

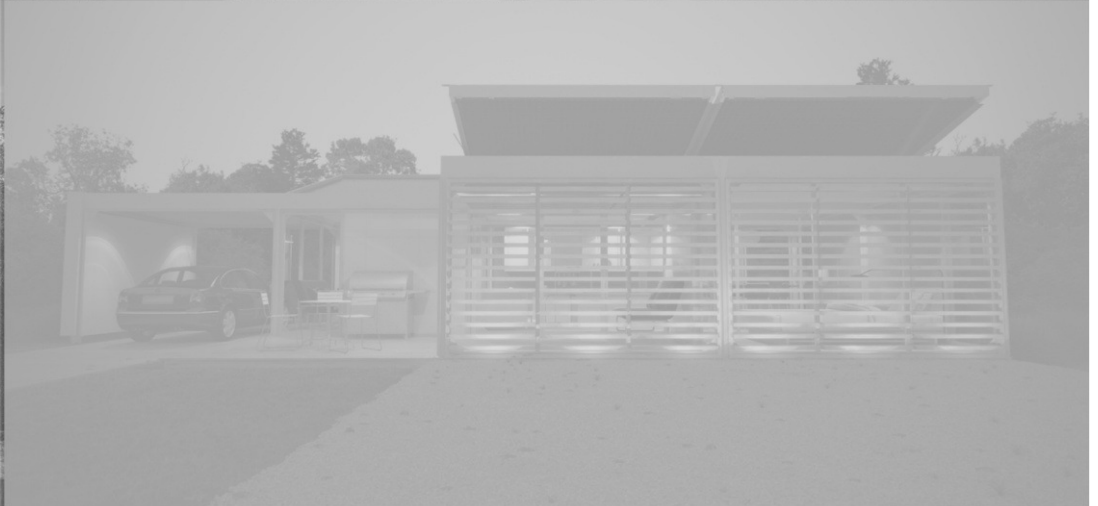


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THE SCALABLE SOLUTION

INTRODUCTION

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THE SCALABLE

SOLUTION

INTRODUCTION

ABOUT US

Multiply is a privately funded initiative, originally tasked with the design and production of a low-cost **modular housing system** for developing economies, particularly focussed on **environmentally friendly** innovative solutions. Subsequently, the technology has also opened up a world of solutions for many other building types and uses – from retail to upmarket residential.

Via **rainwater harvesting**, our newly completed prototype is capable of channelling and storing water within the building structure, thus providing a constant source of water to the unit's occupants. The universally modular nature of the structure requires no wet trades and can, therefore, be erected by **semi-skilled labour** in a vastly **shorter time** frame to traditional building methods by skilled artisans. The module is extremely **versatile** allowing the **scalability** from a single module disaster relief device to a 3 or 4-bedroom middle class home, all within the same modular rationale. The module is enclosed with lightweight, **highly insulated** infill panels consisting of mostly paper pulp, equally durable to traditional materials and vastly more **environmentally friendly**, since no concrete is used in the main structure, thus reducing its **carbon footprint**. These attributes conversely allow the unit/s to be completely disassembled and removed, leaving nothing behind to allow a full restoration of the natural environment.

From a housing point of view, our aim is primarily to **uplift communities** worldwide in a **sustainable** way, beginning with as little as a **disaster relief** solution, individually **growing** each solution over time into environmentally sustainable and **affordable housing**, meticulously designed and rolled out to also provide aesthetically pleasing **architectural environments**.

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THE SCALABLE SOLUTION

INTRODUCTION

WHAT ARE THE BENEFITS OF A MULTIPLY SOLUTION?

Scalability

Can expand ten-fold or more from a 13 sq.m unit to a 3 or 4 bedroom double-storey dwelling within the same system, thus implying empowered ownership.



Environmental Sustainability

- A very low carbon footprint, due to the use of recyclable and renewable materials.
- Own storage of water within the structure via rainwater harvesting.
- Virtually no concrete is used, thus reducing carbon footprint.

Speed and Ease of Construction

Typically erected within a few days, as opposed to weeks and months for other construction types.



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THE SCALABLE

SOLUTION

INTRODUCTION

WHAT ARE THE BENEFITS OF A MULTIPLY SOLUTION?

Cost Effectiveness

Due to the benefits of mass production in a controlled environment and economies of scale, the components are substantially cheaper than traditional building materials and a lot less labour intensive.

Versatility

The module lends itself to many different building types: including all kinds of residential, retail, education, hospitality and disaster relief.

Standards Guaranteed

A product design rationale ensures far reduced parameters of performance predictability.

Maintenance Made Easy

Since components are easy to attach or detach, maintenance is less of an ongoing headache.

Accessible Aesthetic Design Solutions by Trained Professionals

Architectural aesthetic design standards are an added benefit.

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THE COST-EFFECTIVE SOLUTION

BASE UNIT

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THE COST-EFFECTIVE SOLUTION

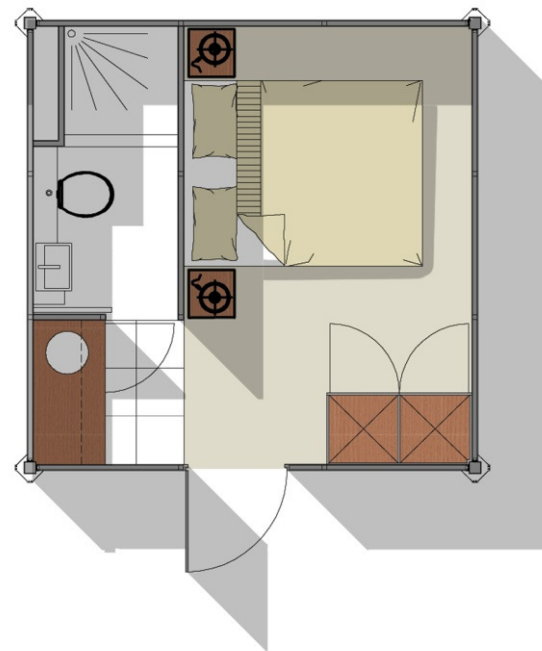
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Entry level

The entry-level basic module is 13 sq.m in area and effectively forms the basic point of departure for all the different typologies. There are various ways of dressing it up or down, depending on accommodation and cost requirements. It can be left as a basic shell or include a one-piece bathroom, flush plastered ceilings and various finishing options. Since expansion potential is considered intrinsic to all typologies, one type easily morphs into another. Most solutions are attainable – we simply track the growth potential in pre-determined growth scenarios.



