BUILDING FOR A CENTURY. PART 2.

WITH A SPECIAL FEATURE: WALLS.

EITHER:

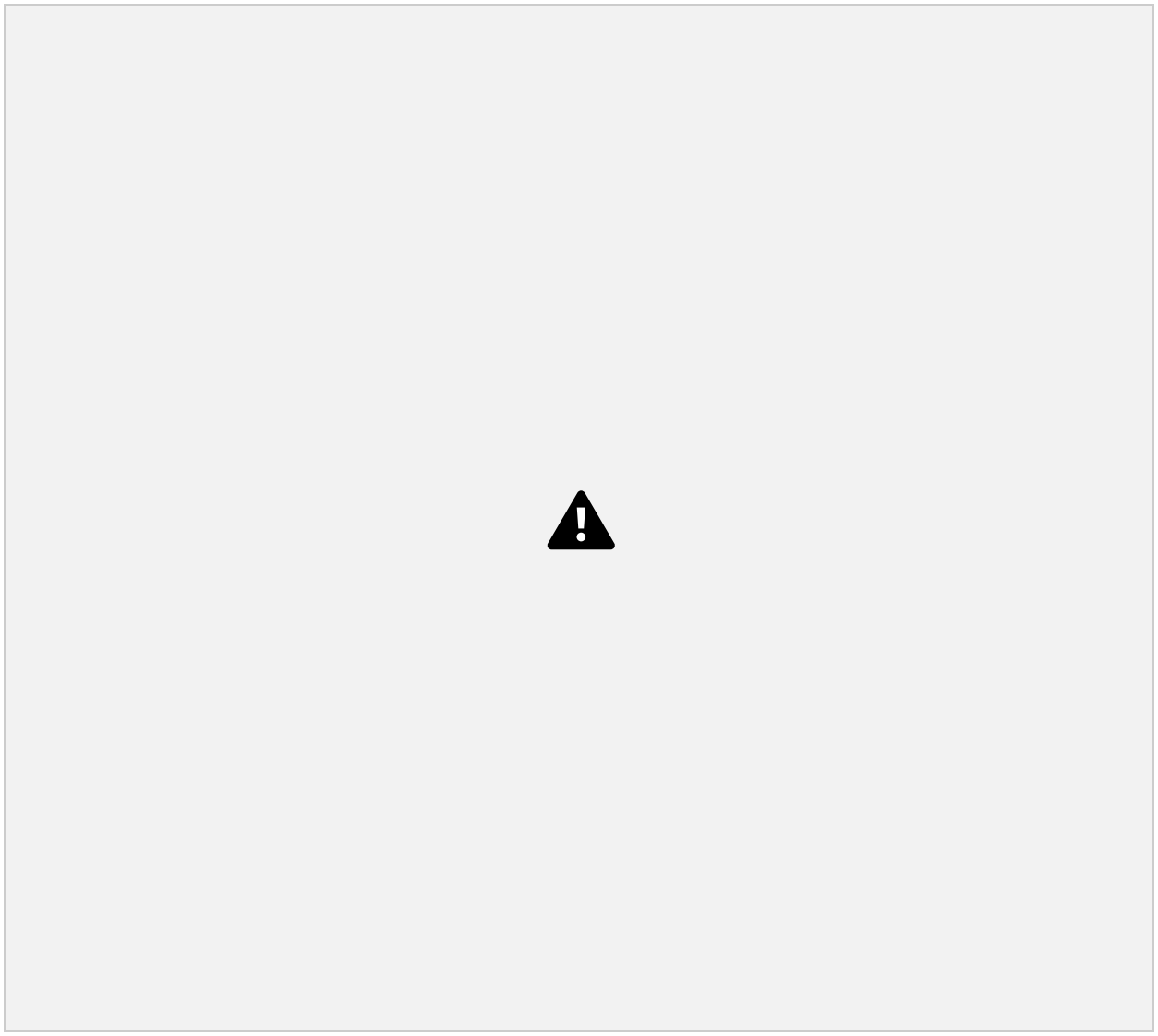
1: It will have provision for restoration, modification, alteration to keep up with a 100 years of trends, climatic variations, and all other unexpected outcomes. BUILDING AS THE YEARS PASS

