LONGHORN ENERGY WEEK –January 2018–

PLANNING, DESIGNING, ENGINEERING FOR A RESILIENT WORLD

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College Station, Texas

CENTER FOR MAXIMUM POTENTIAL BUILDING SYSTEMS

TEXAS as CLIMATE CHANGE CANARY

TEMPERATURE RISE

TCCC

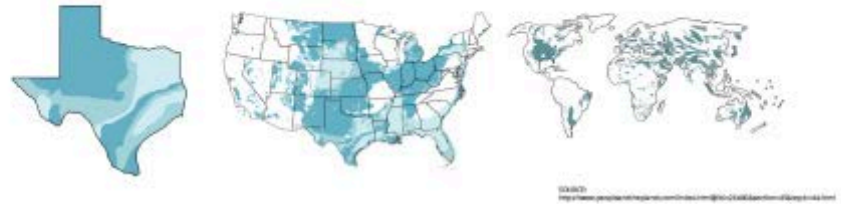
890233560/climate-destabilization
https://www.whitehouse.gov/climate-change-mobile

SOURCE:
http://www.myfoundationrepairs.com/blog/post/2011/07/18/Foundati

FLASH FLOOD

TORNADO

SALINIZATION



BIODIVERSITY LOSS

VECTOR DISEASES

potentiometer

TOWARDS A MAXIMUM POTENTIAL FUTURE

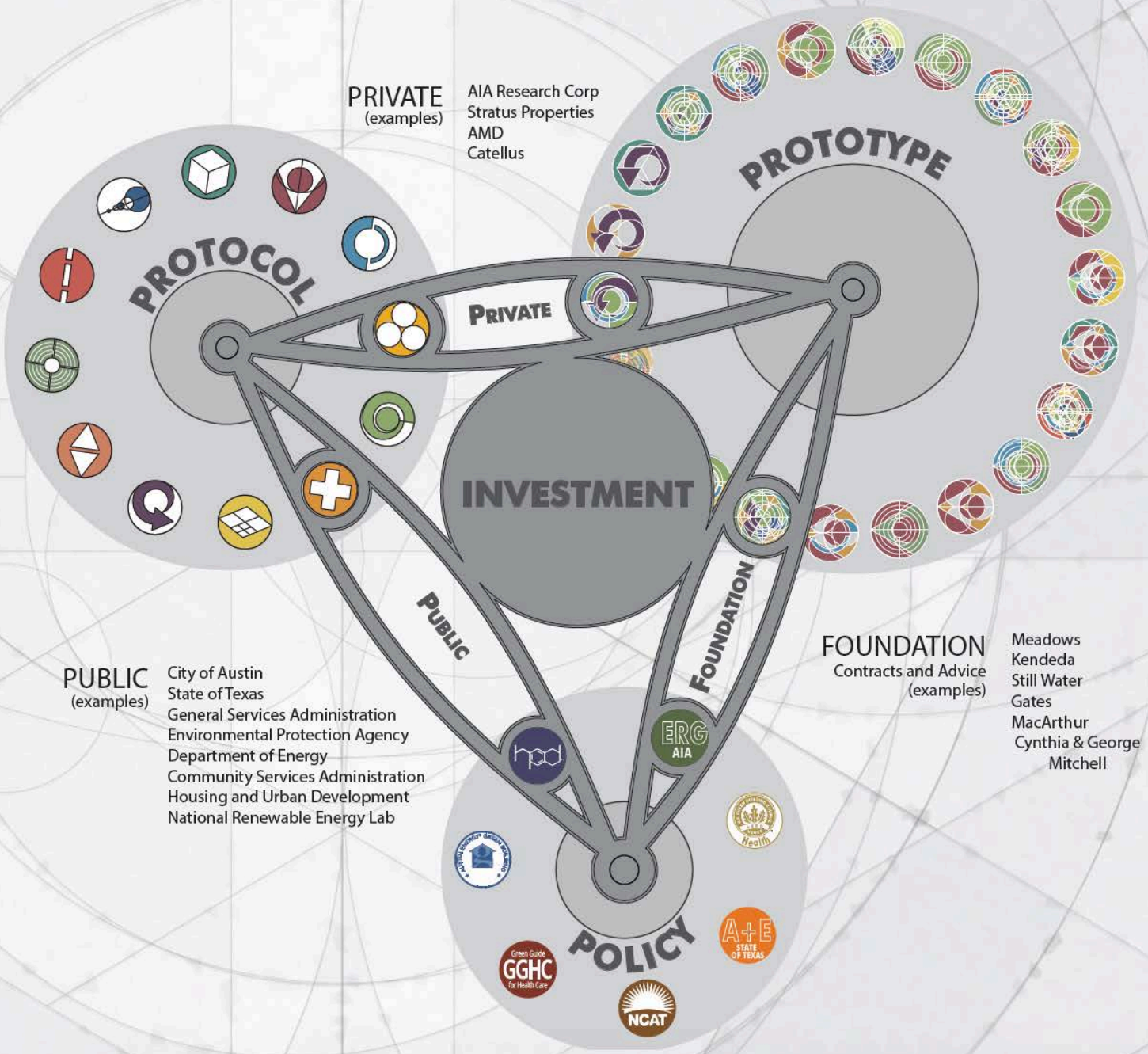
Maximum Potential is a hypothetically perfect state beyond the present. At our Center it is the convergence of 3 conditions: the creation of next generation ecointerventions we call Prototypes; their supportive measured success or failure we call Protocols; and their associated Policies enabling societal acceptance, understanding and improvement over time. It has always been our goal to function with all 3 of these conditions in mind.

Our version of a Potenti-o-meter, similar to an energy meter, identifies the connectivity of these 3 forces, emphasizing their adjacency as powerful enablers that allow us to evolve into a new ecology. The purpose of this virtual invention tool is to create ecointerventions in all 3 areas and to use the Potenti-o-meter as a platform to perform triple duty Serious Commotion.

Because each condition is critical to the other, each contains its own procedural steps; the Prototypes emanate from combinations of regional ingredients that trigger a sequence of how they are formed from the raw resources identified in the maps surrounding the operational cogs of the Potenti-o-meter.

Protocols contain 12 different methods of assessment and discovery, such as our Health lens, that critiques all ecointervention from a human health perspective. Or our planet earth pattern finding lens called Protoscope that helps us identify important Prototype possibilities.

The 7 Policies listed represent how we have worked with others to create the basis for societal acceptance for those combinations of the 3 P's so far developed. Examples include the Austin Green Builder Program, or the USGBC's LEED for Healthcare, Health Product Declarations, the AIA's Environmental Resource Guide, Green Guide for Health Care, National Center for Appropriate Technology and State of Texas Architecture + Engineering Guidelines.



Policies

- HEALTH PRODUCT DECLARATIONS
- LEADERSHIP IN ENERGY & ENVIRONMENTAL DESIGN
- AUSTIN ENERGY GREEN BUILDING PROGRAM
- ENVIRONMENTAL RESOURCES GUIDE
- HEALTHY BUILDING NETWORK
- NATIONAL CENTER FOR APPROPRIATE TECHNOLOGY
- A - E GUIDELINES . STATE OF TEXAS

CMPBS'S ULTIMATE OBJECTIVE BRING WORK TO THE LEVEL OF POLICY

TEXAS as CLIMATE CHANGE CANARY

TEMPERATURE RISE

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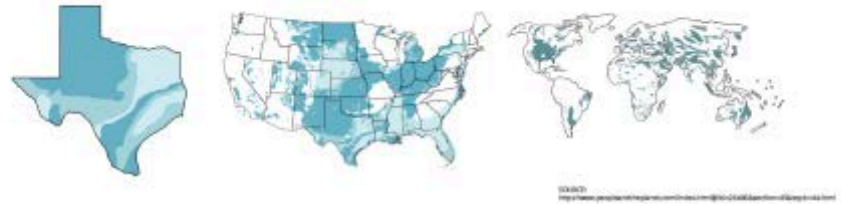
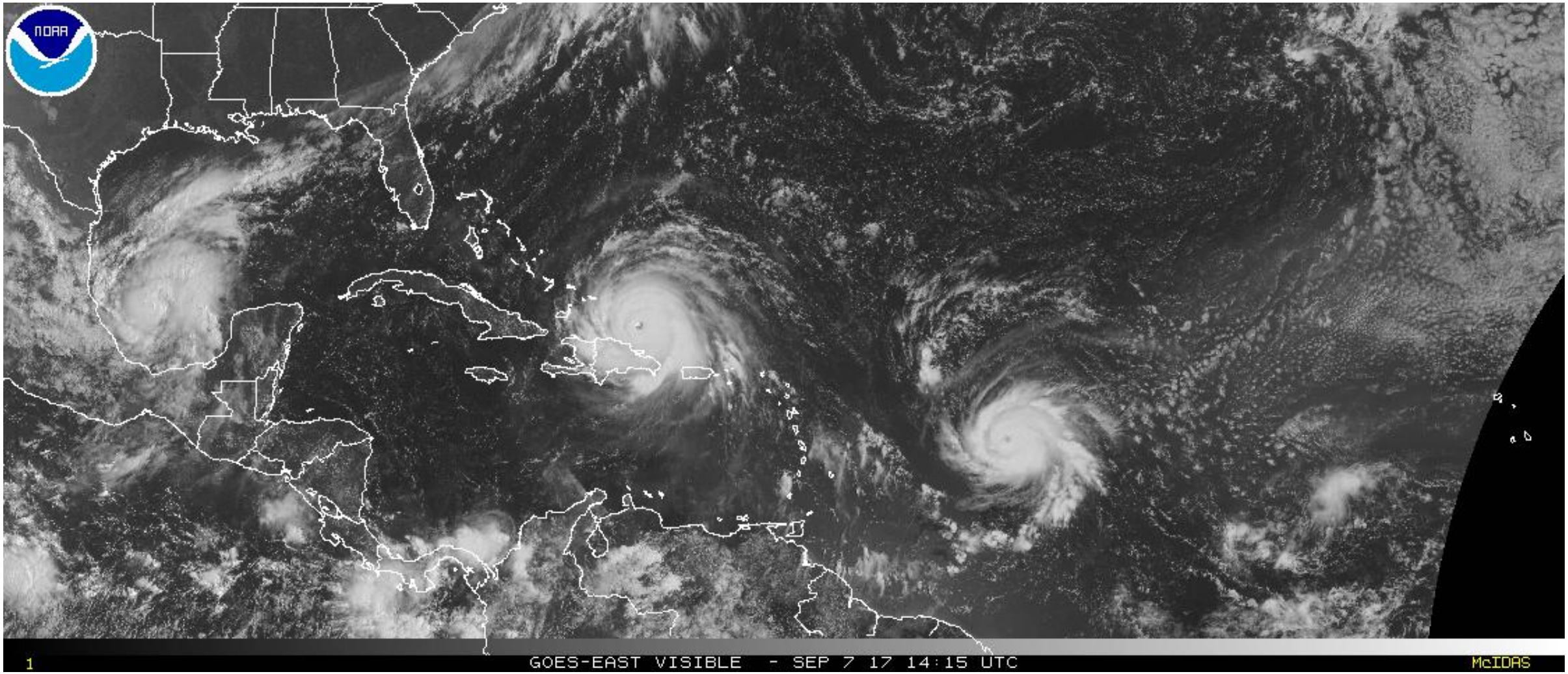


BIODIVERSITY LOSS

VECTOR DISEASES

Tropical Storm Katia, Hurricane Irma and Hurricane Jose in the Tropical Atlantic



Source: NOAA Geostationary Satellite Server

Basis of EPA Projection: Global Redevelopment Costs 2017-2100

U.S. Billion-dollar Weather and Climate Disasters:
Data Sources, Trends, Accuracy and Biases

Adam B. Smith
NOAA National Climatic Data Center, Asheville, North Carolina
Richard W. Katz
National Center for Atmospheric Research, Boulder, Colorado

