



**MAKERERE UNIVERSITY**  
**COLLEGE OF ENGINEERING,**  
**DESIGN, ART AND**  
**TECHNOLOGY**

**ANNUAL REPORT 2013**

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## 1. Overview

The College of Engineering, Design, Art and Technology (CEDAT) was formed from a merger of two academic units: Faculty of Technology (FOT) and Margaret Trowell School of Industrial and Fine Arts (MTSIFA). This academic cooperation springs from the practical-based teaching and learning methods in FOT and MTSIFA which emphasize creativity and innovation aimed at solving societal problems. The technological advancement in the twenty-first century has further reduced the gap between art, design and technology, which more than ever before, calls for interdisciplinary pedagogical approaches between the artists, designers, architects, surveyors, construction managers and engineers. In line with the University's strategy, the College has steadily moved from traditional classroom teaching to more learner centred pedagogy, which stresses research and innovation. We encourage our students to be innovative and search for solutions to problems that afflict our society. Our academic staff is also engaged in intensive research and innovation. This is why the college has come to be known as the home of innovation. Popular known for the vehicle design project, the college is engaged in several other research projects. The college has found itself at the vanguard of technological, art and design advancement while staying relevant to the needs of the society. Our research and innovative capacity has helped attract support from Government and development partners. The quality of our graduates has inspired collaborations with different governments, organisations, universities, communities and companies.

The college has three schools; School of Built Environment, School of Engineering and the Margaret Trowell School of Industrial and Fine Arts. Each of these schools has three departments.

The School of Built Environment has the departments of Architecture and Physical Planning, Department of Construction Economics and Management, Department of Geomatics and Land Management.

The School of Engineering; Department of Civil and Environmental Engineering, Department of Electrical and Computer Engineering and the Department of Mechanical Engineering.

The Margaret Trowell School of Industrial and Fine Arts; Department of Fine Art, Department of Industrial Art and Applied Design, Department of Visual Communication, Design and Multimedia.

### **1.1 Mission of the College**

To undertake high quality research relevant to the region's and global development needs and consequently produce highly qualified graduates with specialised skills but equipped with holistic knowledge, as well as professional services and innovation for sustainable national and regional development.

### **1.2 Goals of the College**

- To provide a teaching and learning environment that assures superior experience to both the learners and the academic staff in order to produce graduates relevant to the world of work and society at local and international levels
- To enhance knowledge generation and its access for the benefit of society.
- To enhance linkages between the College and Partners for purposes of knowledge sharing and service provision.
- To improve the management function so that it assures an efficient and effective operational environment
- To provide a gender responsive organizational environment
- To improve the image of CEDAT through aggressive publicity of its achievements and outcomes
- To enhance the efficiency and effectiveness of the core activities of CEDAT.
- To ensure a high quality human resource base
- To improve the effectiveness and efficiency of the CEDAT Library
- To Promote an Enabling Environment for CEDAT to advance in Academic Excellence and Innovations.
- To establish and maintain an up to date website **and** gallery for **the College**.
- To train staff and students in ICT skills.
- To improve the Gender terrain (staff, mainstreaming) in the CEDAT.

### **1.3 Objectives of the College**

- To design programs with content appropriate/relevant to the changing needs of the society.
- To promote collaboration with stakeholder institutions, including professional organisations and industry in the design of academic programs.
- To integrate ICT, ethics, gender and entrepreneurship in teaching and learning and provide high quality and a variety of relevant and up-to-date teaching and learning materials.
- To integrate learner-centred and problem-based teaching, learning and research in the curriculum
- To increase the quality of designs, art and technology output grounded in basic and applied research undertakings
- To boost the research capacity of staff and students

- To increase the entrepreneurship ability of staff and students by incubating ideas in areas such as alternative energy solutions, use of intermediate technology and software development for adoption by the private sector.
- To promote the utilisation of research innovations
- To increase avenues for disseminating CEDAT findings for sustainable community development
- To promote the translation of CEDAT findings into accessible and useable material for policy development and revision
- To enhance CEDAT competitive position as a technology development & referral institution for vocational & community development
- To provide avenues for partnerships activities
- To improve efficiency in management service
- To establish a well-structured and regular information exchange link with the departments and staff focusing on issues of leadership and management, and image building and marketing
- To raise the CEDAT profile, image and reputation with the regular interaction with varied media.
- To build the capacity of leadership and management at all levels
- To integrate gender in all CEDAT activities

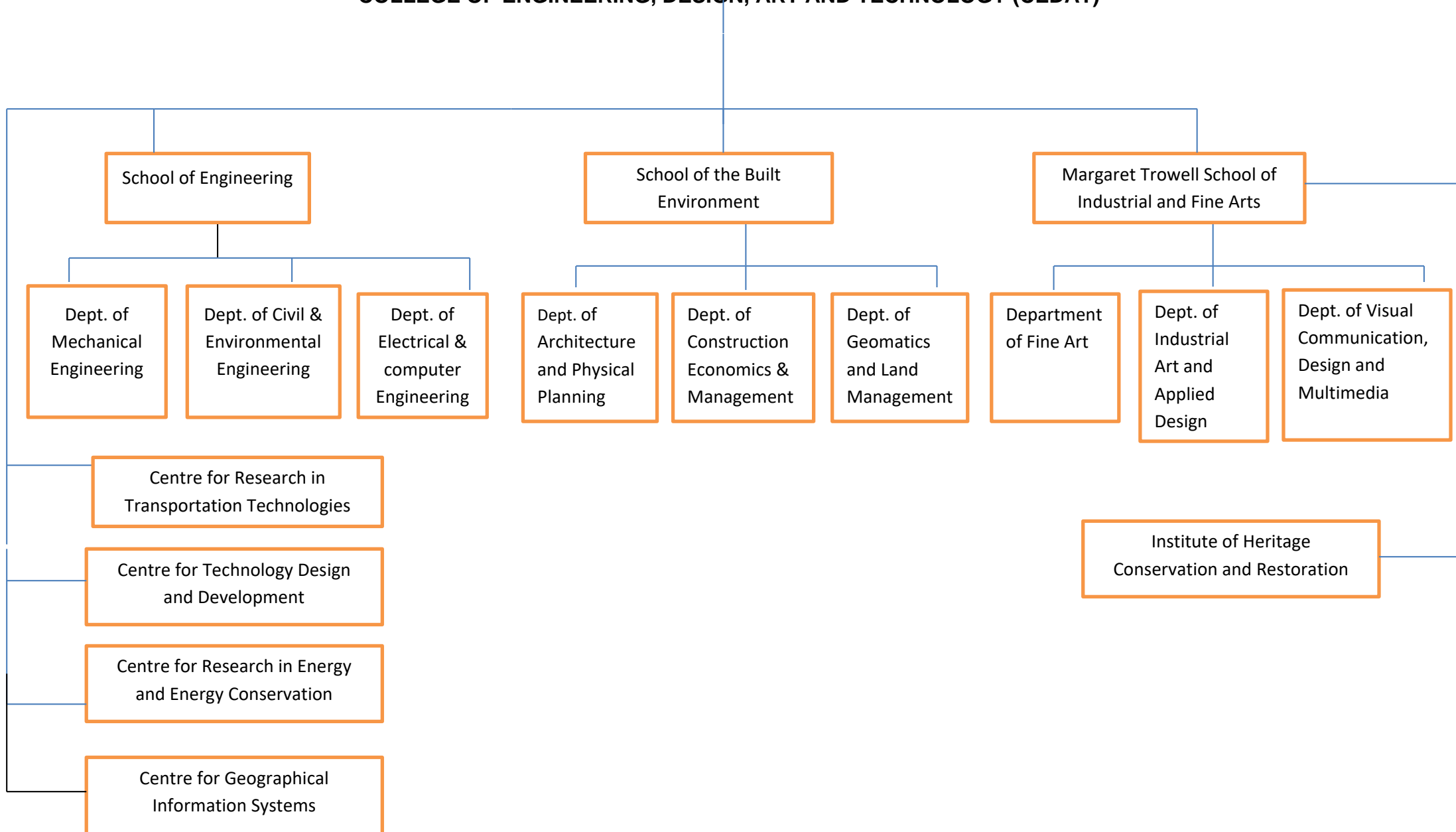
#### 1.4 CEDAT Administration

<b><u>Assoc. Prof. Henry Alinaitwe</u></b> <i>Ag. Principal, CEDAT</i>	<b><u>Dr. Venny Nakazibwe</u></b> <i>Deputy Principal</i>
<b>Mr. Stephen Kayima</b> <i>College Bursar</i>	<b><u>Mr Tom Otim</u></b> <i>College Registrar</i>
<b>Mr. Henry Mayega</b> <i>College Human Resource Officer</i>	<b><u>Ms. Betty Kyakuwa</u></b> <i>College Communication Officer</i>
<b>Ms. Flavia Atukunda</b> <i>College Procurement Officer</i>	<b>Mr. Wilberforce L. Musoke</b> <i>College Librarian</i>
<b>Dr. Venny Nakazibwe</b> <i>Dean, MTSIFA</i>	<b>Dr. Umaru Bagampadde</b> <i>Dean, School of Engineering</i>
<b><u>Dr Moses Musinguzi</u></b> <i>Dean, School of Built Environment</i>	<b><u>Assoc. Prof. Phillip Kwesiga</u></b> <i>Chair, Department of Visual Communication, Design and Multimedia</i>
<b>Dr. Angelo Kakande</b>	<b>Dr. Kizito Maria Kasule</b> <i>Chair, Department of Fine Art</i>

<i>Chair, Department of Industrial Art and Applied Design</i>	
<b>Dr. Charles Niwagaba</b> <i>Chair, Department of Civil and Environmental Engineering</i>	<b><u>Dr. Adam Sebbit</u></b> <i>Chair, Department of Mechanical Engineering</i>
<b>Dr. Julius Butime</b> <i>Chair, Department of Electrical and Computer Engineering</i>	<b>Dr. Stephen Mukiibi</b> <i>Chair, Department of Architecture and Physical Planning</i>
<b>Dr. Anthony Gidudu</b> <i>Ag. Chair, Department of Geomatics and Land Management</i>	<b>Dr. Anthony Kerali</b> <i>Chair, Department of Construction Economics and Management</i>

## 1.5 Academic structure

### COLLEGE OF ENGINEERING, DESIGN, ART AND TECHNOLOGY (CEDAT)



## 1.6 Academic staff

	<b>Professors</b>
1	J . A. Mwakali
2	Tickodri-Togboa Stevens
	<b>Associate professors</b>
1	Barnabas Nawangwe
2	Mackay Okure
3	Henry Alinaitwe
4	Phillip Kwesiga
5	George Kyeyune
6	Da Silva Izael
7	Joseph Byaruhanga
8	Hannington Sengendo
9	Anthony Geoffrey Kerali
10	Richard Okou
	<b>Those with Doctorates ----- 60</b>