BASE UNIT



THE COST-EFFECTIVE SOLUTION

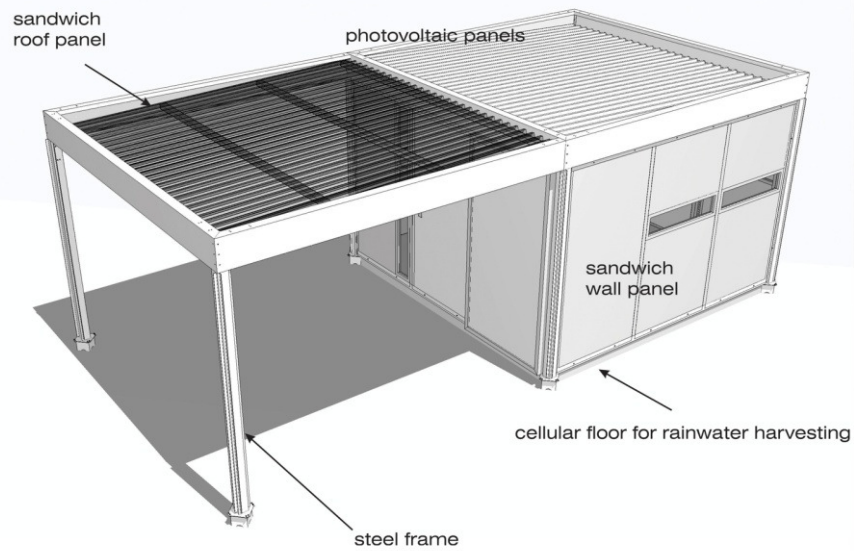
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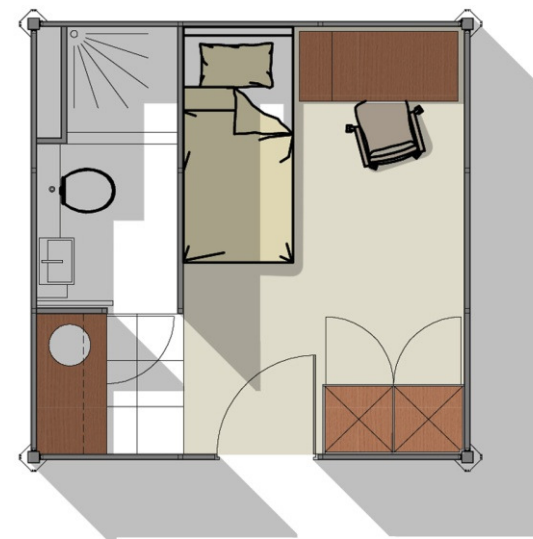
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The System is:

- Modular
- Environmentally Friendly
- Rainwater Harvesting
- Semi-Skilled Labour Utilising
- Versatile
- Scalable



BASE UNIT





THE SUSTAINABLE SOLUTION

UPMARKET
RESIDENTIAL
ASPIRATIONAL

EXPANDABLE

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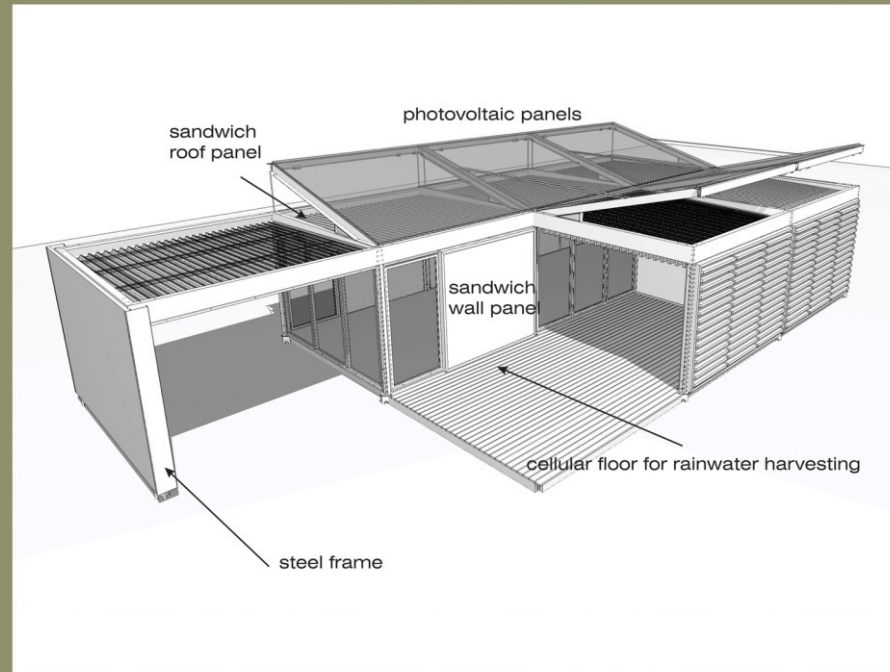


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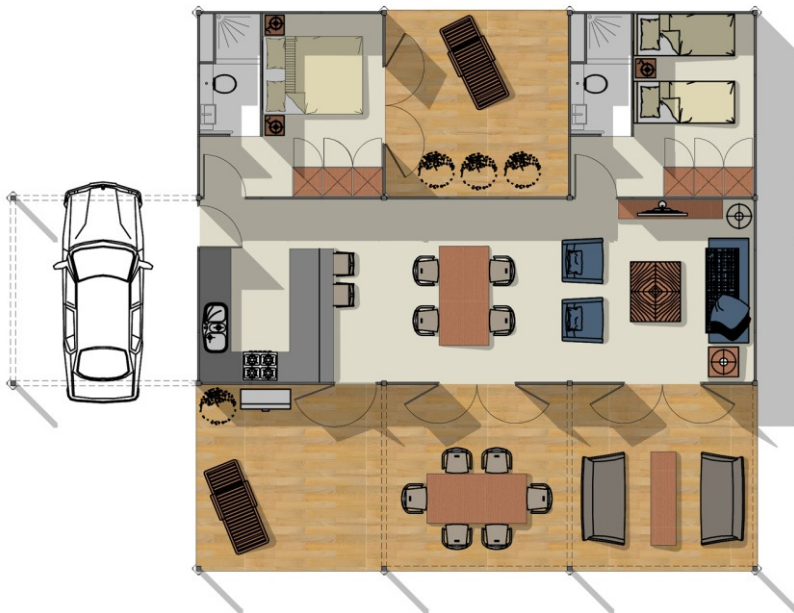
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Single Storey Flat

This modular scenario assumes a set of parameters specific to a particular set of requirements - seen as a two-bedroom house with the option of an added bedroom instead of the indoor – outdoor en suite main bedroom. Extensive photovoltaic panels allow the possibility of electricity supply independent of the grid as well as providing shading for the actual roof surface.



