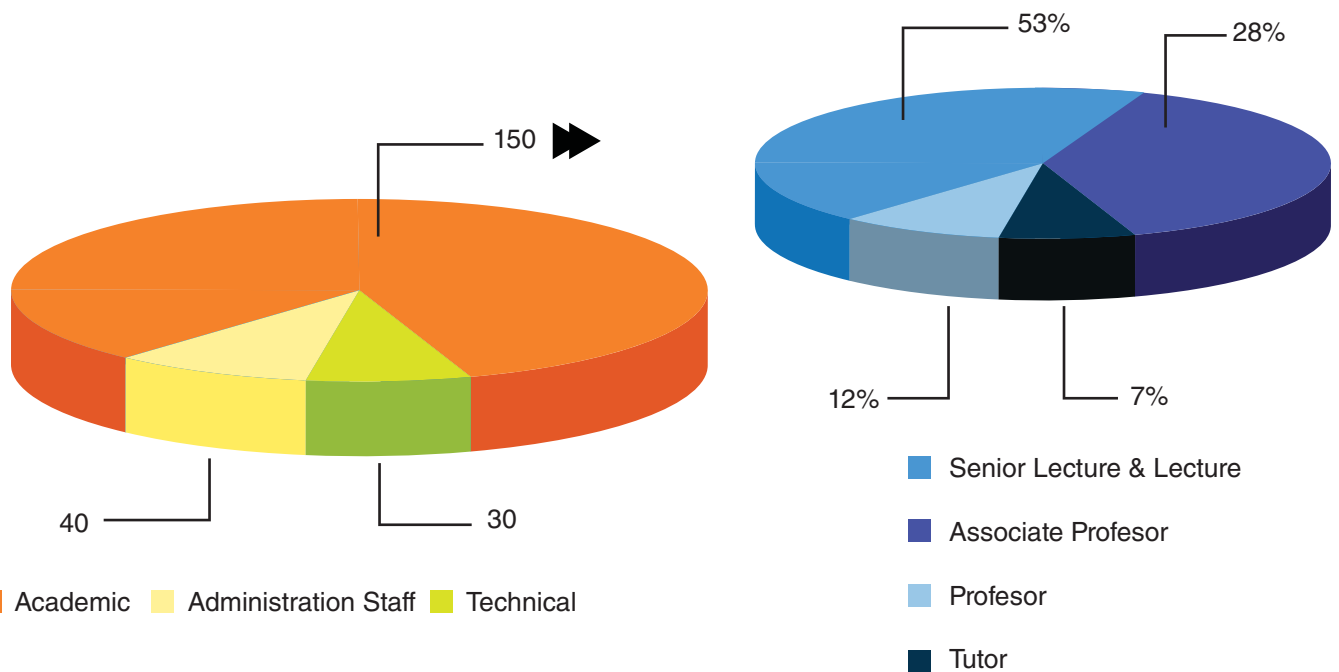
Another effort by UTM-FKA to make ourselves globally visible was to employ 18 international staff from 8 countries.



# Our Management Report

Promotions of UTM-FKA to hold administrative leadership positions in and outside the University signify our significant contributions to the development of UTM. In the past, 8 faculty members had been appointed as Vice Chancellors (Presidents) of various universities in Malaysia. Currently, out of the 163 academics, 19 are leading various Centres/Divisions/Units in and outside UTM. Faculty members are also involved in various international and national organisations and technical committee members.

The Faculty monitors its staff development by providing resources for training, such as courses, seminars, conferences, workshops and technical visits, organized by the Faculty or relevant external organizations. A total of 206 staff attended national and international symposium, conferences, seminars and workshops in 2012 to enhance their knowledge and skills which would in turn contribute towards achieving the objectives of the Faculty.



## Research and Publication.

Research is conducted through the Centres of Excellence and research groups under the 3 major Research Alliances, i.e. RA Water, RA Construction and RA Transport, to mobilize, integrate and consolidate expertise within the faculty. Under the 9th Malaysian Plan, the faculty members had secured 46 research projects worth RM 4 million from various research agencies. Some of the research agencies involved are the Ministry of Science, Technology and Innovation (MOSTI) with TechnoFund and ScienceFund, the Ministry of Higher Education (MoHE) with Fundamental Research Grant Scheme (FRGS) and Research University Grant (RUG), and Construction Industry Development Board (CIDB).

In line with the vision and mission of the university, UTM-FKA staff has been actively involved in research, publication and Intellectual Property and patentships. This year, the academic staff had published 153 international journal papers and 154 papers for conference and seminar proceedings for publication at both national and international level. UTM-FKA has also identified some research products produced by both staff and researchers which may potentially be of good value to be patented, produced and commercialized.