## 1.7 Programmes offered

### Undergraduate Programmes

1. Bachelor of Science in Civil Engineering- 4 years
2. Diploma in Civil Engineering Surveying- 2 years
3. Bachelor of Science in Electrical Engineering- 4 years
4. Bachelor of Science in Telecommunication Engineering- 4 years
5. Bachelor of Science in Computer Engineering- 4 years
6. Bachelor of Science in Mechanical Engineering- 4 years
7. Bachelor of Architecture- 5 years
8. Bachelor of Urban and Regional Planning- 4years
9. Bachelor of Science in Construction Management-3 years
10. Bachelor of Science in Land Economics- 4years
11. Bachelor of Science in Quantity Surveying- 4years
12. Bachelor of Science in Surveying- 4 years
13. Bachelor of Science in Land Surveying and Geomatics- 4 years
14. Bachelor of Industrial and Fine Art- 3years

### Collaboration

- 1 BSc Engineering Programmes in Collaborative linkage with Belgorod Shukhov State Technological University in Russia\*



## **Graduate Programmes**

1. Doctor of Philosophy- 4 years
2. Master of Science in Civil Engineering- 2 years
3. Master of Science in Electrical Engineering- 2 years
4. Master of Science in Mechanical Engineering- 2 years
5. Master of Engineering (Civil) - 2 years
6. Master of Engineering (Electrical) - 2 years
7. Master of Engineering (Mechanical) - 2 years
8. Master of Science in Renewable Energy- 2 years
9. Master of Architecture- 2 years
10. Master of Physical Planning- 2 years
11. Post Graduate Diploma in Urban Design- 1 year
12. Master of Art in Fine Art- 2 years
13. Master of Science in Technology Innovation and Industrial Development- 2 years
14. Post Graduate Diploma in Construction Project Management- 1 year
15. Master of Science in Geo-information Science and Technology- 2 years
16. Master of Science in Power Systems Engineering - 2 years
17. Master of Science in Telecommunication Engineering- 2 years
18. Masters in Public Infrastructure Management in Collaboration with the Schools of Commerce and Social Sciences.
19. Master of Science in Construction Management- 2 years

## **1.8 Proposed programmes**

### Undergraduate Programmes

- 1 Bachelor of fine art degree- 3 years
- 2 Bachelor of industrial and applied design - 3 years
- 3 Bachelor of visual communication design and multimedia- 3 years

### **Graduate Programmes**

1. Master of Science in Urban Planning and Design- 2 years (proposed)
2. Postgraduate Diploma in Urban Planning and Design- 1 years (proposed)



## 2.0 Teaching and learning

### 2.1 Student enrolment 2012/2013. Academic Year

Registration Statistics for CEDAT for Semester Two

<b><u>Faculty School</u></b>	<b><u>Faculty School Name</u></b>	<b><u>Qualification Code</u></b>	<b><u>Qualification Name</u></b>	<b><u>Period Of Study</u></b>	<b><u>Number of Students SUM</u></b>
1700	MARGARET TROWEL SCHOOL - IFA	BIFA	Bachelor of Industrial and Fine Arts	1	163
				2	150
				3	133
					Sub Total: 446
		MAFA	M.A. IN FINE ART	1	1
				2	3
					Sub Total: 4
					Grand Total: 450
900	TECHNOLOGY	BELE	B. OF SCIENCE ELECTRICAL ENGINEERING	1	90
				2	87
				3	80
				4	75
					Sub Total: 332
		BSCM	BACHELOR OF SCI. IN CONSTRUCTION MG'T	1	64
				2	64
				3	7
					Sub Total: 201
		BSQS	BACHELOR OF SCI. IN QUANTITY SURVEYING	1	60

				2	58
				3	70
				4	53
					Sub Total: 241
		BSCE	BACHELOR OF SCIENCE IN COMPUTER ENGINEER	1	37
				2	60
				3	75
				4	84
					Sub Total: 256
		BSLE	BACHELOR OF SCIENCE IN LAND ECONOMICS	1	40
				2	39
				3	57
				4	36
					Sub Total: 174
		BSTE	BACHELOR OF SCIENCE IN TELECOMMUNICATION	1	65
				2	59
				3	65
				4	46
					Sub Total: 254
		BREP	BACHELOR OF URBAN AND REGIONAL PLANNING	1	38
				2	42
				3	13
					Sub Total: 93
		BSGE	BSC IN LAND SURVEYING AND GEOMETICS	1	52
				2	43
					Sub Total: 95
		BARC	BACHELOR OF ARCHITECTURE	1	31
				2	31
				3	35
				4	28
				5	26
					Sub Total: 151
		BCIV	BACHELOR OF SCIENCE IN CIVIL ENGINEERING	1	102

				2	101
				3	91
				4	83
					Sub Total: 337
		BMEC	BACHELOR OF SCIENCE IN MECHANICAL ENG	1	55
				2	53
				3	87
				4	67
					Sub Total: 262
		BSUR	BACHELOR OF SCIENCE IN SURVEYING	2	2
				3	43
				4	48
					Sub Total:93
		DCES	DIPLOMA IN CIVIL ENGINEERING SURVEYING	1	22
				2	24
					Sub Total:46
		MARC	MASTERS OF ARCHITECTURE	1	1
					Sub Total: 1
		MECV	MASTERS OF ENGINEERING-CIVIL	1	
				2	
		MEEL	MASTERS OF ENGINEERING-ELECTRICAL	2	2
					Sub Total: 2
		MRET	MSC IN RENEWABLE ENERGY	1	2
				2	1
					Sub Total:3
		MTID	MSC IN TECHNOLOGY INNOVATION AND INDUSTR	1	19
				2	
					Sub Total: 19
		MSCV	MSC. CIVIL ENGINEERING	1	1
				2	51

					Sub Total: 52
		MSEL	MSC. ELECTRICAL ENGINEERING	2	1
					Sub Total: 1
		MSME	MSC. MECHANICAL ENGINEERING	1	3
					Sub Total: 3
		MUPD	MSC. URBAN PLANNING AND DESIGN	1	8
					Sub Total: 8
		PCIV	PHD IN TECHNOLOGY (CIVIL ENGINEERING)	1	1
				2	1
				3	1
					Sub Total: 3
		PDCM	PHD IN TECHNOLOGY (CONSTRUCTION MGT)	1	1
					Sub Total: 1
			PHD IN ECHNOLGOY (ARCHITECTURE)	1	1
					Sub Total: 1
		GCPM	POSTGRAD. DIPL. IN CONST. PROJECT MGT	1	9
					Sub Total: 9
					Total: 2663
					<b>Grand Total: 3113</b>

## 2.2 Graduation Statistics CEDAT 63<sup>rd</sup>

SN	PROGRAMME	FEMALE	MALE	TOTAL
1	PHD	2	6	8
2	M.ARCH	1	0	1
3	ME.CIV	0	10	10
4	MSC ELECT ENG	2	4	6
5	MSC CIVIL ENG	2	12	14
6	MSC REW ENERG	2	7	9
7	MAFA	2	0	2
8	PGD CONT MGT	0	3	3
9	DIP CES	3	28	31
10	B.ARCH	4	18	22
11	BIFA	37	59	96
12	BSC CIVIL ENG	20	42	62
13	BSC CON MGT	6	21	27
14	BSC ELECT ENG	10	50	60
15	BSC LAND ECON	8	17	25
16	BSC MECH ENG	7	42	49
17	BSC QU SURVEY	6	30	36
18	BSC SURVEY	16	23	39
19	BSC TELCOM ENG	14	36	50
	<b>TOTAL</b>			<b>550</b>

## 2.2 New programmes

Programme	Status
Master of Science in Power Systems Engineering	Has commenced
Master of Science in Telecommunications Engineering	Has commenced
Masters in Public Infrastructure Management in Collaboration with the Schools of Business and Social Sciences.	Two lots of students (1 <sup>st</sup> and 2 <sup>nd</sup> years) are progressing. The staff involved in this are Dr. U. Bagampadde, Dr. C. Niwagaba, Dr. A. Sebbit and Dr. A. Rugumayo
BSc Engineering Programme in Collaborative linkage with Belgorod Shukhov State Technological University in Russia*	The first lot of 6 students finished their first year lectures from Makerere. They have travelled to Russia and begun their second year of the programme. Second group of students has commenced studies

Master of Science in Geo-information Science and Technology	Has commenced
Master of Science in Construction Management	Has commenced
BSc Chemical Engineering	The Draft Curriculum of this programme was finalized and approved by the School Academic Board. It is now ready for submission to Senate

### 2.3 Staff Promotions, Demotions and resignations

- Dr. Richard Okou (Dept. of Electrical & Computer Eng.) was promoted to the rank of Associate Professor.
- Dr. Umaru Bagampadde, the Dean, School of Engineering was promoted
- to the rank of Associate Professor.
- Dr. Julius Butimme (Electrical and Comp Eng) was appointed Chair, Dept. of Electrical and Computer Eng.
- Dr. Henry ALinaitwe was appointed Deputy Principal
- Dr Moses Musinguzi was appointed Dean School of the Built Environment
- Dr Lydia Mazzi Kayondo, Dr Lilian Namuganyi were promoted to the rank of lecturer
- Mr. Edmund Tumusiime was appointment to the rank of Assistant Lecturer.
- Mr Michea.l Lubwama, Mr Arthur Asimwe, Mr Cosmas Mwikirize, Maximus Byamukama and Mr Hillary Kasedde were promoted to the rank of Assistant Lecturer.

#### Table format Promotions

Department	Associate Professor	Senior Lecturer	Lecturer
Civil and Environmental Engineering	• 1 Promoted	• 3 Promoted	• 2 Promoted
Electrical and Computer Engineering	• 1 Promoted	• 1 member promoted	• 2 promoted



	<ul style="list-style-type: none"> <li>• 1 is under external vetting</li> </ul>	<ul style="list-style-type: none"> <li>• 1 member awaiting vetting</li> </ul>	
Mechanical Engineering	<ul style="list-style-type: none"> <li>• 1 is under external vetting</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• 1 promoted</li> </ul>

### *Resignations/Retirements*

Department	Civil and Environmental Engineering	Electrical and Computer Engineering	Mechanical Engineering
Professors			
Assoc Professors			1
Senior Lecturers	3	1	
Lecturers	3		
Assistant Lecturers			
Teaching Assistants			
Staff on Contract with the College	1		
Technicians	2		

### **Resignations**

- Dr Charles Niwagaba resigned from the position of Chair, Dept. of Civil Engineering.

## **2.4 PHD Graduates**

Micheal Kizza, Charles Otine and Lydia Mazzi Kayondo graduated with PhDs

### **Micheal Kizza**

Mr (now DR) Micheal Kizza successfully defended his PhD on May 25, 2012. The defence, which took place in the CEDAT it was agreed that he had convinced the panel and he was declared Doctor. His research is titled Uncertainty Assessment in Water Balance Modelling for Lake Victoria

### **Lydia Mazzi Kayondo**

On Wednesday 7th November 2012, two members of Staff from the College of Engineering, Design, Art and Technology, Mr. Charles Otine and Ms. Lydia Mazzi Kayondo successfully defended their PhD research theses.