2: It will have a design smart enough to keep it current in a 100 years, or more? ONE-TIME BUILDING

A thought: Why is it that our Hindu Temples, or European Churches are introduced as "This church dates back to... or this temples has been around since..." You get the idea, they have lived to see it all. But we notice that in our houses- the ones we live in, the spaces we inhabit every single for our entire lives, paint starts to peel, cracks and fissures develop, we require restoration after x amount of years!

We all know the Pyramids, but where did all the millions who struggled to build them live? What has survived from The Indus Valley civilization? We build the public buildings to last forever but our very own homes struggle to see the turn of a century. Do you think that our houses should last forever as they are what we predominantly build? and public buildings can afford to be rebuilt or renovated every 50-75 years.. to incorporate new technology, changing demographic population, expansion, etc.

WALL SECTIONS



Think about a frame structure.. maybe timber or steel.

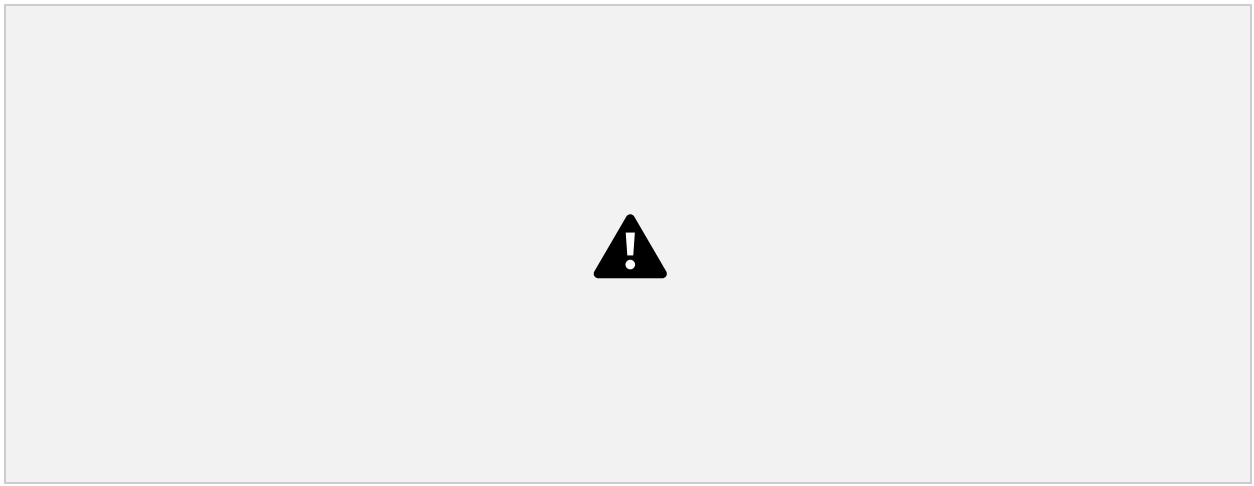
Timber lasts longer than we know...

Many wooden floors have been lost to the ravages of time and the vagaries of fashion. By the time a 200-year-old oak floor has been stained by the Victorians, neglected by a property owner who has fallen on hard times, chopped up by a plumber and coated in years of dust and dirt, the timbers might appear unsalvageable, even worthless. With sympathetic treatment, however, almost all historic timbers can be restored beautifully to become the foundation of an authentic building restoration. Much like a piece of antique furniture, once wooden floors reach a certain age they all have an inherent beauty and value that merits investing the time and effort it takes to revive them. A floor that has passed the age of 100 years is certainly worth saving, whatever the wood.

