SOLARLAB
BY COMPUTER AID

TECHNOLOGY AVALIBLE ANYWHERE

WHAT IS A SOLAR LAB?

The Solar Learning Lab is a standard shipping container, converted into a classroom, with 11 user stations operating off of a thin-client network (which is a low consumption network) and powered by a connected solar solution. With the addition of outside space and laptops, the lab can offer up to 20 people at a time a wireless connection to learning materials. It offers a stand-alone, mobile technology enabled space to underserved communities around the world who would otherwise not have access to ICT due to prohibitive local infrastructure and the economic challenges they face. Partnering with Dell Technologies, we plan to install 10 Solar Learning Labs each year until 2030.

NOT JUST ACCESS, TRAINING TOO

A lack of appropriate spaces and resources for learning prevents young rural populations from accessing the same opportunities as their urban peers. The Solar Learning Lab programs establish a unique space to enrich learning resources, build local institutional capacity and provide access to 21st century skills for the local population. Technology in this program is a tool of transformation and participation. This is not only because ICT skills are essential to succeeding in the modern world, but also because establishing a Solar Learning Lab with the latest technology is a force of transformation and inclusion in traditionally marginalized communities.

"I can now confidently use the computer for various purposes and this has made me believe that I am not limited in any aspect of my academic life."

Emmanuel Okere, Student of State Senior High School, Lagos, Nigeria

Set Up

TECHNICAL CONSIDERATIONS

The Solar Lab comes with different solar power capacity depending on the local needs. The minimun set up is 1.5 KW power including 6x 265watts panels, but if extra power is needed this can be increased to suit local needs adding extra batteries for energy storage.

DESIGN CONSIDERATION

For comfort of learners and to maximize the use of space, we agreed that the lab should include; a roof awning; good insulation from heat; the right inclination for the solar panel and a community space in front of the lab that can be use for more training or internet cafe services.
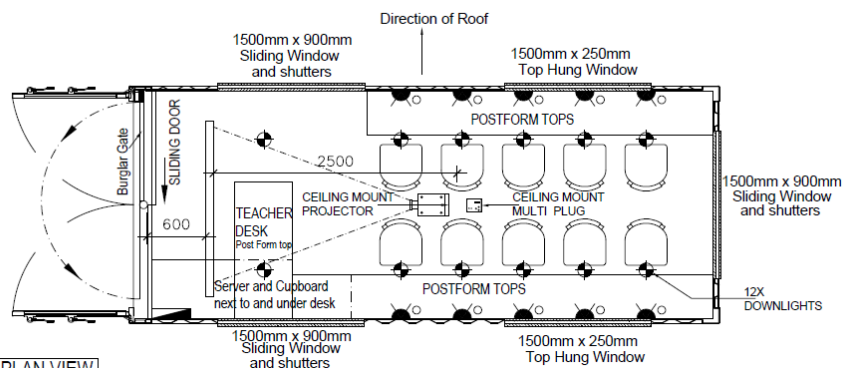

Architecture

LAYOUT

The layout has been design thinking on the best set up for teacher and student interaction enhancing the learning process.

