



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

ANNUAL REPORT 2015

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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.

2. CEDAT Administration

 <p><u>Assoc. Prof. Henry Alinaitwe</u> <i>Principal, CEDAT</i></p>	 <p><u>Dr. Venny Nakazibwe</u> <i>Deputy Principal</i></p>
<p>Mr. Kayima Stephen <i>College Bursar</i></p>	<p><u>Mr. Tom Otim</u> <i>College Registrar</i></p>
<p>Mr. <i>College Human Resource Officer</i></p>	<p><u>Ms. Betty Kyakuwa</u> <i>College Communication Officer</i></p>

Mr. Stephen Byarugaba
College Procurement Officer



Ms. Proscovia Mukama
College Librarian



Dr. Kizito-Maria Kasule
Dean, MTSIFA



Dr. Umaru Bagampadde
Dean, School of Engineering



Dr. Moses Musinguzi
Dean, School of Built Environment



Assoc. Prof. Phillip Kwesiga
Chair, Department of Visual Communication, Design and Multimedia



Dr. Angelo Kakande
Chair, Department of Industrial Art and Applied Design

Dr. Iffe Xavier
Ag. Chair, Department of Fine Art

Mr Martin Tumutungire
Ag. Chair, Department of Civil and Environmental Engineering

Dr. John Baptist Kirabira
Chair, Department of Mechanical Engineering

Dr. Roselyn Akol
*Chair, Department of Electrical and
Computer Engineering*



Dr. Stephen Mukiibi
*Chair, Department of Architecture and
Physical Planning*

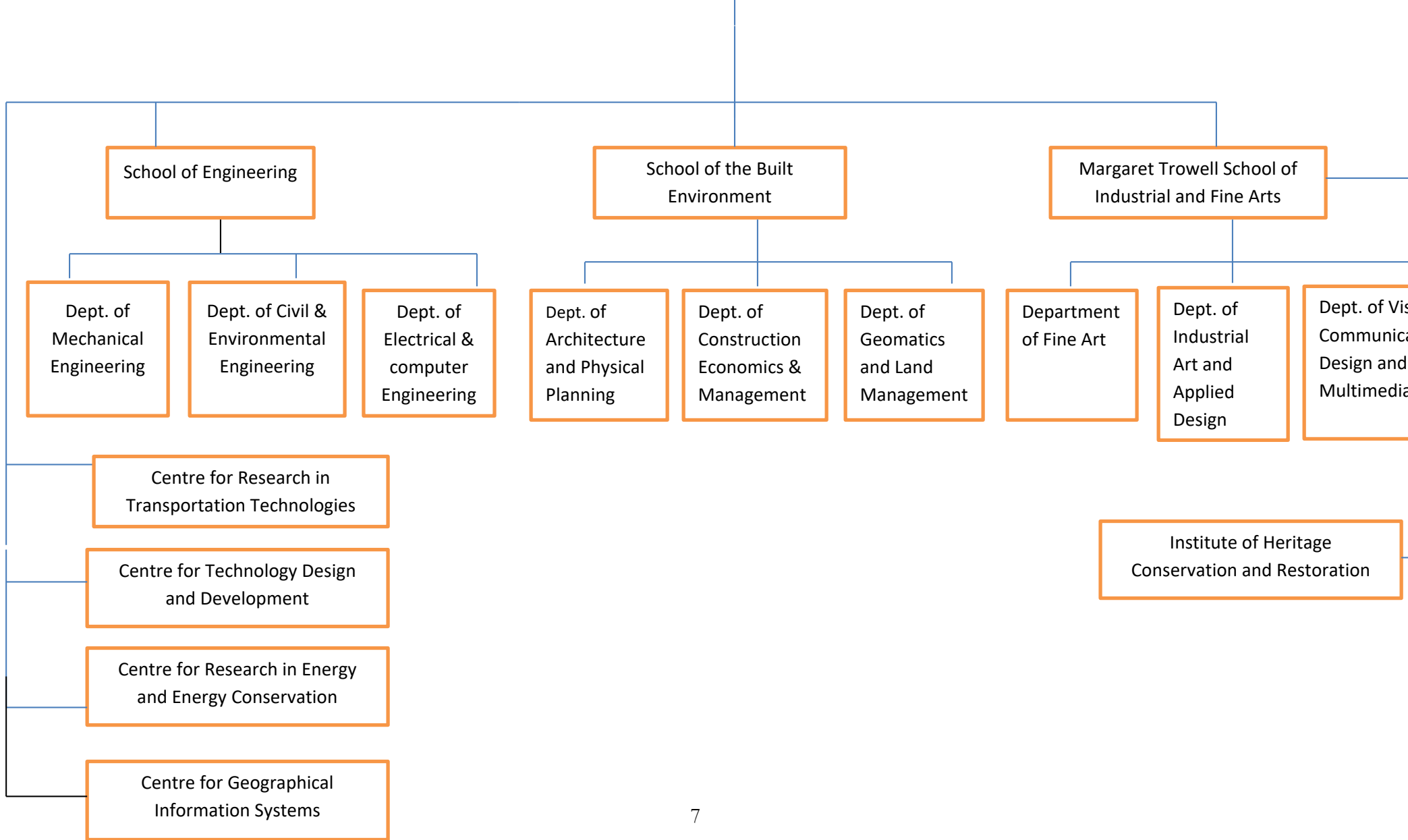
Dr. Anthony Gigudu
*Ag. Chair, Department of Geomatics and
Land Management*



Dr. Anthony Kerali
*Chair, Department of Construction
Economics and Management*

1.5 Academic structure

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



2.1. College Management

Management of the college is under the Principal, assisted by the Deputy Principal, 3 School Deans and 9 Departmental Heads/Chairs. The Principal chairs all academic and administrative meetings in the college. The Deputy Principal is in charge of Academic and research in the college. The Deans chair all School Academic Board Committee Meetings. The Deans and Departmental Heads/Chairs are involved in coordinating the academic programmes, handling examinations, monitoring undergraduate and graduate research, overseeing collaborative linkages with other institutions and industry, industrial training, staff professional growth, assisting with teaching students from other colleges and human resource performance evaluation. The Deans have continued to ensure that the Heads do the following:

- Provide overall academic leadership of the department with the aim of maintaining the highest possible standards in teaching and research.
- Lead the process of academic policy and planning for the departments.
- Maintain and enhance the departmental teaching quality of courses and programmes.
- Lead the department in establishing and maintaining a productive, accessible and well regarded learning environment for students, fulfilling the University's responsibilities in respect of student admissions, instruction, progression and examination; availability of counseling assistance and adherence to the various regulations regarding students.
- Support the promotion and strengthening of the research culture within the department and cross-departmentally where appropriate.
- Enforce appropriate quality assurance mechanisms.
- Ensure that Departments meet standards set by relevant professional bodies.
- Initiate linkages between the department and Institutions of higher learning inside and outside the Country.
- Initiate curriculum review and new programmes.
- Soliciting of funds for enhancing the academic progress of the department e.g. research, reading materials, etc.
- Participation in the appointment, promotion and disciplining of School staff in accordance with the established procedures of the University.
- Generally assisting in the operation of the University by serving on committees and in the capacities appropriate to the well being of the School.
- Performing such other related duties as may be assigned by the Dean.

3. Teaching and Learning

2.1 Teaching and Learning

The college has increased enrolment of students in engineering, Art and technology disciplines. The college has attempted to improve teaching and learning as a strategy to meet society needs.

2.1.1 Innovations in teaching, Learning and Research

- All the lecturers are now using advanced technologies in teaching and learning. All Departments have more than 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.
- More staff members are using direct lecturing, tutorials and laboratories in teaching based on the capacity and results obtained from research. 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, CrossRoads, etc. The major challenge is critical shortage of Technicians in the laboratories.
- There are some courses conducted through e-learning especially the i-labs component.
- The number of industry partners co-supervising students on industrial attachment has continued to increase and now stands at over 50% and we hope this will increase.
- There has been a general increase on 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 continued to improve.
- Use of improved audio and video systems during Masters and PhD Viva Vorce has been effectively used both in the New and Old buildings.
- Use of GIS in research using the new GIS Lab at CEDAT has increased especially by the Graduate students.
- Increased collaboration and communication through Skyping with famous international universities.
- The college now has over 30 internet laboratories which are aiding laboratory work for Electrical and Computer Engineering students as well as those pursuing a BSc in Telecommunication Engineering.