Dr. Kayondo defended her PhD research thesis, entitled Geographical Information Technologies – Decision Support for Road Maintenance in Uganda at 9:00 am in the CEDAT conference hall

**Charles Otine**

Dr. Otine defended his research Thesis entitled HIV Patient Monitoring Framework through Knowledge Engineering HIV Patient Monitoring Framework through Knowledge Engineering at 2:00 pm at the same venue on Wednesday 7th November 2012

## 2.5 PHD Defence

**Abraham J. B. Muwanguzi** successfully defended his Doctoral Thesis entitled “*Investigating the Parameters that influence the behaviour of Natural Iron Ores during the Iron Production Process*” in Sweden

**Joshua Mutambi** successfully defended his Doctoral Thesis entitled “*Stimulating Industrial Development in Uganda through Open Innovation Business Incubators*” on November 28, 2013.

**Julius Ecuru** successfully defended his Doctoral Thesis entitled “*Unlocking Potentials of Innovation Systems in Low Resource Settings*” on November 28, 2013

## 2.6 Innovations in Teaching and Learning

- During the last year, MTSIFA has made significant leaps in towards realizing her academic goals. In terms of teaching and learning, MTSIFA placed special emphasis on consolidating graduate programs (MAFA and PhD) by inviting experts in the field of Contemporary African art history and art criticism from partner institutions in USA, to spend time with our graduate students to engage them in methods and theory in Art history seminars and scholarly writing. Prof. James Elkins, from the School of the Arts Chicago, and Prof. Sidney Littlefield Kasfir, Professor Emeritus at Emory University, Department of Art History, came to MTSIFA, as visiting Professors.
- A number of smart boards have been installed in classroom. The boards have replaced blackboards. The Department of Architecture and Physical planning is the first beneficiary of this new mode of delivering lectures.
- Number of lecturers using advanced technologies in teaching and learning has increased by over 90%. All Departments have at least two power point projectors.

Lecture rooms have been fixed with overhead projectors and white hanging screens. Where illustrations are to be made using chalk, the college is now providing dustless chalk.

- Many staff members use direct lecturing, tutorials and laboratories in teaching. Although laboratory space is still a challenge, there has been general improvement in the laboratories after getting new equipment from Projects like Sida/SAREC, the Presidential Initiative on Science and Technology, MSI in Environmental Engineering, CREEC, NOMA, etc. Some Departments are planning to commercialize the labs so that they become self sustaining without compromising the practicals for students. CREEC is to partner with the Uganda National Bureau of Standards so the government agency can certify CREEC as a laboratory for testing solar equipment on behalf of UBOS.
- There are some courses conducted through e-learning especially the e-labs component. The college now has over 30 ilabs (internet laboratories) through which students are able to conduct experiments. Students of Computer Engineering, Telecommunications Engineering and Electrical Engineering are benefiting from these e-labs.
- The number of industry partners co-supervising students on industrial attachment has also increased by over 60%.
- There has been a general increase in the use of wireless network by students since this facility is now available around CEDAT.
- Online access to Exam results and coursework by students has now improved.
- Use of improved audio and video systems during PhD Viva Vorce has improved with the availability of a modern conference hall by CEDAT.
- Use of GIS in research using the new GIS Lab at CEDAT has increased especially by the Graduate students.
- Use of MUELE in teaching and learning has continued.
- Use of the Drop Box, Wikispaces were explored for teaching purposes.

## 2.7 ICT and Laboratory Infrastructure

- Operationalization of additional student computer laboratories
- Installation of additional Ceiling Mount Projectors for lecture rooms in the CEDAT New Building
- Further extension of network access by wired and wireless means at the CEDAT premises (Technical Labs, Basement Level and MTSIFA)
- Upgrading of network and server infrastructure to cope with increased network penetration as a result of installation of fixed and wireless access points and
- Implementation of a comprehensive maintenance and servicing program CEDAT ICT assets, including printers, computers, Air Conditioners, Switching equipment and UPS Units
- **Telecommunications laboratory** was fully equipped with work benches. Student are able to do experiments.



- **The Environmental Engineering Laboratory** was also equipped



- **GIS Laboratory** has been equipped and turned into a centre. CEDAT now hosts the university GIS centre.
- **Surveying laboratory**

The department has got new equipment for students to use. This includes Total Stations among other things.

- **Mechanical engineering laboratory** has also been equipped.

## 2.5 Facility development

- The college in 2013 continued to equip her laboratories. The Telecommunications Lab, environmental Engineering laboratory, Mechanical Lab, Architecture studios and computer laboratories, Art studios at MTSIFA have been equipped through the Presidential Initiative Fund.
- Smart-boards, Projectors and screens have been mounted in the lecture rooms.

## 2.6 Student Services

Students of the college are empowered to carry out different activities throughout the year. The college allocated Shs 25 million to student activities. These activities include the Open Day, Sports Gala and conferences.

## 3.0 Research and Innovations

The College of Engineering, Design, Art and Technology (CEDAT) is a renowned centre of excellence in the area of technology. The students and lectures of the College have been involved in research which has greatly contributed to the promotion of the University's mission-To provide world class innovative teaching, learning, research and services responsive to national and global needs.

The Government of Uganda earmarked Shs25 billion to support research and innovation in the University over a period of five (5) years. This has been code-named the Presidential Initiative.

### 3.1 Awards

- Dr. M. K. Musaaazi received an Independence Day Medal from the President on October 9, 2013 for his continued contribution to society through the Makapads project.
- Dr. M. K. Musaaazi also won the Siemens Stiftung Global Innovations Award for the MakaPads. The award ceremony took place on October 30, 2013 in Nairobi. Dr Musaaazi came second, a position that earned him and the project Shs103 million, a prize dubbed "Empowering People Award". Dr Musaaazi has continued to shine because of his innovation of the biodegradable sanitary towels. The pads have reduced absenteeism in rural schools and created employment for many women thus improving house hold incomes.
- Dr John Baptist Kirabira and Dr Samuel Baker Kucel on Friday 30th October 2013 received awards for their contribution to the social and economic growth of the country and attainment of the Millennium Development Goals. The two received the Pearl of Africa Lifetime Achievements Awards (PALITA) Award at a ceremony presided over by the Prime Minister Amama Mbabazi.
- Dr. C. Niwagaba won the Melinda Bill gates prize for producing a prototype of a toilet suitable for slum dwellers.
- Two senior academic staff, Dr. Angelus Angelo Kakande, and Dr. Amanda Evassy Tumusiime were among five Makerere academic staff out of the 25 postdoctoral African scholars that emerged winners of the prestigious African Humanities Program Postdoctoral Fellowship 2013. Dr. Angelo Kakande's research focuses on: 'Surviving as Entrepreneurs: Contemporary Ugandan Art and the Era of Neoliberal Reform'. The research examines ways in which these reforms have shaped contemporary art in Uganda to broaden the available knowledge on the relationship between the Structural Adjustment Program (SAP) and contemporary African Art. Using historiography and the social theory of art, Angelo interrogates the proposition that although neoliberal reforms tend to erode formal art institutions, they do not exactly prevent an alternative

cultural discourse from evolving and re-directing the making, meaning and function of art. Dr. Angelo Kakande is the Chair, Department of Industrial Arts and Applied Design.

- Dr. Amanda Tumusiime's research is about 'Art and Gender: Imag[in]ing the new woman in contemporary Ugandan Art'. She observes that patriarchal perceptions have continued to influence the kinds of images through which women are represented in Ugandan art. Such images of women in Ugandan art serve a political purpose, the most important being to silence the voices of women. Consequently, her proposed study intends to show how African women in general and Ugandan women in particular are 'othered' in cultural discourse authored by men and expressed through the medium of art. Dr. Amanda Tumusiime is a lecturer in the Department of Visual Communication Design and Multimedia.
- In addition, Assoc. Prof. George Kyeyune were recipients of the British Academy Commonwealth Fellowships for 2013.
- In the same year, Dr. Kyeyune was also granted an American Fulbright Fellowship to spend 3 months at Emory University to benchmark the graduate programs in art and art history.
- Makerere students win Microsoft Imagine Cup  
For the first time in the history of the Microsoft Imagine Cup, two teams from Africa won prizes at the worldwide finals. Team Code8 from Makerere University that represented East Africa in the just concluded 11th annual Microsoft Imagine Cup competitions in Russia received the Women's Empowerment Award presented in partnership with UN Women. While Team Masked Ninjas from Egypt received an AFT Excellence Award. The Code8 team consisting of Brian Gitta, Joshua Businge (both first year Computer Science students) Simon Lubambo, a fourth year Electrical Engineering student and Josiah Kavuma a third year Information Technology student, developed a Windows phone application named Matibabu that diagnoses malaria without pricking the body to draw blood. Instead, a custom piece of hardware (matiscope) is connected to the windows phone, then a light sensor is passed over a finger to diagnose malaria in the shortest time possible. After diagnosis, the results are displayed on the phone screen.

### 3.2 Internationalization

Dr. Philip Kwesiga was one of 3 Senior Staff at Makerere University who took part in a four-months APEX Residency Fellowship for Senior Administrators at a US institution of Higher Learning. He took his residency at St. Mount Claire University in Virginia. The residency exposed him administrative processes in US institutions. Mr. Bruno Sserunkuuma, a Lecturer in the Dept of Industrial Art and Applied Design, participated in an International Arts and Crafts Festival in Muscat, Oman in February 2013, and in May, he participated and presented at the Tehran –Tabriz International Congress on Features, Characteristics, and Cultural and Economic Contribution of Art and Handicrafts, organised by Tabriz Islamic Art University in

Tehran, Iran, in May 2013. Dr. Lilian M. Nabulime was invited to Arizona State University to give a lecture on Art and HIV/AIDS from a Ugandan perspective. She also mounted an exhibition of her sculptures at Promega International, Wisconsin, USA. Mr. Sserunjogi Patrick, an Assistant lecturer in the Department of Visual Communication Design and Multimedia, and a PhD student participated in an International Design Conference organised by the University of Botswana, Faculty of Engineering and Technology (Dept. of Industrial Design & Technology) held in September 2013, where he shared his on-going research on 'Visual Social Semiotics: an Integral Part in the Design Process of Products User Value'. Dr. Venny Nakazibwe, Dean MTSIFA, participated in the College Arts Association International Conference on Global Art Histories held in New York in February 2013; the International Design Conference held in May 2013 in Khalmar Sweden, organised by *Cumulus*, an international network of Deans for Art and Design Schools around the world. In July 2013; American Art in Dialogue with Africa Symposium held in Washington DC in October 2013. Dr. Philip Kwesiga, Dr. Venny Nakazibwe, Mr. Balaba and Mathias Tusiime participated in the Arts in Medicine Summer Intensive Program at the University of Florida which exposed them to ground-breaking scholarship in this distinguished field of study. With this background, MTSIFA successfully organised the 1<sup>st</sup> International conference on Art in Medicine at Makerere University which took place on 4-5 October 2013. In November, Dr. Kizito Maria Kasule, Chair Dept. of Fine Art, participated in a one-month Art Residency at the Slade School of Art, London UK.

