



# CAMAAY Project

Cameroon 2015

A proposal for a community benefit project in western Cameroon, promoting small-scale farming as a tool for social empowerment and enterprise.

FAO Cardiff University Global Opportunity Centre

[www.orkidstudio.co.uk](http://www.orkidstudio.co.uk)

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“We only know what we make”

Carlo Scarpa  
from Giambattista Vico's  
*verum factum* principle (1710)



# Orkidstudio

Founded in 2008 by three students from the Welsh School of Architecture, Orkidstudio is a humanitarian design organisation whose focus is to benefit children and communities through innovative design and construction.

We believe that creativity has the power to inspire and instil pride within people regardless of race, nationality or circumstance and our aim is to explore the potential of architecture as a tool for relieving poverty, transforming lives, and promoting sustainable urban and social development.

Our projects focus on the process of design and construction rather than just the final product. We believe this process can be a powerful tool for affecting social change and empowering people through the sharing of skills and knowledge on site.

Hands on making and simple detailing are at the centre of our work and we are committed to exploring methods of building which make economic and environmental sense, collaborating with those we aim to help in developing new knowledge and architectural values.





## CAMAAY

Sub-Saharan Africa has the world's youngest population and is home to over 200 million young people. Two out of three inhabitants are under 25 years of age and 44% of its population is under the age of 15; 70% of the youth live in rural areas. Agriculture in these areas is one of the continent's main economic resources and is critical for ensuring future food security.

Currently, Cameroon's farmers are largely elderly people ranging from 55 to 70 years. They follow traditional practices, often resulting in poor returns. As a result, farming has been avoided by the nation's youth, who see it as a job for only the illiterate, poor and old, turning instead towards the cities where unemployment is high and can't cope with this influx.

Faced with desperate poverty and even starvation, many Cameroonian youths turn to substance abuse, violence and crime.

The Cameroon Association of Active Youths (CAMAAY) works to address this problem by training young people to grow high-quality crops and livestock that can be sold to develop income and employment opportunities. To date, the project has shown that young people in rural areas are willing to take up farming as a livelihood and that, with the right support and training, they will stay in the countryside to produce food instead of migrating to towns and cities.

*"The energy of youth can spark economies ... The future belongs to them and they have a clear vision of the world we need to build together: peace, the preservation of our beautiful planet, the opportunity to make a better life."*

[CAMAAY Vision Statement]



## Context

“Architecture is for everybody” is probably a mantra which every architect would support, yet the profession currently serves around 1% of the global population. It comes as no surprise either to find that this largely equates to the wealthiest 1%. What may be more surprising however, is discovering who makes up that elite. According to the World Bank, anyone who earns higher than £21,000 per annum is part of that group, meaning that over half of the population of the United States and over 40% of the UK population fit this criteria.

So it can be argued that architecture is, in fact, not for everybody, but this idea would understandably jar with most practising architects who typically feel that their profession is there to serve society and create not just interesting or practical spaces but also spaces that enhance people’s lives and can be enjoyed by all.

In addition to the desire for architecture to be inclusive and not elitist, there is also the unfathomable question of market share to be addressed. Few other professions or businesses would be content with a 1% market share. According to the widely accepted Diffusion of Innovation theory (Everett Rogers, 1962), most products or services are not considered to have even an early majority market share until they achieve at least 34% market penetration. Now architecture is not a new service or product so the theory can only be loosely applied, and arguably almost 100% of the world’s population live in some form of architecture. However, the theory supports that those who have studied and become qualified ‘Architects’ are not even close to the 2.5% market share that most new products or services can typically expect upon inception.

Today more than ever, many students of architecture are becoming increasingly interested in serving a wider global population. Whether that interest lay on their own doorstep (which in itself provides an international range given the current demographic of student admissions) or in foreign territories, the intent is there.

This project offers a strong opportunity for students of architecture, engineering and other disciplines to engage directly with this issue and provides a unique learning process of benefit to students and a wider beneficiary community.



# Proposal

Architecture has the power to inspire and empower people and communities regardless of race, nationality or circumstance and it can not only answer issues of basic need and shelter but also act as a catalyst for relieving poverty, transforming lives, and promoting sustainable urban and social development.

This proposed mobility opportunity invites students from ARCHI, ENGIN and other schools, to design and build full scale facilities alongside a community in Bafoussam, western Cameroon, in partnership with humanitarian design organisation, Orkidstudio (founded by Cardiff University Alumni).

Critically, this opportunity looks at how the provision of key infrastructure and the implementation of programmes that create opportunities for enterprise and learning can ensure lasting benefit and promising futures for local communities.