Hurricane Ike insured loss ($ Millions)	PCS combined insured loss (Commercial, Residential, Auto)	Commercial	Residential	Automotive	FEMA (PDD) emergency assistance (IA+BA)	FEMA flood insurance payments (NFIP)
Alabama	–	–	–	–	13.1	1.7 (x1.0)
Arkansas	56.0 (x2.0)	35.0	12.5	8.5	2.5	–
Illinois	240.0 (x2.0)	150.0	50.0	40.0	108.0	53.1 (x1.0)
Indiana	330.0 (x2.0)	230.0	80.0	20.0	93.0	31.2 (x1.0)
Kentucky	533.0 (x2.0)	405.0	110.0	18.0	18.9	–
Louisiana	135.0 (x1.0)	50.0	50.0	35.0	*263.0	303.7 (x1.0)
Missouri	76.0 (x2.0)	50.0	16.0	10.0	–	42.4 (x1.0)
Ohio	1,255.0 (x2.0)	960.0	255.0	40.0	39.6	–
Pennsylvania	75.0 (x2.0)	63.0	8.0	4.0	–	–
Texas	9,800.0 (x1.37)	5,500.0	4,000.0	300.0	2,464.0	2,066.0 (x2.56)
Sub total (1)	**18,691.0**				***263.0**	**5,797.7**
State aggregate losses to: Marine / Offshore Infrastructure	2,000.0					
Agriculture, forestry, fishing	825.0					
Sub total (2)	**2,825.0**					
TOTAL						~27,500.0

Using Texas Rebounds insurance coverage report for cities / counties in the Texas disaster area as factor guidance:

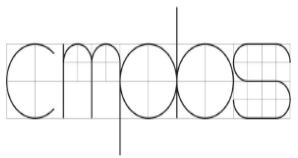
73% insured for wind damage (27% uninsured) = PCS $9.8 billion x (1.37)

39% insured for flood damage (61% uninsured) = NFIP $2.1 billion x (2.56)

$2.4 billion FEMA_PDD < PCS x 0.37 factor ($9.8 B x 0.37 = $3.6 billion) for un/underinsured loss

Therefore, FEMA_PDD loss for Texas not counted toward Hurricane Ike total loss

*FEMA_PDD is only counted for Louisiana since FEMA_PDD ($263.0 million) < PCS x 1.0 factor ($135.0 million)

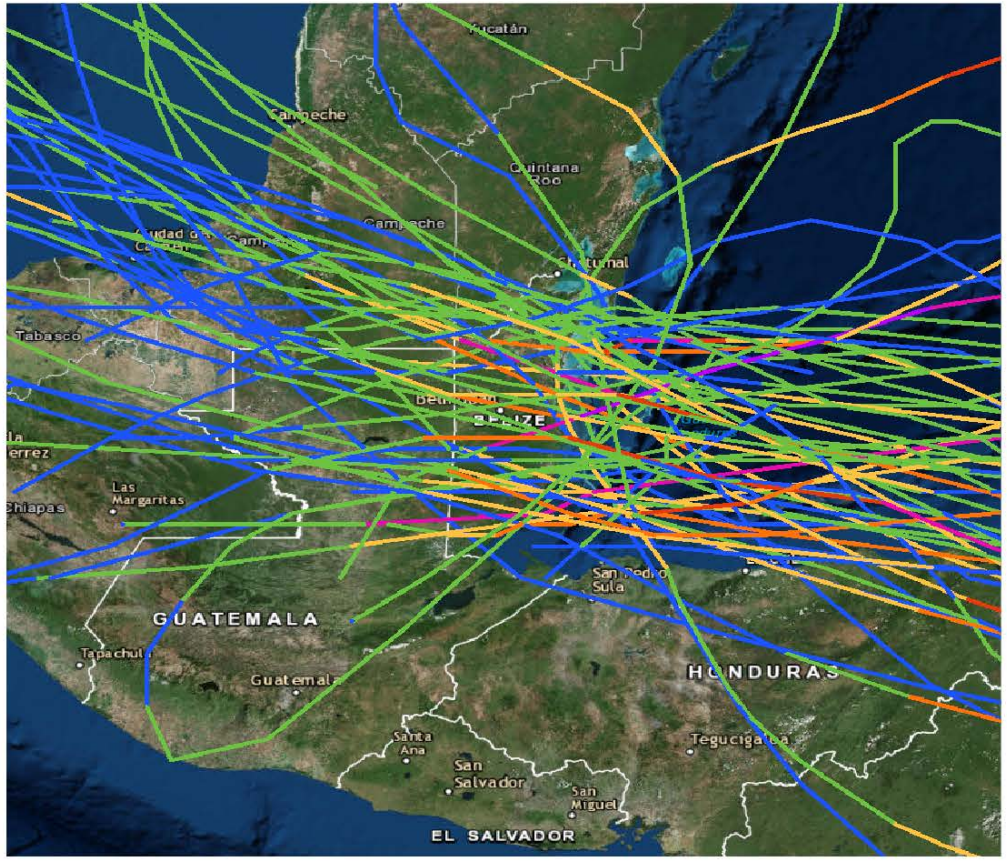


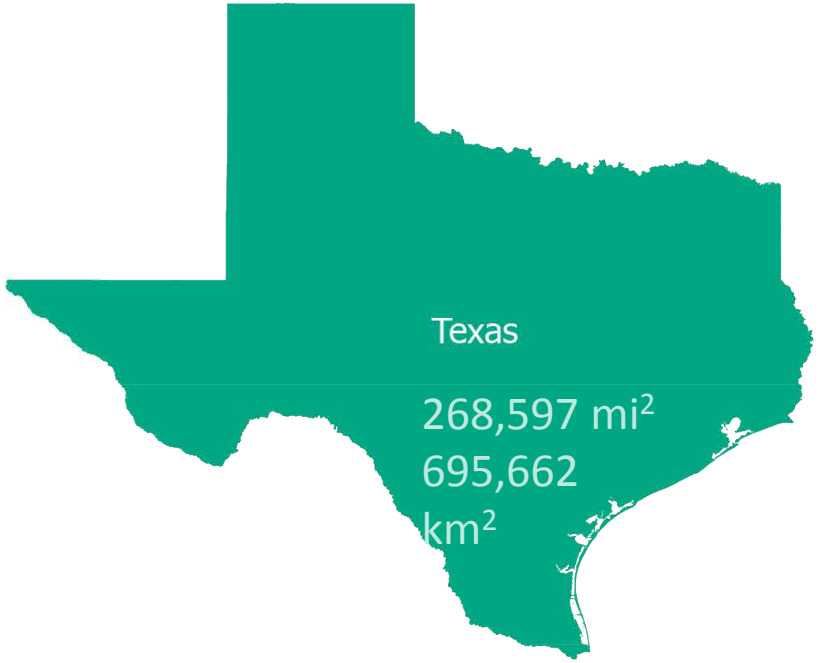
Historical Hurricane Tracks

National Oceanic and Atmospheric Administration

Summary of Search

Location: 17.07778960654538,-88.74755859375
Buffer: 148160 Meters (80 Nautical Miles)
Search was not refined





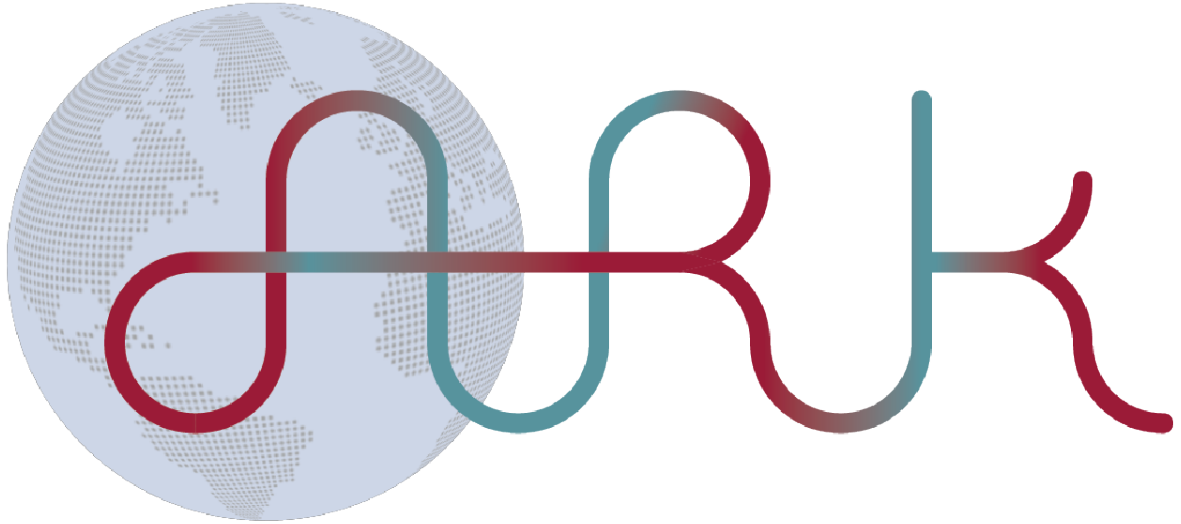
Map Created by Lizzy McKinnon, September 7, 2017

-Belize Population: 387,879 (June 2017)

For reference, Austin = ~948k people, Dallas = ~1.3 million people, San Antonio = ~1.5 million people

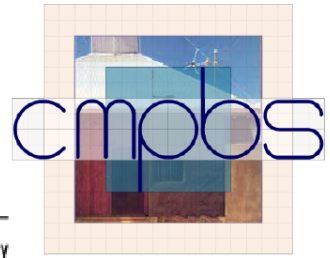
according to US Census Bureau

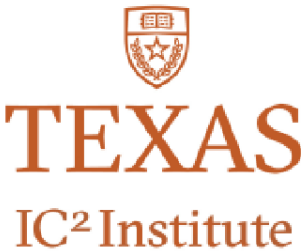
- Most people live in Belize city, followed by Cayo district.
- Slightly less than half of the 2010 population was attending formal schools.
- 55% (estimated 216,473 people) are younger than 25



Adaptation, Resilience, Knowledge

From Mountain to Reef





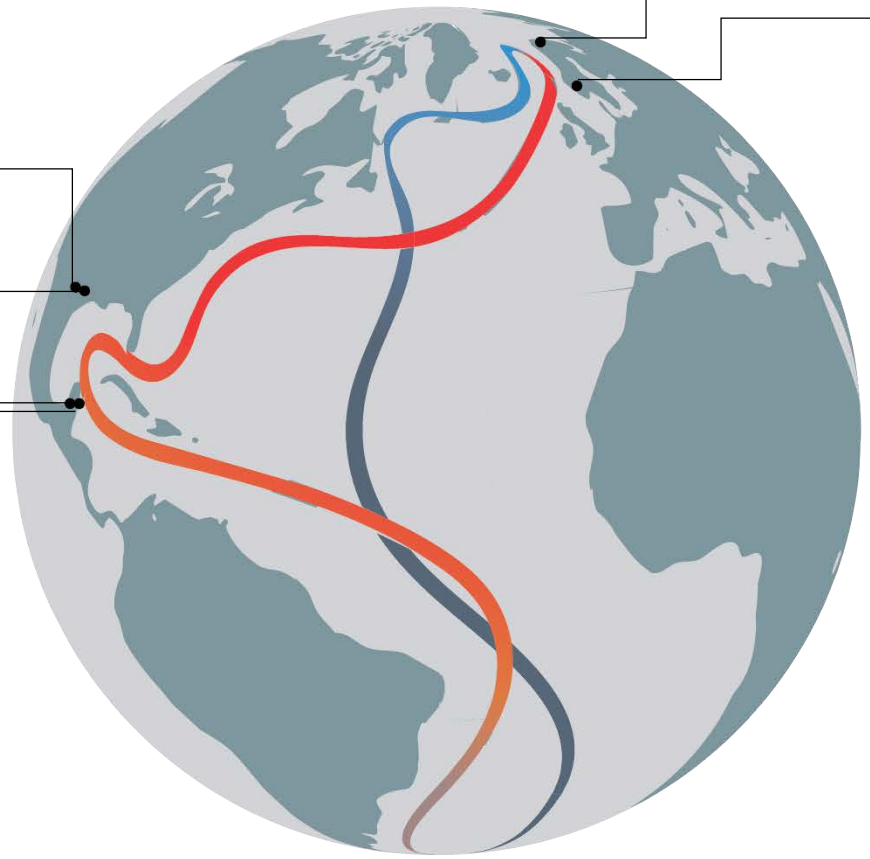
UiT / THE ARCTIC UNIVERSITY OF NORWAY

UWI

Gulf Stream

University of Tromsø

University of Stavanger



University of Texas IC² Institute

Maximum Potential Building Systems

University of West Indies

University of Belize

THE UNIVERSITY OF THE WEST INDIES

- **CAVE HILL CAMPUS**, Barbados
- **MONA CAMPUS**, Jamaica
- **ST AUGUSTINE CAMPUS**, Trinidad