2.1.2 New Programs

There are several new programmes which are in pipeline or have been approved and taken off as follows:

Programme	Status
Master of Science in Power Systems Engineering	This is in its third year of implementation
Master of Science in Telecommunications Engineering	This is in its third year of implementation

Masters in Public Infrastructure Management in Collaboration with the Schools of Business and Social Sciences.	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*	Students are progressing with this programme.
BSc Chemical Engineering	The programme was tabled before Senate and is undergoing Quality Assurance.
Master of Science in Geo-information Science and Technology	Proposed
Master of Science in Construction Management	Proposed
Postgraduate Diploma in Urban Planning and Design	Proposed
Master of Science in Urban Planning and Design-	Proposed
Bachelor of fine art degree	Proposed
Bachelor of industrial and applied design	Proposed
Bachelor of visual communication design and multimedia	Proposed

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

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 Power Systems Engineering - 2 years
16. Master of Science in Telecommunication Engineering – 2 years

3.1. January 2015 Graduation Statistics

SN	PROGRAMME	NOS. GRADUANDS
1	B. ARCHITECTURE	29
2	BSC. CIVIL ENGINEERING	78
3	BSC. MECHANICAL ENGINEERING	45
4	BSC ELECT ENGINEERING	67
5	BSC COMP. ENGINEERING	36
6	BSC. TELECOM ENGINEERING	53
7	BSC CONSTRUCTION MANAGEMENT	55
8	BSC. QUANTITY SURVEYING	59
9	BSC. SURVEYING	11
10	BSC.LAND ECON	40
11	B. INDUSTRIAL AND <u>FINE</u> <u>ART</u>	131
12	D. CIVIL ENGINEERING SURVEYING	6
13	Urban & Regional Planning	11
14	Bsc in Land Surveying and Geomatics	32
15	MASTERS	20
16	PH.D	2

	TOTAL	675
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3.2. 2015/2016 Registration Statistics

SN	PROGRAMME	YEAR OF STUDY				
		1	2	3	4	5
1	B.ARCHITECTURE	40	36	27	30	35
2	BSC CIVIL ENG	122	106	98	100	
3	BSC MECH ENG	79	60	49	57	
4	BSC ELECT ENG	108	92	87	84	
5	BSC COMP. ENG	59	32	36	58	
6	BSC. TELECOM ENG	63	61	55	55	
7	BSC CONSTRUCT MGT	42	46	60	0	
8	BSC. QUANT SURVEY	56	44	61	54	
9	BSC. SURVEYING	0	0	0	4	
10	BSC.LAND ECON	42	39	39	39	
11	B.URBAN & REG PLAN	73	58	52		
12	BSC GEOMATICS	45	44	49	39	
13	BIFA	168	164	152		
14	dces	1	1			
15	PGD CONT MGT	11	0			
16	PGD URBAN DESIGN	1	0			
17	MSC POWER SYS ENG	3	1			
18	MSC RENEW ENERGY	2	13			
19	MSC CONT MGT	16	7			
20	MSC CIVIL	30	22			
21	MSC GIST	17	22			
22	MSC TELECOM	3	2			
23	MSC TIID	16	23			
24	MSC URBAN PLAN DESIGN	2	1			
25	MAFA	4	0	0		
26	TOTAL	1004	876	768	524	40
27	GRAND TOTAL	3,212				

3.3. Student activities

CEDAT Student Leaders Handover 2014

Students of the different CEDAT student associations on the 3rd of April 2014 witnessed the swearing in ceremony of new leaders voted in to power in March. The ceremony, which took place in the Conference Hall saw the different associations get new leaders. The Principal, Assoc. Prof. Henry Alinaitwe, who was the chief guest at the swearing-in and handover ceremony congratulated the new leaders upon attaining leadership positions but also appreciated the service the outgoing leadership gave their fellow students and the College as a whole. He called on the new leaders to not only emulate the outgoing leaders but do better for the good of the student body. He commended the old leadership on the smooth handover of leadership and applauded the new leadership on holding orderly, chaos-free elections. Dr. Alinaitwe pledged administrative support to the new leaders and urged them to cooperate with the CEDAT Administration, even through times of financial constraint.

3.4. Exchange programmes

The college has continued to grow her relationship with Belgorod University in Russia. So, the college has sent 6 students to this university.

3.5. Teaching Facilities/ ICT in Teaching and learning

The college has got enough class rooms to accommodate all the admitted students. About 80% of the classrooms have got over-head projects to ease teaching.

The laboratories have been equipped under the Presidential Initiative Project. Many more need to be equipped but the different departments have been able to equip some labs.

4. Research and innovation

Projects (2014)

1. **Project 1: Stimulating Local Innovation on Sanitation for the Urban Poor in Sub-Saharan Africa and South-East Asia.** This project (2012-2016) is funded by the Bill and Melinda Gates (BMG) Foundation. This project is coordinated by UNESCO-IHE in the Netherlands. The project overall has 20 PhD students and 5 Postdocs. Our part at Makerere University involves one post doc, and three PhD students, studying how to increase the lifespan of a pit latrine by using indigenous organisms to degrade the excreta (PhD student Anne Nakagiri); improving the functioning of biogas latrines by optimising the co-digestion of human excreta and organic bio-waste (PhD student Peter Mutai) and investigating local valorisation of faecal sludge on site (within the slums) to decrease transportation cost and increase benefits to slum dwellers (PhD student Swaib Semiyaga).
2. **Project 2: SCUSA Grey project:** In this project (2013-2014), we are aiming at reducing the pollution load coming from grey water generated in urban slums. We are working with UNESCO-IHE in the Netherlands. This project is funded by DGIS of the Government of Netherlands. We have built 20 household grey water treatment units, treating wastewater from more than 100 households. We are monitoring these treatment systems to quantify the pollution reduction achieved as a result of these grey water treatment filters.
3. **Project 3: Sludge to Energy Enterprises in Kampala (SEEK) project.** This project (2014-2016) is funded by the REPIC-Platform, Switzerland. We work with Sandec (Department of Water and Sanitation in the Developing Countries) as the project leader. In this project, we are optimizing drying technologies to reduce the foot print of faecal sludge drying beds; and doing value addition by optimizing the production of faecal sludge pellets that are applied in a gassifier to produce electricity.
4. **Project 4: WASH in the context of maternal health and menstrual hygiene.** This project (2014-2016) is funded by the Swiss Network for International Studies (SNIS). We work with Sandec (Department of Water and Sanitation in the Developing Countries) as the project leader. The project aims at understanding the current status of Water, Sanitation and Hygiene (WASH) facilities in healthcare facilities, and study them with the view of improving with them, taking into account the gender segregated needs for WASH in healthcare facilities.

Project 5: Research in diapers. The MakaPads project has continued to expand the range of products. The team is currently doing research on how make diapers for babies using bio-degradable materials.

Use of Termite saliva in improving soil for gravel roads

Use of PROBACE 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 a Hybrid car (KIIRA EV SMACK) which uses electricity and fuel. Work for design an electric bus has begun as well as designing and constructing an assembling plant.

4.1. Research grants

	Research name	Funding agency	Amount
1.	WASH Project	Govt of Switzerland	
	African Centre of Excellence for Materials, Product Development and Nano-Technology.	World Bank	6m dollars
	Presidential Initiative	Govt of Uganda	4.5 billion
	Sludge to Energy Enterprises in Kampala (SEEK) project	Govt of Switzerland	
	SCUSA Grey project	Netherlands	

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5. Knowledge Transfer partnerships

iLabs@Mak Project: The iLabs@Mak Project has for the 5th year running pioneered the college's out-reach and knowledge transfer initiative. The team has over the years encouraged science and technology innovation among secondary school students. This has been done through various robotics trainings and through organising the country's only Science and Technology Innovations Challenge. This is held annually and this year round, it grew in numbers to have 12 participate up from 8 last year. It is hoped with number will grow in the coming year.