The project will be in aid of CAMAAY (Cameroon Association of Active Youths) with whom Orkidstudio are working on a number of projects. This proposed opportunity will be centred on a sustainable farming enterprise, providing young people with the skills and knowledge to establish successful vocational enterprises and support themselves. Part of a wider programme, the opportunity would focus on the design and construction of a building to house livestock as well as a space for vocational learning.

With such fertile land and opportunity within rural areas, CAMAAY is working hard to give young people a positive future through providing the skills, knowledge and modern tools required to effectively generate resources and income from the land.

Working in Bafoussam in western Cameroon, the provision of these facilities will act as a catalyst for the wider programme of community empowerment facilities, vocational training centres and key public infrastructure, including sanitation systems and schools.

Given the scope of this project, there is potential for Cardiff University to establish continued involvement and interest, with students benefitting on a longer term basis.



## Student Learning

The main activity will be the design and construction of a full scale building (approx. 80 – 120m<sup>2</sup>) as a livestock enclosure and vocational learning space.

Students will engage directly with the local community, building and exchanging skills and knowledge in a dynamic and demanding construction site environment. The project is not a theoretical exercise but instead will give students a rare opportunity to grapple with real clients, funding, needs and consequences.

They will be involved with every stage of the project, from design, structural engineering, construction and services detailing, financial management and on-site construction, offering a unique learning experience.

Past students on Orkidstudio projects have said:

*“Being part of the Nakuru Project has been one of the most unforgettable experiences I’ve had. From constructing a building that I helped design being invaluable as a student, to having the power to influence social change by teaching new skills and developing relationships with the locals; everyone had something to contribute, making the team an absolute privilege to be part of.”* [Catherine McCartney, Nakuru Project]

*“Building in Kenya with Orkidstudio was such a great way to apply skills I had developed at university and in the office, whilst learning invaluable lessons about the building process that simply can’t be gained without getting your hands dirty. I met some amazing people and what we experienced together will remain with me for a long time.”* [Richard Watson, Nakuru Project]

*“The chance to design and build something of social and architectural value, seeing it grow from talks to sketches to drawings and finally to a resolved building is something truly incredible. It is not every day the opportunity arises to be a part of such a unique experience as this and it was an immense privilege to be a part of the Mutende Project.”* [Frazer Haviz, Mutende Project II]

The construction will take place over four weeks in September 2015. In addition, two design workshops will be held at the University between February and June 2015.



# Financial Proposal

The following gives a more detailed breakdown of the project costs. All attempts have been made to keep the costs of the project as low as possible while still ensuring the health and safety of all involved and the highest possible quality of project outcomes. If the requested funding is deemed to be unfeasible, it is our hope that we could engage in a dialogue with the Global Opportunity Centre to find a mutually agreeable way to make this project a reality. A key variable in the estimated costs is that of the construction. Typically a building in the UK costs upwards of £1,000/m<sup>2</sup> (a typical family home can be around £2,500/m<sup>2</sup>). In Africa we are able to deliver buildings for much less, even though, at times, materials are not significantly cheaper. Previous Orkidstudio projects have been delivered for values between £80/m<sup>2</sup> and £150/m<sup>2</sup>. In this proposal, projections have been based on £120/m<sup>2</sup> to ensure our ability to deliver a high quality building.

## CONSTRUCTION COSTS

Includes:

- Local labour = £3,000
- Construction materials = £11,400

Total, based on £120/m<sup>2</sup> for a 120m<sup>2</sup> building = **£14,400**

## TOOLS

Orkidstudio will lend an extensive kit of tools. Additional costs include larger site tools, such as spades and wheelbarrows, and consumables)

Total = **£1,500**

## ADMINISTRATIVE COSTS

Includes:

- Planning permission
- Local printing
- Site survey
- Soil tests

Total = **£500**

## CONTINGENCY

To allow for unforeseeable or unexpected costs critical to the delivery of a successful building and project.

Total @ 10% of project costs = **£1,640**

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### TRAVEL

Includes:

- 2 visits to Cardiff for student design workshops
- Pre-project site visit for one Project Leader
- Return flights for two Project Leaders in September 2015

Total = **£2,500**

### ACCOMMODATION

Based on a contribution towards accommodation costs for two Project Leaders in September 2015.

Total = **£500**

### ORKIDSTUDIO FEES

Fixed fee, based on estimated time commitment.