PLAN VIEW

1500mm x 900mm
Sliding Window
and shutters

Direction of Roof

1500mm x 250mm
Top Hung Window

POSTFORM TOPS

2500

CEILING MOUNT
PROJECTOR

CEILING MOUNT
MULTI PLUG

1500mm x 900mm
Sliding Window
and shutters

Burglar Gate

SLIDING DOOR

TEACHER
DESK
Post Form top

600

Server and Cupboard
next to and under desk

POSTFORM TOPS

12X
DOWNLIGHTS

1500mm x 900mm
Sliding Window
and shutters

1500mm x 250mm
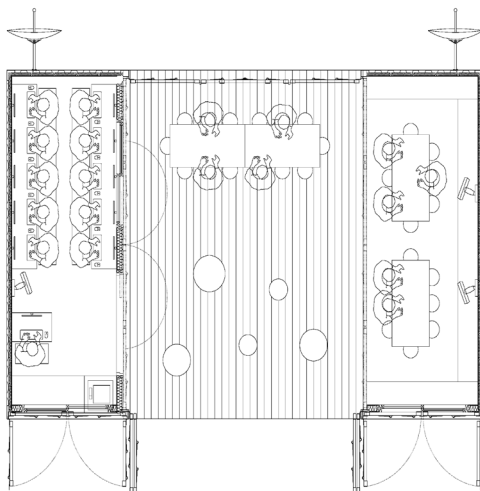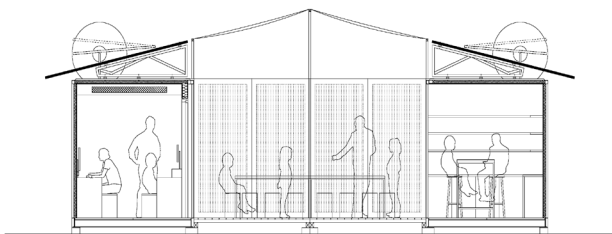Top Hung Window

PLAN VIEW

DESIGN BY SQUIRE AND PARTNERS

INTERNAL ENVIRONMENT

The internal environment is welcoming and designed to inspire learning. It features; high quality finishes and furniture; good lighting and ventilation; comfortable space for students; teacher centre space.

Double Lab

With our double Solar Learning Lab students can benefit from more space to develop their skills. The lab features two converted shipping containers with a covered space in between, allowing for laptop users to join in on lessons taught in the lab.

The Project

ABOUT THE PROJECT

You might take access to computers, the internet and technology in general for granted—but imagine if you were growing up in a town or community where such access was scarce or nonexistent. If you were a child or young adult in such a place, you would be at high risk of being left behind in today's digital world. The installation of the lab provides access to technology for the first time, but beyond that, the installation of a Solar Learning Lab is a message of inclusion and a force of change for a community or a school that needs transformation.
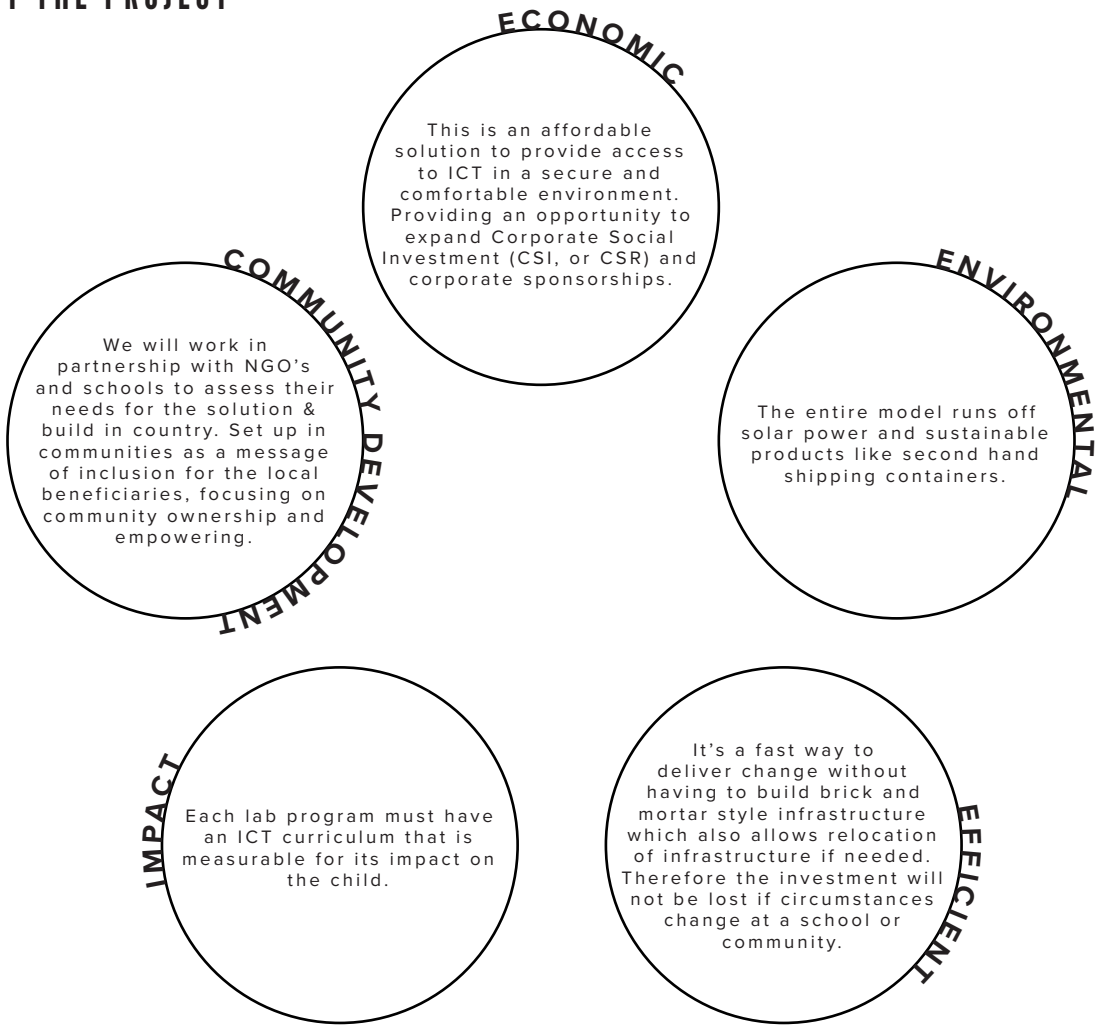
It's been proven that technology can help to engage students in lessons, regardless of the subject. By incorporating technology in an education setting, the children who might have limited or no access to technology and education, now have access to both.