- **OPEN CAMPUS**

Anguilla	British Virgin Islands	St Kitts and Nevis
Antigua	Cayman Islands	St Lucia
Bahamas	Dominica	St Vincent and the Grenadines
Barbados	Grenada	Trinidad and Tobago
Belize	Jamaica	Turks and Caicos
Bermuda	Montserrat	

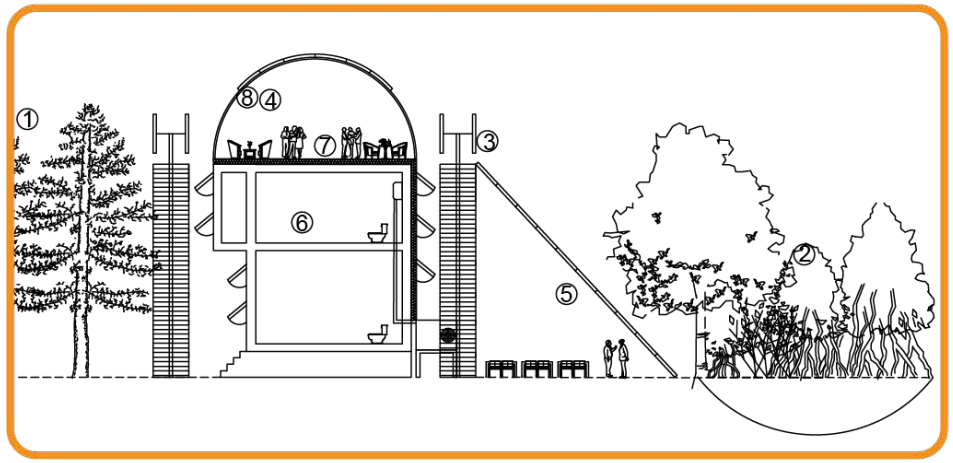
- **THE UNIVERSITY OF THE WEST INDIES CENTRE FOR HOTEL AND TOURISM MANAGEMENT**
  Nassau, Bahamas

- Anguilla
- Antigua & Barbuda
- The Bahamas
- Barbados
- Belize
- British Virgin Islands
- Cayman Islands
- Dominica
- Grenada
- Jamaica
- Montserrat
- St. Kitts and Nevis
- St. Lucia
- St. Vincent & the Grenadines
- Trinidad & Tobago
- Turks & Caicos

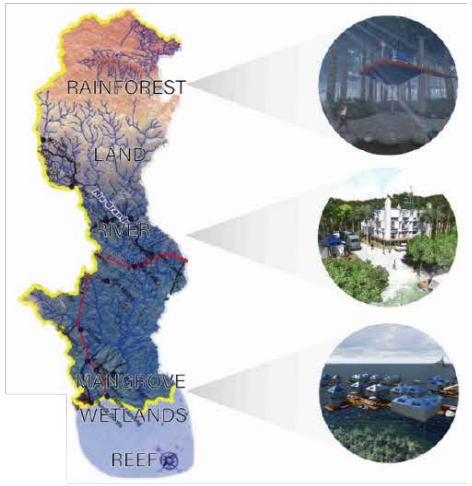
Adaptation, Resilience, Knowledge
From Mountain to Reef

WORKING ATLAS

NEEDS ASSESSMENT
RESOURCE ASSESSMENT
MONITORING FRAMEWORK



ECOCAMPUS - SAFE HOUSE
DEMONSTRATE TRIGGER INDUSTRIES
ECO – LAB TESTING

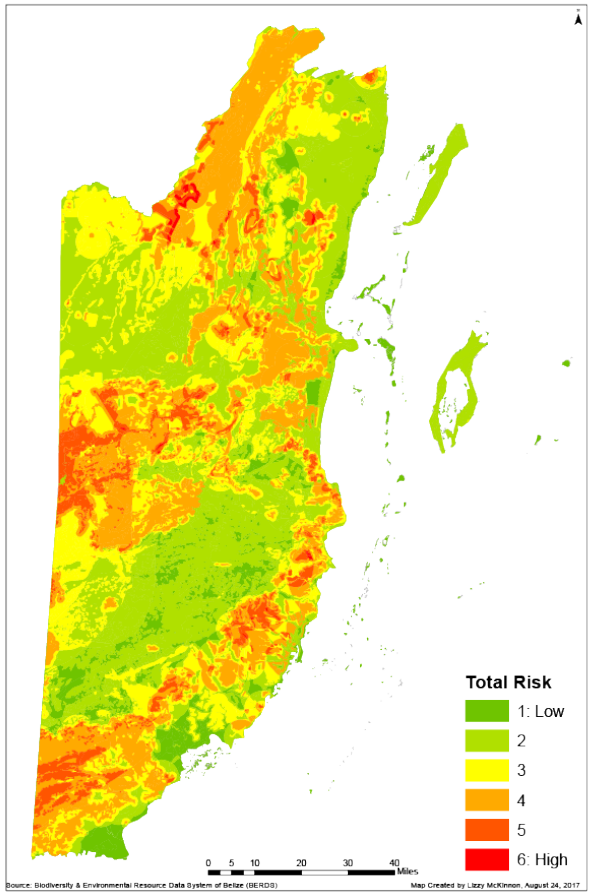


BUSINESS MODELINCUBATION
CONTINUOUS CLIMATE CHANGE
.VERIFICATION

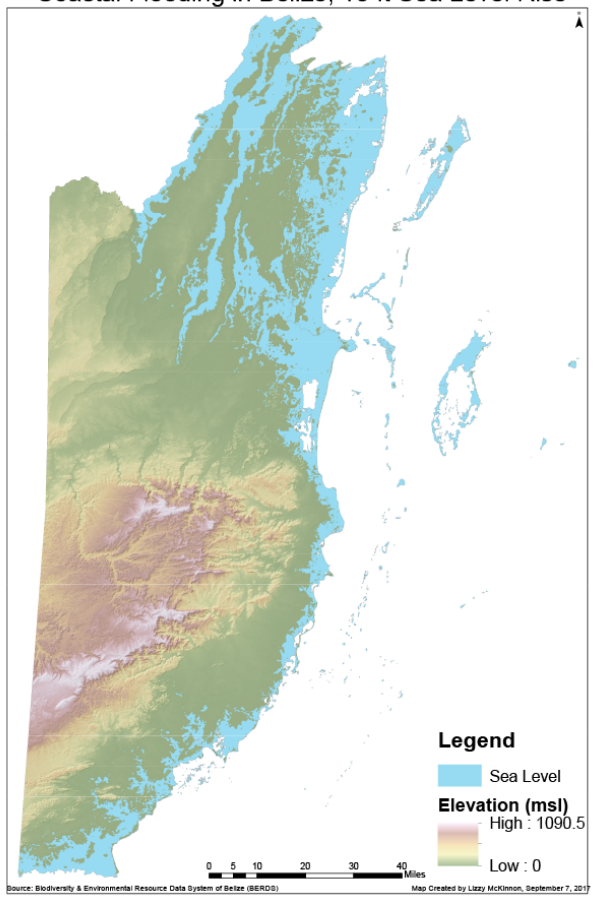
RISK ANALYSIS

RESOURCE ANALYSIS

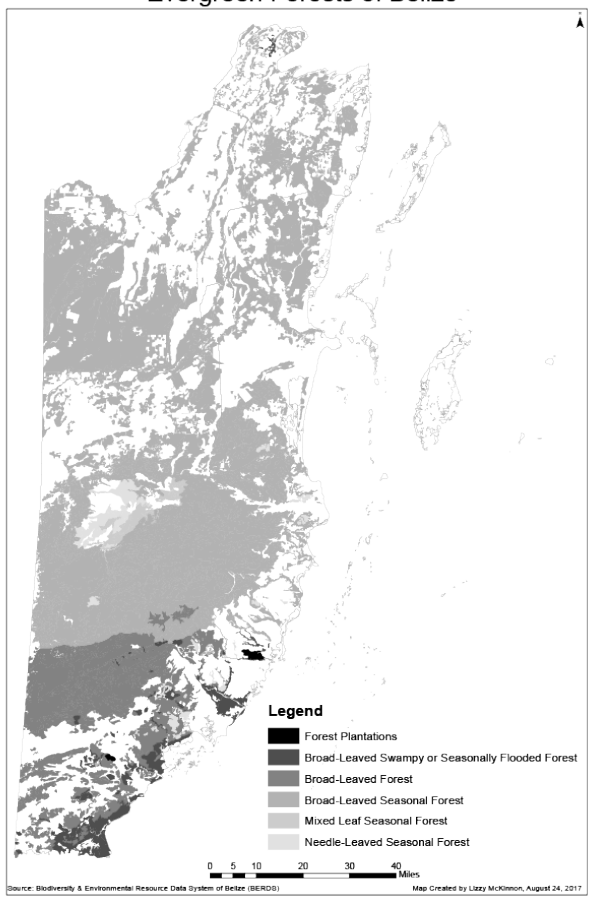
Fire Risk in Belize



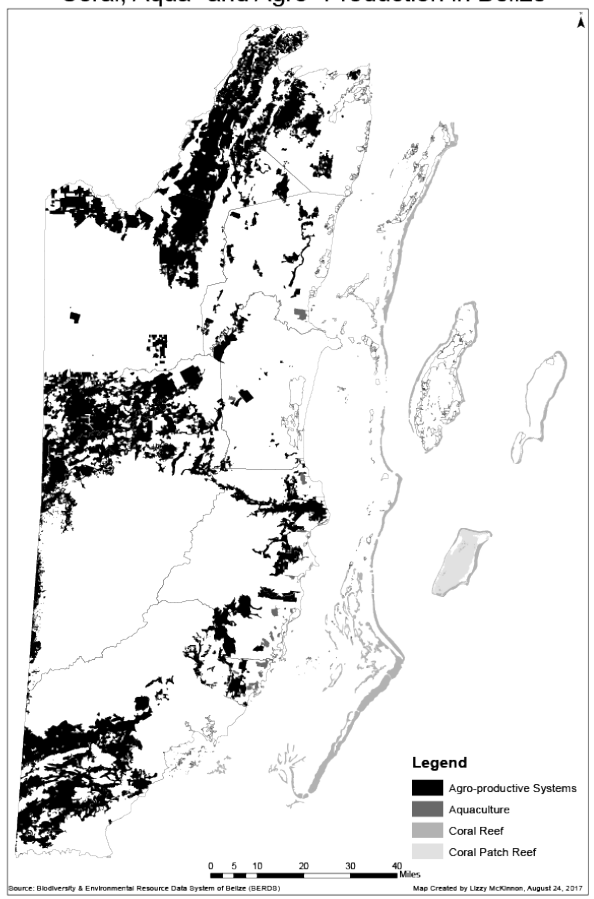
Coastal Flooding in Belize, 15 ft Sea Level Rise