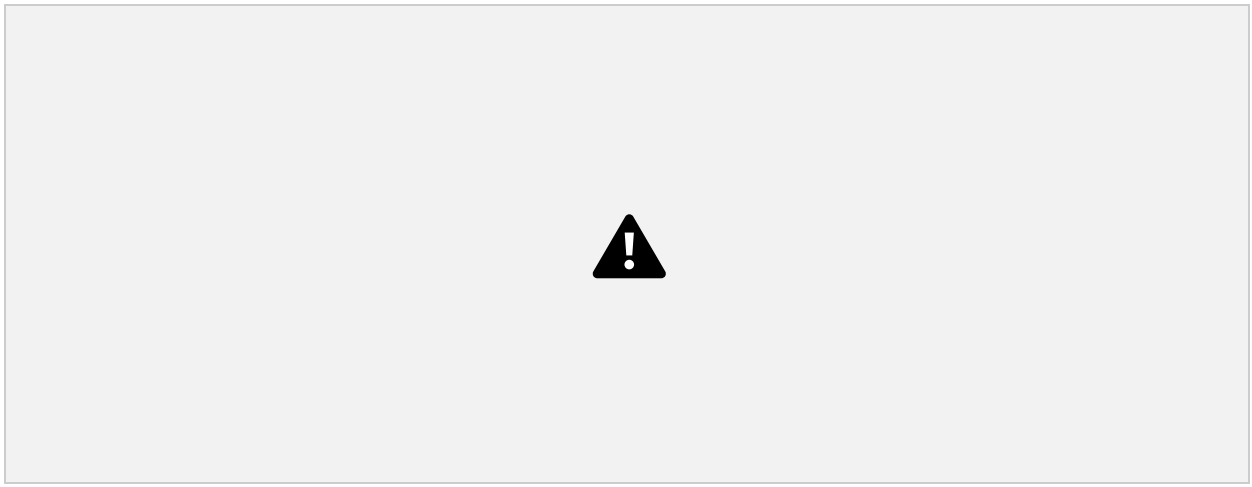
Wall panels can be framed within this structure- this allows for:

- **Different fixing details, size, window or door cut outs.**
- **Flexibility: in designing electric, water, outlets, drains, shelves, etc**
- **Aesthetically panels can be changed, modified, painted printed, etc**
- **Sound-proofed, water-proofed, fire-proofed based on its function and purpose.**