### **Collaborations**

Katrin Peters-Klaphake, the gallery Curator was invited to participate in the Portfolio meeting held in Lagos Nigeria which was the next location of the exhibition. This was in correspondence with the Exhibition dubbed WITNESS/TEMOIN. This exhibition gave the IHCR Art Gallery a face lift and recognition internationally.

Currently Katrin is attending a two weeks meeting of international curators from all over the continent in Germany.

### **Makerere Art gallery- National gallery Zimbabwe collaboration**

Mukyala Hasifa, the gallery Administrator was invited by the National Gallery of Zimbabwe on an exchange programme. This involved training in conservation, restoration and storage of permanent art works and the heritage as a whole. The exchange programme is intended to support capacity building of the IHCR staff.

## **3.3 Research Grants**

### **The Edu-link Project**



MTSIFA together with the Politecnico di Milano- Italy, Delft University Netherlands, Cape Peninsula University of Technology South Africa, University of Botswana and Nairobi University won a EuropeAid Grant worth EUR 487,866 under the ACP-EU Cooperation Programme in Higher Education – EDULINK II.

### **United Nations Grant**

Grantee: CREEC

Grant name: Enhancing capacity of regional testing and knowledge centres in Uganda-CREEC

Intervention: standards and testing development activities for stoves

### **GIZ contract**

Intervention: Data collection, processing and analysis for the energizing development (EnDev) solar market development activities as well as technical quality control on selected solar PV installations

### **UNIDO contract**

Intervention: Renewable energy powered productive activity unit (REPAU) and Business Information Centre (REBIC) . CREEC is the UNIDO renewable energy office since August 2013.

## **3.4 Events in line with research**

### **CEDAT Open Day**

The college held its annual college open day and exhibition on October 18-19, 2013. The event, used to show case research output in the college was graced by the present of the Speaker of Parliament Rebecca Kadaga. She commended the students of the College of Engineering, Design, Art and Technology for the innovations exhibited. She observed that Uganda’s transformation would rely on cutting edge technologies such as those exhibited during the two-day event (Oct 18-19). “A tour of the exhibition tents tells of a generation of students that is going to change Uganda. It is these innovations that the government wants to grow. Developed countries are where they are because of innovations in science and technology. We need to industrialize the economy and this is the role of you the young generation of scientists,” Hon. Kadaga said. “I strongly commend Makerere University and all other research led academic institutions for their great contribution to curbing unemployment levels by equipping the youth with knowledge and skills relevant to Uganda’s development.”



She said the country needs to industrialise and that the role of seeing this happen lies with young innovators.

“With all this growing technological innovation by Ugandan youth and the academia, the country’s unemployment rate is projected to drastically decrease in the nearby future.” She pledged government’s continued support to science and technology innovation.



### **Energeo summer school 2013**

The Department of Geomatics and Land Management partnered with the University of Salzburg, Austria to host the 2nd Energeo Summer School from the 4th – 13th March 2013. The summer school was hosted under the auspices of the framework of the FP7 project “Earth Observation for monitoring and assessment of the environmental impact of energy use (EnerGEO)”. The summer school attracted about 25 participants from Austria, Italy, Netherlands, Ethiopia, Kenya, South Africa and Uganda. It was opened by Dr. Henry Alinaitwe on behalf of the Vice Chancellor. The summer school was motivated by the desire to integrate Geospatial sciences in the modeling of renewable energy potential in Africa.

The summer school began with a panel discussion on energy policies and in the following days included practical sessions on assessment methodologies, various renewable energy models from the perspective of Geographical Information Systems and Satellite Remote Sensing technologies.

As part of the summer school, a field visit was made to Kitezi landfill, the CREEC energy Kiosk in Mukono, Bujagali hydro power in Jinja and Mabira forest to get an appreciation of the available renewable energy potential in Uganda.

### **CRTT takes part in Science and Technology Exhibition in Dar es Salaam**

The Centre for Research in Transportation Technologies (CRTT) represented Makerere University at the 8th Higher Education, Science and Technology Exhibition in Dar es Salaam, Tanzania. The group exhibited a model of the KAYOOLA BUS.

The Kayoola will be the first Ugandan-made electric bus. It is the first clean-technology interception of public space mobility, using Lithium ion batteries as the main power source, thus ensuring that air and noise pollution within the City are curbed. It also has solar panels on the roof that harvest solar energy used to charge the batteries thus extending their range. The development of this technology provides unrivalled opportunities for high technical employment especially for the youth who are the core technical developers. The exhibition was opened by the Vice President of the Republic of Tanzania, Dr. Mohammed Galib Bilal on May 21, 2013. Also present was the Minister of Education and Vocational Training Hon. Dr. Shukuru Kawambwa.



*Africa Junior, a graduate research at CRTT explains to the Vice President of Tanzania, Dr Mohammed Galib Bilal how the Kayoola works on May 22, 2013.*

### **Research Dissemination: Production of Porcelain Insulators from Ceramics materials in Uganda**

At a workshop held on June 6, 2013 at Makerere University College of Engineering, Design, Art and Technology (CEDAT), Mechanical Engineering, Dr. Yasin Naku Ziraba of the Innovative Systems and Cluster Program challenged researchers to always utilize research finding to benefit the country. He was speaking at a research dissemination workshop for Dr Peter Olupot, who was sharing his research findings on the “Development of an appropriate technology for production of electric porcelain insulators from ceramic minerals in Uganda”. He advised researchers to ensure that the research they carry out involves the final end users for whom ideas are designed, in what he called Cluster Team Action. Dr Peter Olupot’s research paper presented results of experimental work done on samples of porcelain insulators made from locally sourced minerals in Uganda and compared the properties of these samples to international standards for insulation materials. The presentation was a result of the post doctoral research work supported by the European consortium of the Volkswagen Foundation, the Nuffield Foundation and the Calouste Gulbenkian Foundation established under the joint initiative on “Research and Training

Fellowships for Junior African Researchers in the Engineering Sciences”. Insulators are used in electrical equipment to support and separate electrical conductors without allowing current through themselves.

### 3.5 Research areas

- **The School of Engineering is undertaking research endeavors in several innovative areas. The following can be noted:**
- Staff won two projects from the CrossRoads Innovation Challenge fund in the following areas:
  - Use of Termite saliva in improving soil for gravel roads
  - Use of PROBASE for stabilizing soil for gravel roads
- Research Output completed by staff
  - Bio-energy Research products under GTZ
  - Gasifier stoves project by the World Bank
- Innovative research findings
- Improved technologies in waste management such as ecological sanitation (ECOSAN),
- Improved road technologies using students during workshop practice,
- High value potential local raw materials such as kaolin,
- Application of ICT in critical areas such as environment.
- Several Publications in both peer reviewed journals and peer reviewed conference proceedings.
- Staff from the college have increased participating in consultancy services to community.
- Innovative contributions to National Development and Poverty Reduction
- Design of an Electric car (KIIRA EV) which uses electricity instead of fossil fuel. Work for design an electric bus. There are plans of constructing an assembling plant. Exhibition of the Electric car has begun outside the university with the latest having been done in Arua and other northern Uganda Districts.
- The same team is designing and assembling a hybrid vehicle (running on both fuel and batteries). Designs are expected to be complete soon.

### 3.6 Research projects

These projects include;

#### 1. Centre for Research in Transportation Technologies (CRTT)

The Vehicle Design Project has grown into CRTT and has received funding to the tune of Shs150 billion from the government. The money is spread over a period of 5 years. CRTT is applying contemporary technologies to develop sustainable transportation solutions for Uganda and Africa.

The vision of the project is to be at the forefront of research and development of green transport technologies in Africa, while its mission is to carry out research aimed at

development of cost effective and environmentally friendly transportation technologies for Africa.

The project last year started working on another vehicle after the completion of the Kiira EV. This time round, the team is working on computer vehicle- 36- seater bus code named KAYOOLA.



*A model of the KAYOOLA*

2. In addition, ground-breaking innovations like the **MakaPads** are ensuring that students in rural Uganda have access to free sanitary towels. Makapads are sanitary pads made from papyrus and paper waste. The fibers are beaten, dried and softened without the use of any electricity. They are assembled with moisture barrier and mesh covering. MakaPads are the only sanitary pads made in Africa, from local and natural materials, using local machinery in a cottage industry setup. The consequences have been a positive impact to society as: Schoolgirls have been able to access sanitary pads at a much lower cost, Economically disadvantaged people (especially single mothers, refugees, former abductees of LRA living with HIV/AIDS, privately sponsored Makerere University students and rural people) are employed in the various production processes.



3. The **Low Cost Irrigation Project**, which has designed a pump that will ensure that our farmers can produce crops all year round. The rainfall patterns have become unpredictable over the last few decades because of climate change. This has often resulted in frequent crop failure and widespread food shortages, famine, death and widespread poverty and thereby slowing development/ economic growth. Through this project farmers in rural areas have been helped to start irrigating their crops.





The Centre is working towards reducing the usage of paraffin fuelled lamps to light people's houses during night time for social activities, studying, cooking and income generating activities. These "tadoobas" are emitting harmful combustion gases and thereby creating indoor air pollution. Using solar photovoltaic systems to light houses and businesses may greatly increase indoor air and health of people involved. Also it creates independence from the unreliable electricity grid which suffers from power cuts due to various reasons.

## **7. Innovation Systems and Clusters Programme –Uganda (ISCP-U)**

The main objective of the project is to make Uganda's businesses more competitive locally and globally, through innovations as well as Cluster Initiatives which bring together geographically co-located firms. There are 22 operational clusters and 8 newly approved Clusters located all over the country with membership levels ranging from 30 to over 300 members, representing various sectors of the economy including agriculture, food processing, manufacturing, service sector and Information and Communication Technology. Given the opportunities for competitiveness and innovation and strategic linkages, cluster firms have been able to penetrate bigger and outside markets due to increased value addition, innovative interventions and research as well as process innovations. Clusters such as Fruits and Vegetable, Kayunga Pineapple, fish farming, garments and textile and basketry serve various export markets such as the UK, Rwanda, Congo, Sudan, Tanzania, Kenya, Canada as well as the Local Tourist markets. Kayunga Pineapple Cluster also supplies fresh fruit up to 3 tonnes per month to the School of Food Engineering and Bio Technology. Other clusters include; Maize floor cluster, Lira bee cluster and Lake Katwe salt cluster.

