PROJECT IMPACTS

A huge fixed and on-going carbon saving.

Innovative solutions that offer good value and are economical in the medium term (with reasonable payback periods!) and maintainable in the long term.

A boost to the capacity of the ‘home grown’ Rwandan construction material industry, providing much needed local jobs, skills and training.

An integrated and replicable approach and a pilot for green city development in Rwanda.

CACTUS GREEN PARK
A GREEN AND RESILIENT NEIGHBOURHOOD

PIONEERING SUSTAINABLE SOLUTIONS FOR GREEN CITIES

Consultants:

FBW GROUP
WATER CONSULTING EAST AFRICA
STUDIO ENGLEBACK
SONGA OGODA & ASSOCIATES
NATHAN GAUTHIER
The designs and technical studies for Cactus Green Park have been undertaken by an expert team of specialists headed by Light Earth Designs as part of a joint initiative between Horizon Group and Fonerwa. Four technical studies, covering many aspects of sustainable practice have been produced and combined into an integrated neighbourhood proposal, tailored to the Rwandan context.

A masterplan for a residential neighbourhood has been designed over a period of 8 months. This place will integrate the many innovative ‘green initiatives’ into a coherent whole. It will be a great environment, a happy and healthy place where families can live in balance with nature.
A GREAT NEIGHBOURHOOD FULL OF AMENITY
A SCHOOL, PLAYGROUNDS AND A NEIGHBOURHOOD CENTRE.

LOW CARBON AND PASSIVE HOME DESIGNS
SUITED TO THE RWANDAN CLIMATE, CUTTING OVERHEATING AND ENERGY.

PIONEERING NEW SUSTAINABLE ECONOMICALLY VIABLE INNOVATIONS
LOW CARBON HOME GROWN CONSTRUCTION, WATER CONSERVATION AND SOLAR ENERGY.

BUILDINGS THAT ARE CONTEMPORARY AND NATURAL
WORKING WITH THE TOPOGRAPHY AND ARE INSPIRED BY TRADITIONAL RWANDAN HOMESTEADS.
Pursue a ‘green economy’ approach to economic transformation. The green economy approach favours the development of sustainable cities and villages. Key innovations include: piloting a green city, attracting investors in green construction, Interventions will focus on green urbanisation and the promotion of green innovation in industrial and private sectors”. **EDPRS II**

Light Earth Designs has been prototyping Glue laminated eucalyptus structural roof beams in partnership with Rubengera Technical Secondary School. We Promote partnerships to sustainably manage forestry. We propose extruded agro-waste fired bricks, tiles and clay hollow floor planks. We also propose a Eco-concrete frame (with less Portland cement), Strawtec internal partitions and local properly dried timber joinery.

“The fixed Carbon saving from using local materials instead of imported is more that 4 years worth of the energy consumption for the entire development”.

**THE MATERIALS**

AGRO WASTE FIRED BRICKS AND FLOOR SLABS, GLUE LAMINATED EUCATYPTUS AND LOCAL TIMBER PRODUCTS, STRAWTEC, ECO CONCRETE.

**BUILDING THE CAPACITY OF THE CONSTRUCTION MATERIAL INDUSTRY PROVIDING MUCH NEEDED LOCAL JOBS, SKILLS AND TRAINING.**

**QUANTIFICATION OF THE IMPACTS OF THE STRATEGIES FIXED AND ON-GOING CARBON SAVINGS AND COST BENEFIT ANALYSIS TO DETERMINE ECONOMIC VIABILITY**
“Any excess solar electricity is fed back to the grid - offsetting any morning and evening grid usage”.

**Pioneering Net Metering**
Using roof mounted domestic solar panels to provide and cater for the majority of domestic electricity demands.

**Innovative Ground Water Supply Using Boreholes**
Using boreholes to provide clean and drinkable ground water without affecting the surrounding ecosystems.

**Solar Hot Water**
Combined with ‘Low Flow’ fittings to provide for the majority of domestic demand.

**Waste Water**
– Innovative low maintenance and low energy aerobic thin film waste water treatment - with water recycled back into grey water supply.
GREEN SPACES

A FUNCTIONAL LANDSCAPE ‘INFRASTRUCTURE’
BOTH THE ‘HEART AND SKELETON’ OF THE DEVELOPMENT.

A SOFT LANDSCAPE STORM WATER NETWORK
USING POROUS SURFACES AND PLANTING TO SLOW DOWN RAPID RAINFALL,
FACILITATING INFILTRATION INTO SOIL.

‘The site storm water runoff for the new development will be
less than half of that of the empty site’

LOW IMPACT DESIGN - PIONEERING THE USE OF SOFT LANDSCAPE AND
PERMEABLE SURFACES TO TEMPER STORM WATER AND SITE RUN OFF
PROTECTING THE SURROUNDING ECOSYSTEMS.

EXTENSIVE TREE PLANTING AND VETIVER GRASS SLOPE STABILISATION
CARBON FIXING, BUILDING AND PEDESTRIAN SHADING AND BIOCLIMATIC
MODERATION THOUGH ‘EVAPOTRANSPIRATION’.