**46** Research projects worth RM 4 million.

**153** Indexed journals

**154** Papers for conference and seminar proceedings.

## Achievement and Award

In 2012, the faculty management team and academic staff have received multiple awards and recognition from international and local institution. These include awards from the university, and numbers of competition. Several collaboration and MOU are made between the faculty and outside parties. Among the achievements and awards in 2012 are listed below;

- Winner for the Anugerah Kualiti Akademik 2012 at the Citra Karisma Event (3 July 2012)
- Silver Award at the 23rd International Invention, Innovation & Technology Exhibition (ITEX) on the 17-19 May 2012, KLCC
- Majlis Anugerah Kualiti is held on the 29 August 2012 to honor faculty members
- The faculty's team members bagged nine awards at IDEERS, Taiwan (13-16 September 2013)
- Prof. Dr. Khairul Anuar Kassim and Assoc. Prof. Dr. Kamarudin Ahmad awarded with the Telford Premium Award at the Institution of Civil Engineers, ICE United Kingdom for their contribution in civil engineering discipline through outstanding research paper entitled "Electro-Kinetic Treatment on a Tropical Residual Soil"
- First Prize in the Nehemiah Design Competition on 8 November 2012
- International Collaboration with Institut Teknologi Sepuluh Indonesia for Postgraduate Master Program
- Research Alliance WATER and IPASA with Syarikat Air Johor on Research Collaboration



*Winner for the Anugerah Kualiti Akademik 2012 at the Citra Karisma Event (3 July 2012)*

# Our Management Report



*Silver Award at the 23rd International Invention, Innovation & Technology Exhibition (ITEX) on the 17-19 May 2012, KLCC*



*Majlis Anugerah Kualiti is held on the 29 August 2012 to honor faculty members*



bum 7 of 10

Tag Photo Options Share

*The faculty's team members bagged nine awards at IDEERS, Taiwan (13-16 September 2012)*





Prof. Dr. Khairul Anuar Kassim and Assoc. Prof. Dr. Kamarudin Ahmad awarded with the Telford Premium Award at the Institution of Civil Engineers, ICE United Kingdom



**First Prize**  
Nehemiah Design Competition RM5000 Cash & A Plaque 8 November 2012

**International Collaboration with**  
Institut Teknologi Sepuluh Indonesia for  
Postgraduate Master Program



**Research Alliance WATER and IPASA**  
with Syarikat Air Johor on  
Research Collaboration

# Our Management Report

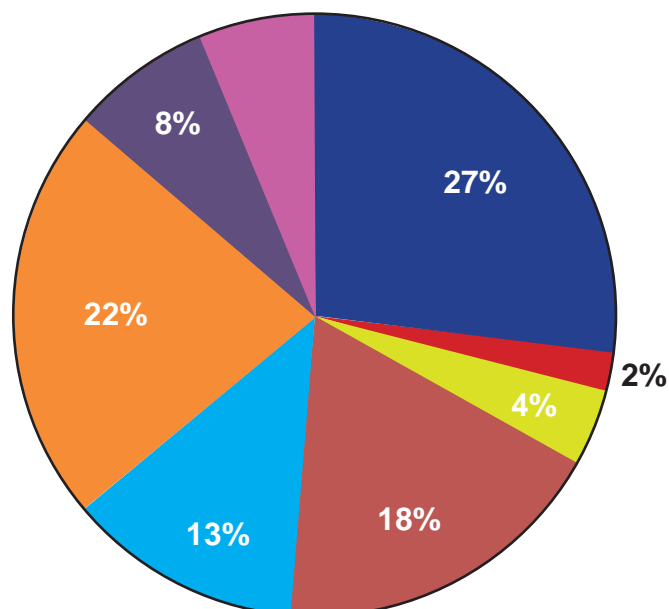
## Our Financial Report

The budget allocated to the faculty in the year 2012 amounted to RM 1,285,000.00. This amount is used for operational and maintenance of equipment and services, as well as capital and fixed assets.

The faculty has also allocated some budget for recruitment of contract staff in order to increase the number of visiting Professors.

From this allocation, RM 1,439,246.00 has been spent, meaning that 3% was saved. UTM-FKA staff is also awarded with research grant amounting to RM7.7m from various agencies.

Items	2011(RM)
Staff Transportation	300,000.00
Rental	30,000.00
Raw Materials Supplies	7,000.00
Materials and Supplies	140,000.00
Maintenance and Repairs	93,000.00
Professional Services	330,000.00
Capital Asset	140,000.00
Fixed Asset	60,000.00
<b>Total</b>	<b>1,100,000.00</b>



Operating allocation for 2012



**Our Departments and units**

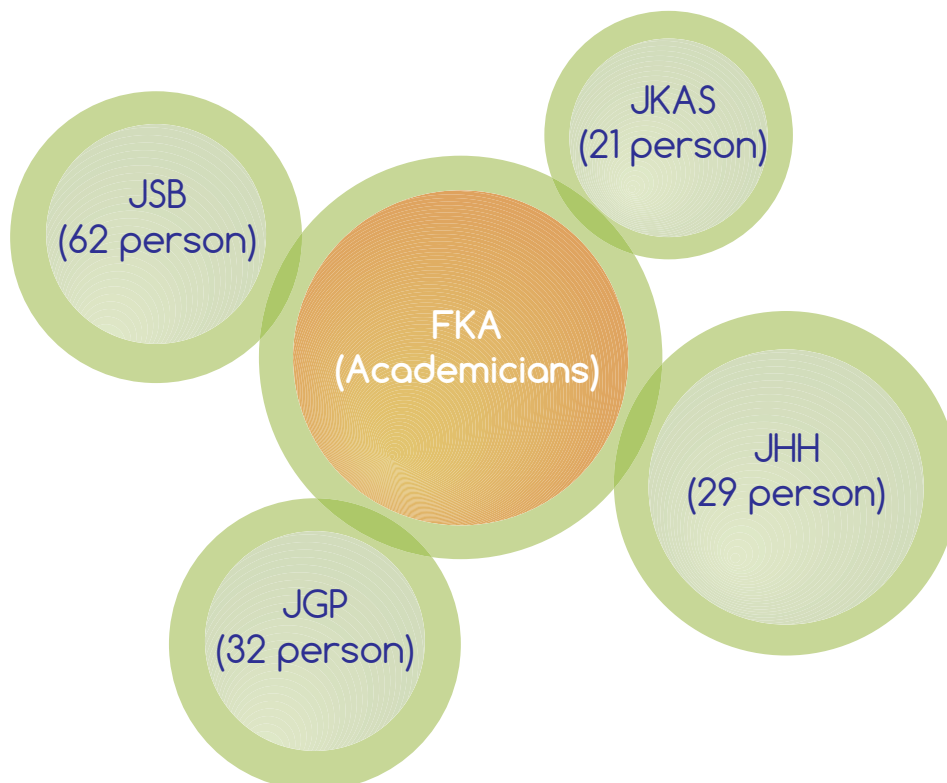
There are four departments in UTM-FKA as listed below:

- i. Department of Structures and Materials (JSB)
- ii. Department of Geotechnics and Transportation (JGP)
- iii. Department of Hydraulics and Hydrology (JHH)
- iv. Department of Environmental Engineering (JKAS)

The strength of the faculty is in the number, expertise and competency of its academic and support staff.

**Academic staff distribution and breakdown, by department**

Position	Number		Departments				Unit
	Full Time	Part Time	JSB	JGP	JHH	JKAS	ITUCE
Professor	20	0	9	3	4	4	0
Associate Professor	46	0	24	8	6	4	1
Senior Lecturer	59	1	25	9	10	8	2
Lecturer	24	0	3	9	3	3	6
Tutor	13	0	1	3	6	2	0
Others	0	0	0	0	0	0	0
<b>Total</b>	<b>162</b>	<b>1</b>	<b>62</b>	<b>32</b>	<b>29</b>	<b>21</b>	<b>9</b>



# Department of Structures and Materials

Department of Structures and Materials has 62 academic staffs including 5 contract lecturers. The academic positions in the department are 9 Professors, 24 Associate Professors, 25 Senior Lecturers, 3 Lecturers and 1 Tutor. The number of Master students, enrolled in the department, by research and taught courses is 495 while the number of registered PhD students for semester 1 session 2011/12 is 124.

The Department of Structures and Materials is one of the main departments in the Faculty of Civil Engineering. The Head of Department oversees various sections under his control. One of these sections is the Structures Laboratory and the Materials Laboratory. Apart from the laboratories, there are heads of panels for four sections as well as the course coordinators.

The four sections are analysis section, design section, material section and construction section.

Directly under the head of panels are the course coordinators for analysis section, design section and material section.



The department has eight research groups with vast expertise in the area of construction and materials, earthquake engineering, precast, industrialized building system, computational mechanics, and many more. These groups are listed in the figure below and detailed in Appendix 4.



List of research groups in the Department of Structure & Materials (detail in Appendix 4. )





## Department of Structures and Materials

In 2012, the department has conducted a number of activities with participation from international bodies and staffs.

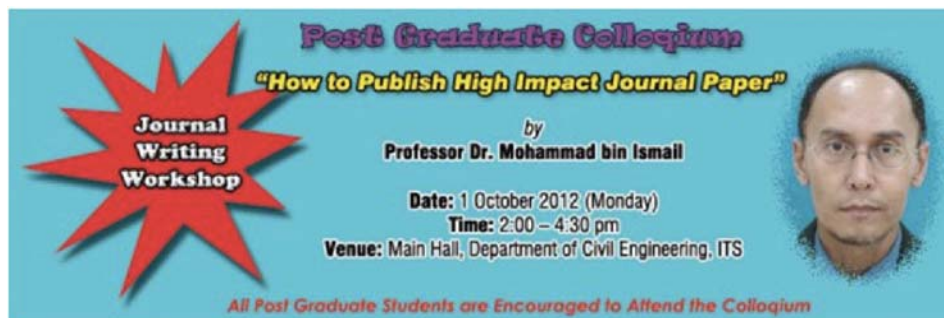
The department has conducted three programs i.e. The Asia Pacific Structural Engineering & Construction Conference, APSEC conducted in Surabaya Indonesia on 2-4 October 2012 (with collaboration from the Institut Teknologi Sepuluh Nopember, ITS), Summer School Construction Management Practices in Institut Teknologi Surabaya, ITS in July 2012 (15 students of UTM-FKA joined the program together with 25 students from ITS) and the seminar on "How to Publish High Impact Journal Paper" on the 1st October 2012 in ITS Indonesia conducted by Professor Mohammed Ismail from the department.



*Asia Pacific Structural Engineering & Construction Conference, APSEC conducted in Surabaya Indonesia on the 2-4 October 2012 in collaboration with Institut Teknologi Sepuluh Nopember, ITS.*



Summer School Construction Management Practices conducted in Institut Teknologi Surabaya, ITS – July 2012.



*Professor Dr. Mohammad bin Ismail conducted seminar on "How to Publish High Impact Journal Paper" – 1 October 2012, ITS Indonesia*

A number of professors from around the world and some important personnel in the construction industry in Malaysia have visited the department.

This include Dato Sri Ir. Dr. Judin Abdul Karim; Director of the Public Works Department of Malaysia, Dato' Ir. Dr. Ismail bin Mohamad Taib, Director of the Jambatan KeduaSdnBhd, Prof. Roger James Plank from the University of Sheffield United Kingdom, Profesor Jean Paul Lebet, École Polytechnique Fédérale de Lausanne Suisse, and Professor Miroslaw J. Skibniewski University of Maryland, USA.