## **8. Centre for Technology Design and Development**

This Project was established in 2002. The main activities of CTDD are development and application of innovative technology, research and technology transfer with the aim of uplifting social-economic development of Uganda in sustainable manner. The CTDD is the backbone link between the community, industry and CEDAT. Although Uganda is endowed with abundant natural resources, poverty still persists, particularly in the rural areas. The Government of Uganda, over the past decade put in great effort to improve the standard of living of the rural communities. However, this effort has not been accompanied by a matching transfer of technology to the communities. The CTDD would like to develop capacity in technical, socio-economic, cultural and political aspects of technology transfer from other countries to Uganda, and also within different parts of Uganda.

## **9. iLabs@MAK**

The project last year organised *The Science and Technology Innovations Challenges 2012*. As part of the ongoing effort to promote science and technology incubation through problem based learning in Ugandan secondary schools, the iLabs@MAK Project held the Science and Technology Innovations Challenges, involving 11 schools from 3 different regions of the country: Northern, Central and Western. Regional competitions were held, with the winners selected to participate in the Grand National Challenge. The schools showcased robotics projects and partook of a mobile phone quiz and an assembly/disassembly challenge. In addition to the support from the presidential innovations fund, iLabs@MAK obtained support from Huawei Technologies and Uganda National Council for Science and technology, who provided awards for the winning teams.

The Grand Challenge involved seven schools, Ntare School, Maryhill High School, King's College Budo, Makerere College School, St. Mary's College Kisubi, Dr. Obote College Boroboro, and Lango College. The schools presented one robotics project, and took part in the mobile phone challenge. St. Mary's College Kisubi emerged victorious, winning the grand prize of a fully connected e-lab with 20 computers, offered by Huawei Technologies.

The Makerere University iLabs Project (iLabs@MAK) was established in 2005 to principally undertake research in the development and deployment of iLabs (Internet Laboratories) to support curricula of the Department of Electrical and Computer Engineering at Makerere University. This would ultimately address the dearth of conventional laboratory facilities experienced in Universities throughout Africa. The Project is implemented in collaboration with Massachusetts Institute of Technology (MIT), Obafemi Awolowo University (OAU) of Nigeria, University of Dar-es-Salaam (UDSM) and Carinthia University of Applied Sciences (CUAS) of Austria. Since August 2008, twenty six (26) online laboratories have been developed; with over 1,000 students at CEDAT utilizing the iLabs Infrastructure at MAK. With support from the presidential innovations Project, iLabs@MAK has over the past year expanded its activities to include:

- i. Outreach to secondary schools to promote technology incubation and problem- based learning.
- ii. Development of interactive multimedia courseware to support the basic science curricula in secondary schools
- iii. Extension of iLabs to other public Universities in Uganda

## **10. Industrial Parks Project**

The Industrial Parks project aims at building and developing business parks, where Small Medium Enterprises (SMEs) can be able to operate and function well. The Gatsby Trust Fund of the College of Engineering Design Art and Technology developed a similar Park in Mbarara and Jinja Districts. These parks will then be replicated in different parts of the

country in order to give the SMEs a favourable working environment and hence boost their businesses.

11. The School of Engineering is undertaking research endeavors in several innovative areas. The following can be noted:

- Staff have won two projects from the CrossRoads Innovation Challenge fund in the following areas:
  - Use of Termite saliva in improving soil for gravel roads
  - Use of PROBASE for stabilizing soil for gravel roads
- Research Output completed by staff
  - Bio-energy Research products under GTZ
  - Gasifier stoves project by the World Bank
- Innovative research findings
  - Improved technologies in waste management such as ecological sanitation (ECOSAN),
  - Improved road technologies using students during workshop practice,
  - High value potential local raw materials such as kaolin,
  - Application of ICT in critical areas such as environment.
- Several Publications in both peer reviewed journals and peer reviewed conference proceedings.
- Staff from the college have increased participating in consultancy services to community.
- Innovative contributions to National Development and Poverty Reduction
  - Design of an Electric car (KIIRA EV) which uses electricity instead of fossil fuel. Plans are underway to design an electric bus by 2013.
  - Design of a Low Cost Irrigation Pump.

#### **4.0 Knowledge sharing and transfer partnerships**

- Collaborative research with University of Dar-es-Salaam and University of Eduardo Mondlane.
- Held a research collaboration meeting at Dar es Salaam University of Tanzania in June 2013.
- Exchange of staff with other universities in the areas of teaching, vetting of graduate theses, external examination, opponents during viva voce sessions, and others .
- Joint PhD supervision with Professors from universities in Sweden, Lund, LTH, and Blekinge.
- Continued offering the joint masters programme in Urbanism with five universities of Makerere, Ardhi, Addis Ababa, Jomo Kenyatta and Nairobi University all under the NOMA programme.



- Staff are serving on several Boards of Government parastatals like the Uganda National Roads Authority.
- United Nations Grant  
Grantee: CREEC  
Grant name: Enhancing capacity of regional testing and knowledge centres in Uganda-CREEC  
Intervention: standards and testing development activities for stoves
- GIZ contract  
Intervention: Data collection, processing and analysis for the energizing development (EnDev) solar market development activities as well as technical quality control on selected solar PV installations
- UNIDO contract  
Intervention: Renewable energy powered productive activity unit (REPAU) and Business Information Centre (REBIC) . CREEC is the UNIDO renewable energy office since August 2013.
- **High level Norwegian delegation visits CEDAT**

CEDAT, as one of the beneficiaries of support from the Norwegian government on March 5, 2013 received a high level delegation, which was visiting the university to assess the impact of their support to the University.

The NORAD delegation, led by Paul R. Fife visited CEDAT at 3pm. They were accompanied by the Director of Planning and Development. At CEDAT, the group was received by the Deputy Principal of the College, Dr Mackay Okure and the Dean of the Margaret Trowell School of Industrial and Fine Arts, Dr Venny Nakaziwe. They visited the Telecom Laboratory, the Environmental Engineering Laboratory and paid a courtesy call on the Principal. All these laboratories as well as administrative offices are in the new building that was donated by the government of Norway in 2009 and commissioned by the then Ambassador H.E Bjorg Leite.

The delegation commended CEDAT for putting the building to good use. The building houses equipment and Computer laboratories, lecture rooms, administrative offices, and offices of teaching staff for the departments of Architecture, Electrical and Computer Eng, Geomatics and Land Management, Construction Economics and Management and the Head of Civil Engineering.

- **Makerere signs MoU with Bar Ilan University, Israel**

Makerere University on April 5, 2013 signed an MoU with Bar-Ilan University of Israel to collaborate in areas of joint research, student and staff exchanges. Bar-Ilan University was represented by Professor Benjamin Ehrenberg, the Director in charge of Research at the university. He was accompanied by his wife Ms Varda Ehrenberg. The MoU was signed by the Deputy Vice Chancellor (AA) on behalf of the Vice Chancellor.

Professor Benjamin Ehrenberg and Makerere signs MoU with Bar Ilan University, Israel September 7, 2012 his wife visited CEDAT on Friday at 9:30am before the signing of the

MoU. They were received by the Deputy Vice Chancellor (F&A), Principal of the college, Deans and Heads of Department.

Bar-Ilan University is interested in collaborating with CEDAT, CONAS and CHS. Prof. Ehrenberg told the CEDAT administration that they are interested mainly in areas of Engineering, health and actual sciences. In Bar-Ilan University, the following academic units will be part of the collaboration: Faculty of Exact Sciences; Faculty of Life Sciences; Faculty of Medicine and Faculty of Engineering. His visit to CEDAT was motivated by the desire to see the college's research interests.

He was impressed by the research in Transportation technologies and he shared with the administration some of the transportation research Bar-Ilan is engaged. He shared with the group pictures of an electronic car that a professor in his university has assembled and pointed out that this would be a good area of collaboration. The car used Aluminium batteries invented by the professor of chemistry.

### **Tullow collaboration**

A senior official of Tullow Oil visited the Office of the Principal and discussed opportunity for collaboration in developing courses in occupational health and safety, either as part of the current programmes offered at CEDAT or as short refresher courses. Tullow also offered to sponsor CEDAT staff to take courses in this important area. They also expressed willingness to providing support in developing the courses and piloting the phenomenon at CEDAT. Tullow will return with an MOU for signing between the two parties.

### **Collaboration with Tottori University Japan**

A delegation from Tottori University in Japan was in Makerere University on a week-long visit. The delegation comprised of the Vice President of Tottori University, Prof. Honna Toshimasa; the Director Global Human Resource, Prof. Yamamoto Sadahiro; Prof. Kurimasa Akihiro; the Director International Affairs, Prof. Takeda Hiroshi and the Coordinator Global Human Resource, Dr Kalemelawa Frank.

They were received by the Ag. Principal, Dr Henry Alinaitwe; the Dean School of Built Environment, Dr Moses Musinguzi and the head Dept. of Architecture and Physical Planning, Dr Stephen Mukiibi.

The delegation visited the university to check on the progress of the three Japanese students from

Tottori University, who are on an exchange programme and to explore ways for further collaboration with Makerere University. The students are hosted in CEDAT, CHUSS, and COBAMS. The student at CEDAT is in the Department of Architecture and Physical planning.

The delegation informed the meeting of the opportunities for collaboration with Tottori University, which include staff and student exchanges as well as opportunities for scholarships from the Japanese Government. The students however have to pay for the air ticket.

Another area envisaged for collaboration is a fiveyear project in which 1,000 Africans, including Ugandans will study at Tottori University.

## 4.1 Events (general)

### **iLabs@Mak concludes search for best innovators**

Dr Obote College Boroboro edged 17 other schools to win this year's Science and Technology Innovations Challenge, hosted by iLabs@Mak Project, one of the research projects at the College of Engineering, Design, Art and Technology.

The colourful ceremony, presided over by the Minister of Education and Sports, Hon. Jessica Alupo saw Dr Obote College Boroboro winning the grand science and Technology Innovations Challenge 2013 beating seven other school that earlier qualified for the final completion.

This year's Science and Technology Innovations Challenge, organised by the iLabs@Mak project saw 18 schools taking part. The regional competitions were won by Ntare School and Mary Hill (Western Region); Lira Town College and Dr Obote College Boroboro (Northern region); Makerere College School,

Mt. St. Mary's College Namagunga, St. Mary's College Kisubi and Kings College Budo (Central Region). The competition involves building robots that address society problems, disassembling and assembling of mobile phones and a question and answer session, testing their understanding of the world of science.

The winning school built a robot that demarcates pitches. The robot is programmed to demarcate a football pitch, a cricket march, and a basketball pitch etc. Name it and the robot will do a perfect job.

Dr Obote College Boroboro, Lira walked away with 20 computers for the school's e-learning and 8 smart phones all courtesy of Huawei, the biggest sponsors and supporters of the science and technology innovations challenge.