Innovations System and Cluster Program: The project is working SMEs, the Ministry of Trade and Industry, private sector and the academia to
The concept of clustering brings together people dealing in the same economic activity but also operating in the same geographic location. The idea is for the cluster groups to work together with the academia in an effort to improve the quality of the products so as to get better market and in so doing improve incomes. Some of the cluster groups that have benefited from this partnership with academia are the Katwe Metal Cluster, Mbarara milk cluster. Lira Bee cluster, Katwe salt cluster, basketry cluster among other.

CREEC: The Centre for Research in Energy and Energy Conservation is working with rural communities in Uganda on the Rural Electrification Project. In an effort to reduce the usage of candles and fuel lamps, CREEC is working with the Ministry of Energy to extend the usage of solar to rural communities. The centre has put solar kiosks in 4 different districts. The kiosk has rechargeable solar lamps which communities hire at only Shs500. This has reduced the number of people using fuels lamps, accidents due to fires and also created employment for some youth.

Research in the area of water and sanitation: the different research projects highlighted above clearly show how the researchers are working with the communities to improve their lives by ensuring the correct disposal of faecal matter as well as ensuring people take clean water.

MakaPads Project: The project has created employment for women and girls in the different production plans like in Kawempe and the various refugee camps. The project has greatly contributed to keeping girls in school during the menstruation period. With the affordable sanitary towels of just Shs400 many girls have been able to attend school during these days.

Board membership: Staff from the School are serving on several Boards of Government parastatals like the Uganda National Roads Authority, Uganda Communications Commission, Engineers Registration Board, and others.

Partnerships and Linkages with other universities

- Collaborative research with the Schools of Engineering at University of Dar-es-Salaam in Tanzania and Eduardo Mondlane, Maputo, Mozambique.
- 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.

6. Academic achievements for 2015

No.	Name	Department	Qualification attained
1.	Dr. Ronald Kizito	Electrical and Computer Engineering	PhD
2.	Dr. Moses Matovu Junior	Civil & Environmental Engineering	PhD
3.	Dr. Ronald Ssengendo	Geomatics & Land Management	PhD
4.	Dr. Godfrey Mwesigye	Geomatics & Land Management	PhD
5.	Dr. Aggrey Mwesigye	Mechanical Engineering	PhD
6	Dr Ronald Musenze	Civil Engineering	PhD
7.	Dr Feriha Mugisha	Civil Engineering	PhD
8	Dr Jonathan Sserugunda	Electrical and Computer Engineering	PhD
9	Dr Dans Naturinda	Construction Economics and management	PhD
10	Dr Eunice Naigaga	Construction Economics and management	PhD
11	Dr Richard Irumba	Construction Economics and management	PhD

7. Awards/ Grants

CEDAT wins 6 million dollar grant from World Bank

CEDAT participated in a grant call from the World Bank to host the African Centre of Excellence for Materials, Product Development and Nano-Technology.

The World Bank is supporting development of Eastern and Southern Africa Higher Education Centers of Excellence to promote regional specialization among participating universities within areas that address particular common development challenges, and strengthen the capacities of these universities to deliver high quality training and applied research. The main objective of the project is to meet the demand for skills required for Africa's development in areas such as agriculture, energy, extractive industries, etc., while strengthening the innovation capacity of the best African higher education institutions in science, technology, engineering, and mathematics (STEM), and other relevant disciplines.

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 receive an AFT Excellence Award. The Code8 team consisting of Brian Gitta, Joshua Businge (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 (matscope) 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. These results are then sent to the user's SkyDrive for medical record keeping and sharing with their personal doctors.

The UN Women Award that comes with a cash prize of \$12,000 (sh30m) recognizes two student teams that created projects that best address issues impacting women globally. According to an excited Josiah Kavuma, the funds will enable them do more research on the feasibility and scalability of their application.

"We are extremely happy to be the first African team to secure a prize at the finals and we shall now focus towards competing for the ImagineCup Grant," he added. "It feels good to see our dreams come true especially after the hard work, sleepless nights, the team spirit and motivation from our lecturers and staff of the MIC-Uganda," Kavuma noted.

Team Code 8 is one of the fruits of the Microsoft Innovation Center-Uganda, currently hosted at the College of Computing and Information Sciences. "At MIC-Uganda, we are proud of the progress the program has made on the ICT sector in Uganda in terms of supporting software developments and start-ups. This is the second win after the Winsenga application that got \$50,000 from Microsoft last year," said Drake Patrick Mirembe, the MIC-Uganda manager.

8. ICT Infrastructure

This gives an overview of the status of the Computer Laboratories in the College of Engineering, Design, Art and Technology. This write-up is limited to infrastructure within the college that is availed for public access to students.

Distribution of Computers

Margaret Trowell School of Industrial and Fine Art

The Margaret Trowell School of Fine Art (MTSIFA) has a total of two (2) computer laboratories. These are:

- i. The Masters Lab (located in the Small offices block)
- ii. The Main Computer Lab (Located on the Ground Floor of the Admin Block)

The distribution of computers in the above labs is shown in *Table 1* below:

Table 1: Distribution of Computers in MTSIFA

Lab	Type	Current No. of Computers	Total Capacity of Computers
Masters Lab	Postgraduate	2	12
Main Computer Lab	Undergraduate	20	35
Totals		22	47

Implications and Recommendations

- 10 more computers should be procured for the Masters Lab in order to bring it to full capacity.
- 15 more computers should be procured for the Main Computer Lab in order to bring it to full capacity.

In total, 25 more computers should be procured for the Laboratories in MTSIFA to bring them to their full capacities.

School of The Built Environment

The School of the Built Environment (SBE) has a total of three (3) computer laboratories. These are:

- i. Architecture Lab (located on level two in the New Technology Extension) – this lab is under the department of Architecture and Physical Planning
- ii. The Survey Lab (located on the upper floor of the Old Building) – this lab is under the department of Geomatics and Land Management.
- iii. GIS Lab (located on the ground floor of the New Technology Extension) – this lab is under the department of Geomatics and Land Management

The distribution of computers in the above labs is shown in *Table 2* below:

Table 2: Distribution of Computers in SBE

Lab	Type	Current No. of Computers	Total Capacity of Computers
Architecture Lab	Undergraduate	16	20
Survey Lab	Undergraduate	19	19
GIS Lab	Postgraduate	22	50
Totals		57	89

Implications and Recommendations

- 4 more computers should be procured for the Architecture Lab in order to bring it to full capacity.
- The Survey Lab is already at full capacity.
- 28 more computers should be procured for the GIS Lab in order to bring it to full capacity.

In total, 32 more computers should be procured for the Computer Laboratories in the School of The Built Environment in order to bring them to their full capacities.

School of Engineering

The School of Engineering (SOE) has one computer laboratory – the Mechanical Lab. The distribution of computers in this lab is as shown in *Table 3* below:

Table 3: Distribution of Computers in SOE

Lab	Type	Current No. of Computers	Total Capacity of Computers
Mechanical Lab (KTH)	All	25	30

Implications and Recommendations

5 more computers should be procured for the Mechanical Lab in order to bring it to full capacity.

Labs Directly under the College

There are four labs that are directly under the College. These are:

- i. The Masters Lab (located on the upper floor of the Old Building)
- ii. The Main Computer Lab (located on the upper floor of the Old Building)
- iii. The E-Learning Lab (located on the upper floor of the Old Building)
- iv. Lab 3034 (located on level three in the New Technology Extension)

The distribution of computers in the above labs is shown in *Table 4* below:

Table 4: Distribution of Computers in Labs Directly under the College

Lab	Type	Current No. of Computers	Total Capacity of Computers
Masters Lab	All (Projects)	2	25
Main Computer Lab	All	46	50
Lab 3034	All	77	80

E-Learning Lab	All	49	50
Totals		174	205

Implications and Recommendations

- 23 more computers should be procured for the Masters Lab in order to bring it to full capacity.
- 4 more computers should be procured for the Main Computer Lab in order to bring it to full capacity.
- 3 more computers should be procured for the Main Computer Lab in order to bring it to full capacity.
- 1 more computer should be procured for the Main Computer Lab in order to bring it to full capacity.