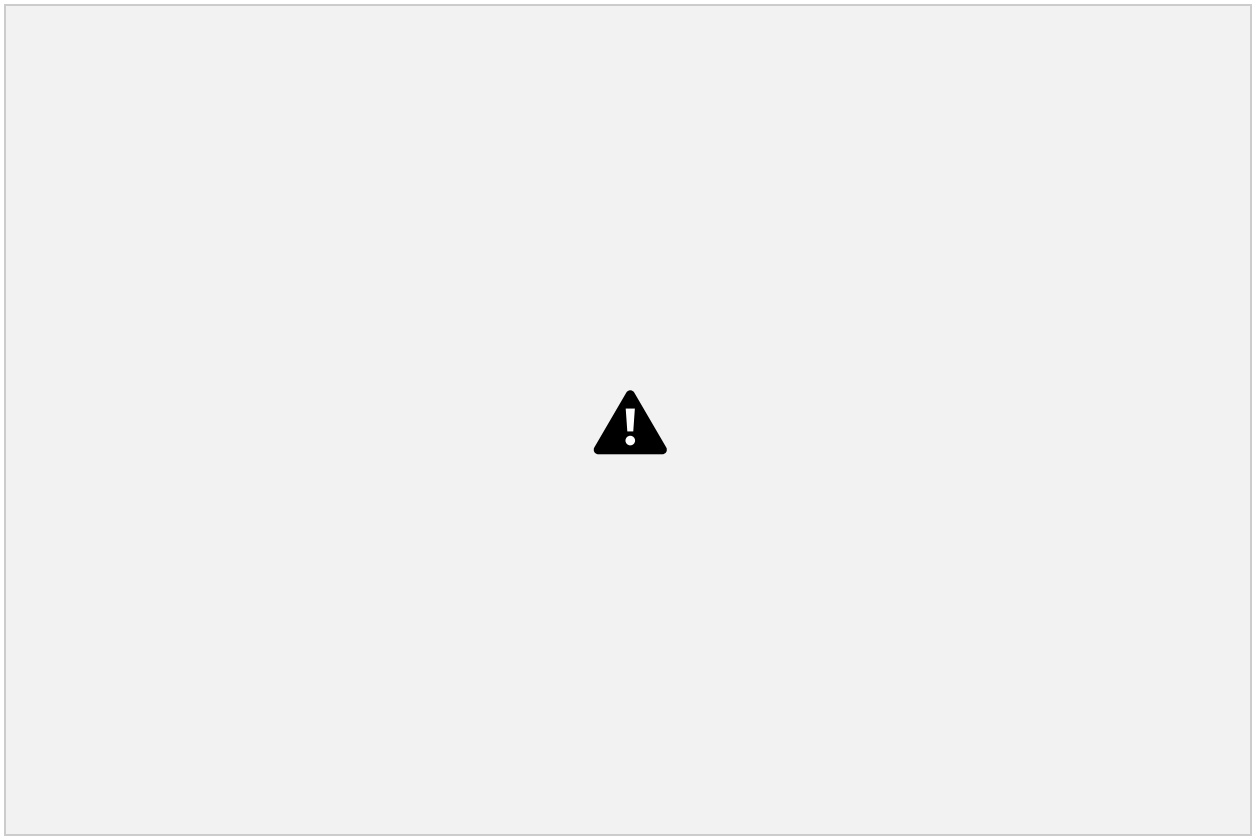
EXTERIOR WALL CLADDING



INTERIOR WALL CLADDING



Or Insuating Aercon ACC- Autoclaved Aerated Concrete



HOW DO WE STRUCTURALLY BUILD FOR A CENTURY?

MODULAR, MULTI-FUNTIONAL, CHEAP (PRE-USED WITH LITTLE OR NO FUTURE APPLICATION), STRONG

A SHIPPING CONTAINER

On average they can reach **30 years** with a struggle, and that includes standing up against the harsh ocean elements- salty (natural corrosive agent) breeze, rough handling and moving.

They can be **water-proof, wind-proof, vermin proof**, **welded,** cut, buffed and primed, etc.