EXPANDABLE
UNIT





THE SUSTAINABLE SOLUTION

UPMARKET
RESIDENTIAL
ASPIRATIONAL

LUXURY UNIT

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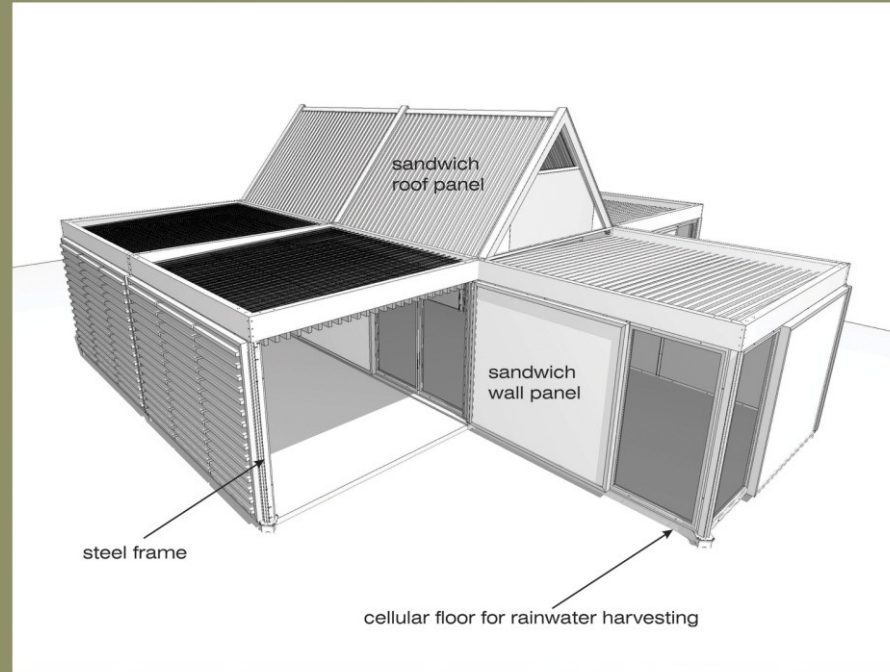


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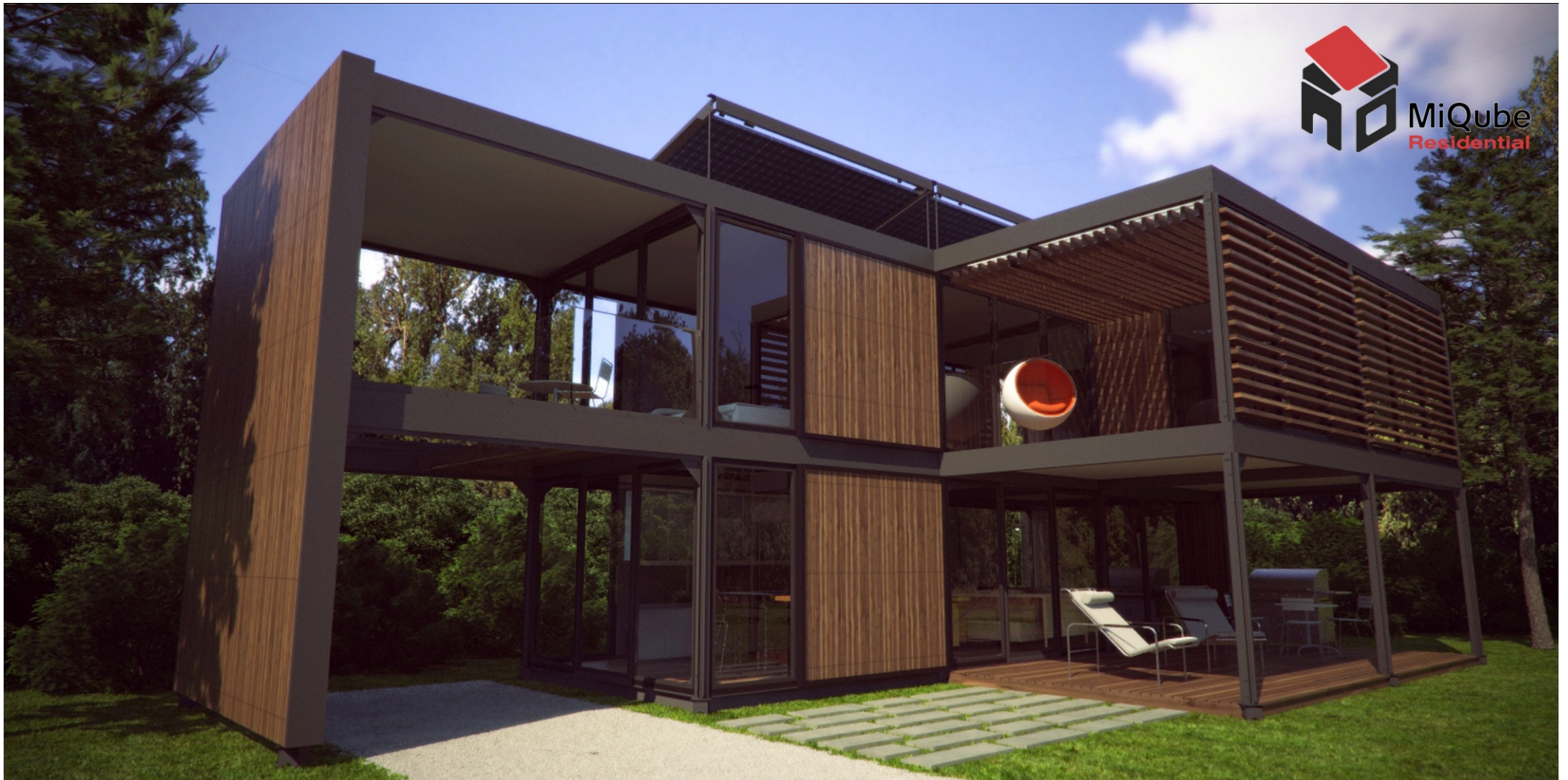
Single Storey Pitch

Very much a balance between accommodation and lifestyle, this unit offers a good measure of both. A third bedroom/ loft offering, coupled with a generous main en suite.