These visits have given great opportunity to the faculty members to benefit from the vast experiences of the visitors and also to discuss potential collaboration in the future.

Details of the activities in the department are as shown in Appendix 4.

# Department of Structures and Materials



**Professor Miroslaw J. Skibniewski,**  
University of Maryland, USA giving talk on "Construction Technology  
Progress: from Mechanization and Prefabrication to Automation"  
- 24 Julai 2012, Bilik Mesyuarat Utama FKA.



**Dato Sri Ir. Dr. Judin Abdul Karim,** CIDB delivering a short course on "Crisis Management" - 30 Mei 2012, PBL M46 FKA



**Profesor Jean Paul Lebet,**  
École Polytechnique Fédérale de Lausanne (EPFL)  
delivering lectures in various topics - 28/August to  
14/September 2012, Seminar Room M46 FKA



**Prof. Dr. Azlan bin Adnan,**  
Universiti Teknologi Malaysia  
delivering lecture on  
“Engineering Seismology & Earth Quake  
Engineering Research in Malaysia” -  
5 Mac 2012,  
Bilik Mesyuarat Utama FKA



**Prof. Roger James Plank,**  
University of  
Sheffield United  
Kingdom  
delivering lecture  
on “An Overview  
on Research  
Work in London”  
- 29 February  
2012, Seminar  
Room D10 FKA



**Dato' Ir. Tee Chai Seng**  
Jurutera Perunding  
Primareka Sdn Bhd,  
delivering a talk on  
“Engineering  
Experiences in  
Civil and Structural  
Design Around  
Malaysia & Career  
Opportunities”  
- 30 Mei 2012, Bilik  
Seminar B FKA



**Dr. Lim Siong Kang,**  
UTAR giving a talk on  
“Lightweight  
Foam Concrete”  
- 9 November 2012,  
Bilik Kuliah Tingkat 2,  
D04 FKA





KERAJAAN MALAYSIA



LEMBAGA LEBUHRAYA MALAYSIA



JAMBATAN KEDUA SDN BHD.

## THE SECOND PENANG BRIDGE

PROJECT BRIEFING & INDUSTRIAL TRAINING PLACEMENT  
UNIVERSITI TEKNOLOGI MALAYSIA (UTM), SKUDAI, JOHOR

### SUSTAINABLE DESIGN & CONSTRUCTION

### 7<sup>th</sup> MARCH 2012

Presented by: Dato' Ir. Dr. Ismail bin Mohamed Taib  
Managing Director, Jambatan Kedua Sdn Bhd



**Dato' Ir. Dr. Ismail bin Mohamad Taib,**  
Jambatan Kedua Sdn Bhd & Mr. Malcom David  
Cantilever Bumi Sdn Bhd, giving a talk on  
“Second Penang Bridge Project & Industrial  
Training Placement”  
- 7 Mac 2012, Dewan Sri Resak KTDI UTM

# Department Of Geotechnics and Transportation

The Department of Geotechnics and Transportation has a strength of 34 academics and 12 technical and supporting staff. There are three sections in the department, namely highway and traffic engineering, transportation planning and management and geotechnical engineering and geology.

Other than the academic programmes offered at postgraduate level, the main activities of the department include consultancy works on highway materials, geological and geotechnics field.

In 2012, the department produced numerous journals and conference papers, both at international and national levels, which are listed in the publication section.

Apart from involvement in the academic activities, the department is actively engaged with several local industries and organisations through consultancy projects.

An overview of consultancy projects undertaken by the Highway and Transportation division and Geotechnics division totalled RM 140,000 and RM 200,000 respectively.

These projects involved laboratory and field material testing on rocks, aggregates, bitumen and soil investigation for road construction materials.





The departmental staffs are also active members of various professional bodies having national and international reputation in their respective fields, some of which are:

- Board of Engineers Malaysia
- Institution of Engineers, Malaysia
- Institute of Quarrying, United Kingdom
- International Committee of Road and Airfield Pavement Technology
- Institute of Geology Malaysia
- Road Engineering Association of Malaysia
- Geological Society of Malaysia
- Transportation Science Society of Malaysia
- South East Asia Geotechnical Society (SEAGS)
- Transportation Research Board (TRB), USA
- National Tropical Rock Engineering Research Group (NaTROCK)
- International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE)
- International Society of Rock Mechanics (ISRM) Malaysia
- Institution of Highways and Transportation (MIHT), United Kingdom
- International Union of Geological Society (Geological Environment and Management Group)
- International Association of Engineering Geologist (IAEG)
- Association of Asphalt Paving Technologist (AAPT)
- Road Engineering Association of Asia and Australia (MREAAA)

List of research groups are as follows:



# Department Of Geotechnics and Transportation

Activities / highlights:



Internship program of students from Indian Institute of Technology, IIT Bombay  
- 26 Mei to 12 July 2012  
• Ashlesh Sonje  
• Satya Praneeth Repaka



Prof. Madya Dr. Nurly Gofar,  
Universiti Teknologi Malaysia, Rainfall Induced Slope Failure  
- Learning From Practical Experience  
- 28 Mac 2012, Bilik Seminar C, D10 FKA



Dr. Anil Minhans,  
Universiti Teknologi Malaysia giving lecture on "Public Participation in Transport Sector  
- Perceptions and Expectation"  
- 9 Mei 2012, Bilik Seminar C, D10 FKA



Prof. Madya Ir. Dr. Ramli bin Nazir,  
Universiti Teknologi Malaysia giving lecture on "Geotechnical design according to  
Eurocode 7"  
- 12 September 2012, Bilik Seminar, M50 FKA



Besides numerous activities highlighted in 2012, Prof. Madya Dr. MohdJamaludin bin Md.Noor, from Universiti Teknologi MARA, Shah Alam was invited to give a talk on 'Significant of Non-linear Shear Strength Envelope in Slope Stability Analysis for Shallow Failures' on the 21 Jun 2012.

