

RAPID BUILDINGS

Infrastructure to Face Disasters









World has changed after the covid-19 infection. But this is not the only threat that threatens the Humans on various levels and may lead to Human catastrophe of unprecedented proportions. With Global Warming, Changing weather patterns, Over pollution coupled with Mismanagement of resources has led to Shortages of Essentials which may lead to War. The grief Humanity and Human as a species can sustain are beyond control...

But we can manage the aftermath of each catastrophe and do our best for Restoring the faith and securing health of the affected people. For that we present our Corner Stone solutions Division. Our Corner Stone Division has designed state of the art Hospitals, Crisis Management Centre, Relief Camps, Civilian Defense systems, Portable Utility Systems, etc.

Our Hospital System is a modular system with each unit of two containers have capacity of full functional off grid 30 bedded Hospital. They Are designed and equipped with advanced off-the-grid technologies. Allowing these Hospital modules to work for many years. And the best part they are easy to maintain and operate.

Our modules are so efficient that we can have fully functional 100-150 bedded multispecialty hospital with just 12 containers or 6 units. Each of our unit can be setuped by four personnel in under 8 hours. And after setup all of these units Self regulated environment which isolated from outside world. Depending on the usage we upgrade the envelope to bullet proof and other configurations.









ENVIRONMENTAL DANGER

Non-Environmental Danger



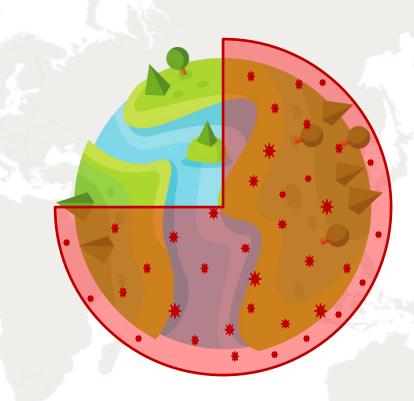


- EARTHQUAKES
- HURRICANES & FLOODING
- DROUGHT & WILD FIRES
- Volcano Eruption & Landslide
- PANDEMIC
- OTHERS...

ENVIRONMENTAL DANGER



- O INDUSTRIAL SPILLAGE
- Nuclear Disasters
- o WARS
- BIOLOGICAL THREAT/PANDEMIC
- SOIL CONTAMINATION
- OTHERS...



Non-Environmental Danger



- Rapid Buildings are those buildings that can be transported and established in new location in 24 - 48 Hours
- These building structures can be transported by Trucks, Airlifted and even be air dropped directly on the field
- Packing Unpacking, Transportation, prep should need minimal staffs and workers with minimal specialize training
- Rapid Building should be mostly be self reliant in power generation & environment control





TIME IS OF THE ESSENCE

- It is pertinent that relief services be able to setup relief infrastructure rapidly and reliably.
- Faster deployment also prevent secondary loss of life and in some cases even prevent loss of life.

PART ONE



PART TWO



SAVING HUMAN LIVES

- o Rapid Build Infrastructure save lots of Human lives as they provide shelter, aid in Rescue and Treat the ones in need.
- These Infrastructure enable empower and inspire our frontline workers to go and above beyond their duty



DOCUMENTING SCOPE

- Documenting the complete extent and effect of any Disastrous event enables Rescue workers to work effectively and get more result.
- With rapid building secondary effect can also be identified and measures to resolve them can be deployed