EXPANDABLE
UNIT





THE VERSATILE SOLUTION

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LUXURY UNIT

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THE VERSATILE
SOLUTION

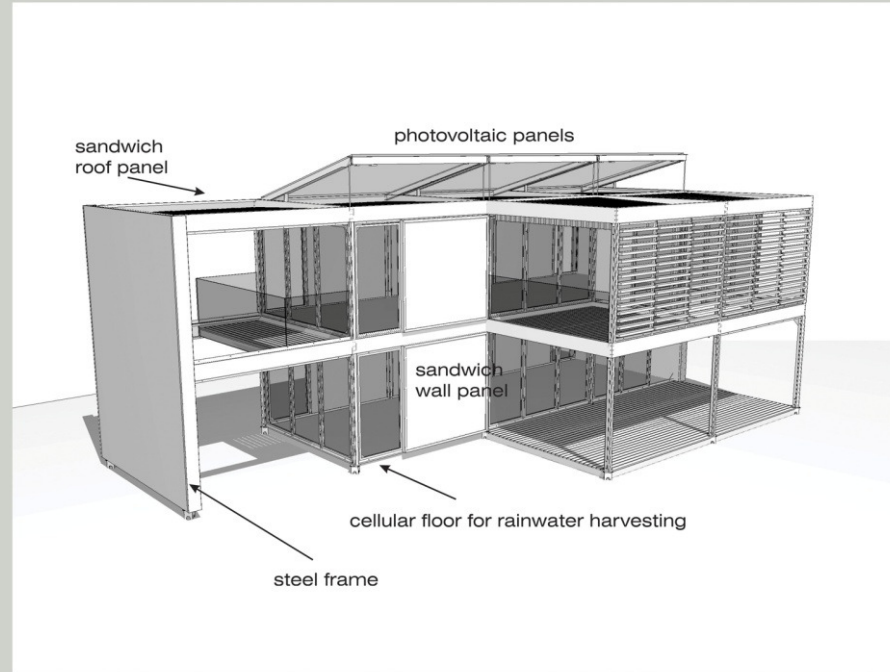
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Double storey flat

This format is an extension of the single storey version, offering more in terms of living, entertainment, lifestyle and utility spaces as opposed to only bedroom expansion. Finishes can be geared up to suit more upmarket expectations.



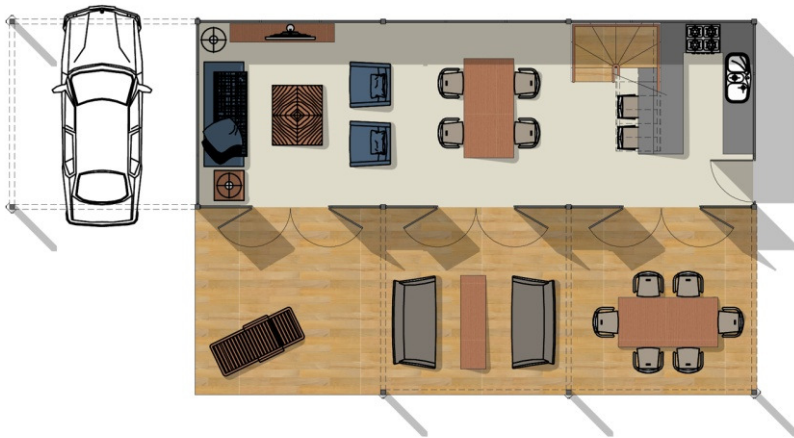
LUXURY
UNIT



THE VERSATILE SOLUTION



LUXURY
UNIT



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THE SOCIAL SOLUTION

DENSIFICATION
COMMUNITY
UPLIFTMENT

DENSIFICATION

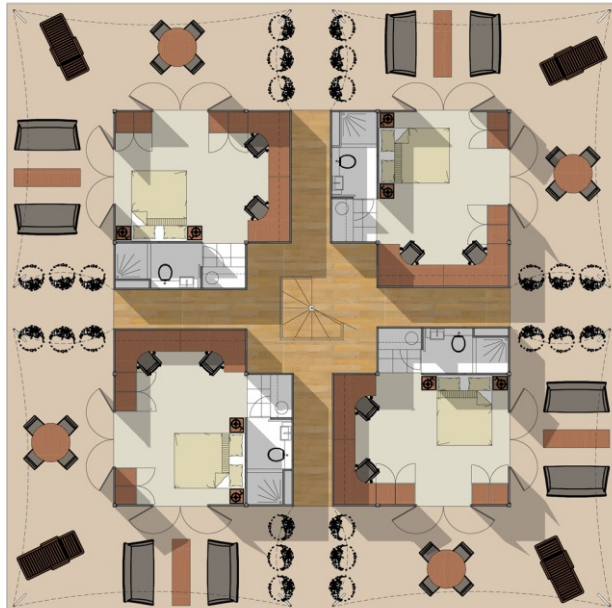
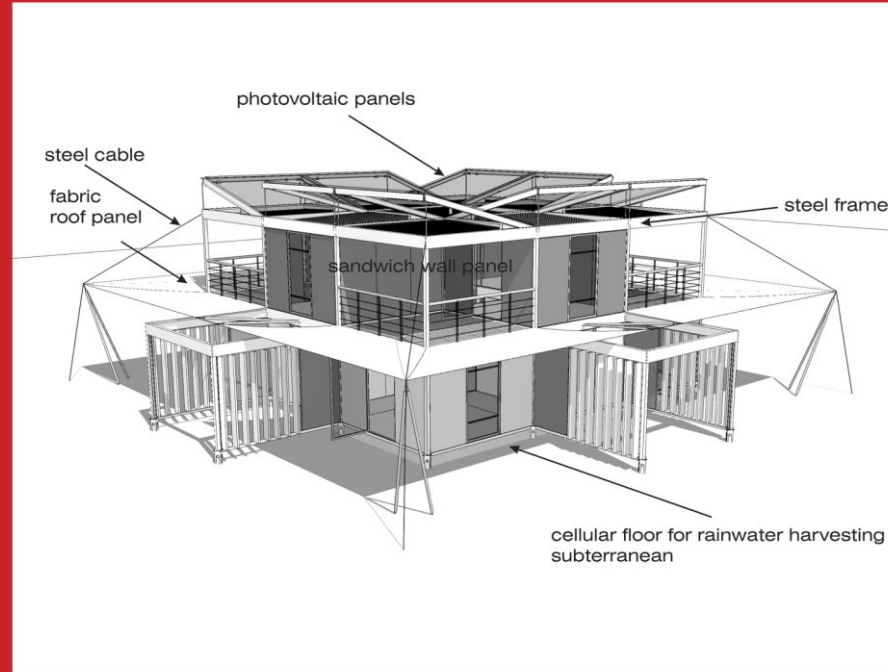
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Densification

In as much as the modular approach empowers the potential individual family, higher density interventions are also a function of the modular metamorphosis. In the same way as a single 13 sq.m unit can grow to become a 4 bedroom dwelling, it is equally plausible to grow entire communities by introducing medium and higher density build-out solutions. Sophisticated rollout strategies via master planning criteria, will thus convert a singular solution into an urban fabric.