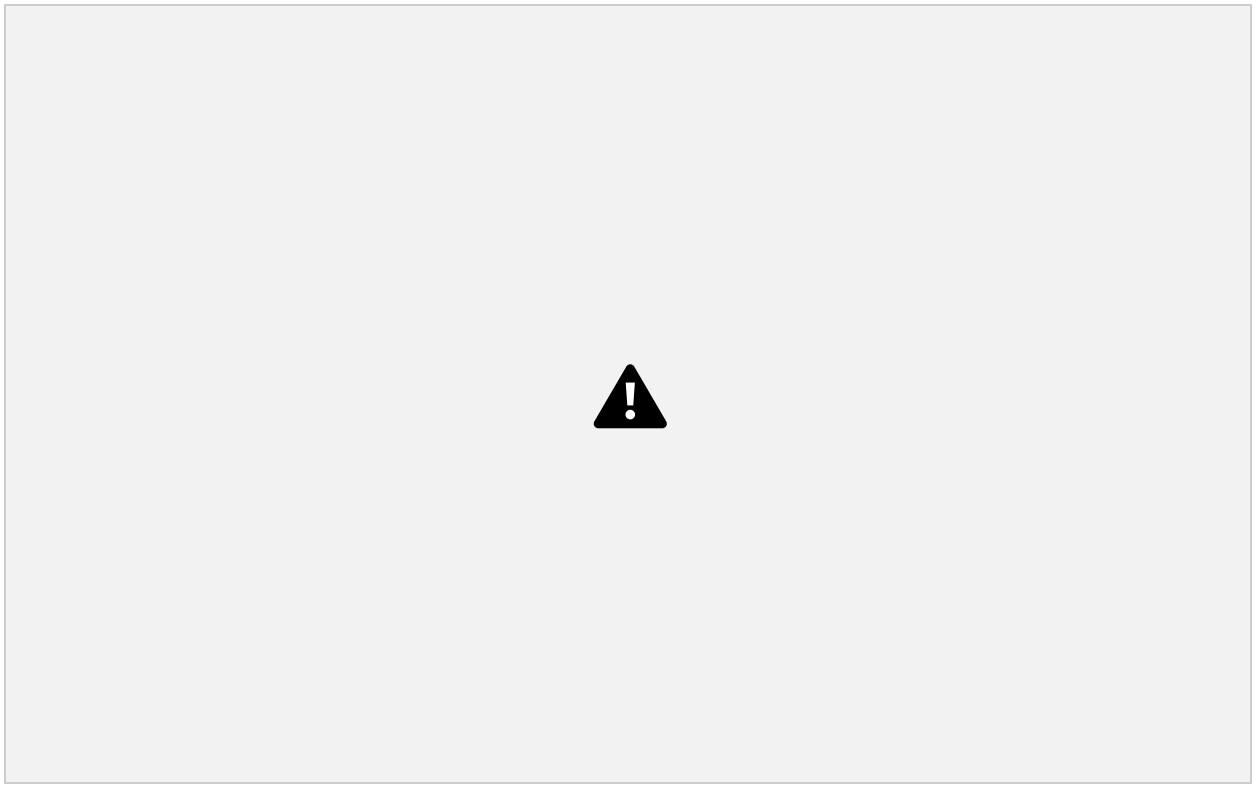
They can be stacked upto **seven (floors)** unites high.

Containers are 8-foot (2.44 m) wide by 8 ft 6 in(2.59 m) high, and either a nominal 20-foot (6.1 m) or 40-foot (12.19 m) long. 7 containers give you a 2000+ sq ft house.

Think about a shipping container frame where walls can be slotted in on brackets depending on the clients requirements..

Glass panels for views, frosted for added privacy, tinted to aid glare.

Panels that can be sound-proofed, water-proof, wooden, ACC, the possibilities are endless!



Modular construction is a process in which a building is constructed off-site, under controlled plant conditions, using the same materials and designing to the same codes and standards as conventionally built facilities – but in about half the time. Buildings are produced in "modules" that when put together on site, reflect the identical design intent and specifications of the most sophisticated site-built facility – without compromise.

Structurally, modular buildings are generally stronger than conventional construction because each module is engineered to independently withstand the rigors of transportation and craning onto foundations.

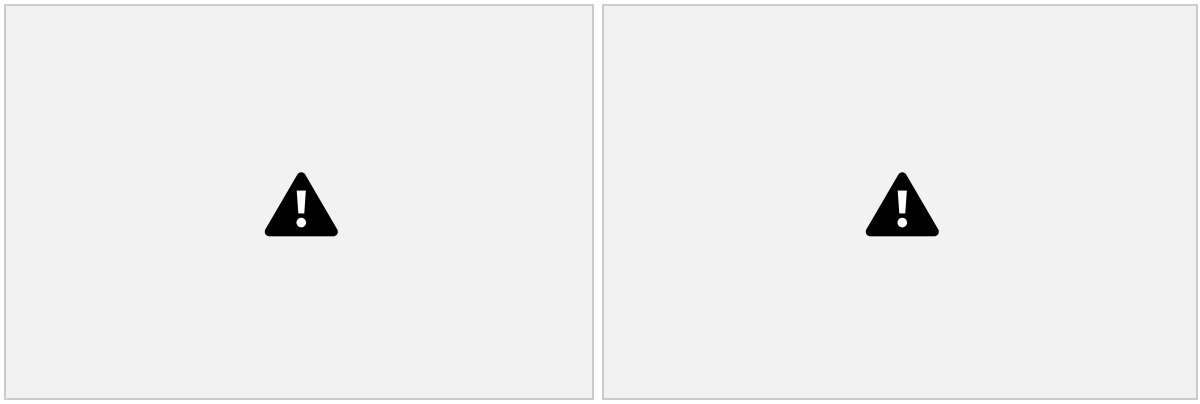
Building off site ensures better construction quality management.