Also, Ir. Dr Md. Maniruzzaman A.Aziz gave a seminar on 'Application of Microwaves for the Characterization of Civil Engineering Materials and Their Unique Electromagnetic Properties' on the 24 October 2012.



*Sebahagian pelajar di lombong bijih besi di Kota Tinggi*



*Pelajar mendengar penerangan daripada wakil kuari di Masai*



*Pelajar dibawa melawat lombong besi di Kota Tinggi*



*Pelajar bergambar di hadapan muka kuari di Masai*



*Pelajar mempelajari cara-cara pemotongan cerun berprofil luluhawa granit di Masai*

# Department of Hydraulics and Hydrology

The Department currently has 29 academic staffs and 8 technical and supporting staffs. A unique feature of the department is the close link with the local industries and public bodies, which is integral to the department's approach to research, education and knowledge exchange.

The department is closely involved with several prominent local water industries, water resource related organizations and universities worldwide through academic links and consultancy projects.

The civil engineering profession, particularly water resource engineering, is evolving to meet the new challenges faced by society including planning and management of water resources and creating a sustainable future for all.

The main scientific areas carried out by the Department relate to both the qualitative and quantitative aspects of the river basin, urban watershed, agricultural watershed, rural watershed, estuary, climate and coastal environment and the related water engineering works.

The academic staffs of the Department are involved in a total of 18 courses of the Civil Engineering curriculum, some of which are addressed to all the undergraduate students of the Faculty and others to the Masters in Hydraulics and Hydrology programme by taught course.

The staffs also supervise final-year students carrying out professional design project and undergraduate thesis, Master thesis as well as PhD dissertations.

The Department is active in innovative and significant research to address the challenges for water resource engineering in the 21st century, such as environmental hydraulics, climate change, flood management, dam break modeling, rainwater harvesting, coastal peat hydrology, coastal engineering, tsunami modeling and forest hydrology.

The Department aims to deliver scientific breakthrough that will lead to solutions by establishing several research groups under the umbrella of the Water Research Alliance. In addition, three of the department staffs serve as leaders of water research alliance and the National Oceanography Directorate.

Numerous publications by the department staffs are listed in the publication section. The Department staffs are also actively involved in various consultancy works led by the Centre of Excellence, IPASA and IKPLP. The details of consultancy works are presented in consultancy section.

The Department successfully organized short courses, meetings, seminar and colloquiums in 2011.



List of research groups:

- COEI (Hydroinformatics)
- IPASA (Eco-Hydrology)
- IPASA (Integrated Water Resource Management)
- IPASA (Climate Change Group)
- IPASA (Waste Recovery)
- IPASA (Environmental Chemistry)
- IPASA (Water & Wastewater Treatment)
- IPASA (Integrated Water Resource Management)
- IPASA (Green Technology Group)
- IPASA (Water & Wastewater Treatment)
- IPASA (Impact & Restoration on Water Bodies)
- IPASA (Environmental Chemistry)

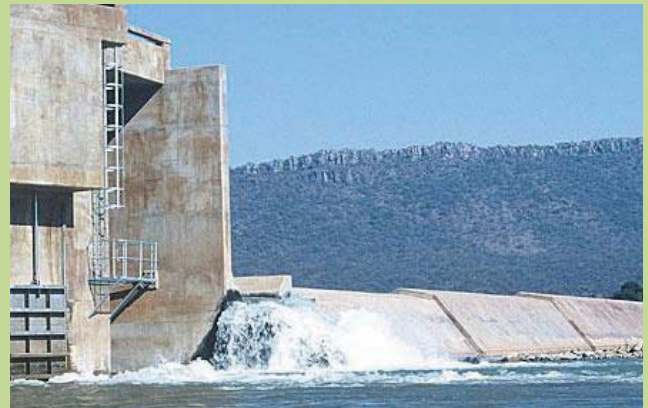


# Department of Hydraulics and Hydrology

## Activities / highlights:

One of the main highlights of the department's activities in 2012 is the International Conference on Water Resources, ICWR 2012.

This conference is held in conjunction with the Regional Steering Community Meeting (RSC) IHP-UNESCO. It is conducted from 5 - 9 November 2012 in Langkawi, Kedah.



**ICWR 2012**  
5 - 9 NOV 2012 | BAYVIEW HOTEL, LANGKAWI KEDAH  
Follow us: <http://seminar.utmspace.edu.my/icwr2012>

**2nd INTERNATIONAL CONFERENCE ON WATER RESOURCES**

in conjunction with

20<sup>th</sup> UNESCO-IHP REGIONAL STEERING COMMITTEE MEETING FOR SOUTHEAST ASIA AND THE PACIFIC

Organised By:



"Sharing Knowledge of Issues in Water Resources Management to Face the Future"



International Conference on Water Resources, ICWR 2012

In 2012, the department has conducted a number of seminars involving experts from international institutions.