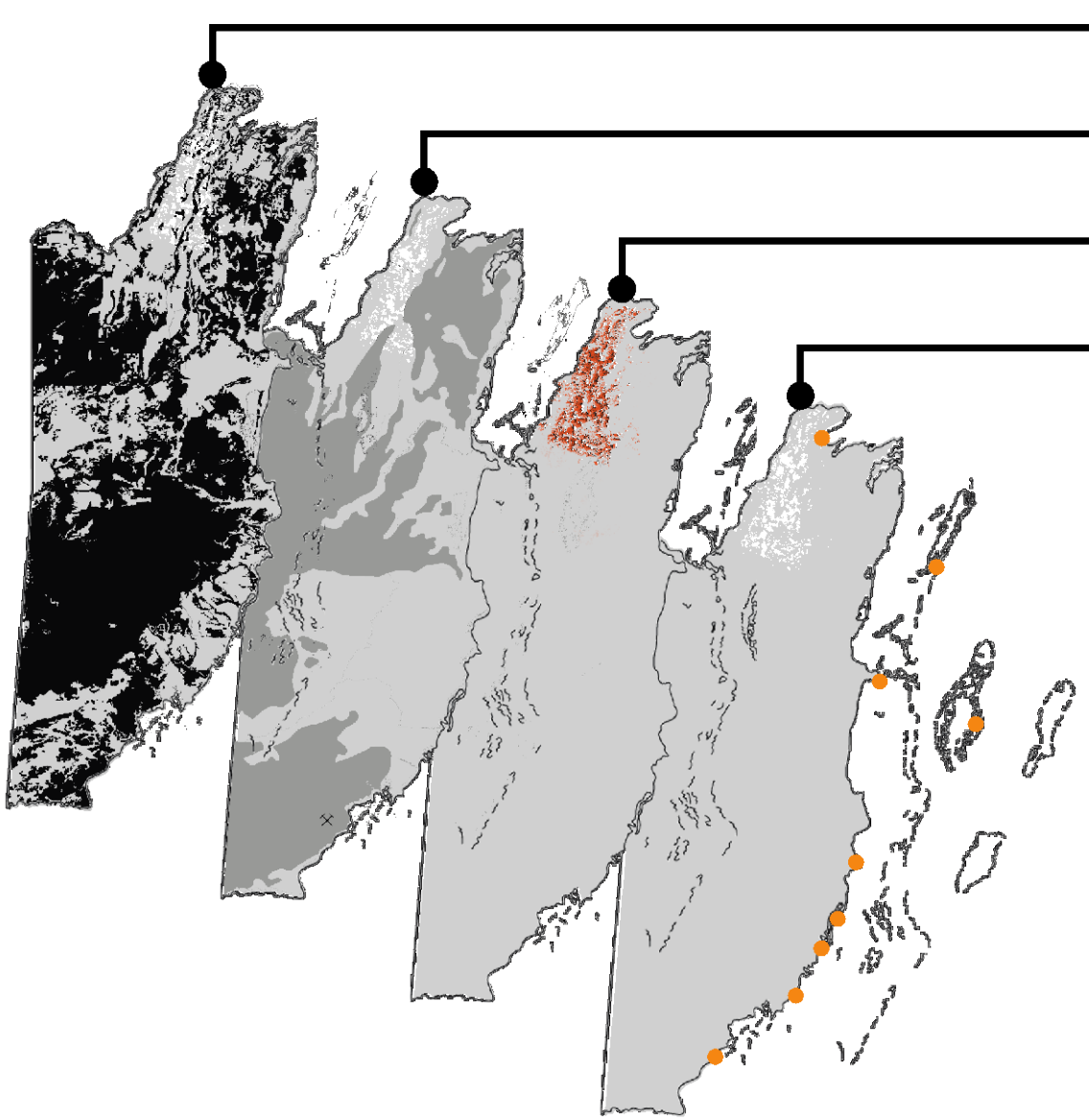


Evergreen Forests of Belize



Coral, Aqua- and Agro- Production in Belize



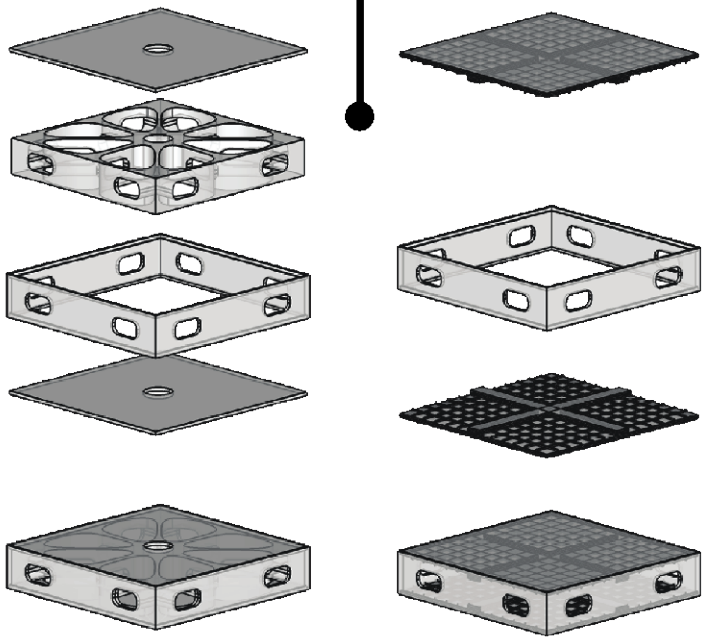


Lumber. Fiber, Rosen (foam insulation)

Mined MgO (carbon neutral cement)

Fiber, sugar based epoxy

MgO from sea water, recycled plastic



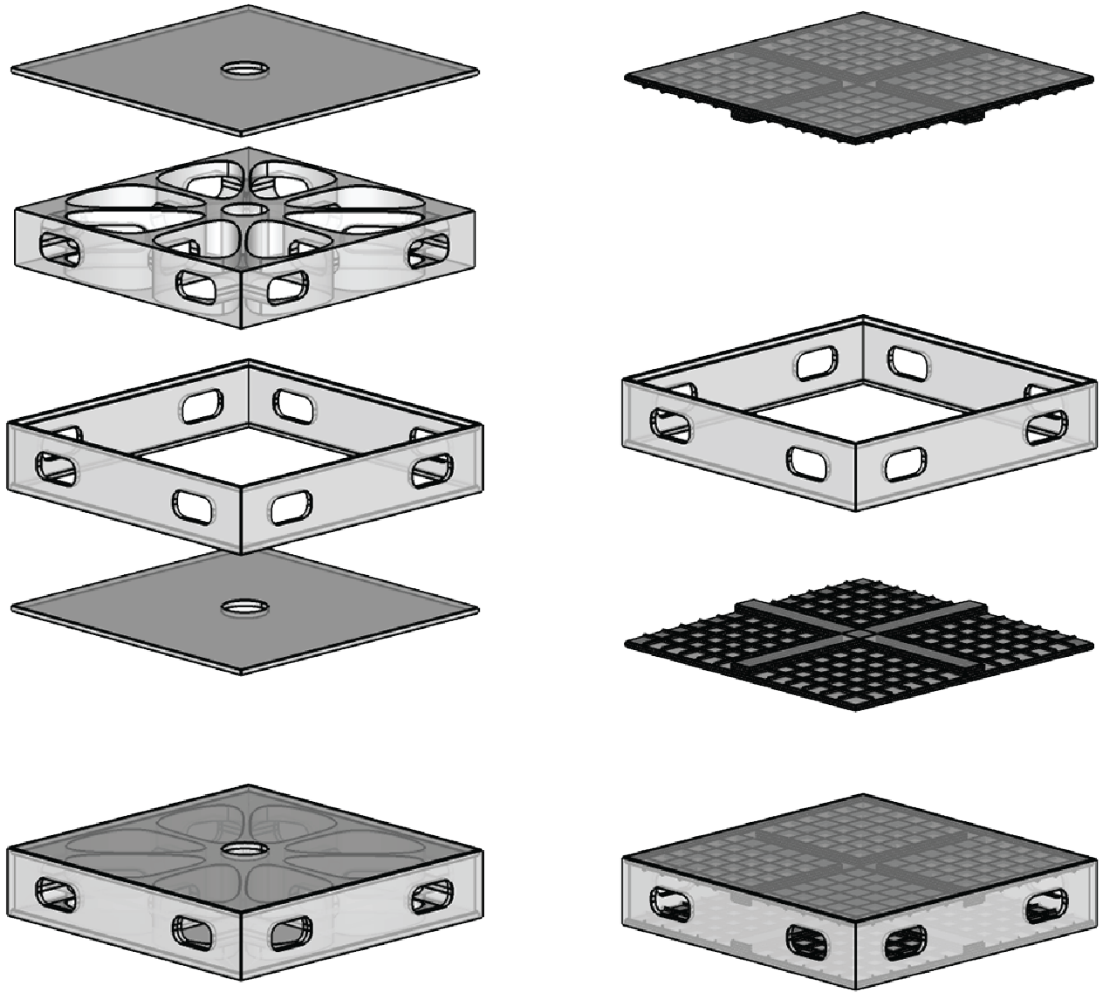
PALLET TESTING REQUIREMENTS

test series:

1. side impact test- ASTM D880
2. rotational flat drop test- ASTM D6179
3. random truck vibration- ASTM D4728
4. random air vibration- ASTM D 4728
5. rotational flat drop method 2- ASTM D6179
6. side impact test plus- ASTM D880