### **Officers from Rwanda National Police College impressed with CEDAT research**

The 35 police officers from 12 African Countries including Burundi, Rwanda, Uganda, Somalia, Zambia among others visited CEDAT as part of their tour of Uganda. The officers were on a Senior Command and Staff Course at the Rwanda National Police College.

Of interest were the Kiira EV and the MakaPads Project. The two research teams shared with the officers the technologies they use. Dr Moses Kiiza Musaaazi also shared with them the technology of making inter-locking bricks out of soil and cement. These bricks are cost effective to use in construction and are easy to make. The officers were greatly impressed with the technologies. They called on Dr Musaaazi to extend the innovations to their countries so that the poor can benefit.

### **CEDAT student body gets new leadership**

CEDAT students on April 15, 2013 got new leaders at a swearing-in ceremony witnessed by students and staff of the college. The ceremony which took place in the Conference Hall saw the different associations get new leaders. The Principal, Assoc. Prof. Barnabas Nawangwe, who was the chief guest at the swearing-in and handover ceremony congratulated the new leaders upon being elected but also appreciated the contribution of the outgoing leaders to the college. He described the old guard as the most organised and cooperative student leadership he has worked with so far.

### **CEDAT gets new Deputy Principal**

The contestants for the position of Deputy Principal of CEDAT took to the podium to deliver the plans they had for CEDAT. Dr Allan Birabi and Dr Henry Alinaitwe both delivered their plans in the presence of CEDAT staff and a representative of the University Registrar, Mr Feni. The lively discussions, which took place in the Conference hall, were proceeded by an election on February 11. Dr Alinaitwe was later appointed Deputy Principal of the College.

### **Israel Ambassador visits CEDAT**

The College on April 24 hosted the Israel Ambassador to East Africa, H.E. Gil Haskel. He was received by the Principal, Dr Barnabas Nawange, the Deputy VC (F&A) Prof. Tickodri, the Head of Electrical and Computer Engineering, Dr Julius Butime and members of the communication office. The Ambassador was accompanied by officials from the Public Relations Office including the Senior Public Relations Officer, Ms Namisango Ritah. The Ambassador's visit is a follow up on the MoU that Makerere Israel Ambassador visits CEDAT April 24, 2013 University signed with Bar ilan university Israel three weeks ago. H.E. Gil Haskel reaffirmed his country's commitment to working with staff of Makereke University in areas of research. He said researchers in Israel would be happy to share their expertise and experience with Makerere researchers as well as learn from them. During his short visit to CEDAT, Amb Gil Haskel toured the Kiira EV before proceeding to the School of Food Science and technology. Prior to visitng CEDAT, H.E Haskel paid a courtesy visit on the Vice Chancellor of the University, Prof. John Ddumba-SSentamu.

### **CEDAT staff credited for designing Shs 50,000 note**

*Shs50,000 is third most beautiful in the world*

Uganda's Shs50,000 note has been named among the nine most beautiful currences in the world. According to the International Bank Note Society (IBNS) ratings, the note's distinctly rich and well-design features, make it the third most beautiful currency in the world.

“Uganda's 50,000-shilling note

is a finely worked piece of currency with design features such as the watermark of the head of a crested crane, an outline of a map of Uganda

(highlighting the equator), the profile of man wearing Karimojong head dress, patterns based on indigenous basket work and, at the far right on the back, the Independence Monument...” read the IBNS

The statement also took notice of beautifully wrought silver-back mountain gorillas on the back of the note that scooped the 2012 banknote of the year award. The IBNS is a nonprofit educational organization that has been around

for over half a century. Its objectives are to promote, stimulate and advance the study, collection and dissemination of information related to paper money.

The award emanates from a competitive process that involves different countries from the four continents, ranged from Europe, Asia, Africa and the Middle East to North, South and Central America.

The Designing team

Among those involved in designing the new banknotes are

Uganda Peoples Defence Forces MP Gen Elly Tumwine, Mr Patrick Sserunjogi, Mr Emmanuel Mutungi, artist Raymond Nsereko, Mr Joseph Ssematimba and Dr George Kyeyune (of the Margaret Trowell School of Industrial and Fine Arts).

### **Activities at the Institute of Heritage Conservation and Restoration**

Exhibitions are at the core of teaching and learning in the art and design discipline, and the Institute of Heritage Conservation and Restoration has supported MTSIFA in this role. In the past year, IHCR organised nine exhibitions which have provided inspiration to our staff and students, other scholars at Makerere University and to the general public. The following were some of the highlights:

#### **January 18<sup>th</sup>- 31<sup>st</sup> 2013**

##### **Benet Art Project (Rooted)**

This was an international installation on the heritage and culture of the Benet people with Dutch artists Iris Honderdos and Arno Peeters from The Royal Tropical Institute, The Netherlands in collaboration with Makerere University, Institute of Heritage Conservation and Restoration. The installation was first premiered on December 22<sup>nd</sup> in Kapchorwa where many VIP's were present. Paper presentations and traditional performances by the Benet spiced up the event.

The *Benet* people are a vulnerable group of Ugandans displaced from their ancestral land. Their stories and exhibits depict life as it was lived in the pre-colonial period, emphasizing on the pride and beauty of the beliefs, rituals and customs in those days.

#### **February 7<sup>th</sup>- March 7<sup>th</sup> 2013**

##### **“Different But One 17”**

This year's 'Different But One' was distinguished by its co-incidence with the 75<sup>th</sup> anniversary (platinum jubilee) of the Art school. This anniversary marked 75 years of artistic ingenuity which is a truly remarkable achievement for Ugandan artists and the Margaret Trowell School of Industrial and Fine Arts. This exhibition brought works of the past and present staff of MTSIFA and each exhibiting artists presented his /her earlier work alongside the most recent one.

With the transformation of the Makerere University into a College system of administration, MTSIFA is now an integral part of the College of Engineering Design Art and Technology (CEDAT). The anticipation is that, this newly formed nexus between art and technology will extend the creative boundaries of Different But One to greater heights.

It is a union of all themes meant to bring artists to work together as it is dubbed that we are different people, different attitudes towards work yet we can work together and it's annually organized by Rebecca Uziel, a Jewish born artist and curator.

**March 8<sup>th</sup>- 15<sup>th</sup> march 2013**  
**International Women's Day**

This was a participatory event which involved practicing female Artists from various Universities and galleries in and around Kampala. This event involved an Art exhibition and a collective mural painting with artists. It embraced the theme: The African Woman balancing home and career. This exhibition saw female lecturers and artists working together as a whole and using Art to communicate to the public.

**April 4<sup>th</sup>- May 20<sup>th</sup> 2013**  
**History in Progress (HIP) Uganda- Sketching a civilization**

Makerere University hosted an exhibition of photographs and drawings; drawings by Rumanzi Canon and photographs by Andrea Stultiens together with images published in the first decade of the 20<sup>th</sup> century. By presenting their artworks alongside the historic illustrations, Rumanzi and Stultiens suggest a dialogue between photography of early-twentieth century and their contemporary imagery.

The collaboration between these two (Ugandan and Dutch) artists started when they founded History in Progress Uganda (HIP), a platform that collects and shares historic photographs from and about Uganda. 'Sketching a Civilization' is an ongoing project exemplifying how material from the past can affect contemporary image making.

**July 12<sup>th</sup>- August 13<sup>th</sup> 2013**  
**Launch of Uganda Visual Artists and Design Association (UVADA)**  
**Alongside permanent collection exhibition**

This is a unique collaboration between Makerere University Art gallery and the Ugandan Artists Association. This event was the launch of the Association and its website; this was alongside a series of exhibitions from our permanent collection. This was in honor of Jonathan Kingdon a former Dean of the Makerere Art School and named after one building located at the art school.

**August 29<sup>th</sup>- 22<sup>nd</sup> September 2013**  
**Witness/ T`emoin**

Witness/Temoin focused on the African metropolis or 'megacity'. The exhibits reflected on immediate circumstances of this group of emerging photographers. The images dealt with a wide range of social issues that consider an inherited culture and history, as the photographers bear witness to the constant flux and changing cultures that define the 'megacity'.

This is the first exhibition by participants of the photographers' portfolio meeting, initiated by Simon Ndjami and Goethe- Institut South Africa in 2008. The portfolio meetings are held once a year in different cities on the continent. Photographers meet in group sessions and on a one on one basis with curators.

The next location of the exhibition and portfolio meetings were held in Lagos in October 2013 and Katrin Peters Klaphake, Curator Makerere Institute of Heritage conservation and Restoration, was invited for a jury meeting, which she attend.

**Feats of Uganda Pottery III: From Mud to Authenticity.  
September 26<sup>th</sup>- October 14<sup>th</sup> 2013**

The third edition of the ceramic exhibition featuring seven Ugandan artists was successfully held in the Makerere Gallery. This concept of Feats of Ugandan Pottery is a unique idea and the themes addressed every time are up graded through research to respond to modern demands and taste.

**Uganda Photo Press Award  
Winning Photos Exhibition  
October 18<sup>th</sup>-7<sup>th</sup> November 2013**

Every year the final exhibition showcases winning images from the competition, by photographers from all over the country. Through their eyes we can witness the events of the past year in Uganda. The 2013 exhibition also features historical images and multimedia documenting photojournalism's early days in Uganda. The Uganda Press Photo Award was created in 2012 to recognize the individuals who record the visual history of this country, working tirelessly and sometimes taking risk so that the rest of us can stay informed about what is happening. The award aims to promote the best of today's photojournalism in Uganda as well as encouraging a new generation of photographers. It also seeks to remind the viewing public of the importance of a vibrant press for democratic development. The Uganda press photo award was conceived by the foreign correspondents' association of Uganda and the Friedrich Ebert Stiftung. This year the second edition of UPPA, received many entries from all over the country. The panel of judges was composed of Carl De Souza (AFP), Katrin Peters-Kalphaken (Makerere University Art gallery/IHCR) and Thomas Mukoya (Reuters). MTSIFA encourages students to participate in such competitions and other events, where their academic output can be tested and judged by the international community of professionals. Papa Shabani, a third-year student won awards in two categories.

**The Poetic Line  
November 14<sup>th</sup>- 14<sup>th</sup> December 2013**

Makerere Art gallery/ IHCR presented this exhibition in collaboration with the Goethe-Zentrum Kampala/Uganda German Cultural Society and the Iwalewa-Haus Bayreuth displaying works of the Nsukka School, mainly drawings by artists like El Anatsui, Obiora

Udechukwu and Olu Oguibe. The works are part of the early Iwalewa collection gathered in the 1970' and 80s by the founder and art promoter Ulli Beier.

The Nsukka artists were and are a major group of artists in the modern Epoch in Nigeria, who are active in the International art scene to date linking the traditional past and present.

For more information: <http://www.goethe.de/kampala> and [Makerereartgallery.wordpress.com](http://www.makerereartgallery.wordpress.com)

## 5.0 Research Publications

A number of papers were published in 2013.