In total, 31 Computers should be procured for the Computer Laboratories in CEDAT in order to bring them to their full capacities.

Distribution of Projectors

The projectors in CEDAT are mostly mounted in classrooms and Computer Laboratories to aid in conducting of lectures. The distribution of projectors in the College is as shown in Table 5 below:

School of The Built Environment

The distribution of projectors in the SBE is as shown in Table 5 below:

Table 5: Distribution of projectors in classrooms / Labs in SBE

Classroom / Laboratory	Type	Current No. of projectors	Capacity
3003	All	1	1
3004	All	1	1

3005	All	1	1
3033	All	1	1
3034 (Computer Lab)	All	2	2
2003	All	1	1
2004	All	1	1
2022	All	1	1
2023	All	1	1
2024	All	1	1
4004	All	0	1
4005	All	0	1
Totals		11	13

Implications and Recommendations

Two more projectors should be procured for the different classrooms / Labs within the School of The Built Environment in order to have all classrooms at an equal standard.

School of Engineering

The distribution of projectors in the SOE is as shown in Table 6 below:

Table 6: Distribution of projectors in classrooms / Labs Directly in the SOE

Classroom / Laboratory	Type	Current No. of projectors	Capacity (projectors)
141	Undergraduate	1	1
142	Undergraduate	1	1
143	All	1	1
160	All	1	1
161	All	1	1
163	All	1	1
149	All	1	1
158	All	1	1
M1	Undergraduate	1	1
M2	Undergraduate	1	1
M4	Undergraduate	1	1

Main Lab	All	1	1
E-Learning Lab	All	2	1
Masters Lab	All	0	1
Mechanical Lab	All	0	1
221	All	0	1
146	All	0	1
105	All	0	1
Mechanical 3	Undergraduate	0	1
Mechanical 4	Undergraduate	0	1
Totals		14	21

Implications and Recommendations

7 more projectors should be procured for the different classrooms / Labs within the School of Engineering in order to have all classrooms at an equal standard.

Margaret Trowel School of Industrial and Fine Arts

The Margaret Trowel School of Industrial and Fine Arts currently does not have projectors in all 11 studios and laboratories. There is therefore a need to procure 11 projectors for the School in order to have a more convenient teaching / learning experience for lecturers and students of the school.

Other Rooms with projectors

The CEDAT Conference Hall and New Boardroom are rooms that should also be taken note of when considering projector access to students. This is because the Conference hall is sometimes used for conducting lectures that involve a large number of students. The Boardroom is also used for meetings in general and also on occasions to host special student events that require small numbers eg. PhD Public Defenses and other presentations. The Conference Hall has 2 projectors and the boardroom has 1 projector. These rooms are actually represented to their capacity.

Distribution of Smart Boards

The smart boards in CEDAT are majorly in the department of Architecture to accommodate different learning styles and provide a neater, more interactive learning experience to students.

The distribution of smart boards in the College is as shown in Table 7 below:

Table 7: Distribution of projectors in classrooms / Labs in the College

Classroom / Laboratory	Type	Current No. of Smart-Boards	Capacity
3034 (Computer Lab)	All	4	1
2003	All	1	1
2004	All	1	1
2022	All	1	1
2023	All	1	1
2024	All	1	1
Totals		9	6

There are enough smart boards in the Department of Architecture, however, in order to have a more interactive teaching and learning experience at MTSIFA, at least 3 smart boards should be procured for the School.

Wireless Access Points

The College currently has 5 wireless access points to be accessed by students and staff around the college premises. There are 2 access points in the Technology Old Building, One outside the CEDAT New Building, 1 in the CEDAT Conference Hall and 1 located on the 4th Floor of the CEDAT New Building.

9. Library Services

This report is based on the University Library Strategic Plan for 2015 “Enhancing access to quality information resource by all stakeholders”.

ACHIEVEMENTS FOR CEDAT LIBRARY FOR THE YEAR 2015

- The college library has received 107 new books for 2015; CEDAT library (61), SIFA library (46). The total number of books in CEDAT library is now 13,120 books compared to the last years 13,069. SIFA library, the total stock is 4155 books compared to last years, 4109. CEDAT library has received 46 masters and Ph.D theses for 2015 raising the total number of dissertations to 215 compared to last years 169.
- 308 records have been entered in the University main library database (virtual) so that library users (college inclusive) can access them.
- 490 books have been bar coded to enable online circulation of books (online borrowing and returning of books).
- A total of 402 books has been recovered from offices of lecturers.
- The number of students using the library have increased to 130 students for the morning, afternoon and evening sessions. About 30 lectures are using the library for academic purposes.
- The college has purchased 5 computers for the college library. 3 computers for the CEDAT library and 2 computers have been given to SIFA library which initially didn't have any. These computers have increased accessibility to the online library resources and catalogue of the main library by college library users.
- To increase on the security for the students' bags the college has purchased a shelf for the students' bags with 100 lockable compartments. This shelf will help minimize the thefts on students property kept in the library as they use the library.
- Also to improve security on the reserve books, the college has purchased a stamp for the reserve books for the library so that when the reserve books are stamped they can be easily identified by the college library staff and students.
- Three (3) padlocks were also purchased to reinforce the strength of the burglar proof doors in CEDAT and SIFA libraries. SIFA library got 2 padlocks and CEDAT library one padlock.
- The first year students of the college, both postgraduate and undergraduate students attended the library orientation which took place in the Makerere University Library where they were oriented on how to use and retrieve the library information materials both online and print formats for their course works, assignments and projects. The first year students were also oriented by the college library staff on how to use the college library.
- Useful information about the College library has been placed on the college and University main library websites and on the college library notice boards.

CHALLENGES FOR THE COLLEGE LIBRARY FOR 2015

- The college library space is small. Only a maximum of 130 students can use the CEDAT library basing on the available furniture (table and chairs) that can fit in the library. SIFA library can accommodate only 30 students at one sitting. Some students end up missing out on using the library.
- The student numbers have increased and the number of students that line up for a single or a few copies of the reserve books has increased. This leads to delays in students writing their assignments and coursework.
- The computers that the students are using to access the online resources and catalogues are still very few compared to the student numbers. There are only 7 computers. CEDAT library has 5 and SIFA library 2 computers.

RECCOMENDATIONS (WAY FORWARD)

- There is a need to increase on the library space to accommodate more students that need to use the library in CEDAT and SIFA.
- There is a need to increase on the copies of books on demand either through photocopying or by the lecturers that teach the courses ordering more copies of books that are on demand from the Makerere University Library annual book orders.
- The computers the library has are very few compared to the student numbers, there is need purchase more computers for the college library.

10. Human Resources

1. PROMOTIONS 2015

No.	Name	Department	Position promoted to
1.	Dr. Jonathan Serugunda	Electrical and Computer Engineering	Lecturer
2.	Dr. Geofrey Bakkabulindi	Electrical and Computer Engineering	Lecturer
3.	Dr. John Muhumuza Kakitahi	Construction Economics & Management	Lecturer
4.	Dr. Herbert Mpagi Kalibbala	Civil & Environmental Engineering	Lecturer
5.	Dr. Evassy Amanda Tumusiime	Visual Communication, Design & Multimedia	Senior Lecturer
6.	Dr. Francis Xavier Ifee	Margaret Trowel School of Industrial & Fine Art	Associate Professor

2. APPOINTMENT OF HEADS OF DEPARTMENT 2015

No.	Name	Department	Period
1.	Dr. Anthony Kerali	Construction Economics & Management	01.7.2015 – 30.6.2019
2.	Dr. Phillip Kwesiga	Margaret Trowel School of Industrial & Fine Art	01.12.2015 – 30.11.2019
3.	Dr. Angelo Kakande	Industrial Art & Applied Design	01.12.2015 – 30.11.2019

3. CONFIRMATION IN UNIVERSITY SERVICE

Eight (8) members of staff were confirmed in service.