**DENSIFICATION
UNIT**



**THE SHARED
SOLUTION**

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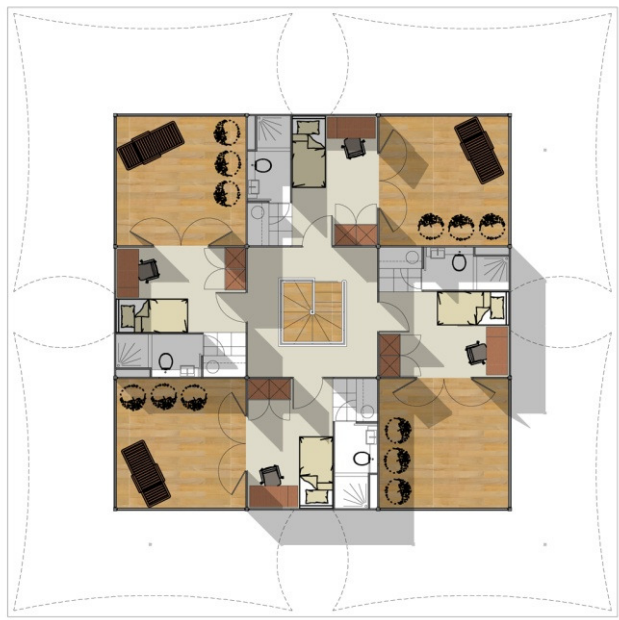
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It is important to note that the high density solution is appropriate for a fraternity environment and not a family environment per se. The family configuration will be planned as a medium density solution, with a separate entrance for each family unit.



THE SHARED SOLUTION

DENSIFICATION UNIT



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THE SOCIAL SOLUTION

DENSIFICATION
COMMUNITY
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DENSIFICATION UNIT

THE SHARED SOLUTION



DENSIFICATION UNIT



These units are diverse in both the level of density offered on a small footprint, as well as being able to accommodate a wide variety of uses and occupants.

In this case, the typical 54m² footprint is replicated to make up 8 family units - each with their own, separate entrance. Separate entrances are a requirement specific to family configurations.

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THE APPROPRIATE SOLUTION

ECONOMIC GROWTH
BUSINESS DEVELOPMENT
TOURISM

HOSPITALITY

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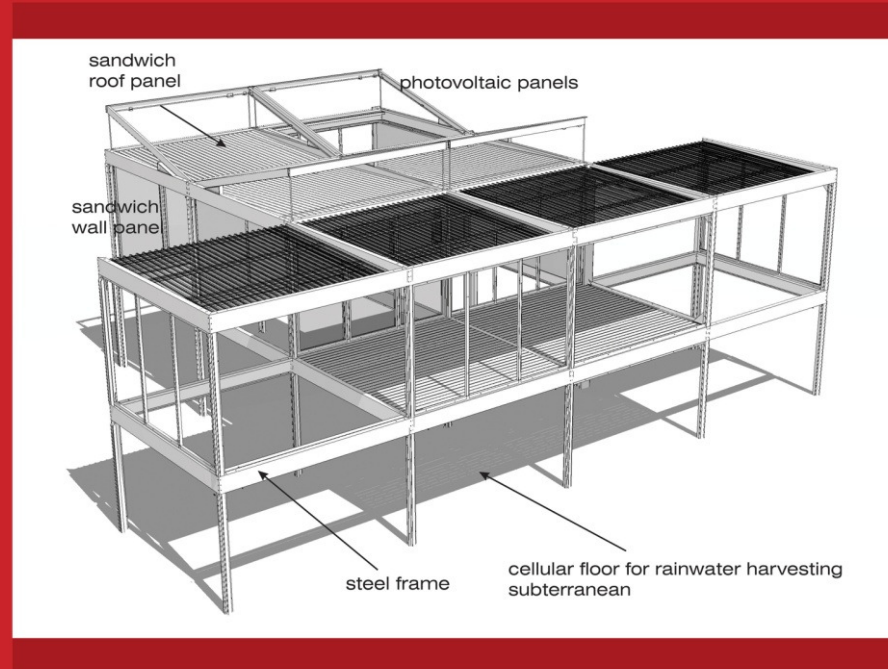
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THE APPROPRIATE SOLUTION

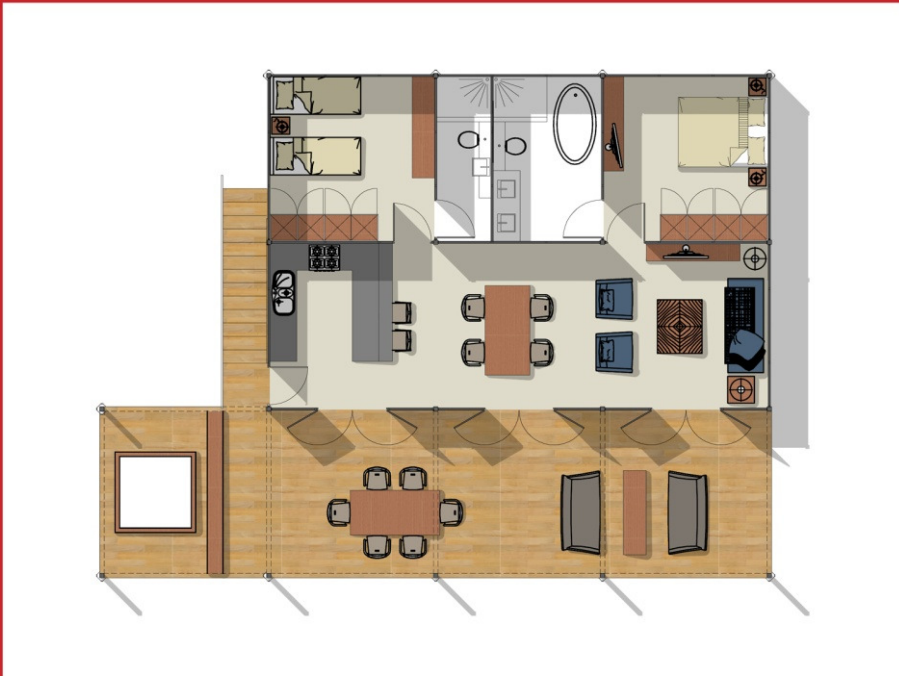
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HOSPITALITY UNIT



Hospitality

Many different versions of the idea fit well with hospitality concepts such as bush lodges, tented camps, weekend retreats and more. Particularly appropriate for this sector because of its environmentally friendly attributes. Far-flung localities are well served by the energy concepts incorporated in the concept.