1. C.M. Abigaba, **R.N. Akol**, J. Butime, '*Dynamic threshold-based congestion control in wireless multimedia networks*', International Journal of Engineering & Technology, pp. 200-208, vol.2, No.3, June 2013. ISSN 2227-524X.
2. C.M. Abigaba, **R.N. Akol**, J. Butime, '*Integrated Services Congestion Control in Wireless Communication Networks*' International Journal of Innovative Research in Engineering and Science (IJRES), vol.9, No.2, September 2013. ISSN 2319-5665.
3. M.G. Kagarura, D.K. Okello, **R.N. Akol**, '*Evaluation of Spectrum Occupancy: A Case for Cognitive Radio in Uganda*', Accepted for publication in the proceedings of IEEE 9th International Conference on Mobile Ad-hoc and Sensor Networks (MSN 2013), to be held in China on the 11<sup>th</sup>-12<sup>th</sup>-December 2013.
4. **M. Okure**, **J. Ndemere**, "*Prospects and Limitations of Biomass Gasification for Industrial Thermal Applications in Sub-Sahara Africa*" Chapter 33 in "Climate-Smart Technologies: Integrating Renewable Energy and Energy Efficiency in Mitigation and Adaptation Responses." Leal Filho, W.; Mannke, F.; Mohee, R.; Schulte, V.; Surroop, D. (Eds.) Springer Science & Business, Jun 4,
5. Murray Muspratt, A., Nakato, T., Niwagaba, C., Dione, H., Kang, J., Stupin, L., Regulinski, J., Mbéguéré M., Strande L., 2013. '*Fuel potential of faecal sludge': Calorific value results from Uganda, Ghana and Senegal*. Journal of Water, Sanitation and Hygiene for Development. doi:10.2166/washdev.2013.055.
6. Tumwebaze K. I., Niwagaba B.C., Günther, I., Mosler, H-J., 2014. '*Determinants of household's cleaning intention for shared toilets: Case of 50 slums in Kampala, Uganda*'.



8. Habitat International 41, 108-113.
9. Tumwebaze K. I., Christopher G. Orach, C. G., Niwagaba C., Lüthi C., Mosler H-J., 2013. '*Sanitation facilities in Kampala slums, Uganda: users' satisfaction and determinant factors, Uganda.*' International Journal of Environmental Health Research, 23 (3), 191-204.
10. Nordin, A., Niwagaba C., Jönsson, H., Vinnerås, B., 2013. '*Pathogen and indicator inactivation in source-separated human urine heated by the sun.*'
11. Journal of Water, Sanitation and Hygiene for Development 3(2), 181-188.
12. **Kwesiga, P** (2013) '*Pottery function and Nkore social activity*' *Craft Research* 4: 2, pp. 223-244, doi: 10.1386/crre.4.2.223\_1
13. **Kwesiga, P** and Okumu, T (2013) '*Mapping and developing and e-Content for a University in Uganda*' *Journal of Engineering, Design and Technology*, Vol. 2(1), pp. 73-77
14. **Kwesiga, P** (2013) '*The embodiment of Uganda's historic buildings*' *Journal of Interdisciplinary Social Sciences*, Vol. 2(2), pp. 1-5
15. **M. Lubwama**, B. Corcoran, J.B. Kirabira, A. Sebbit, K.A. McDonnell, D. Dowling, K. Sayers, '*Flexibility and frictional characteristics of DLC and Si-DLC films deposited on nitrile rubber*, Surface & Coatings Technology (2013), doi:10.1016/j.surfcoat.2013.11.023.
16. **M. Lubwama**, B. Corcoran, K.V. Rajani, C.S.Wong, J.B. Kirabira, A. Sebbit, K.A. McDonnell, D. Dowling, K. Sayers, '*Raman analysis of DLC and Si-DLC films deposited on nitrile rubber*, Surf. Coat. Technol. 232 (2013) 521 - 527.
17. **M. Lubwama**, K.A. McDonnell, J.B. Kirabira, A. Sebbit, K. Sayers, D. Dowling, B. Corcoran, '*Characteristics and Tribological Performance of DLC and Si-DLC Films Deposited on Nitrile Rubber*, Surf. Coat. Technol. 206 (2012) 4585-4593.
18. **M. Lubwama**, B. Corcoran, K. Sayers, J.B. Kirabira, A. Sebbit, K.A. McDonnell, D. Dowling, '*Adhesion and Composite Micro-hardness of DLC and Si-DLC films Deposited on Nitrile Rubber*, Surf. Coat. Technol. 206 (2012) 4881-4886.
19. **M. Lubwama**, B. Corcoran, J.B. Kirabira, A. Sebbit, K. Sayers, '*XPS and nano-mechanical properties of hybrid a-C:H and a-C:H:Si films*, Manuscript under review in Surface and Interface Analysis.
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21. **M. Lubwama**, B. Corcoran, K. Sayers, J.B. Kirabira, A. Sebbit, *Closed Field Unbalanced Magnetron Sputtering Ion Plating of DLC and Si-DLC Films onto Nitrile Rubber*, Proceedings of the 29<sup>th</sup> International Manufacturer's Conference (IMC29), August 29<sup>th</sup> – 30<sup>th</sup>, 2012, Belfast, UK.
22. **M. Lubwama**, K. Sayers, J.B. Kirabira, B. Corcoran, *Wear Mechanisms of Piston Seals for reciprocating handpumps for rural water supply*, Proceedings of the Second international Conference on Advances in Engineering and Technology, Macmillan Africa, pp. 612 – 618, 2011, Kampala, Uganda.
23. **M. Lubwama**, *Wear Mechanisms of Piston Seals for reciprocating handpumps for rural water supply*, Poster Presentation (peer reviewed), Proceedings of the 35<sup>th</sup> International WEDC Conference held in Loughborough, UK, July 2011.
24. **M. Lubwama**, B. Corcoran, K. Sayers, *Deposition and characterization of hybrid DLC and Si-DLC films deposited on nitrile rubber*, Abstract accepted (peer reviewed) for poster presentation during the Symposium on Frontiers in Polymer Science in conjunction with journal Polymer, 21<sup>st</sup> -23<sup>rd</sup> May, 2013, Sitges, Spain.
25. **M. Lubwama**, B. Corcoran, K. Sayers, *Characteristics and tribological performance of DLC and Si-DLC films deposited on NBR rubber*, Poster Presentation, Faculty Research Day, Faculty of Engineering and Computing, Dublin City University, 12<sup>th</sup> September, 2012.
26. **M. Lubwama**, A. M. Sebbit, J. B. Kirabira, K. Sayers, B. Corcoran, *Wear Mechanisms of Nitrile Rubber Piston Seals for reciprocating handpumps for rural water supply*, Poster presentation, Faculty Research Day, Faculty of Computing, Dublin City University, 12<sup>th</sup> May, 2011
27. **Lubwama, Michael** (KTH, School of Industrial Engineering and Management (ITM), Energy Technology), *Technical assessment of the functional and operational performance of a fixed bed biomass gasifier using agricultural residues*, URI: urn:nbn:se:kth:diva-12824, <http://urn.kb.se/resolve?urn=urn:nbn:se:kth:diva-12824>  
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28. Mwesige, G; Haneen, F; Bagampadde, U; Koutsopoulos, H N; (Jan 2014) Stochastic model for Passing rate at passing zones on two-lane rural highways, accepted for publication by the Transportation Research Board, Washington, D.C.,USA.

29. Namutebi, M; Birgisson, B; Bagampadde, U; Guarin, A; (Mar 2013) *An overview of foamed bitumen technology aspects – State of the art*, Journal of Road Materials and Pavement Design, Lavoisier, France.
30. Bagampadde, U; Kaddu, D; Kiggundu, B M; (May 2013) *Evaluation of rheology and moisture susceptibility of asphalt mixtures modified with low density polyethylene*, Int. Journal of Pavement Research and Technology Volume 6, Issue 3, pgs 217 – 224, Chinese Society for Pavement Engineering.
31. Namutebi, M; Birgisson, B; Bagampadde, U; (April 2013) *Development of a gyratory compaction procedure for laterite gravels treated with foamed bitumen*, International Journal of Pavement Engineering, Volume 14, Issue 3, pgs 256 – 264, Taylor and Francis.
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34. Ssengendo, R., Sjöberg, L.E, Gidudu, A., 2011, Evaluation of EGM08 in Uganda: Preliminary results. 1<sup>st</sup> Advances in Geomatics Research Conference, Makerere University, Kampala, Uganda (August, 2011).
35. Ssengendo, R., Sjöberg, L.E, Gidudu, A.,2011, Geoid Determination in Uganda: Current Status. Advances in Engineering and Technology Conference, Entebbe Uganda (February, 2011).
36. M S Abbo, E Begumisa; Rural electrification: A Sustainable Solar Energy Kiosk as an off-grid Solution in Mukono, Uganda
37. Joseph Ndemere Arineitwe and Mackay Okure; *Modeling of a LCV Gas Burner based on Swirl Flow and Continuous Air Staging: - State of the art*
38. U. Bagampadde and D. Kaddu; *PROBASE Stabilization of Pavement In-situ Materials for Gravel roads*
39. Hilary Bakamwesiga, Jackson Mwakali and Sven Thelandersson; *Relating Design Storm and Adequacy of Existing Highway Bridges in Uganda*

40. Bakkabulindi, G.; *Optimal Feeder Route Configuration In Single Wire Earth Return Power Distribution Networks*
41. Alinaitwe Henry; *Analysis of Claims in the Construction Industry in Uganda*
42. Herbert Mpagi Kalibbalaa,c , OlleWahlbergb, ElzbietaPlazac and Rose Christine Kaggwad; *Aquatic Iron Mediation of Natural Organic Matter Removal With Hydrogen Peroxide and Pumice ina Filter*
43. Kaluuba Livingstone, Micheal Mukasa, and Moses Kabuye; *Reducing Lightning Strike Disasters Through Risk Assessment Of Residential Areas of Uganda.*
44. Hillary Kasedde<sup>1,2</sup>John \*Baptist Kirabira<sup>2</sup>,Matthäus U. Bähler<sup>3</sup>, Anders Tilliander<sup>1</sup>, Stefan Jonsson<sup>1</sup>; *Mineral recovery from Lake Katwe brines using isothermal evaporation*
45. Mazzi Lydia Kayondo-Ndandiko; *Object Based GIS-T Data Model for Road Maintenance in Uganda*
46. Dans N. Naturinda and Anthony G. Kerali; *An investigation into the quality of natural pozzolans in Uganda for use in Construction*
47. Niwagaba B. Charles\*, Sekigongo Patrick, Nakato Teddy: *The Potential to Utilize Faecal Sludge as a Fuel Source in Large Scale Industrial Kilns Producing Building Materials*
48. Mukasa Norbert; *Moderating Role of Influences on Production Strategies vis-à-vis Technological growth of the Manufacturing Industry in a Developing Country*
49. R. Okou, M. Edimu, O. Kyahingwa, E. Niwagaba and A.B Sebitosi\*: *Considerations for a Renewable Energy Electric Power Mini-Grid System for Isolated Areas; A Case for Kalangala Island in Uganda*
50. Fredrick Omolo Okalebo; *IDP Camps in Northern Uganda: Urbanism, Transformation and Physical Planning*