4. RECOMMENDATIONS TO THE APPOINTMENTS BOARD FOR PROMOTION

Three (3) members of staff were recommended to the Appointments Board in December 2015 for promotion to different positions.

5. COMPLETION OF STUDIES

No.	Name	Department	Qualification attained
1.	Dr. Ronald Kizito	Electrical and Computer Engineering	PhD
2.	Dr. Moses Matovu Junior	Civil & Environmental Engineering	PhD
3.	Dr. Ronald Ssendo	Geomatics & Land Management	PhD
4.	Dr. Godfrey Mwesigye	Geomatics & Land Management	PhD
5.	Dr. Aggrey Mwesigye	Mechanical Engineering	PhD
6	Dr Ronald Musenze	Civil Engineering	PhD
7.	Dr Feriha Mugisha	Civil Engineering	
8	Dr Jonathan Sserugunda	Electrical and Computer Engineering	PhD
9	Dr Dans Naturinda	Construction Economics and management	PhD
10	Dr Eunice Naigaga	Construction Economics and management	PhD
11	Dr Richard Iumba	Construction Economics and management	PhD

6. EXIT OF STAFF 2015

RESIGNATION

NO.	Name	Rank	Department
1.	Dr. John Muhumuza Kakitahi	Lecturer	Construction Economics & Management
2.	Dr. Julius Butime	Lecturer	Electrical and Computer Engineering
3.	Dr. Abraham Muwanguzi Bumalilivu	Lecturer	Civil & Environmental Engineering
4.	Ms. Vivian Ssentamu	Secretary	Geomatics & Land Management

RETIREMENT

NO.	Name	Rank	
1.	Dr. Paul Mujugumbya	Lecturer	Civil & Environmental Engineering
2.	Ms. Mary Nakibuuka	Cleaner	Margaret Trowel School of Industrial & Fine Art

ABSCONDMENT

NO.	Name	Rank	
1.	Mr. Samuel Mushabe	Sanitary Cleaner	Principal's Office
2.	Mr. Joseph Odeke	Cleaner	Principal's Office

11. Exhibitions

Gallery/IHCR Report - 2015

DAUDIMZILI -Dichotomy of creativity: indigenous expressionism- January 29th , 2015



This is an annual event by two famous artists Daudi Karungi and Henry Mzili Mujunga who believe that all human beings are capable of divergent thought; the ability to generate multiple solutions to a single problem. Within the box we were all born peers (although some think their bonds are stronger than others'). Indigenous expression tries to explore all four corners of that box through conscious and subconscious expression.

While not implying that new media has little to offer, they purport that there is simply a lot that has not been explored or explained in traditional media such as painting, therefore, painting as a medium of expression is still helping to explore the creativeness hence the show; indigenous expressionism.

Different But One 19- February 19, 2015

The 19th edition of the group art exhibition Different But One.



This is also an annual event where Makerere Art Gallery/IHCR hosts an artist/curator Rebeka Uziel from Israel comes to Kampala every February and organizes this unique display of new works by lecturers from Margaret Trowell School of Industrial and Fine Arts at Makerere.

AtWork Workshop and Exhibition - February 12, 2015

The Exhibition was an outcome of the AtWork workshop held in Kampala in February 2015 in partnership with Margaret Trowell School of Industrial and Fine Arts, Maisha Foundation and *lettera27*



”Should I take off my shoes?” This workshop saw students questioning everything they thought they knew about themselves, their cultures, their identities. The certainties, the preconceptions, the conventions have been crumbling down like sand castles. Every posed question opened a new perspective, a new door, a new interpretation of their daily artistic practices. Stimulated daily by Simon Njami and the two workshop facilitators Lilian Nabulime and George Kyeyune,

With every hour their awareness of who they are and who they want to be was evolving and expanding. All this reflection and internal questioning found its creative expression on the pages of the notebooks which were displayed in the gallery premises

AtWork format was conceived by Simon Njami and *lettera27*. Then Kampala chapter was organized in partnership with Margaret Trowell School of Industrial and Fine Arts, Makerere Art Gallery/Institute of Heritage Conservation and Restoration, and Maisha Foundation.

1. Beautiful Imperfections – Sculpture Exhibition-April 23, 2015



An exhibition of sculptures by Ivan Allan Bwambale, Emmanuel Lwanga and Patrick Mulondo. The young and upcoming sculptors graduated from Margaret Trowell School of Industrial and Fine Arts then teamed up for an exhibition of their latest works. The artists came up with this theme because it synchronizes the different topics explored in their individual art works into one. The art works are assemblages from various scrap

metal pieces, forged metal and assembled slab technology; where each artist recycles, transforms and redefines the once rejected objects into beautifully thought through artworks that become a dialogue between the artist and his environment.

Through the artworks, the artists are tracing historical and contemporary life in Uganda and Kampala particularly. The exhibition highlights that even with the numerous up-hazards and vices in society today; hope is not lost in their interpretations of socio-economic and cultural events. With their exhibition “Beautiful Imperfections” the artists invited the viewers to question and reflect on the subject of what is perfect and what is not.

Permanent collection exhibition in partnership with the US Embassy-May 4, 2015



This was an event that hosted over 10 Ambassadors of Uganda where important works including the finest paintings from the independence decade to the early 1990s from the permanent collection of Makerere Art Gallery/IHCR were temporarily displayed in our space for viewing by the public.

Ebishushani II and III-May 14, 2015

Exhibition and Book Launch of Ebishushani II and III:

People, Poses, Places – Musa Katuramu

All the Tricks – Elly Rwakoma

This is an annual event and this third edition of History In Progress Uganda presented two Ugandan photographers: Musa Katuramu and Elly Rwakoma. Musa Katuramu (1913 – 1986) made portraits of the people around him in their environment in his home region of Western Uganda. He was a teacher and a carpenter who took photographs on the side. His active period was between the 1930s up until he couldn't ride his bicycle anymore. Elly Rwakoma was born in 1937 and baptised in 1939. He was a presidential photographer (from the early 1960s to mid 1980s), photojournalist, and ran a photo studio in Jinja. He trained as a teacher and a social worker.



The books *People, Poses, Places – Musa Katuramu* and *All the Tricks – Elly Rwakoma* are the second and third part of the book series called *Ebifananyi/ Ebishushani* published by History In Progress Uganda. Both words are equivalents of the English word ‘images’ in Luganda and Runyankole respectively. Each book of this series is focusing on one specific photo collection and/or photographer in Uganda.

Ian Mwesiga – Melancholy- June 11, 2015



Melancholy
Ian Mwesiga

Opening 11th June 2015, 5:00 PM
The exhibition will be open until 4th July 2015

Makerere Art Gallery/IHCR

For more information please visit
makerereartgallery.org/ianmwesiga.com



Under the title Melancholy he presented his latest cycle of paintings. Mwesiga is a young artist who since his graduation from our sister institution Margaret Trowell School of Industrial and Fine Arts has continuously developed his individual style by pushing his own practice and relentlessly interrogating painting as a medium.

Mathias Tusiime – Art and the Community- July 9, 2015

Exhibition and Launch of the Uganda Community Art Skill Development and Recycling (UCASDR)’s new project.

Mathias Tusiime is a staff member of the College of Engineering Design Art And Technology, where he has worked as a cleaner since 1999. Unlike other staff members who have stuck to their job boundaries, Tusiime did not settle at being just a cleaner. With profound curiosity and a desire to learn, he interacted and engaged with art students and art teachers.

Without any formal education, the self-taught artist and paper maker has developed a personal style of painting which has seen him blossom in the art scene both nationally and internationally. Although Ugandan artists’ involvement in the International scene is limited, due in part to difficulties in their accessing travel documents; Tusiime has travelled widely for exhibitions, presentations and residencies. As such, he has exhibited in the University of Florida

Art Gallery, Makerere University Art Gallery, Alliance Franchise Kampala, Goethe Zentrum-UGCS Kampala, the Empire State Building and Shadravan Art Gallery (Denmark) among others.