Beyond quality management and improved completion time, modular construction offers numerous other benefits to owners. Removing approximately 80% of the building construction activity from the site location significantly reduces site disruption, vehicular traffic and improves overall safety and security.

For architects and owners alike, modular construction companies today can work with levels of design and construction sophistication that will exceed all expectations, rivaling their conventional counterparts.

As owners and designers look for more sustainable designs for improved environmental impact, modular construction is inherently a natural fit. This, along with improved quality management throughout the construction process and significantly less on-site activity and disturbance, inherently promotes sustainability.

Building With Shipping Containers



Located in Quebec, this home utilized seven shipping containers. **The 3,000 square foot house was built for $58 per square foot**, easily one-third the cost of building a traditional American home. Photo: Lowimpactliving.com

When used to carry cargo, shipping containers have an average life span of about 20 years before they are sent to scrap yards. When stationary and properly maintained in architecture, they are ***likely to outlast other traditional building materials.***

Built to withstand huge amounts of weight and pressure, as well as extreme weather conditions, these containers make ideal building blocks. Not to mention the fact that they are plentiful, ***relatively cheap*** and easily transported.

The construction of this 1,858-square-foot shipping container home was said to produce only ten contractor trash bags of construction waste

The average shipping container, weighing around 9,000 pounds, takes 9,000 kilowatt hours of energy to melt down the steel. On the flip side, modifications made to the steel containers for building use approximately 400 kilowatt hours of energy, a 95 percent reduction in energy consumption.

Stacks of abandoned containers became the inspiration for artistic and sustainable design just a couple decades ago, though awareness of the building concept has increased dramatically in the last few years.

ZERO-CARBON HOMES

The Carbon-neutral House

A net-zero energy home has **"zero net energy consumption and zero carbon emissions annually."** That means that sometimes the house and its occupants are drawing energy from the grid and sometimes they are supplying energy, and the net is zero over the course of a year.

In addition, by **building out of local materials**, the carbon released to build the house is greatly reduced. Once **carbon-absorbing cements** are commercially available, then compressed earth blocks with this cement added will draw down carbon from the atmosphere. Add a green roof and even more is absorbed by the plants living on the roof.

Concrete roads and buildings have been linked to "hot city syndrome," a condition in which temperatures keep rising in urban areas. There's a direct link between concrete and global warming.

Researchers are studying things such **as porous pavement that allows the earth to breathe and take in water.** Stone and soil underneath porous pavement acts as a reservoir and cleans runoff water like the filter on a fish tank.

Highway barriers made from porous concrete could absorb sound and act as sponges that soak up greenhouse gases.

Zero Energy Building is considered as a part of smart grid. Some advantages of these buildings are as follow:

Integration of renewable energy resources

Integration of plug-in electric vehicles

Implementation of zero-energy concepts

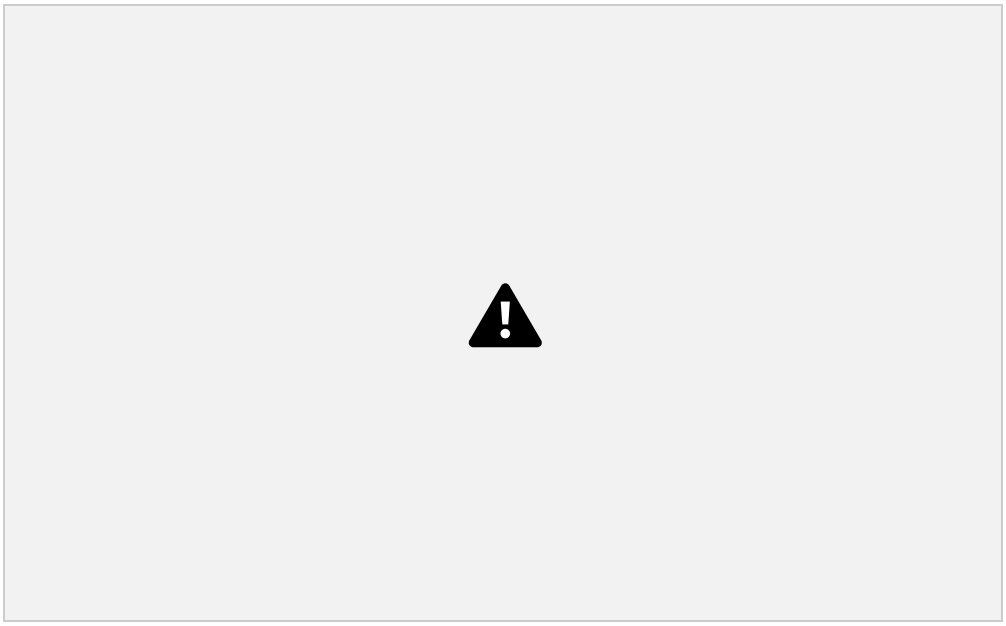
Design and construction[edit]

Successful zero energy building designers typically combine time tested passive solar, or artificial conditioning, principles that work with the on-site assets. **Sunlight and solar heat, prevailing breezes, and the cool of the earth below a building, can provide daylighting and stable indoor temperatures** with minimum mechanical means. ZEBs are normally optimized to use passive solar heat gain and shading, combined withthermal mass to stabilize diurnal temperature variations throughout the day, and in most climates

are superinsulated. Sophisticated 3-D building energy simulation tools are available to model how a building will perform with a range of design variables such as building orientation (relative to the daily and seasonal position of the sun), window and door type and placement, overhang depth, insulation type and values of the building elements, air tightness (weatherization), the efficiency of heating, cooling, lighting and other equipment, as well as local climate.

Skylights or solartubes can provide 100% of daytime illumination within the home. Nighttime illumination is typically done with fluorescent and LED lighting that use 1/3 or less power than incandescent lights, without adding unwanted heat., **superinsulation walls** using straw-bale construction, **Vitruvian built pre-fabricated building panels** and roof elements plus exterior landscaping for seasonal shading.

Zero-energy buildings are often designed to make dual use of energy including white goods; for example, **using refrigerator exhaust to heat domestic water**, ventilation air and shower drain heat exchangers, office machines and computer servers, and body heat to heat the building. These buildings make use of heat energy that conventional buildings may exhaust outside.



In America, it's estimated that buildings contribute to 36% of energy consumption and 30% of green house gas emissions and it's an area that's ripe for improvement. Innovative American building company Vitruvian is doing just that by offering a full service green building system that utilizes pre-engineered modular construction consisting of inter lockable panels to form a complete, weather tight building shell. As well as delivering extremely low energy bills.

Long-term environmental benefits: The materials used in the Vitruvian system have a double the life span of traditional wood framing. Thus, the material in the panels are recyclable and reusable. Because most of these parts have a screwed mechanical connection, this lends to easy assembly or disassembly compared to traditional construction or demolition. Vitruvian panels would never need to be diverted to a landfill, nor would they lose any of their structural or insulating properties over time.

The Vitruvian Building System: Green, Cost-Efficient And Fast

http://www.fastcompany.com/1169215/super-green-and-super-fast-vitruvian-building-system

ADD ADJECTIVES TO DESCRIBE A HOME OF THE FUTURE:

GREEN

CLEAN

AFFORDABLE

EASILY CUSTOMIZABLE

MOBILE

----------SPOCKSTUDIO.CHALLENGE#2.WALL.SECTIONS----------