51. Adam M Sebbit<sup>1</sup>, Hillary Kasedde<sup>1</sup>; *Improvement of energy use in the Small and Medium scale lime burning Industry in Uganda. Case study of Tororo district*
52. Edmund Tumusiime<sup>1</sup>, Samuel Baker Kucel<sup>2</sup> and Mackay A. Okure<sup>3</sup>: *Energy Recovery from Municipal Organic Wastes at Kakungulu Satellite City in Uganda*
53. Yasin Naku Ziraba; *The transformation of the Innovation systems program to a center of excellence*
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62. Eunice Naigaga, *An analysis of the Policy framework for the mining sector in Uganda*
63. Eunice Naigaga, *An Examination of the Sustainability of Pozzolana Mining Processes in Uganda*

64. **Joshua Mutambi**, “*Stimulating Industrial Development in Uganda through Open Innovation Business Incubators*”
65. **Julius Ecuru**, “*Unlocking Potentials of Innovation Systems in Low Resource Settings*”
66. Peter W. Olupot, Stefan Jonsson, and Joseph K. Byaruhanga; ‘*Effects of the Sintering Process on Properties of Triaxial Electrical Porcelain from Ugandan Ceramic Minerals*’
67. **Yafesi okia** Current efforts on delimitation, demarcation and affirmation of international boundaries of African states: with a focus on Uganda
68. **Brian Makabai, Addisu Hunegnaw**, Modelling the Azimuthal Dependence of the Tropospheric of the Delay on GPS using GAMIT/GLOBK and Updated Vienna Mapping Function
69. Ground Deformation Assessment of the Albertine Graben Using INSAR  
**Prossy Atolere, Anthony Gidudu, John Richard Otukei, and Francesca Martini**
70. Geo- special analysis of aquaculture fish production in central Uganda  
**Jim Ayorekire, Atukunda Gertrude and Anthony Sentongo**
71. Impact of Land use/ cover changes on soil carbon and their implication for food security and climate change on slopes of mt. Elgon, Eastern Uganda  
**Barasa Bernard and Kakembo Vicent**
72. Land use and Land cover changes: Their implication on the Hydrology of River Malaba Catchment, Eastern Uganda  
**Barasa Bernard and Kakembo Vicent**
73. Estimation and Mapping of Above Ground Biomass and Carbon Using Radar Imagery  
**Male, E and Otukei, J. R.**
74. Spacial Vulnerability Assessment to Malaria out breaks in Uganda  
**Mazimwe, A., and Kienberger, S.**
75. Classification and mapping of Vegetationb physiognomic composition  
**David Mfitumukiza<sup>a</sup>, Ellen Kayendeke<sup>a</sup>, Majaliwa, J.G.Mwanjalolo<sup>a</sup>**

76. Spatio- analysis of urban Land use and land cover change using multi-temporal remotely sensed imagery **Danilla Carolyne, John Richard Otukey**
77. An Assessment of the Flood Plain of River Mlaba Catchment .  
**<sup>1</sup>Mugalu Gerald and <sup>1</sup>Mazzi Lydia Kayondo**
78. Hydrocarbon Exploration Aster Imagery in the Albertine Graben, Uganda. John Mugisa<sup>1</sup>, Ciaran peyton<sup>2</sup>, **G.W .Nyakairu Atwoki<sup>1</sup>, John Richard Otukey<sup>3</sup>, Betty Nagudi**
79. Application of Geospatial Tools for Landslide Hazard Assessment in Uganda.  
**<sup>1</sup>Musinguzi Moses ,and <sup>1</sup>Asiimwe Immaculate**
80. Modeling of property rights to support the property and credit Market in Uganda: A literature Review **Wabineno Lilian<sup>1</sup> and Musinguzi Moses<sup>1</sup>**
81. The Impact of Informal Settlements on the Land Markets in Nakawa Division, Kampala: A case study of Mutungo parish  
**<sup>1</sup>Wamani Bryan and <sup>2</sup>Wabineno Lilian**
82. Assessment of Land slide hazard in bududa district using bivariate statistical method  
**Rita Musazi<sup>1</sup>, John Richard Okutei<sup>1</sup>**
83. Mapping Hot Spot Areas within River Atari Micro- Catchment using the SWAT Model Judith **Sirike<sup>1</sup>,Majaliwa J.G Mwanjolo<sup>1</sup> Frank Kansiime<sup>1</sup>**
84. An Assessment of the Spatial Temporal Wetland Loss to Development Projects: The case of Kampala –Mukono Corridor(KMC) Wetlands in Uganda  
**<sup>1</sup>Waswa, H., <sup>1</sup> Kakembo, v. and <sup>2</sup>Mugaga, F.**
85. Markus Möller, Jens Birger, **Anthony Gidudu** & Cornelia Gläßer (2013) A framework for the geometric accuracy assessment of classified objects, International Journal of Remote Sensing, 34:24, 8685-8698, DOI: [10.1080/01431161.2013.845319](https://doi.org/10.1080/01431161.2013.845319)
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## 6.0 SUPPORT FUNCTIONS

### Human Resource (Staff Counseling and Welfare)

- i. Strengthening Human Resource capacity and status
  1. More staff are enrolling for PhD and more are completing PhD in the School of Engineering. During 2013, the School has graduated 4 PhD candidates.
  2. After the recent reforms emanating from Council resolutions, many staff on part-time basis have stopped offering services to the School. In fact the Diploma in Civil Engineering Surveying programme has been stopped with effect from this academic year.
  3. Staff have had their salaries increased by 70% after the recent Council resolution although this is widely perceived as a replacement for the traditional system of giving out incentives to staff based on the teaching load by a member of staff. The responsibility allowances to the Dean and Heads of Department has also been abolished.
- ii. Staff Promotions, Demotions and resignations
  1. Some staff members (Dr. E. Lugujo, Mr. P. Mujugumbya, Dr. B. Mangeni, Dr. M. Kizza, and Dr. Semuwemba) have either resigned from teaching or are retiring in December 2013.
  - iii. The Head of Civil and Environmental Engineering has communicated to the university HRD his intention to resign from this administrative position in December 2013. We are trying to request him to continue since it is going to be difficult to get a replacement with such a good wealth of experience like his.

### 6.1 Library Services

**This report is based on the University Library Strategic Plan of 2013.**

#### **Achievements.**

##### **1.0 Enhancing access to quality information resources by all stakeholders.**

- 3,369 books on both closed access and open access in Technology Library have been bar coded. Bar coding makes easy to access books from online catalogue
- The Library started online circulation in July 2013 having trained the library staff and bar coded all the books.



- Technology Library has entered 1,840 and MTSIFA Lib. 554 records into virtual( Makerere University Library Online Catalogue)
- Needed information for library users has been made available on both the Library and CEDAT websites.
- The College Librarians sent mails to update academic staff on Library Collection.
- Technology library spine labeled 807 and MTSIFA 106 books ( Spine labels on books get off due to tear and wear.
- CEDAT first year undergraduates and first year's graduates were briefed about library and information resources during orientation of first year students.
- Also CEDAT first year undergraduates have been briefed on the user education conducted in the main Library and encouraged to attend.
- MTSIFA Library acquired two notice boards.

## 2.2 Improving the library collection other than the BB

- SIFA Library received 45 books donations 31 Journals from friends.
- The borrowing time has been reduced from one semester to three weeks to reduce on loss of books.
- Technology Library received 32 books, 7 journals and 3 theses from Sweden and were added to the library collection.
- Stock taking was successfully carried out in both libraries of CEDAT in June and July. The results are shown in the tables below.

<b>Stock taking results of Technology Library June –July 2013</b>		
	<b>Titles</b>	<b>Copies</b>
<b>Books borrowed</b>	<b>231</b>	<b>470</b>
<b>Books on reserve</b>	<b>628</b>	<b>764</b>
<b>Books on open access</b>	<b>1,574</b>	<b>5,374</b>
<b>Overdue books</b>	<b>99</b>	<b>120</b>
<b>Books recovered</b>	<b>33</b>	<b>33</b>
<b>Books for binding</b>	<b>79</b>	<b>152</b>
<b>Total stock</b>	<b>2,613</b>	<b>6, 873</b>
<b>Books below 1970</b>	<b>350</b>	<b>556</b>

<b>Stock taking results of MTSIFA Library June –July 2013</b>		
	<b>Titles</b>	<b>Copies</b>
<b>Books borrowed</b>	<b>87</b>	<b>131</b>
<b>Books on reserve</b>	<b>183</b>	<b>260</b>
<b>Books on open access</b>	<b>213</b>	<b>3249</b>
<b>Overdue books</b>	<b>61</b>	<b>75</b>
<b>Books recovered</b>	<b>5</b>	<b>5</b>
<b>Books for binding</b>	<b>3</b>	<b>6</b>

### 2.3 Prolong the life span of Information material

- 120 books in TECH that are torn have been identified & are to be sent for binding.
- Six books in MTSIFA Lib. were repaired.

### Challenges

- MTSIFA Library needs computers urgently.
- Library users can not access online resources due to lack of computers.
- Library space is only 30 chairs but at time library users go up to 60.
- Some books need to be weeded in both libraries of CEDAT but there is no University weeding policy yet.
- Technology Library needs more computers.
- Poor and limited Library furniture at MTSIFA Library.
- MTSIFA Library roof is threatening to fall in and walls need repainting.
- Limited library space at Technology library that has made merging of the two libraries impossible.

## 6.2 Student Support Services

- i. Student counseling through allocating **mentors** on issues related to academics, social life, economics, and others.
- ii. Recreation and sports of students is supported both financially and through physical participation by staff.
- iii. Financial support to students in identifying industrial training placement.
- iv. Technical support to students in career guidance to secondary schools to encourage them in studying science based courses that enable them join Engineering programmes at the university.

## 7.0 Conclusions and way forward

- The college has lost a big number of teaching staff. These need to be employed permanently or replaced.
- The Library needs to be stocked with more books related to the disciplines of the Built Environment and Engineering to match the increased numbers of students in the School of the Built Environment in accordance with the requirements for the NCHE i.e. 1:40 volumes. Accessibility to on-line Built Environment specific journals needs to be made more efficient in the main library.
- There is need for more space to take care of the new programme. The space is required for studios, office space and for a modeling workshop. In addition, lecture space has been optimized to serve the large numbers of students available. Efforts need to be put in place to achieve the required ideal target of 2.5m<sup>2</sup> per student.