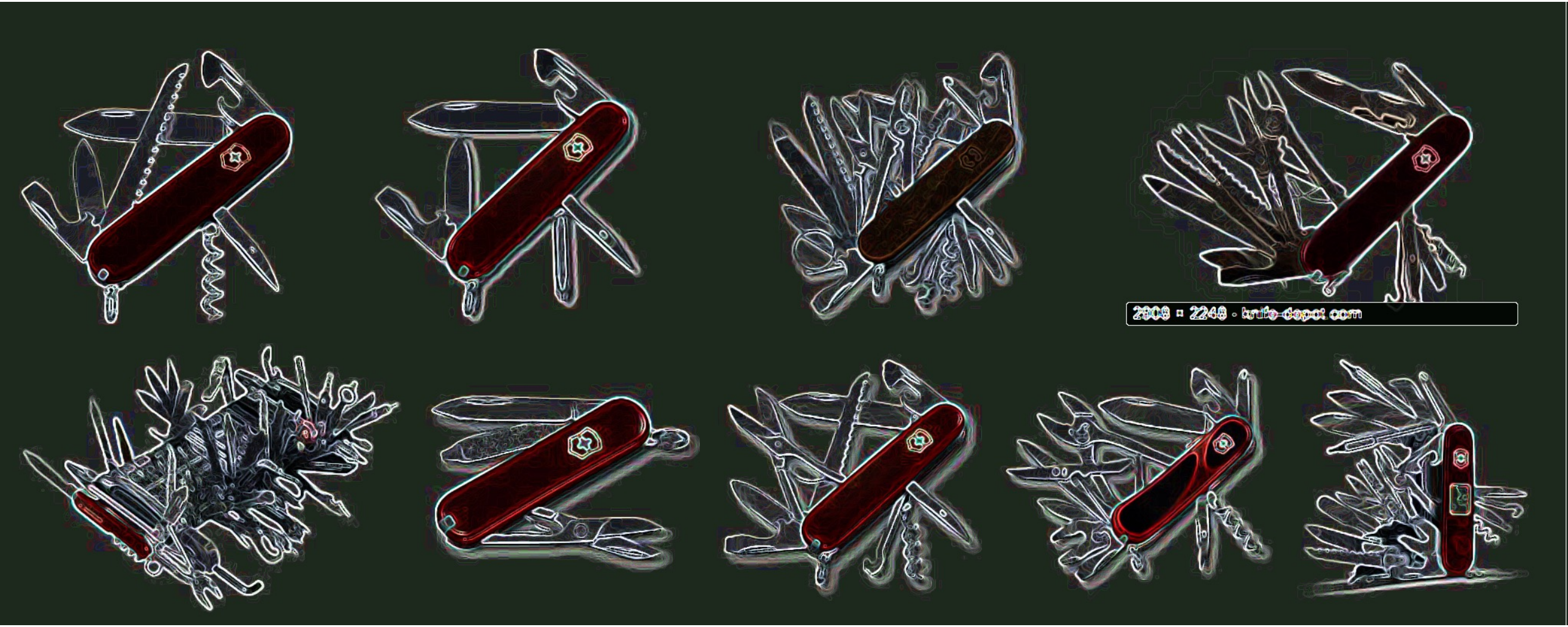
must survive up to Assurance Level I

source: ASTM simulated transport test



ARK PALLET = HIGH STRENGTH COMPONENTS

POD PALLET - BUILDING SYSTEM - THE SWISS ARMY KNIFE OF SUSTAINBLE DEVELOPMENT



POD PALLET - FOR SERIOUS WORK OR SERIOUS PLAY = SERIOUS COMMOTION

PACKAGING PALLET

OPEN DRUM PALLET

FOUNDATION WITH UTILITIES

CHARCOAL VENTED PALLET

BALLAST RAFT PALLET

PV PANEL SHUTTER

WETLAND PALLET

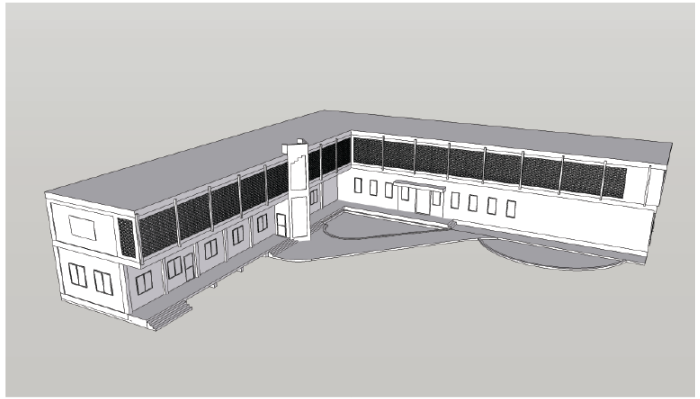
COMPOSTING PALLET

GREEN ROOF PALLET

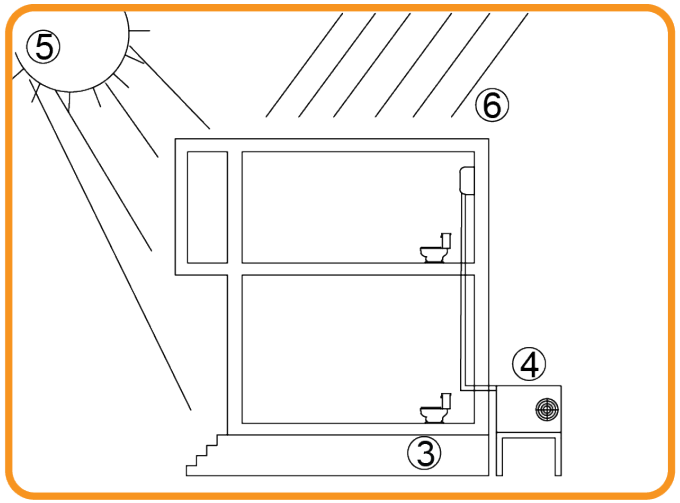
VEGETABLE GARDEN PALLET

PALLET MODULE CATEGORIES

STEP ONE

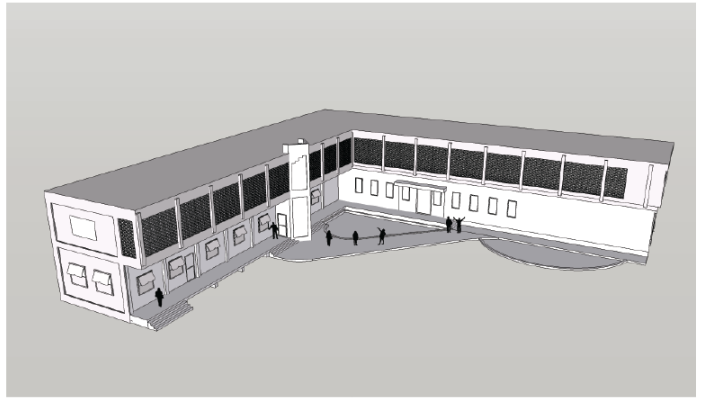


INITIAL TEST & ANALYSIS OF BUILDING

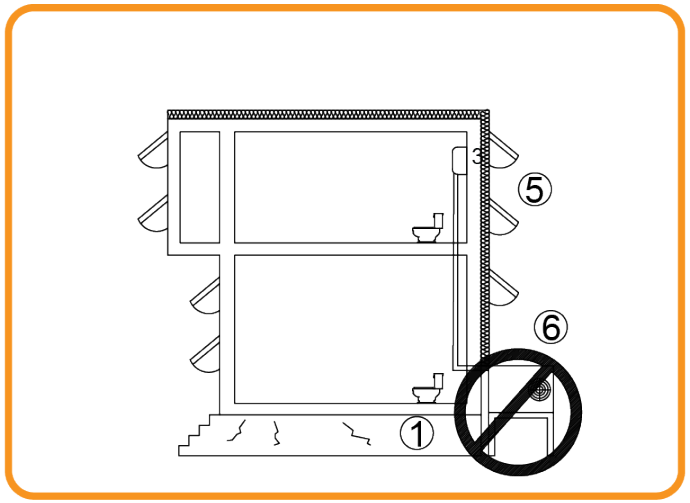


1. RESONANCE SOUND TESTING OF STRUCTURE
2. PRESSURE TESTING FOR LEAKAGE INFRARED ANALYSIS OF HEAT/COOLING LOSS
3. FOUNDATION INSPECTION
4. ANALYSIS OF HVAC SYSTEM
5. MODEL BUILDING RELATIVE TO CLIMATE, ORIENTATION, INSULATION, OPENINGS TO DETERMINE POTENTIAL THERMAL MASS OF CONCRETE AS ENERGY STORAGE
6. COMPUTER MODEL FOR WATER USE AND POTENTIAL COLLECTION STORAGE

STEP TWO

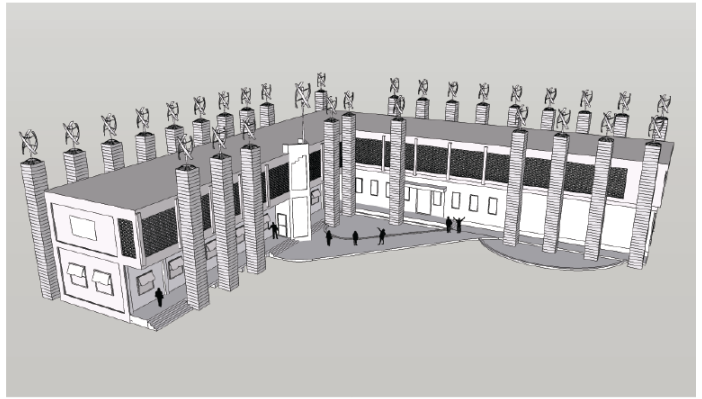


REMEDIATION

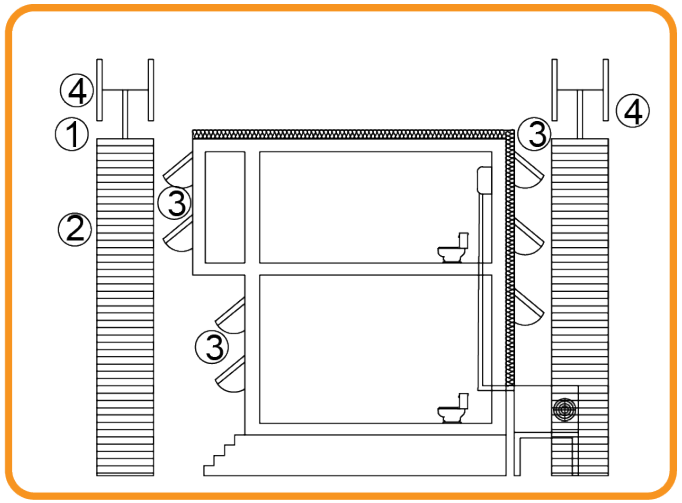


1. MGO FIBER CEMENT INJECTION INTO FISSURES IF REQUIRED
2. REPLACE WINDOW FENESTRATION AS NEEDED
3. INSULATE ON EXTERIOR OF MASS IF WARRANTED
4. ASSESS POSSIBLE REPLACEMENT OF SYSTEM TO MEET GREENHOUSE GAS STANDARDS
5. FIT WINDOWS WITH PROTECTIVE SILICA HIGH IMPACT SHUTTER USING TREATED WOOD
6. REPLACE HVAC AS NEEDED

STEP THREE

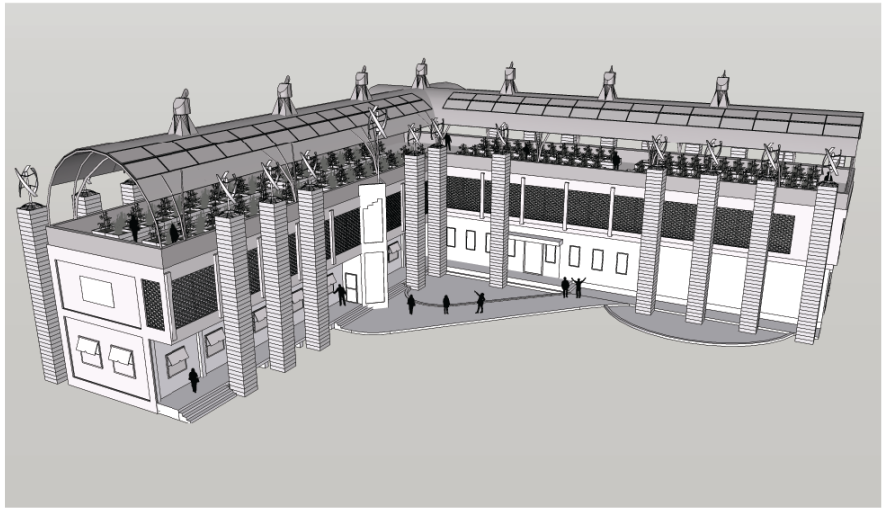


1ST BAY GREEN RETROFIT DEMONSTRATION & EDUCATION



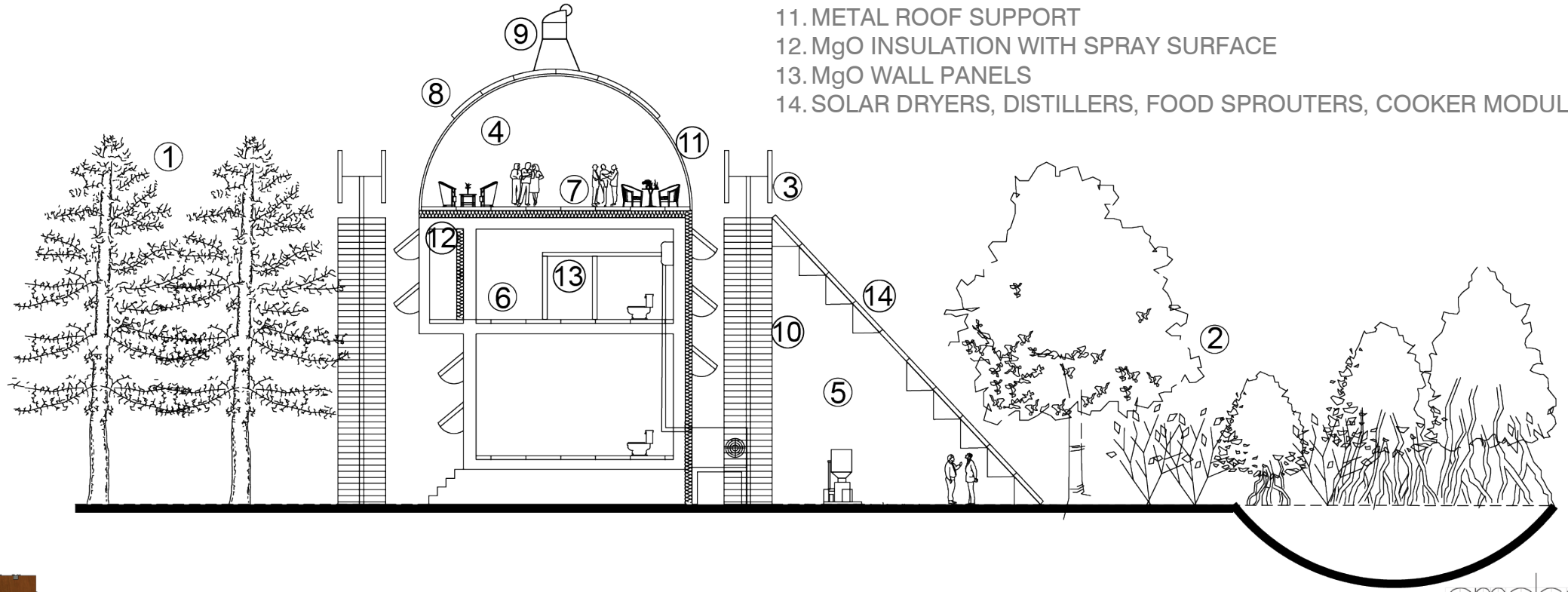
1. SILICATED WOOD CISTERNS INSTALLED FOR WATER CATCHMENT
2. ONE CISTERN RETROFITTED FOR PUMP STORAGE ENERGY SYSTEM
3. WINDOW PROTECTIVE SHUTTERS GET RETROFITTED WITH PUMP STORAGE PV PANEL
4. CISTERN GET RETROFITTED WITH PUMP STORAGE WIND SYSTEMS