Tusiime is also the founder and Director of Uganda Community Art Skill Development and Recycling (UCASDR) project, which tackles many social problems among young people. With the UCASDR project, Tusiime works with and has been able to empower the unprivileged people of Kalerwe suburb in Kampala by teaching them craft skills that can help them to earn a living.

CONSTRUCTIONS - July 14, 2015

CONSTRUCTIONS is a creative collaboration between Prof Andrew Burton (Newcastle University, UK) and Dr Lilian Mary Nabulime (Makerere University, Uganda) and the artisans of Kampala.

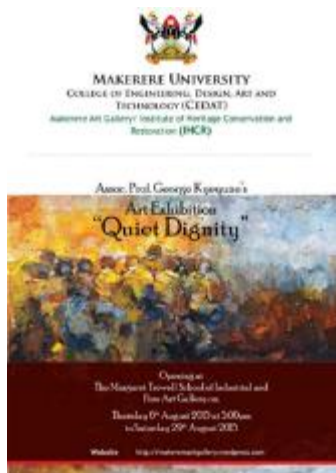


In CONSTRUCTIONS, a project created In June/ July 2015, in the Margaret Trowell School of Industrial and Fine Arts at Makerere University, Ugandan and British artists Lilian Nabulime and Andrew Burton explore the principles of collaboration and use of *the local* as a resource for new sculpture and installation. The work in the exhibition was made by hand using objects or materials found around Kampala and regularly used in people's everyday lives. It was created collaboratively working with artisans in Mulago and makers in Makerere University.

Quiet Dignity by George Kyeyune-August 6, 2015

Assoc. Prof. George Kyeyune is a prolific artist, the director of the Makerere Institute of Heritage Conservation and Restoration but also a scholar and experienced lecturer who has helped to shape artistic development of two decades of artists in Uganda.

Professor Kyeyune's long association with the Margaret Trowell School of Industrial and Fine Arts goes back to 1981 when he started his undergraduate degree in Fine Arts. Since then he has balanced a busy academic career, gaining his PhD in art history at the School of Oriental and African Studies in London, with a consistent artistic output ranging from oil painting to monumental sculptures.



His ongoing investigation of locally available materials that can be used for metal casting, via experiments of mixing sap from trees with paraffin wax, petroleum jelly and beeswax, has produced a mixture that can be used instead of the imported ones. The experiment is still a work in progress of how natural and locally widely available materials can be used in place of imported ones. The Makerere Art Gallery was proud to host this first solo exhibition.

Peregrinate – A photo exhibition exploring notions of time and space- Sept 10th, 2015



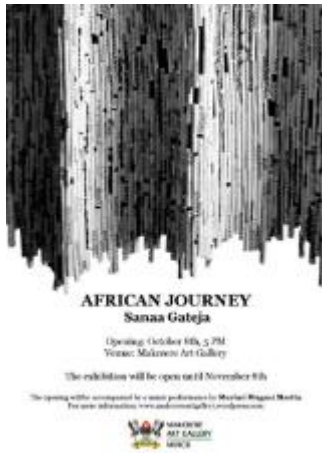
This exclusive photo exhibition entitled *Peregrinate: Field Notes on Time Travel and Space* was the second exhibition of young African photographers who have just “graduated” from a pan-African photography master class; the Photographer’s Portfolio Meetings. The first exhibition of its kind to

be hosted at Makerere Art Gallery was *Witness/Témoin* two years ago. The so called photography master class is a long term workshop with annual meetings in different African countries initiated and run by Simon Njami in collaboration with Goethe Institute in Johannesburg, South Africa. During these workshops, a group of young photographers undergo a one on one interaction and mentorship with experienced curators in the field of photography and contemporary art. Beyond studying photography, these students get the opportunity to use photography to represent subtle themes in their vicinity.

Featuring the photographers Musa Nxumalo, and the late Thabiso Sekgala from South Africa as well as Mimi Cherono Ng’ok from Kenya, the *Peregrinate* exhibition expresses the myriad ways in which societies respond to notions of time and space alongside its divergent functions.

African Journey by Sanaa Gateja, - October 8, 2015

Born in Kisoro district, 65 year old Gateja is a Ugandan artist, whose practice focuses on creating environmentally conscious art, re-using found objects that many people would unthinkingly disregard as garbage. He also has a passion for using indigenous materials such as backcloth in his work.



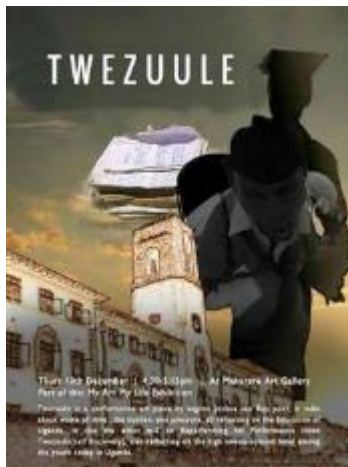
This show took the audience on a journey exploring his artistic development through life, and also challenging his viewers to reconsider what they regard as having value. The exhibition comprised of wall hangings, sculptures and wearable art made out of bark cloth and paper beads. The opening was accompanied by a musical performance by Murimu Mugani Martin, and a brief show of Gateja’s costumes presented by MTSIFA students.

Obvious Things – not so obvious- November 18, 2015

This was a unique exhibition entitled Obvious Things by Ndema and Mukiza. Ndema’s large and brightly coloured work created a deep contrast with Mukiza’s paintings, which seemed incomplete on the white canvases. In his bold oils on canvas, Ndema seeks to question and investigate Christianity while Mukiza on the other hand was interested in telling what unfinished stories are. He explains that they neither have a beginning nor an end and it is the viewer who is invited to reflect and ask the questions to which the answers are apparent.

End of year art exhibition- December 10th , 2015

My Art, My life is a group exhibition that opened on Thursday 10th December, at 5:00pm at Makerere Art Gallery. The art works presented for this show included paintings and sculptures that make reference to the changed and changing 2015.



Besides the expected excitement that Christmas and end of year season engenders, this year has had something extra. The pope’s recent visit and the upcoming presidential elections have added color to Uganda’s social life. These events have remarkably affected almost every citizen of Uganda including the artists exhibiting in the show.

The open and flexible theme: *My Art, My Life* creates a broad space, which enormously encompasses a wide body of work that is not only tackling diverse issues of society by numerous artists but also showing a variety of unique medium of execution. The opening was accompanied by “Twezuule” performance by Joshua Kagimu.

12. EVENTS

674 graduate from CEDAT



Dr. Paul Mujugumbya (L) & Dr. Wilson Musinguzi (R)

The College of Engineering, Design, Art and Technology on Wednesday January 21, 2015 witnessed 674 students graduate. Five of these graduated with PhDs, 17 masters, seven post graduate diplomas and 645 graduate degrees. Speaking at the ceremony, the Vice Chancellor, Prof. John Ddumba-Ssentamu applauded the college for its continued leadership in research and innovation in the university. He also send condolences to all members of staff that have lost relatives during the last year. He noted that the university had lost many members of staff, including 6 professors. During the 65th graduation ceremony lasting 3 days (Jan21-23) 13,776 students will graduate. Of these, 49.5 % are female while 50.5% are male. We shall also witness a record attainment of 67 doctorates. Of these 67% ae male and 33% are female. CEDAT had 5 members graduate with PhDs, these are Dr. Geoffrey Bakkabulindi and Dr Wilson Musinguzi from the Dept. of Electrical and Computer Engineering. Dr Senfuka Christopher from the Dept.

of Mechanical Engineering, Dr Mujuumbya Paul and Dr Kusemererwa Kahuma Adolf from Dept of Civil and Environmental Engineering.