Professor Akira Goto, from Utsunomiya University of Japan has given a seminar on 'Distributed watershed modeling for analyzing influences of the climate change on irrigation systems in the tropical regions' on the 19 Mac 2012.

On the 26 April 2012, Professor Ir. Dr. Mohammad Bisri, from BrawijayaUniversiti Malang Indonesia gave a talk on 'Combined Results of Research of Water/ Civil Engineering'. A seminar on 'Neural Network Application in Rainfall-Runoff Modeling' was conducted by Dr. Neelankantan Sajikumar, from Asian Institute of Technology (AIT), Bangkok Thailand on the 17 Mei 2012.

The department's academician; Dr. Mohamad Hidayat bin Jamal has also conducted a talk on 'Gravel Beach Profile Evolution' on the 16 Feb 2012.



Groundwater monitoring

# Department of Environmental Engineering

The Department of Environmental Engineering is one of the four core departments in the Faculty of Civil Engineering.

Although being the smallest, the department is developing fast with the advancement of technology moving towards Green Technology.

Environmental Issues are the concern of the society that need to be addressed, and the department is promoting forward-looking academic research and internationalization by having academic staff and research fellow from overseas, as well as establishing joint-research efforts with foreign institutions.

The Department is led by the Head of Department whose responsibility is to manage the academic and technical staff under his jurisdiction.

The Head of Department is assisted by the Head of Laboratory and two Heads of Panel that are Environmental Engineering and Environmental Management Panels.

Course coordinators are directly under their respective panels.

Currently the Department has 21 academic staffs including two international lecturers and 6 technical and supporting staffs.

Altogether, there are 15 academic staffs (with doctoral degrees) and two of them are qualified professional engineers.

The expansion within the last few years has seen the department progressively reforming its curriculum to include emerging technologies and their applications to the environmental engineering.



## List of research groups:

Integrated Water Management

Wastewater Treatment

Landuse Impact Research Group



**Activities/highlights:**



One of the department main activities in 2012 is the Summer School Joint Degree Program conducted on the 2nd - 19th of July 2012.

This is a collaboration program between the faculty and Institut Teknologi Surabaya, ITS.

*Collaboration with the Institut Teknologi Surabaya (ITS) for APSEC 2012, Summer School 2012*

In 2012, the department has received a number of visits from both international and national organization. A series of lectures have been conducted with collaboration of the department academic staffs. This includes the seminar on "Introduction to Sewerage Treatment" by Assoc. Prof. Dr. Azmi Aris and Ir. Mohd Taufik Salleh from Indah Water Consortium on the 17-18 April 2012. Collaboration between the department and Indah Water Consortium continues with the joint seminar on "Maintenance of Sewers" conducted by Dr. Mohd. Fadhil bin Md. Din and Mr. A. Ghani Mohamed on the 11 October 2012.

The department welcomed a number of international academician including Dr. Paul J. Sallis from the School of Civil Engineering & Geosciences, Newcastle University, United Kingdom. Dr Paul has been a visiting professor in the department for a duration of two weeks in the month of August 2012. A student from the Indian Institute of Technology (IIT) Bombay; Mahinder Meenahas also done an internship program in the department for two months.



*Summer School Managing Water Environment on 2-19 July 2012*

# Constuction Research Centre

UTM Construction Research Centre, UTM-CRC was established in the Faculty of Civil Engineering, Universiti Teknologi Malaysia, JB, Johor to promote the construction industry research such as in construction management, steel and geotechnical area.

There are 11 fulltime academic staff in various multi disciplinary fields (science, mechanical, and civil engineering) who teach and conduct research and consultancy on subjects related to construction industry. Complete back-up facilities for all kinds of research activities are also available at Faculty of Civil Engineering laboratory.

Research interest of UTM-CRC include structure, construction management, IBS Construction, Geotechnical Engineering, Concrete Technology, Steel, Sustainable Materials.

In 2012, CRC has commercialized four products;

- Educational Reinforced Concrete Analysis and Design Software (ERCAD)
- Fast Track Wall System
- Fast Track Wall System
- EGB BRICK (Cement Free Concrete)

**10** Consultancy projects worth RM 500,00.00

**73** Journal paper

**4** Commercialization products

**22** Conference paper

**33** Research grants worth RM 1.5 million

CRC has also received numbers of awards and recognition from both international and national level. These awards are summarized in the following table.

No.	Competition / Event	Level	Award	Participants
1.	INATEX 2012	National	Silver - Innovative Partial Strength Connection on Cruciform Column Section	Dr. Shek Poi Ngian
2.	ITEX/ Malaysian Invention and Design Society (MINDS)	National	Silver- Cement Free Concrete (Eco Green Brick)	Prof. Ir. Dr. Mohd Warid Hussin
3.	ITEX/ Malaysian Invention and Design Society (MINDS)	National	Silver - Cement Free Concrete (Eco Green Brick)	Assoc. Prof Dr. Muhammad Amer Rafique Bhutta
4.	World Competition of IDEERS 2012	International	1. Second Prize (Overall) 2. Third Prize (Most Creative Structural/Engineering Design) 3. Third Prize (Best Presentation/Poster Award)	Prof. Dr. Nordin Yahaya Assoc. Prof Dr. Norhazilan Md Noor (Postgraduate Team RESA-FKA-UTM)
5.	World Competition of IDEERS 2012	International	Quake-Resistant Certificate	Mohd Nur Asmawisham Alel Norhisham Bakhary (Undergraduate Team eSEER-FKA-UTM)

### CRC ACTIVITIES



*CRC UTM Strategic Planning Workshop, 9-11 December 2012*



*Journal Publication Workshop with Emeritus Profesor, Dr Gustav Olsen 17/10/12*



*Workshop with Lembaga Lebuhraya Malaysia, 2 April 2012*

# Institute of Environmental & Water Resource Management

Institute of Environmental & Water Resource Management (IPASA) was established in 1994 is one of the specialized research centres in UTM.