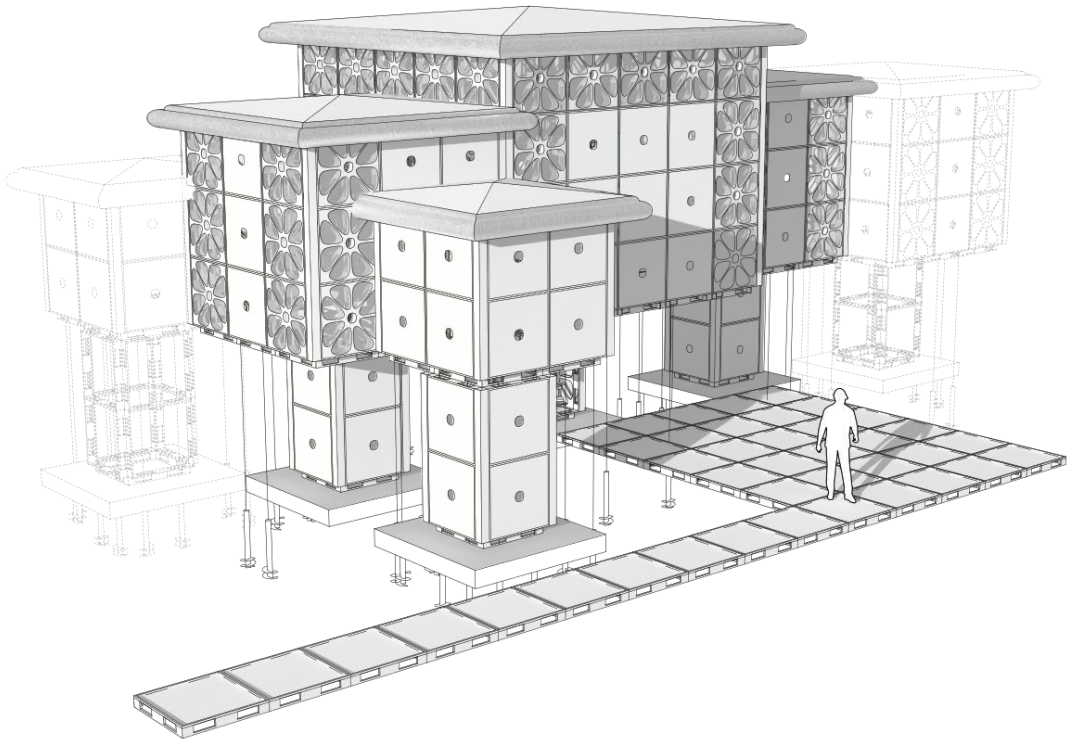
UWI CAMPUS AS PROTOTYPE RETROFIT



GREEN CAMPUS EVOLVED WITH GREEN INFRASTRUCTURE LANDSCAPE

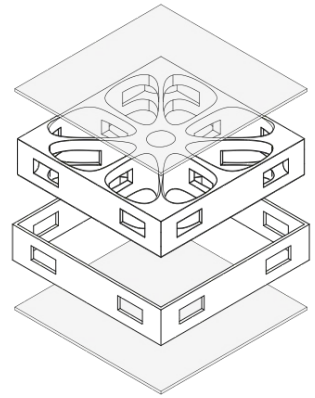
1. PINE LUMBER WASTE WATER PLANTATION
2. NATIVE FOOD FOREST/MANGROVE WASTE WATER SYSTEM
3. WIND GENERATOR
4. GREEN ROOF STUDENT HANG OUT AREA
5. OUTDOOR INCUBATOR AND CLASSROOMS
6. RAISED BED FLOORS
7. PALLETS USED AS GREEN ROOF/AIR VENTS
8. MOUNT PV ROOF SHADE OVER ROOF TERRACE
9. VENT
10. PALLET FRAMES FOR CISTERN
11. METAL ROOF SUPPORT
12. MgO INSULATION WITH SPRAY SURFACE
13. MgO WALL PANELS
14. SOLAR DRYERS, DISTILLERS, FOOD SPROUTERS, COOKER MODULE



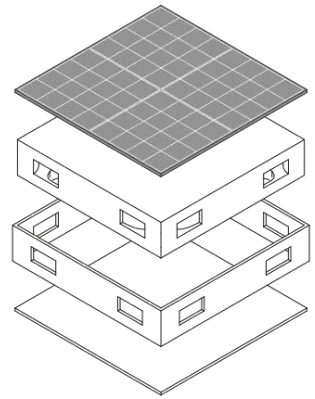


SAFE HOME

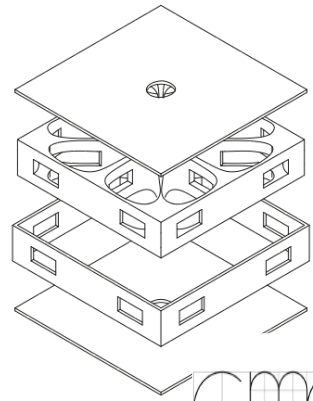
- NO ROOF OVERHANG
- BUILDING INTEGRATED SHADE
- WALL AT STRENGTH OF PALLETS
- RAISED FOR FLOOD
- GROUND CABLED FOR WIND
- BUILDING INTEGRATED PV
- UNIVERSAL PALLET JOINT SYSTEM



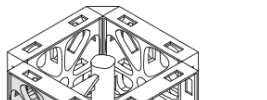
STRUCTURAL GLASS



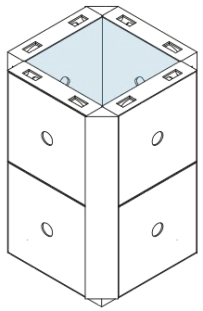
PV PANEL



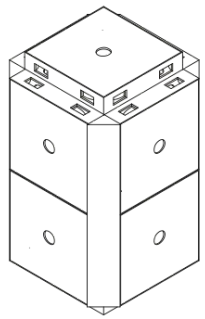
BASIC BUILDIN



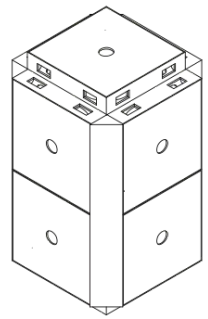
SPIRAL STAIR



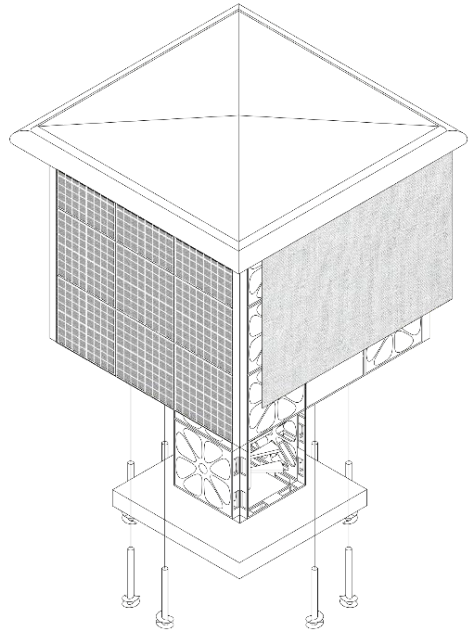
CISTERN



GENERATOR

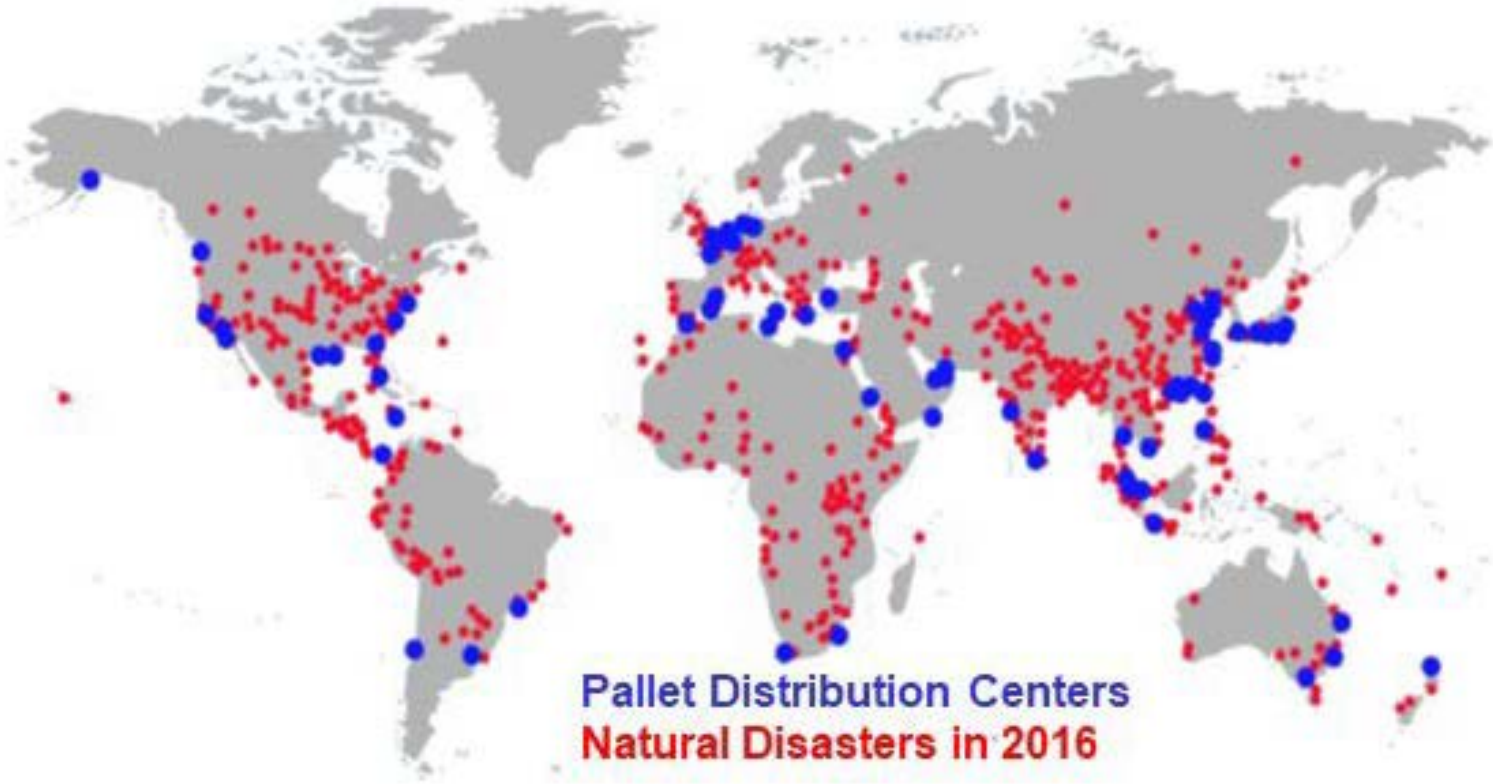


WASTE TREATMENT

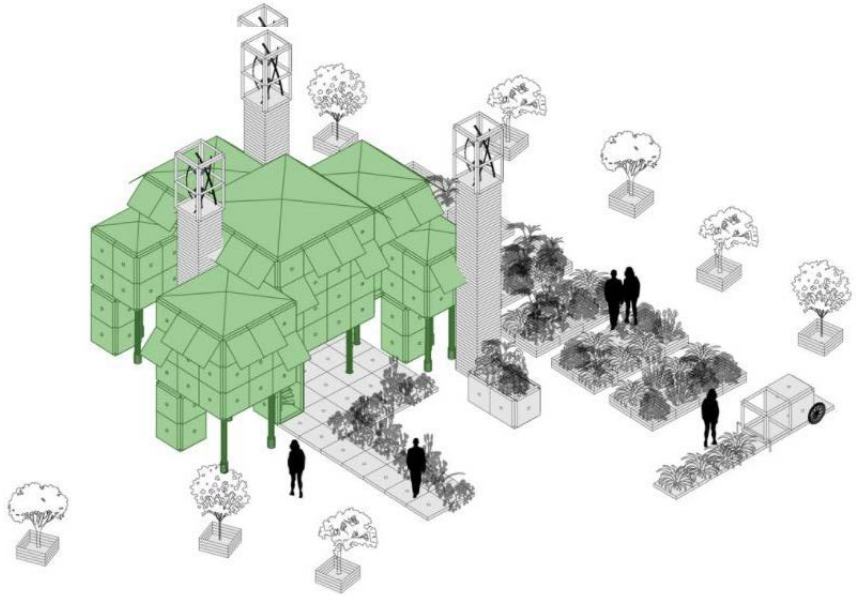


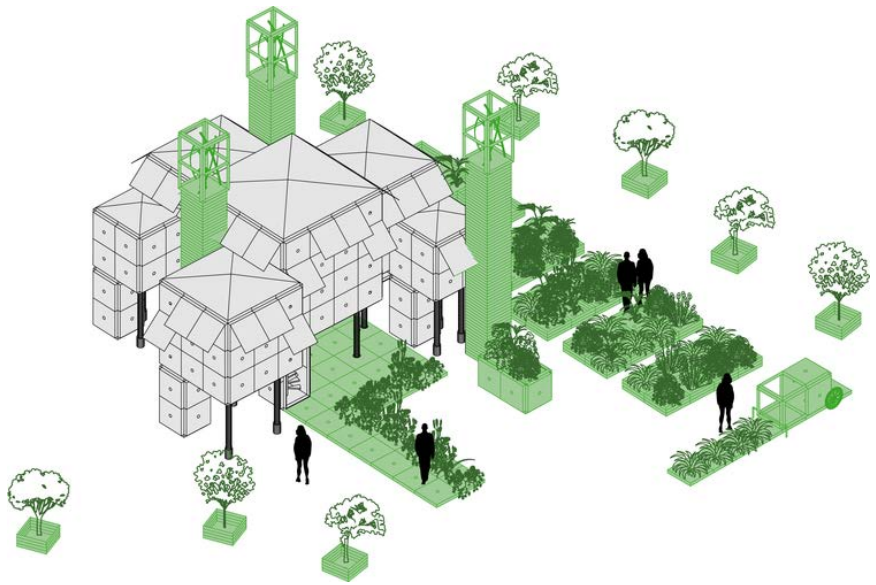
GROWTH MODULE

PROJECT Sustainable Home for Disaster Relief	PALLET MODULE SAFE HOME	*Provisional Patent in Preparation	Center For Maximum Potential Building Systems 8604 FM 969 Austin, Texas 78724 (512) 928-4786 center@cmpbs.org
PRODUCED BY Pliny Fisk III, Caroline Dunn, Charlie Correales			
DATE September 25, 2017			