THE RELIABLE SOLUTION

COMMUNITY AID
DISASTER RELIEF

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RELIEF UNIT

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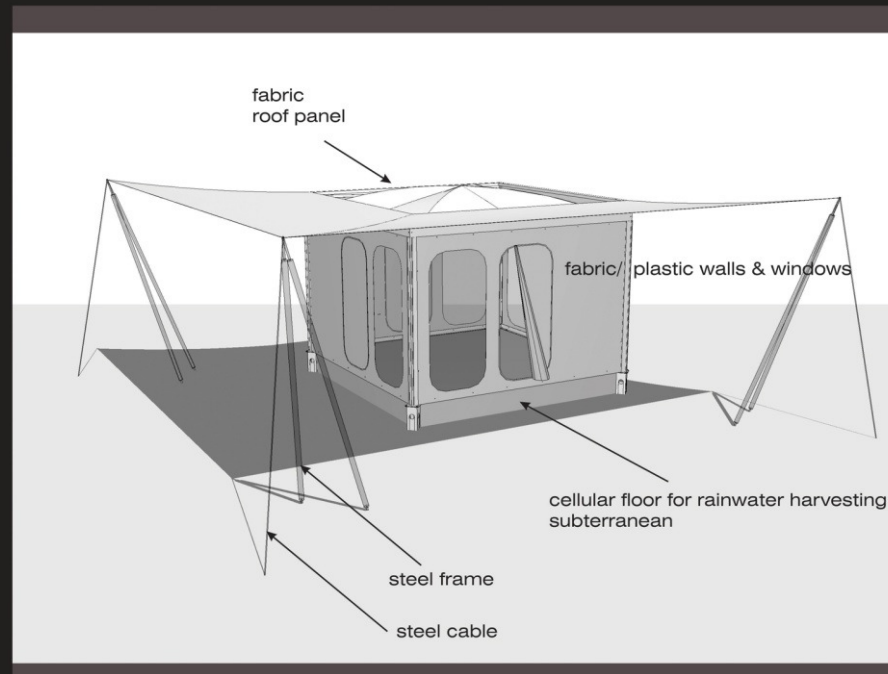
THE RELIABLE SOLUTION



Disaster relief

Envisaged a sub-entry level iteration, this format offers quick and accessible emergency housing at a very low price, with the potential of up-scaling into the higher formats with subsequent changes in circumstances and the passing of time.

RELIEF UNIT



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THE FLEXIBLE SOLUTION

EDUCATION
SUSTAINABILITY
COMMUNITY

UTILITY

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Educational

As in most developing economies, education is always in search of venues and adapting the modular concept to address this sector, is a logical application of the idea. Most typical educational configurations are easily achieved. Modularity is particularly appropriate to this type of application.