Includes:

- 2 x full day student design workshops = £240
- 4 day pre-project site visit = £480
- Project setup = £2,520
  - Preparation of brief
  - Community consultations
  - Design developed for planning permission
  - Detailed drawings for construction
  - Structural engineering and specification
  - Services and environmental specifications
  - Schedule of works
  - Material quantities
  - Detailed projected construction budget
  - Practical arrangements for student travel and accommodation
  - Health and safety assessments
  - Practical arrangements for site works, incl. site security
  - Arrangement of site services. E.g. water, electricity etc.
- Project management for 4 week period (Sept 2015), working min. 10hrs/ day for 28 days, plus teaching and post practical completion work = £4,200 (detailed below)

#### *Construction and procurement:*

- Identification and appointment of local work team
- Procurement of materials
- Financial management
- Quality Assessments (for materials and works)
- Health and safety monitoring

#### *Post practical completion:*

- Snagging list
- Inspection of site and completed works, compiled as a report
- Preparation and administration of handover agreement with local client
- Services layouts and maintenance information
- Financial summary and report for GOC
- Written project report for GOC
- Supply of visual media and publicity material for use by Cardiff University
- Student post-project briefing, discussion and reflective reports

Total = £7,440 + VAT (20%) = **£8,928**

**TOTAL REQUESTED = £29,968**

# Past Orkidstudio Projects

For reference, here are a selection of a few past and current Orkidstudio projects.



## NAKURU PROJECT, KENYA

Built with a diverse group from a small Kikuyu community in the rapidly developing agricultural outskirts of Nakuru, Kenya, we have recently completed a new home which will house local disadvantaged and abandoned children. Challenging the typology of the typical African orphanage where children sleep en masse in large dormitories, the new home limits each room to just four children providing ample space and natural light, and is characterised by a range of different social spaces from open communal areas to quiet nooks and crannies offering space to study, read or simply relax.

The local area is widely populated with stone and concrete houses, many of which are typically left incomplete as their owners struggle to fund the materials to complete each phase. In response, the new home, known as the St Jerome's Centre, is made from earthbags, utilising the large quantities of soil generated from foundation, sanitation and rainwater storage excavation. The local soil, which has around 20% clay content, is packed into everyday grain bags and laid like oversized bricks to create deep, durable walls which also effectively absorb heat from the sun, helping regulate temperatures during the cooler nights.

Completed in just eight weeks and with added help from a small group of architecture students representing schools across the UK, there were as many as seventy people on site each day, including local women who worked alongside their male counterparts for an equal wage, setting a rare precedent for employment in the area. Many of the team, men and women, have since been approached for work in direct connection with the project, including a couple of commissions to build more earthbag homes and help pass on these skills to others.

The new home also features a timber cladding made from pillar cores, a by-product of veneer processing and a material which is often discarded as waste. Additionally, a rainwater harvesting system and integrated community tap provide a unique source of clean running water.



### SWAWOU PROJECT, SIERRA LEONE

The Swawou School Foundation (registered charity in England and Wales) was set up to support the development of a primary school in Kenema, eastern Sierra Leone. With an aim to educate up to 120 girls annually, Orkidstudio designed and are in the process of building new facilities on a nearby site, replacing the existing bush-stick school structure. Due to the ebola epidemic, work on this project is currently suspended though plans are in development to complete work in the present situation.



### MUTENDE PROJECT II, ZAMBIA

The Mutende Children's Village near Chingola, Zambia offers opportunities for orphans and abandoned children to be cared for in a loving, family environment. In summer 2013, along with a team of ten volunteers, we designed and constructed a large hall space, which can be divided into three classrooms plus an office and IT suite, for the Mutende's Harold Mwenge Memorial Academy. Built in only 7 weeks, this 350m<sup>2</sup> structure cost only £100/m<sup>2</sup> and will more than double the existing study space and enable the school to provide education for significantly more children in the local area.



# James Mitchell

A graduate of the Welsh School of Architecture, Cardiff University, James founded Orkidstudio in 2008. James is also a part-time Lecturer in Humanitarian Architecture at the Mackintosh School of Architecture, Glasgow School of Art, where he leads a number of programmes for student learning on live construction sites overseas.

James also teaches in the urban housing unit on the Diploma of Architecture/ MArch course at the MSA and leads two Masters research groups, exploring earthbag construction and disaster relief shelter respectively.

He has previously worked in architecture firms both in the UK and overseas, most notably for 2014 Pritzker Prize winner Shigeru Ban Architects in Tokyo, where he played a key role in developing temporary housing units for displaced families following the 2010 Haiti earthquake.

Through Orkidstudio, James has delivered major construction projects in Uganda, Bolivia, Kenya, Sierra Leone and Zambia. His current projects are based in Ghana, Kenya, Cambodia, India, Sierra Leone, Democratic Republic of Congo and Cameroon. Now working with a larger team, his primary role in Orkidstudio is the delivery of projects and on-site construction management.

James currently acts as a member of SEDAbuild (Scottish Ecological Design Association) Steering Group, which seeks to promote and share knowledge, skills and experience in ecological design.

In 2013, Orkidstudio received the Royal Scottish Academy Medal for Architecture, one of Scotland's most prestigious architecture awards.

James led a highly successful Vertical Studio project to Kenema, Sierra Leone, in spring 2014 with students from the Welsh School of Architecture.



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