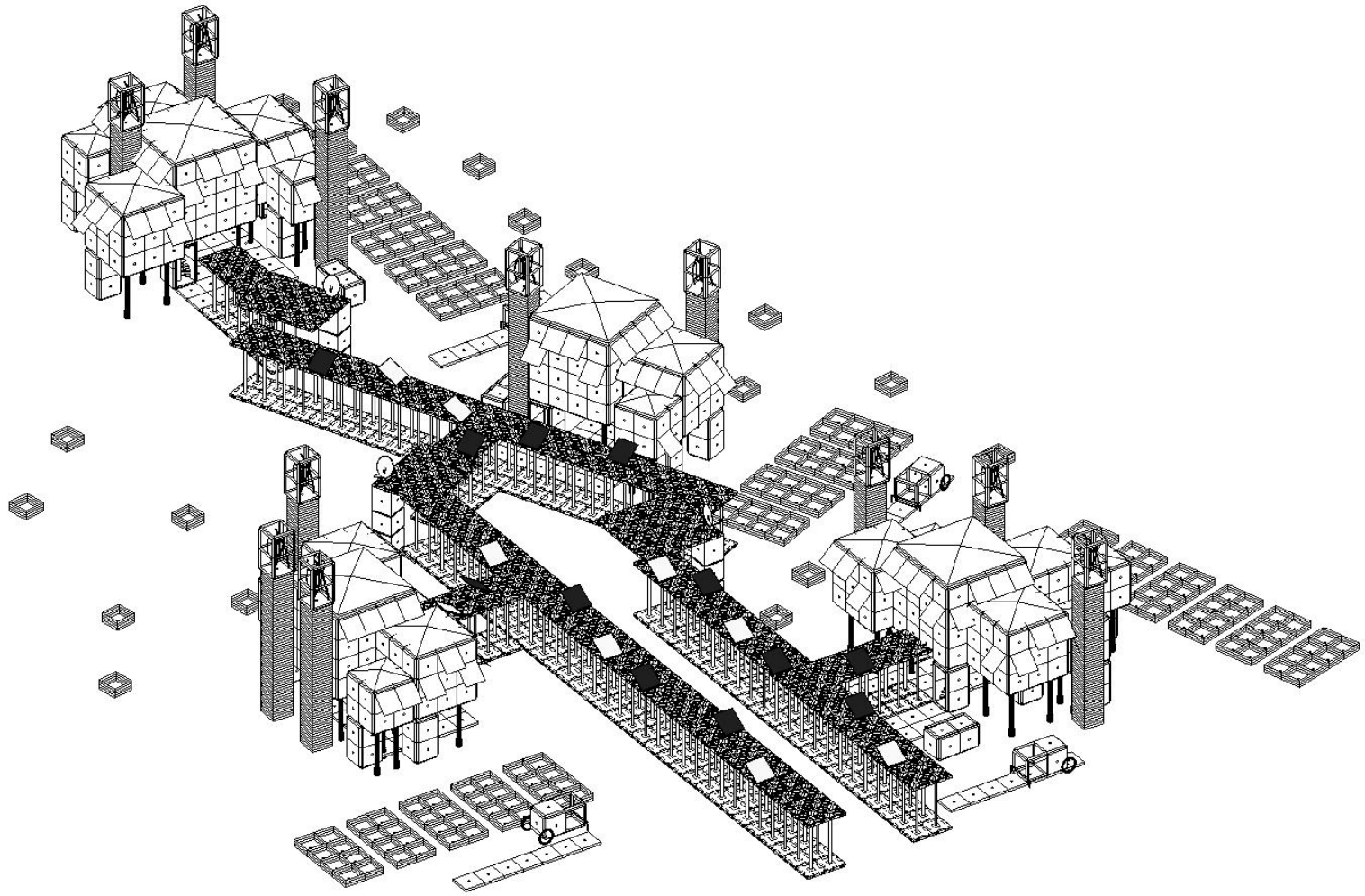


sPODS Are Readily Available Across the Globe – Particularly Important When Need Becomes Critical

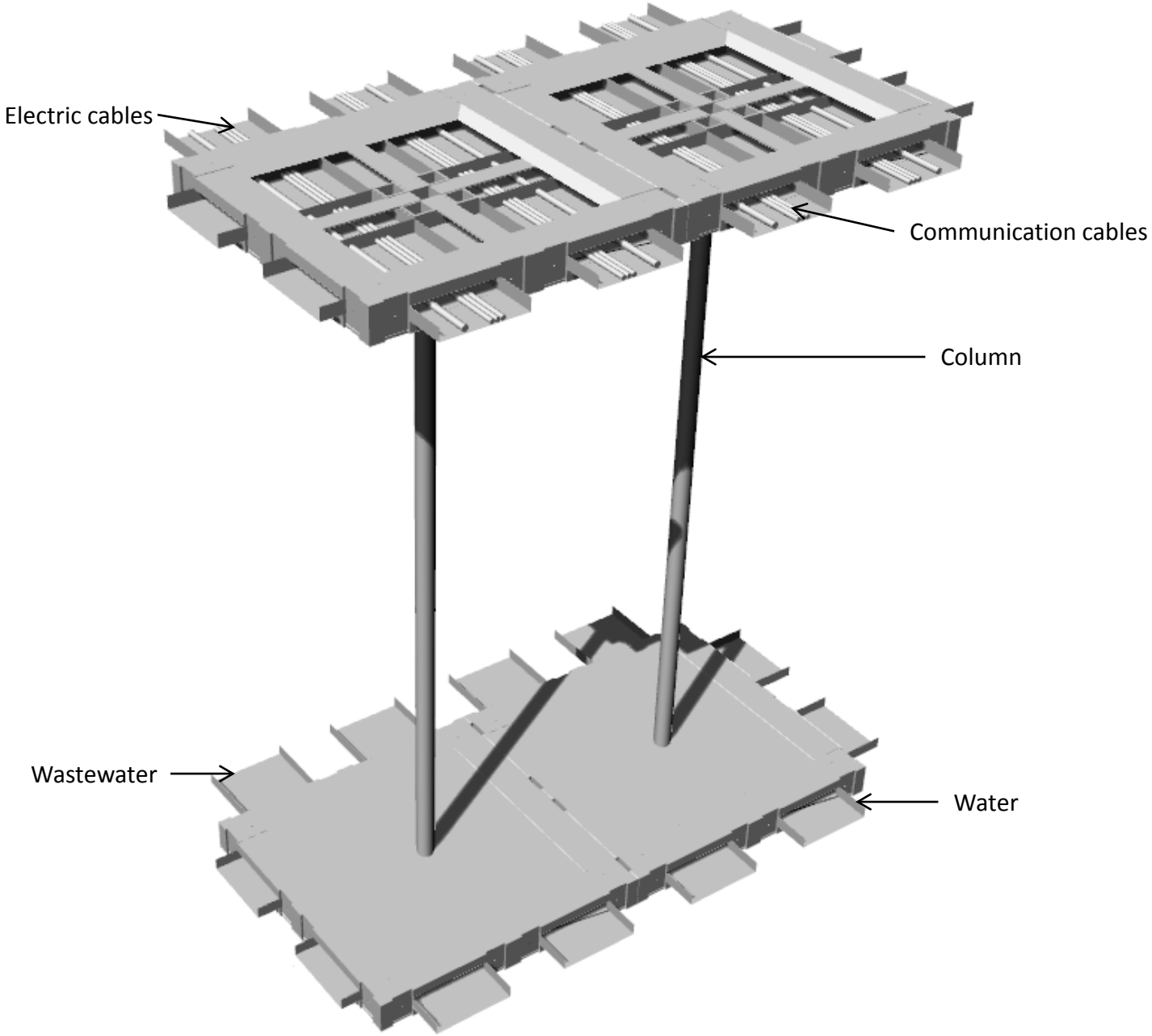




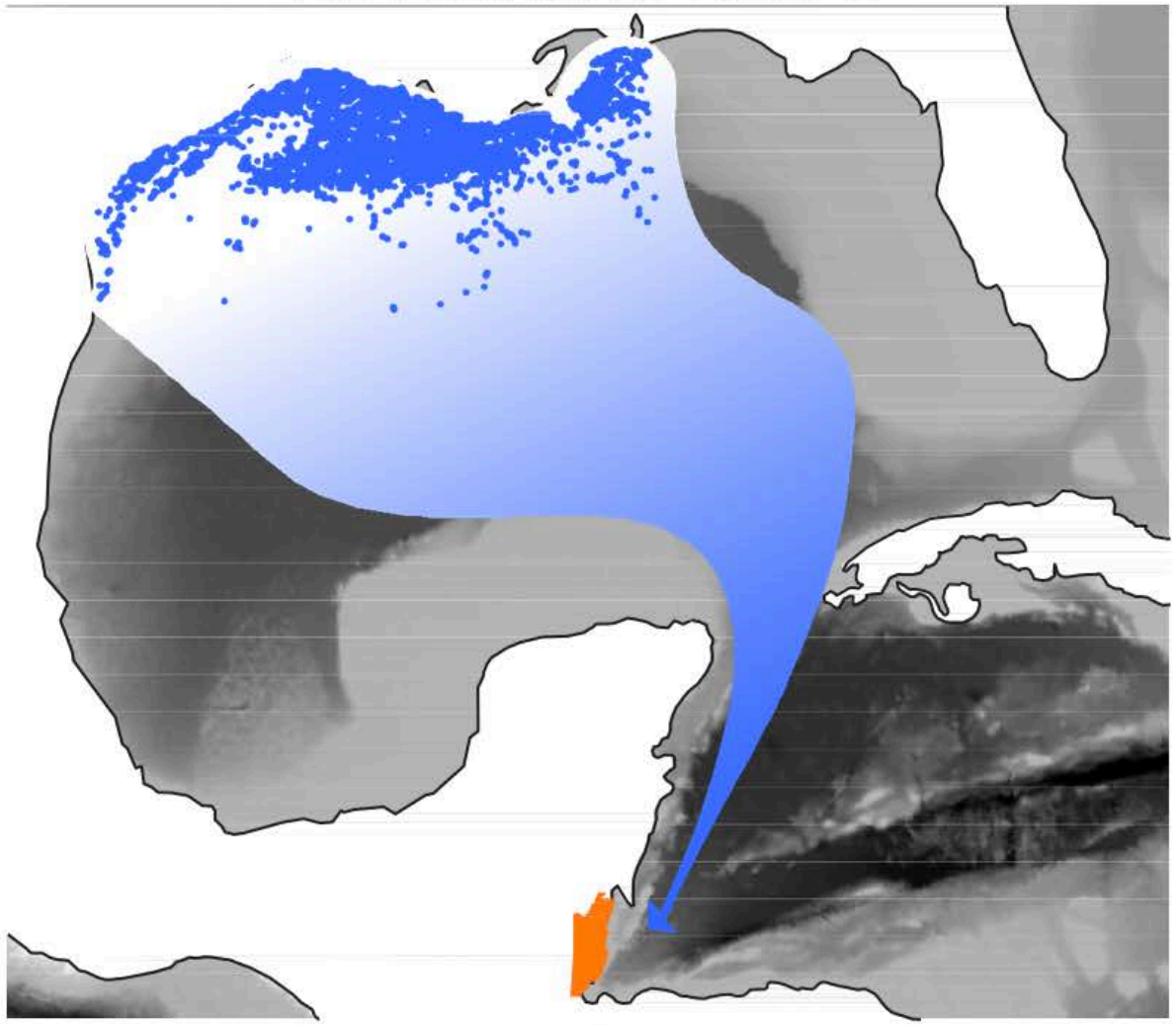
sPOD's* Modular *Components Support Both Building & Infrastructure Construction