Architecture: Making use of waste in Kiteezi



The Department of Architecture and Physical Planning, on March 18th, 2015 hosted a team of officials from Kampala City Council Authority. The purpose of the visit was for KCCA officials to familiarise themselves with some of the research project ideas that the students had in regards to how best the authority can deal with garbage at the Kiteezi landfill. The 3rd-year students had undertaken a 3-months research project at the landfill. Many advised on making pipes out of the plastics at the site, plastic doors, pipes, tiles, gas, cards, bricks etc.

The officials from KCCA included; Ms Harriet Mudedo, the Director Gender CS&P, Ms Esau Galukande, Deputy Director Production and Marketing, Dr David Serukka, Lutakome Obed, Nakitingi Doreen, Godwin Kamugisha and Nyamate Damalie.

This work was supervised Dr Nnaggenda Assumpta and Dr. Ssemwogerere Kenneth.

Below are some of the research projects/ proposals on how best to utilise the Kiteezi landfill/ the factories that could be set up in the area.

PROJECT NAME: PLASTIC INTERIOR FINISHING TILES FOR A BETTER KAMPALA

By Edna M M Amayo

Kiteezi landfill located in Mpererwe is Uganda's largest and only sanitary engineered landfill with its highest end rising up to 10 metres, sitting currently on 36 acres of land. It receives 1000 kilos of waste daily with under 400 salvagers working in the landfill every day in harmony.



The mysteries of Kiteezi's great size arise from the slow decomposition process that is a result of unsorted waste, that is 15% inorganics and 85% organics collected from source together and disposed of at Kiteezi. Out of the 15% of the organics, 1-2 tons of that is plastic, and of which 30% is salvaged leaving an alarming 70% – which includes polythene paper bags, commonly known as “*kaveera*”.

This makes *kaveera* a readily available raw material for a potential factory near Kiteezi. Choice of such a raw material can be complimented by the 2009/10 budget ban on *kaveera* where 20% was manufactured locally and 80% imported as per 2003 and the rising numbers of polythene bags floating in various streams and drains all over Kampala city, and littering of streets.

Considering its properties, both physical and chemical, *kaveera* can be manipulated in a simple process of; washing, drying, sorting, shredding, batching with sand, extrusion, pressing and printing- if necessary- to produce plastic interior finishing tiles. The advantages of plastic tiles include; durability; easy installation; low maintenance; cost effective; recyclable.

The construction industry contributes over 12% to Uganda's GDP and has witnessed a steady growth for the last 20 years and despite the recent upsurge in inflation, the sector has remained on a steady path of growth and development (Uganda National Commission for UNESCO, 2013). Hence the manufacture of these tiles would be a great contribution to the growing construction industry and possibly the GDP through exports.

Lastly, the process for the manufacture of these tiles will require housing, hence the need for an architecture that is both feasible and sustainable right from the external façade to the interior main and support spaces, and efficient circulation systems, not neglecting required building services for proper functioning of the factory and the building as a whole.

PROJECT NAME: THE ENDLESS SET.

By: Namwanje Priscilla



I got to Kiteezi, expecting to have an unpleasant experience. It is the largest landfill, ‘garbage dump’ in the country after all. But, to my surprise, I found a small community of people, birds, insects, almost like a world of its own, co-existing in harmony at this overwhelmingly large mountain of garbage. Amazing! I was further astonished, after I took a closer look at what the garbage is comprised of and discovered that it’s our lives. Small pieces of who we are, things we once loved, photographs, shoes, bags...stuff that actually meant something. It was all thrown away.

On realisation that we are literally throwing away our lives, I sought to back track the process and see if I can find the reason or any missing link. Why are we throwing all these things away? Anything that could cause us to stop/ pause and think...anything. I searched through a dozen of dustbins, went through shopping carts at the supermarket. I found nothing. It was just a helpless situation. We buy something, we use it, and we throw it away. End of story. Nothing along this process causes us to pause and think.

At this point, I knew exactly what kind of product I should produce from the garbage.

The Endless Set is a set of cylindrical jars made of out broken pieces of glass that are joined to each other using plastic. Each jar varies in size. The reason for this is so that the product can suggest various uses or should I say, endless possibilities. It can be a lamp shade, flower pot, candle holder, pencil holder, cup, interior décor...the list is endless. Why broken glass? I want the product to be able to trigger/invoke thought...some sort of question from the user.

The idea behind this product is a new approach to product design. For so long, our waste management campaigns have targeted the consumer, and not the commodity. I believe that's where the answer lies! What if producers made 'endless sets' of everything? Products with more depth. Products with a less obvious fate of winding up in the trash almost immediately after they are bought. Imagine if the plastic soda bottles were designed for more than just one use, and after taking soda, you've got yourself a new pen holder, or television stand or an entire list of endless possibilities! Maybe then, we can tackle the issue of high levels of waste accumulation in our city and our country. And reduce on the rate at which Kiteezi is filling up...otherwise, in a couple of decades from now, we could possibly be looking at districts of garbage!

PROJECT NAME: FUEL PELLETT MANUFACTURING INDUSTRY

By: Opolot Jackson

Kiteezi dumping site is an engineered land fill for Kampala city commissioned in 1996 and meant to run until 2011. Disposed waste comprising; organics 83.5%, Metal 8.6%, Paper 5.4%, Plastics 1.6%, Glass 0.9%, at Kiteezi land fill has increased from 1,400 to 1,700 tonnes daily. The above statistics express that the rate at which the waste is accumulating is exponential. "Compacted waste, 10 stories high, caused garbage to spill over the gabion retaining walls partially burying the leachate treatment plant expressing that the capacity of the land-fill has been exceeded," Mr Obedi Lutakome, the Kiteezi Site Engineer, said in an Interview.



As such this project hopes to curb the exponential growth of the waste as compared to the limited land solution for landfills by turning organic waste into environmentally friendly fuel pellets. Biomass pellets are a sustainable fuel source with low co2 emission used for domestic heating and running steam turbines in industries for power generation among others.

Fuel pellet manufacturing is composed of 5 key processes:

1. Receipt & processing of the feedstock; storage and sorting of the garbage to pick all non-organic elements within the garbage.
2. Drying; use of a rotary drum dryer to decrease the moisture content to a range of 10 – 15%.
3. Grinding; the biomass is ground to a finer powder, starch binders are then added to facilitate the sticking together of the particles.
4. Pelletisation; using steam the powder is moist to 1-2% and compressed through a die to produce the pellets and allowed to cool.
5. Packaging & storage; the pellets are stored in 25, 50 and 100 kilogram sacks for domestic use and jumbo sized sacks of 500 and 1000kg for industrial use.

The industry would be located on a 2.5 acre, irregular 5-sided polygon, site. A multi-level roof system appreciates the varying site topography while various green spaces balance out the “hard” surfaces making the site cool and inviting. The exterior walls are built from concrete blocks and finished with rough-cast.

The building is zoned into four major spaces;

- Feedstock & storage; a double volume space with a floor laid to a 6° fall finished with terrazzo, a low maintenance finish. While Pompeii grills facilitate passive design to counter the stench from rotting garbage.

- Sorting on the 1st floor; single volume space with sequenced 1200 x 600mm pivoted windows on the east and west faces of the building aiming at ‘releasing anxiety’ in the space while catering for passive design.
- Production; a tunnel like space with a polished granite floor finish that punctuates the transition between processes, fixed floor to ceiling windows open the interior space to the compound while Pompeii grills ventilate the space
- Packaging & Storage; a double volume space with steel, floor to ceiling storage racks, bolted into the walls and anchored into the rough concrete floor, Pompeii grills at a 4500mm sill-height keep the room aerated.

In conclusion, recycling and use of landfills for waste-disposal doesn’t provide a permanent solution. If better ways of optimising waste as an energy source are realized a new dimension could be added to the concept of energy efficiency. Thus I believe this innovation will be of great importance to the immediate Kiteezi community and Kampala at large.