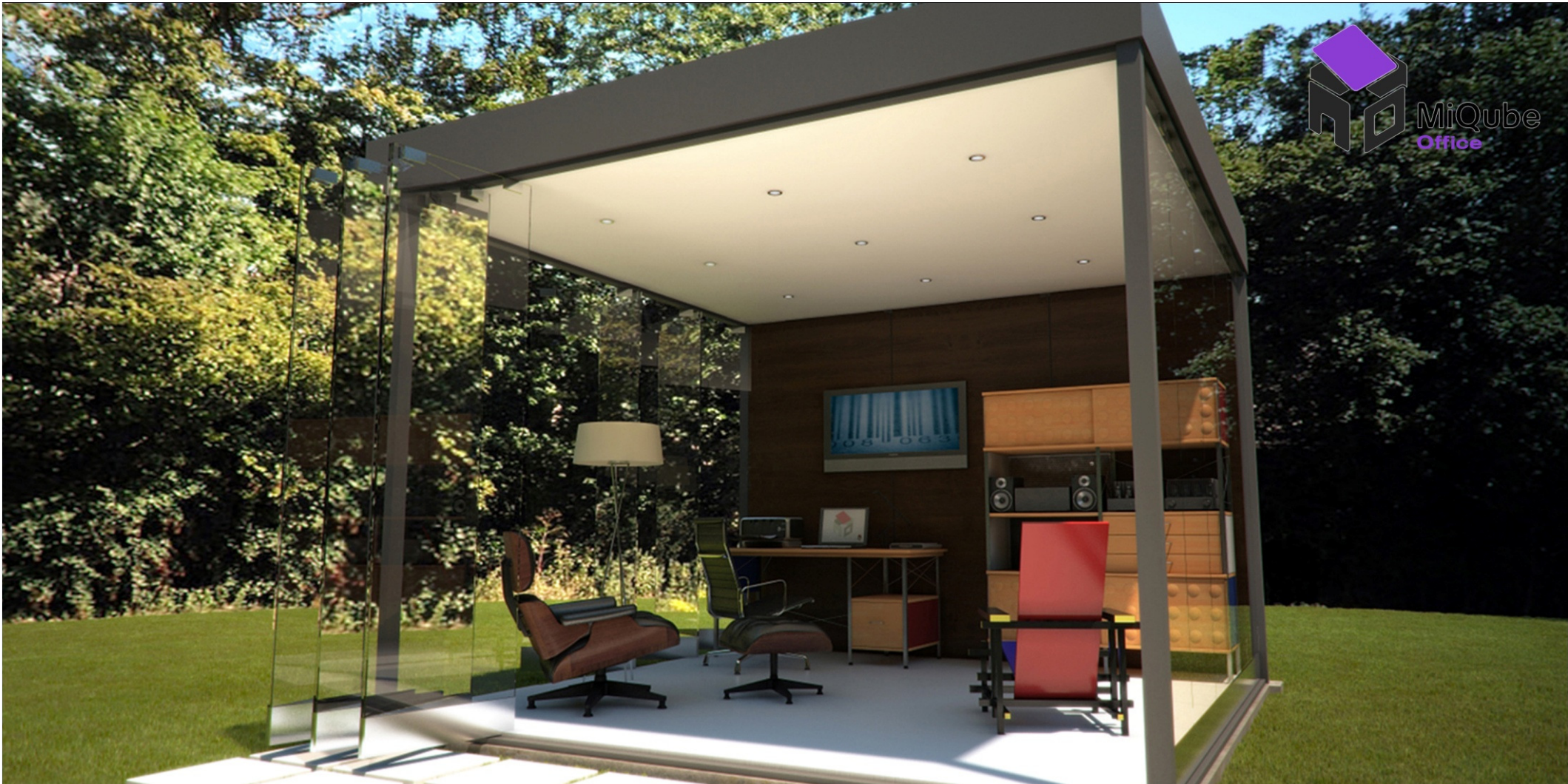


UTILITY UNIT



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THE DIVERSE SOLUTION

OFFICE/COMMERCIAL
SMALL/MEDIUM
BUSINESS SOLUTION

COMFORT

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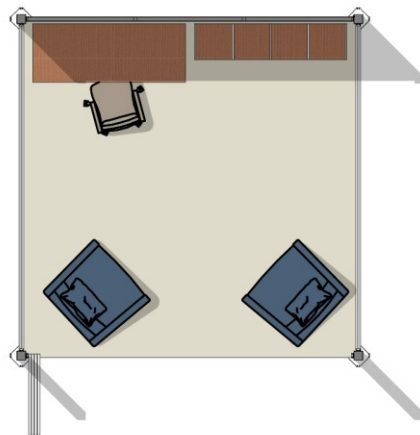
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THE DIVERSE
SOLUTION



Office

Perhaps the dream of every workaholic – the office/study in the garden, with a view. Dressing the unit up in this way allows for a tranquil minimalist intervention in the style of a garden pavilion of old.



COMFORT
UNIT

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THE ENGINEERED SOLUTION

SMALL BUSINESS DEVELOPMENT
SOCIAL UPLIFTMENT
MODULAR CONVENIENCE

RETAIL

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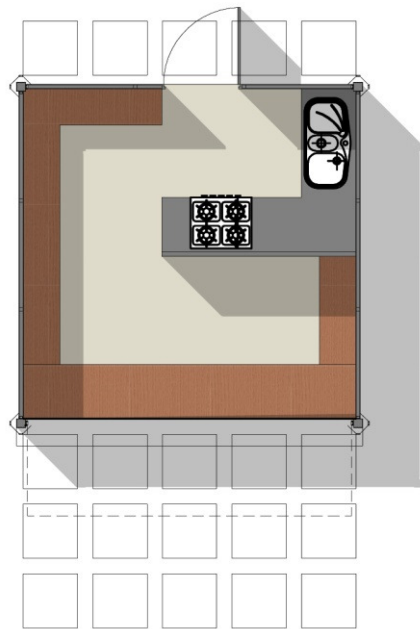
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THE ENGINEERED SOLUTION



Retail

This single modular unit addresses the requirements of the small-scale informal trader. Larger configurations of this concept ranging from informal clusters to convenience stores are a logical culmination of the retail variant and are very much in the pipeline, moving forward. Such contributions to the retail sector will encourage economic growth at a grass root level and stimulate job creation.



RETAIL UNIT

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THE LOCAL SOLUTION

SMALL RETAIL
OPPORTUNITY
CONVENIENT
COMMUNITY STORES

RETAIL

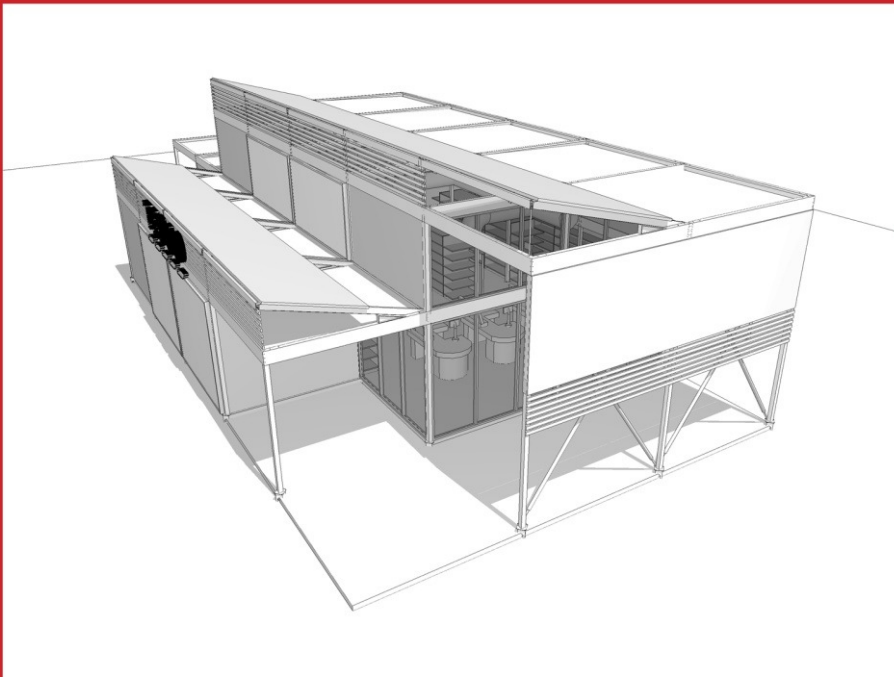
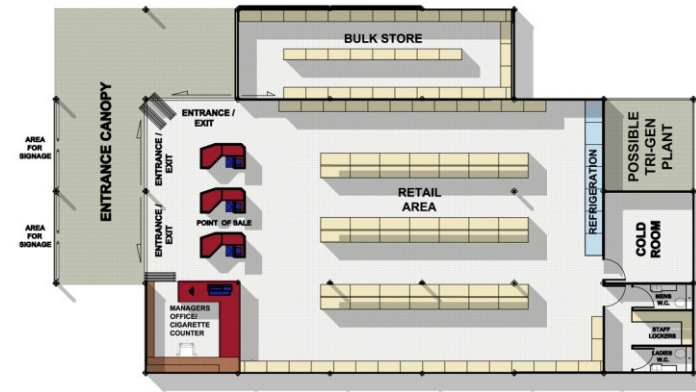
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THE LOCAL SOLUTION

Retail

When applied to retail, the rapid delivery modular concept opens up enormous brand establishment potential in far-flung and undeveloped regions. For any retailer, building a capability for quick deployment in a logistically sustainable, cost effective manner is a very definite differentiator. The modular, cost effective and environmentally friendly attributes of this concept, further reinforce its advantages over other modes of retail space.