Previously known as the Institute of Environmental (IKAS), the centre was established as an effort to integrate available expertise in various fields at UTM to understand and to overcome complex problems related to the environment.

Currently, IPASA is headed by an Executive Director and a Deputy Director who are appointed on a rotational basis to head the management team.

Even though it was officially formed in 1994, most of IPASA's associated fellows have vast experience in environmental studies, consultancies and teaching since early 1980s.

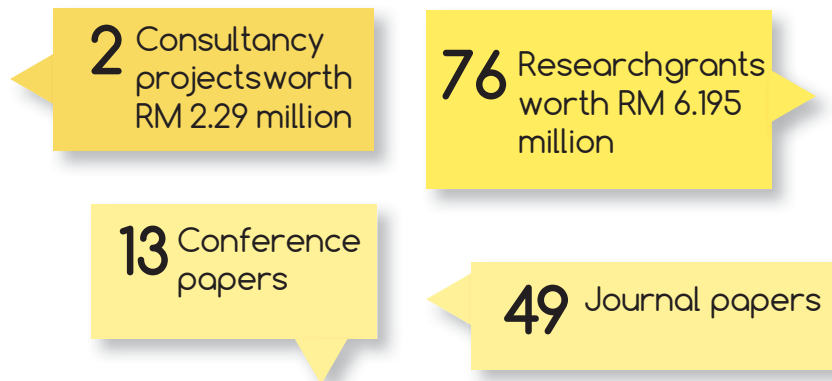
IPASA research interests encompass several broad areas, and a flexible organization allows for prompt response to environmental issues as they arise. Our research activities cover five main thrusts, i.e.:

- Catchment Hydrology
- Water and Wastewater engineering
- Environmental Biotechnology
- Solid Waste Management
- Socio-Economic Environment.



Through our R&D activities, IPASA is now recognized as a reference centre for water and wastewater technology, river rehabilitation and catchment hydrology.

Two of our R&D products, i.e. Wastewater Treatment Plant Design Advisor (WASDA) and Health Risk Assessment Software (RISKAS) have been marketed and used for teaching and operational purposes by universities and companies.



### Highlight of IPASA

In 2012, the department has secured numbers of consultancy project and research collaboration. Among others is the collaboration with Syarikat Air Johor, SAJ Holdings Sdn. Bhd.

This memorandum of understanding is attended by the Vice Chancellor of UTM himself; Dato' Seri Professor Ir. Dr. Zaini Ujang.



RA Water and IPASA with SAJ on Research collaboration

JOHOR BARU: SAJ Holdings Sdn Bhd is targeting to reduce its Non-Revenue Water (NRW) by 25% in 2020.

Its chief executive officer Abdul Wahab Abdul Hamid said the company had reduced its NRW from 33% five years ago to 28% at present.

"We are confident of achieving the target based on what we have done over the years," he said at a memorandum of understanding (MoU) signing ceremony with Universiti Teknologi Malaysia (UTM) recently.



At the MOU ceremony: Abdul Wahab (left) and Zaini.

# COASTAL AND OFFSHORE ENGINEERING INSTITUTE

In 2012, the governance of Coastal and Offshore Engineering Institute was directly under the Deputy Vice-Chancellor's Office (Research and Innovation). Five staff from the Faculty was seconded to COEI for a period of 3years. However, the staff have to carryout teaching, supervision and teaching, supervision and other duties.

A joint field work with the research team from the Technical University Delft (TU Delft) at Sg Linggi in Negeri Sembilan was carried out in January. This is part of the research collaboration between UTM and TU Delft. The objective of this exercise is to collect hydrodynamic and salinity data that will be used in the PhD research to characterize river and estuary systems in Malaysia. This is part of a worldwide project headed by Prof Savanije from TU Delft. Other river systems measured throughout the past year include Sg Selangor, SgBernam and Sg Muar. New sites at Sg Perak and Sg Kurau have been planned for 2013.

In February, COEI played host to the Terengganu State government delegation, headed by the Deputy State Secretary, Dato' Hj Wan Ahamad Wan Muda. This visit was arranged to promote the use of Hydro-Cheese submerged breakwater for the Terengganu coastlines. As a follow-up, a project proposal to deploy the hydro~cheese system stretching over 400m at Pantai Rhu Renggeh- Kuala Marang was submitted and awaiting financial approval from the state government. Dr Abbas Yeganeh- Bakhtiary from the Hydro-Environmental Research Center Centre, Cardiff University, UK. Visited COEI.

Even though the trip was not funded by UTM, Dr Abbas spent some time at COEI to discuss and plan some matters relating to experimental works on marine pipeline scour, to be carried out at COEI. In April and October 2012, the COEI team revisited the deployment site of the Electro-Deposition-Reef (EDR) system in Pulau Perhentian. This is part of the GUP Innovation Enhancement project on the EDR system, and a continuation of an e-Science project completed in 2011. The EDR was designed to accelerate coral growth on artificial reefs. Although some damages weredetected at the system installation, coral growth was found to be very encouraging.