Community

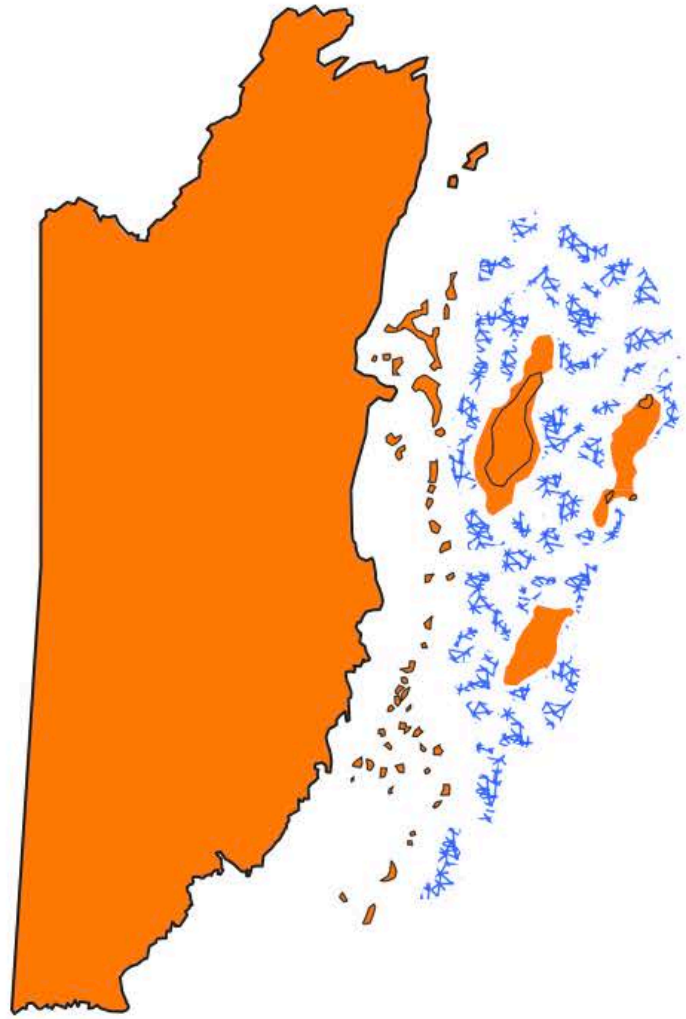

Electric cables
Communication cables
Column
Wastewater
Water

REPOSITIONING OIL RIGS AS FLOATING REEFS

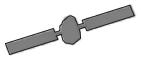


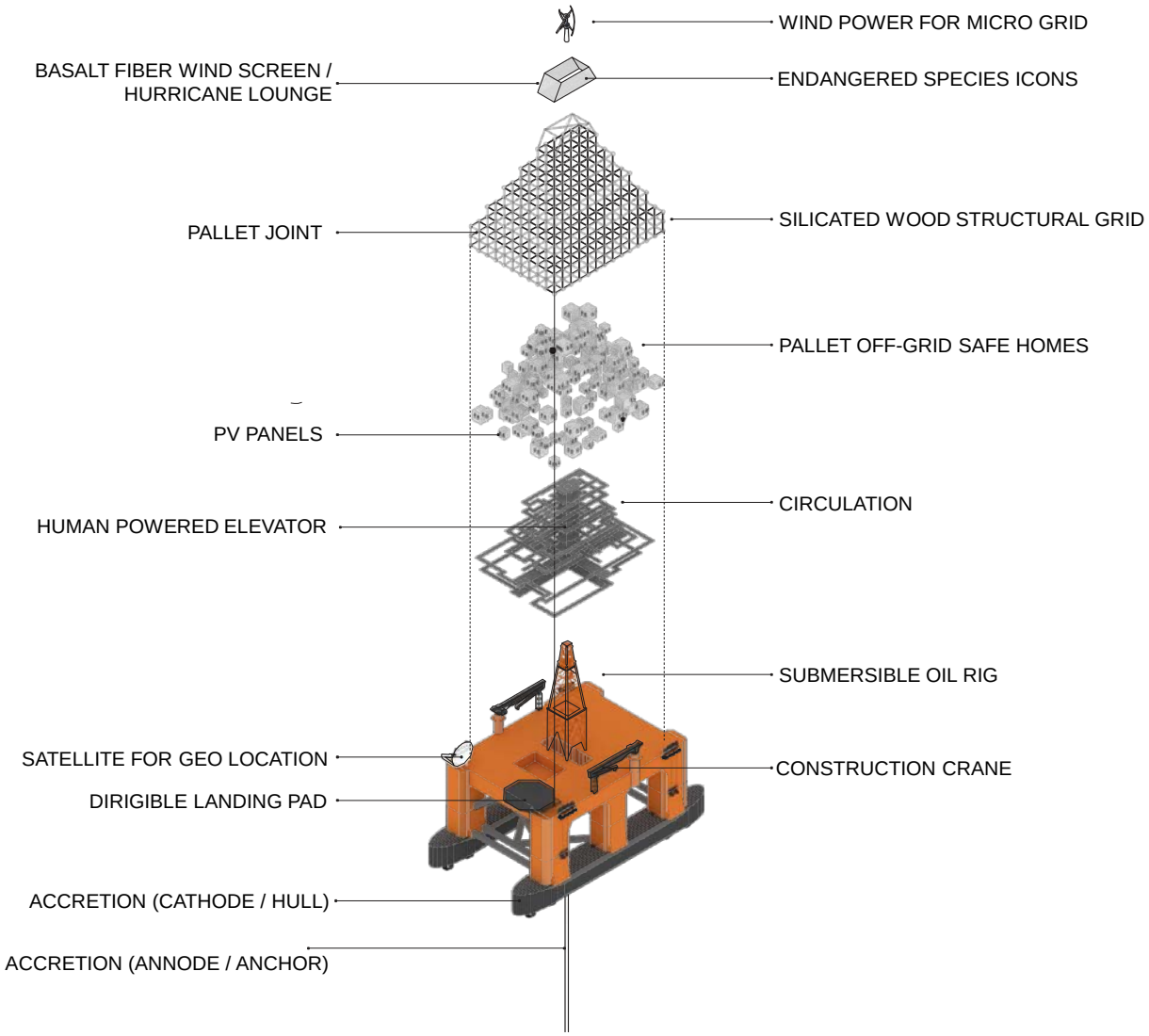
4,000 OIL RIGS AVAILABLE
EACH RIG IS 0.00125 SQUARE MILES
TOTAL 5 SQUARE MILES OF NEW REEF

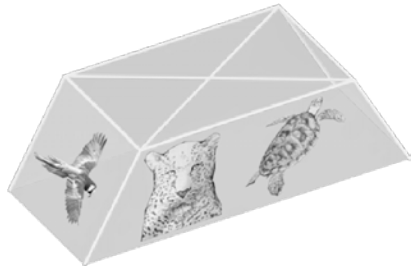
EXPANDED REEF IN ECONOMIC ZONE



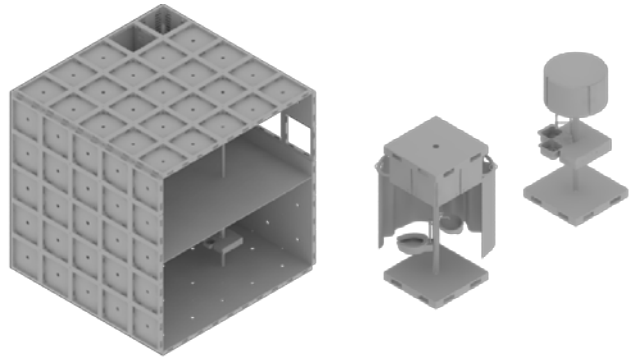
SEMI-SUBMERSIBLE OIL RIGS FOR SALE



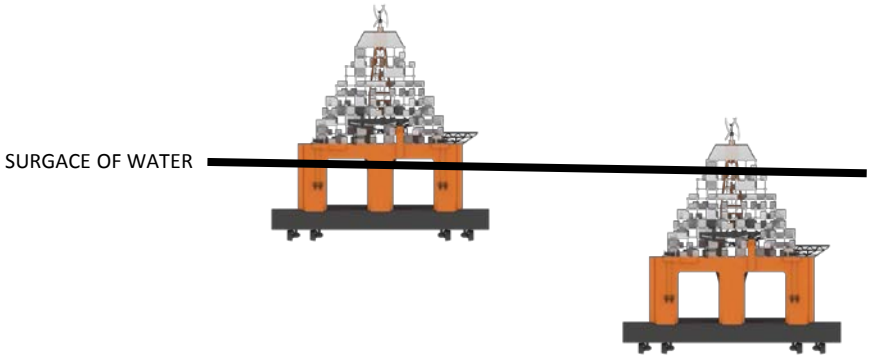




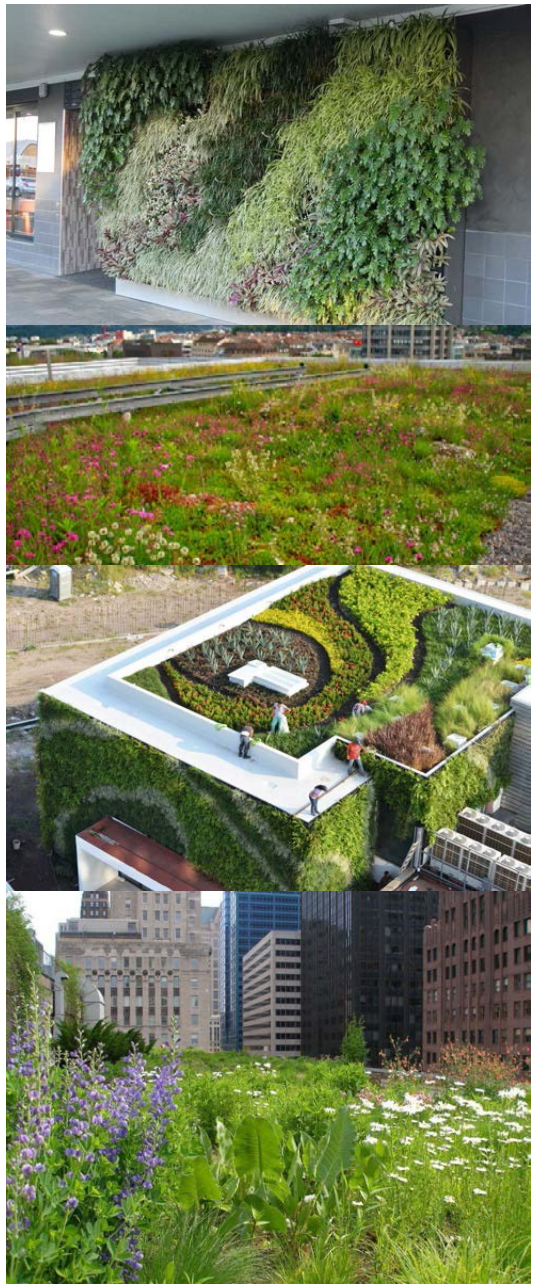
HURRICANE VIEWING LOUNGE PROTECTED BY BASALT FABRIC WIND BREAK



TYPICAL PALLET LIVING MODULE
WITH BATHROOM / KITCHEN UNITS



SUBMERSIBLE PLATFORM IN HURRICANE SEASON



CITIESALIVE

15TH ANNUAL GREEN ROOF & WALL CONFERENCE

SEATTLE | SEPTEMBER 18-21, 2017

SEAS ALIVE

BLUE ROOF & WALL

THE BLUE ECONOMY