The project provides a sustainable philanthropic solution to any corporate or individual who wants to impact under-served children and youth. By contributing access not only to technology but also to an ICT curriculum, every school where the Solar lab arrives will also benefit from our teacher centered training-process.

The Project

ECONOMIC

This is an affordable solution to provide access to ICT in a secure and comfortable environment. Providing an opportunity to expand Corporate Social Investment (CSI, or CSR) and corporate sponsorships.

COMMUNITY DEVELOPMENT

We will work in partnership with NGO's and schools to assess their needs for the solution & build in country. Set up in communities as a message of inclusion for the local beneficiaries, focusing on community ownership and empowering.

ENVIRONMENTAL

The entire model runs off solar power and sustainable products like second hand shipping containers.

IMPACT

Each lab program must have an ICT curriculum that is measurable for its impact on the child.

EFFICIENT

It's a fast way to deliver change without having to build brick and mortar style infrastructure which also allows relocation of infrastructure if needed. Therefore the investment will not be lost if circumstances change at a school or community.

BEFORE

We will work with partners in country to select schools and communities where there is an identified need for access to technology. We will monitor the set-up of the lab in each school and community center, to ensure that it is working correctly before it's used. We will conduct a base-line survey to measure the ICT literacy of participants in the project before the training starts.

AFTER

We will conduct an end-line survey to compare with the first survey.
We will asses how many teachers passed each module and examine any barriers which might be preventing further achievement.
We will record qualitative data from students and teachers to find out how they feel the lab has impacted their education.

DURING

We will identify a minimum of 3 teachers to be trained in core ICDL modules at each school/lab. We will ensure students can access and use the curriculum at each school/lab We will provide access to digital STEM learning content and materials. We will work with our in-country partner to provide necessary IT support to the schools/labs.

Budget

Dell Solar Learning Lab South Africa	
ITEMS	TOTAL ZAR
Container conversion	ZAR 269,832.00
Site preparation and installation	ZAR 55,660.50
Solar Turnkey 2.34kW Solar System	ZAR 132,978.00
Training, learning material and internet access	ZAR 112,557.90
School selection process and project management	ZAR 131,326.96
Impact and evaluation	ZAR 32,442.12
Total Funding Required	**ZAR 734,797.48**
Costs funded by Dell Giving	
Dell technology	ZAR 758,948.00
Technology Installation	ZAR 85,345.00
Contingency	ZAR 74,706.00
Total funded	**ZAR 918,999.00**

Estimated costs based on a single lab.

Contact Us

ABOUT US

Founded in 1997, Computer Aid International aimed to solve two problems: the growing problem of e-waste, and the inequality of ICT education. In the past 20 years we've seen how technology can impact lives and benefit education, we will continue our work to close the digital divide.

www.solarlearninglabs.org

EMAIL

info@computeraid.org

Alejandro@computeraid.org

PHONE

+44 20 8361 5540

ADDRESS

1E Mentmore Terrace,
London
E8 3DQ