CEDAT gets new student leadership



CEDAT community on Thursday April 2, 2015 witnessed the swearing in of new student leaders for the year 2015/2016. The Principal, Dr Henry Alinaitwe, thanked all staff and students of the commitment shown towards ensuring a good academic and social environment at CEDAT. He congratulated the new and old leaders upon the smooth transition of power and elections. He decried the noise made during the campaigns and asked the students to keep in mind that classes continue to take place despite the campaigns. He also cautioned against putting posters on the walls.

He advised the students to report matters to their Head of Departments and the Deans for action before reporting to the Principal. “Let us give the HoDs and Deans a chance to handle your problems,” he advised.

In their speech, delivered by outgoing MES president Mwine Musa, the students thanked the administration for the support given to them and the achievements registered over the years.

Some of the achievements they listed include improved Internet connectivity, improved sanitation in regard to the ongoing works on the toilets in the old building, the placement of dustbins in the classes, holding a successful Open Day, Intellectual challenge and various study tours made.

The students, however, cited delayed results and lecturer absenteeism as some of the areas that the administration of the college needs to look into.

Dr Allan Kenneth Birabi, who also attended the handover congratulated the new leaders upon winning the election. Quoting the late Pastor Myles Munroe “Success without successors is failure” Dr Birabi congratulated the students upon a good culture of peacefully handing over power.

The HR officer, Mr Makubuya Godfrey, asked the students to avoid engaging in strikes, emphasising that diplomacy is the best way to handle disputes and contentions.

Recognised for their Service to The Makerere – SIDA Research Programme



The Vice Chancellor Makerere University Prof. John Ddumba- Ssentamu has recognised A/Prof. Henry Alinaitwe and A/Prof. Mackay Okure for their contribution to the growth and

sustainability of the Makerere– Sida Collaborative Research Program. This was during the Makerere – Sida International Research and Innovations Dissemination Conference that took place from 20th -21st April, 2015 at Hotel Africana, Kampala, Uganda under the **theme: “Community Transformation through Research, Innovations and Knowledge Translation”**

A/ Prof. Okure has coordinated the Technology sub-program since the inception of this collaboration in 2000.

The programme has since graduated 25 members of staff and another 11 are scheduled to complete before the end of the year.



A/Prof. Okure receives his award from Prof. Nawangwe

A/Prof. Alinaitwe has been the coordinator of the regional collaboration component of the program. Under his leadership, the college successfully hosted the 9th regional collaboration conference which attracted scholars from Tanzania, Mozambique and Sweden. Over 80 papers were presented over a period of two days.

The awards were presented to them by the Deputy Vice Chancellor (Finance and Administration), Prof. Barnabas Nawangwe. He commended the people that received awards on the service that they had offered the university for the last 15 years.

Biomedical Engineering students to get access to Duke University Online Resources

Students of Biomedical Engineering at Makerere University will get a chance to access online resources from Duke University in the US, following the signing of a Memorandum of Understanding between the two institutions.

This was agreed upon in a meeting on Thursday May 14, 2015. The delegation from Duke University was accompanied by a team from the College of Health Sciences led by the Acting Principal, Dr. Charles Ibingira. Biomedical Engineering is run jointly by CHS and CEDAT.

For the first two years, students do the bulk of their study at CEDAT then move to CHS for the last two years of study. Biomedical Engineering is a new course whose first cohort was enrolled in 2011.

Teaching the course has had some challenges which include staffing and lack of laboratories for biomedical engineering. Because the program is new in the country, it is also difficult to find these students internship placement. Library material for biomedical engineering is lacking and the CHS needs resources to set up a Fab-Lab.

To this end, the two colleges saw it fit to collaborate with institutions that have grown in the area of Biomedical Engineering. CHS has collaborations with Uganda Heart Institute, Joint Medical research centre, Moi University and Nairobi University for purposes of internship training.

Duke University on the other hand will help Makerere University in the area of Curriculum review and access to material. Others areas of collaboration will include;

- Duke University will give the students access to the online library at Duke so that they access E-resources
- Graduate students of Duke University will teleconference and teach the undergraduate students here.
- Makerere Students will be given access to online introductory courses
- Faculty exchange will also be done.
- Duke University made an offer to send one of our students to China where they opened a university. The student would take some courses in Biomedical Physics?

The delegation was received by the Deputy Principal, Dr Venny Nakazibwe who welcomed the collaboration as one that would go a long way in improving the quality of students we have.

Attachments

MTSIFA celebrates partnership with US Embassy



Ambassador Scott DeLisi addresses the guests

Art lovers on April 30, 2015 gathered at the Makerere Art Gallery to celebrate a partnership the Gallery has with the US Embassy in Uganda. The US Embassy in 2012 started funding the documenting of Art pieces, improving storage space and staff training among other things. This was done under the *US Ambassador's Fund for Cultural Preservation awarded to the Institute of Heritage Conservation and Restoration*

On April 30, 2015 the Ambassador, H.E, Scott DeLisi invited other diplomats in an effort to woe them to start on a journey that he embarked on in 2012; support the preservation of Art.

The cocktail, attracted guests from different diplomat missions including France, Netherlands, Norway, Poland and British Council among others.

Ambassador Scott DeLisi emphasized the need to preserve art and culture so that generations to come can better understand their cultures. He called on others to join him in this noble journey.

Our journey



CEDAT Principal addresses the guests

In 2012, the United States Ambassador's Fund for Cultural Preservation was announced and as a starving but vigilant institution, we responded to the announcement with a proposal. The Institute of Heritage Conservation and Restoration is still in its infancy having been launched in 2010. Its immediate needs of documenting the collection, training of staff, revamping of storage space and repair of the Institute and gallery building fitted well in the United States Ambassador's Fund for Cultural Preservation funding criteria.

CEDAT student draws Architectural Plans for Ekisaakaate kya Nnabagereka; designed by CEDAT student



CEDAT Principal Handing over the Ekisaakaate designs to the Nnabageraka

Emphasis was, on Thursday May 21, 2015, on knowledge transfer partnerships as CEDAT handed over Architectural Designs of the Ekisaakaate Kya Nnabagereka Centre of Excellence (The Royal Enclosure) to the Nnabagereka.

“We had many international organisations bidding to design the Ekisaakaate but, as an organisation whose goal is to nurture local talent and mentor the youth, we decided to approach Makerere University to identify a student to do this work for us,” Ms. Solome Nakaweesi, the CEO of the Nnabagereka Development Foundation, said.

As a foundation that promotes local talents, values, culture, Architecture and We had many international organisations bidding to design the Ekisaakaate but we said, as an organisation our goal is to nurture local talent and mentor the youth. So we approached Makerere University to identify a student to do this work for us design, the Nnabagereka Development Foundation (NDF) approached CEDAT and requested that the college identify a student to design the Ekisaakaate. They wanted a design that celebrates culture, Africa and its people.

James Kalyango Ssenabulya, a final year student of the Dept of Architecture and Physical planning designed the Ekisaakaate Kya Nnabagereka as part of his final year project. The student worked under the supervision and mentorship of Dr Kenneth Ssemwogerere.

“After running the Ekisaakaate for 10 years, we realised we can no longer run it from school to school so we decided to get a permanent home and ensure we run programs all year round and open up to a wider community including the adults. This will be the first such centre of excellence in Africa,” Ms Nakaweesi added. As a foundation that promotes local talents, values, culture, Architecture and design, the Nnabagereka Development Foundation (NDF) approached CEDAT and requested that the college identify a student to design the Ekisaakaate. They wanted a design that that celebrates culture, Africa and its people.

About the design

The site is located on 25 –acres of land at Ssisa, Wakiso District.

The master plan sits on 15.7 acres. It has the main building, dormitories for both male and female students, gardens, music and dance auditorium, art studios, swimming pool, play grounds and offices among other things.

13. PUBLICATIONS

PUBLICATIONS 2015

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14. CONCLUSIONS AND WAY FORWARD

The general situation in terms of human resource on ground is not good. The departments don't have enough teaching and non-teaching especially Laboratory technicians. Laboratory facilities have improved owing to support from the Presidential Initiative Fund although more still needs to be done. There is need to find ways of motivating the few members of staff that the college has got.