From a development perspective, reaching emerging markets has historically posed plenty of challenges: shortages of skilled labour, lack of services infrastructure, as well as expensive and/or unreliable energy resources, have all contributed to the lethargy in expansion in these areas. An uncertainty with regard to security of tenure has also proved to be a deterrent for development.

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Retail

THE LOCAL SOLUTION

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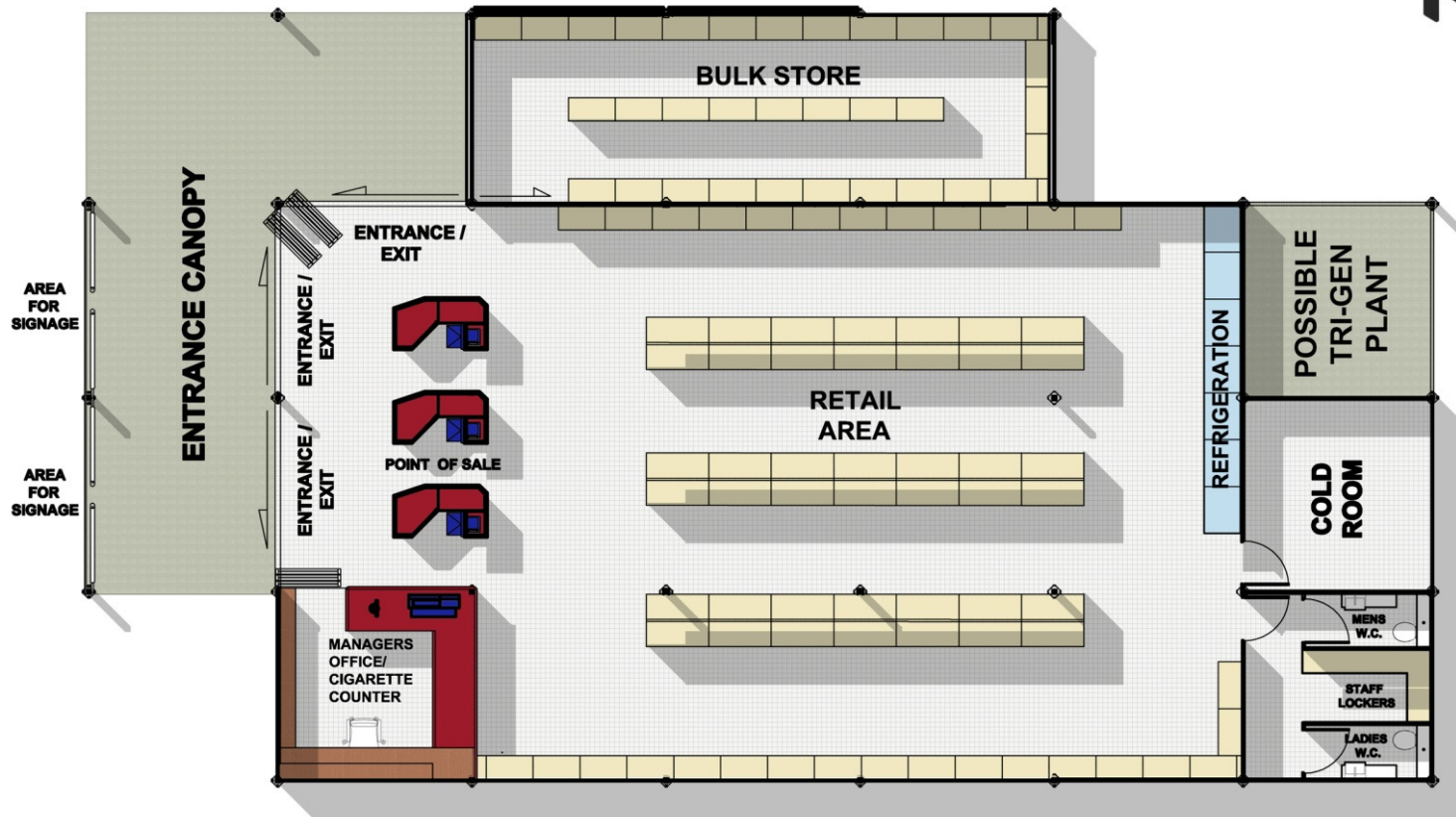
Ease of delivery is matched by quick disassembly when required. Not only does this semi-nomadic style of design allow for quick deployment, by extension it also allows for easy up-scaling and down-scaling as well as complete disassembly and removal.



Self-sustaining energy for lighting and electronic installations is supplied by way of solar installations, whether building specific or a separate array for enhanced capability. Where refrigeration and air-conditioning are required off the grid, tri-generation via micro-turbine systems are proposed where appropriate.



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RETAIL

RISK

MINIMISATION OF RISK AND MAXIMISATION OF OPPORTUNITIES IN AFRICAN STORE LOCATIONS OUTSIDE SA



- **Market Intelligence risk**; in SA, there is a wealth of data about population, income groups and spending patterns; in the rest of Africa, this is less sound and our solution allows rapid and relatively easy relocation with minimum downtime and costs of relocation should a decision prove to be wrong; it also allows re-siting according to changes in population centres and infrastructures
- **Time Risk**; planning permission in North Africa is chronic and decisions can take years; all that is required in our solution is land
- **Landlord Risk**; having found a good location, finding a good building or creating a building from scratch can also take a long time; there are not the range of financial institutions ready to fund buildings and landlords easily.
- **Cost risk**; construction costs in Africa can be 3 x SA, undermining the retail profitability model, or alternatively translating into very high selling prices, which the locals see as exploitation
- **Size risk**; if the market turns out to be bigger or smaller, the traditional model of fixed square metre buildings results in either wasted space or unattractive add-ons with new time delays; our model scales easily, quickly and relatively cheaply
- **Hub risk**; stores can become more profitable if a mix of retailers migrate to the site; in the traditional model this can take years; our model enables the rapid creation of retail Malls

THE LOCAL SOLUTION

SMALL RETAIL
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