A swash sediment transport monitoring station was set-up at Pantai Desaru with the cooperation from Desaru Holdings Sdn Bhd. COEI will monitor the seasonal variation of sediment movement in the swash zone subject to fluctuating ground water level beginning from September 2012 to October 2013.

In June 2012, a field team visited the Sg Pulai estuary to carry out ground truthing and to obtain record of mangrove species along the Pulai river.

The research aims to map and assess mangrove shoreline stability using satellite images. Both projects above are funded by the GUP Tier 1 grant. In June, a research colloquium were held. COEI participated in the World Expo 2012 in Yeosu, Korea. Three products from COEI, namely the Sine-Slab, Hydro~Cheese and EDR system were displayed at the Malaysia Pavilion in the Expo. This event was held between 12th May 2012 to 12th August 2012 and it attracted approximately 8 million visitors from 100 countries.



13 Conference paper

4 Journal paper

8 Research Grantsworth RM465,000.00

Highlight of COEI



COEI office repainted in ocean blue



Field work with Delft TU team at Sg Selangor



Swash sediment transport monitoring at Pantai Desaru



Coral growth on EDR installation being recorded



Underwater monitoring of the EDR system at Pulau Perhentian



Terengganu state government delegation given a briefing on the Hydro-Cheese system at COEI laboratory.



COEI Director and National Oceanographic Directorate's Prof Dato' Dr Noraieni Mokhtar at the COEI product exhibition at the Yeosu World Expo 2012.

# COASTAL AND OFFSHORE ENGINEERING INSTITUTE



COEI project team awarded the Anugerah Perundingan FKA 2012



COEI Director giving a presentation at Zhejiang University, China.



Staff and students of COEI at the International Conference on Water Resources 2012.



Retirement lunch for Prof Hadibah at Menara Kuala Lumpur.



Farewell gift for Puan Noraini Nordin.



Farewell gift for En Md Halim Mustari.



# INFORMATION TECHNOLOGY UNIT

Information Technology Unit of Civil Engineering is aimed to spearhead the IT services in FKA. Starting as a small unit with few technical staff 6 years ago, ITUCE is expanding by forming several new sections called Services Unit, Academics Unit, Laboratory Unit and Resources Centre Units.

ITUCE is headed by Information Technology Manager. At present, ITUCE is the only IT unit in UTM that serves as a department offering IT subjects, laboratory experimentation and modeling for postgraduate programmes. It focuses on the knowledge based type of information, automating the process to database format, such that raw data analysis and its interpretation for engineering purposes. In order to fulfil the mission, ITUCE offered three core subjects and two optional subjects for the undergraduate programme while for the postgraduate programme, two optional subjects are offered.

IT Unit has excelled in teaching as well; high level facilities in teaching include computer laboratories and engineering software for students to enhance their IT skills in civil engineering. ITUCE is also actively involved in research especially in the application of Information Technology tools to civil engineering problems.

Industrial Building Systems (IBS), Earthquake and Vibration, Database management system and Vibration based damage detection are the major fields that have been explored. ITUCE staff has contributed in many international and national journals as well as conferences. One significant contribution to the faculty itself is an establishment of ISO9001 online system.

Besides, ITUCE also provides IT services for the faculty ranging from computer maintenance, website development to system development.



# SURVEYING UNIT

The Survey Unit is responsible for providing teaching and learning, practical training and research for students in the field of survey. The unit is headed by the Unit Coordinator and assisted by one technician and two general staffs.

The Survey Unit also work together in research and consultancy activities with others laboratories, departments and centre of excellents in Faculty of Civil Engineering.

The Survey Unit laboratory also equip with the advance survey equipments such as Leica TCR803 Reflectorless Total Station, Leica TPS1200 Robotic Total Station, Leica Precise Digital Auto Level, Digital Engineering Auto Level, Close Range Photogrammetry System, UAV Systems, Shallow Water Hydrographic Surveying System (HydroPro Navigation Software and Bathy 500MF Dual Frequency Echo Sounder), Water Level Recorder, Leica SR20 DGPS System, Topcon Hyper II RTK GPS System, LisCAD Engineering Surveying Software and etc. to provide the most excellent facilities in teaching, research and consultancy in the field of survey.

One of the activities carried out by the Survey Unit every semester is the Survey Camp Programmes. The Survey Camp Programmes give a holistic view of the surveying activities needed prior to and during the construction stages of a civil engineering project.

Futhermore, the survey camp activities is a platform for student in planning and executing survey work on a larger scale.

The surveying work involved depends on the type of project undertaken, but normally include establishing horizontal and vertical controls, detailing, earthwork calculations and setting out.



## Highlight of Surveying Unit

### i) Development of Unmanned Aerial Mapping System (UAMS)



*UAMS Installation*



*UAMS – Electronic System Configuration*



Unmanned Aerial Mapping – Field Test Flight

UAMS – Engine Setting

ii) Surveying Camp 1012



Surveying Camp Morning Roll Call & Briefing | Engineering Survey Fieldwork



Total Station Set-up Test



GPS Surveying –  
To Establish Horizontal Control



Briefing - engineering surveying practical by lecturer

# SURVEYING UNIT



Engineering Surveying Practical – Data Observation | GPS Surveying – Road Surface Roughness Study (PSM Students)



Engineering Surveying Practical - Fieldwork