PART THREE



PART FOUR

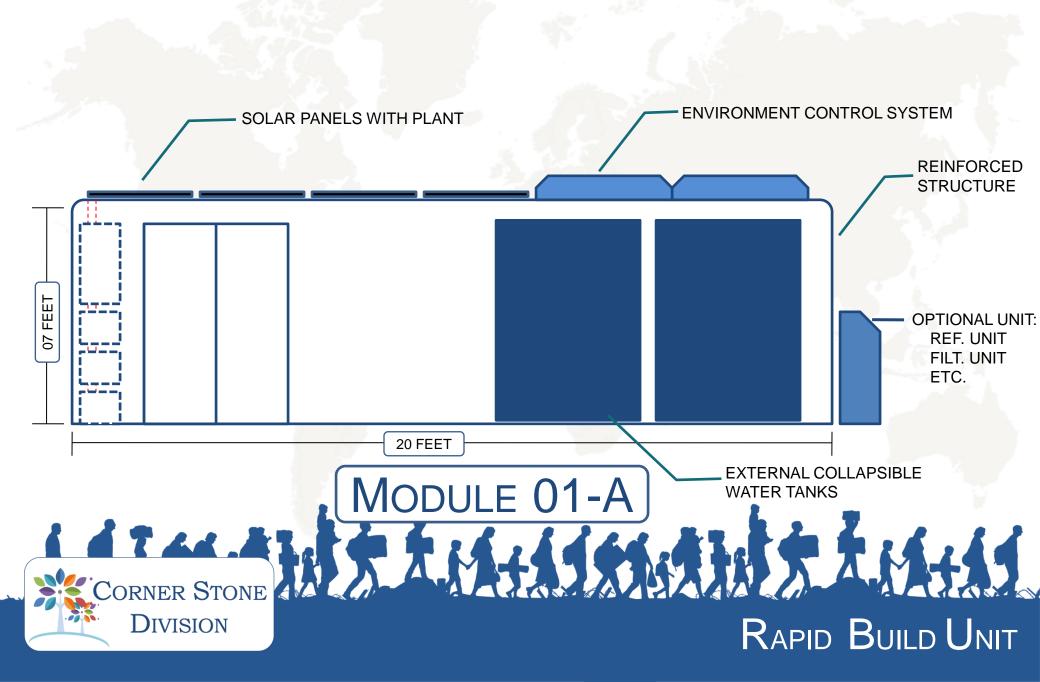


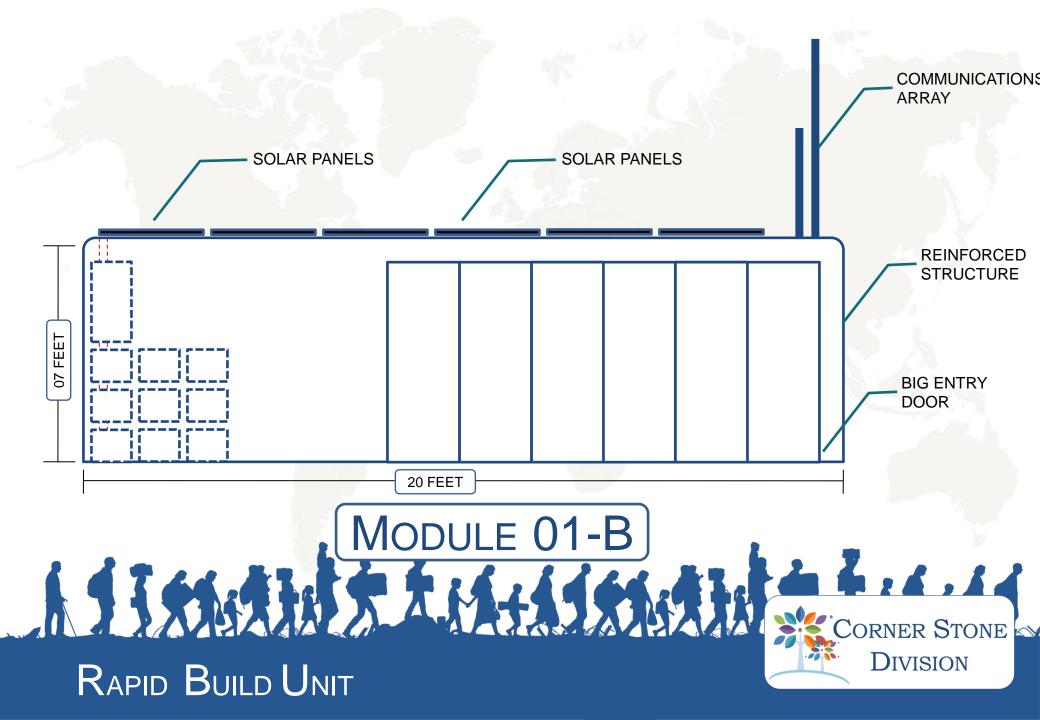
PREDICTING FUTURE EVENT

- Rapid Build help in assimilation and analysis of key information that will enable future prediction of primary and Secondary events.
- o Even prevent future loss of life



ABOUT RAPID BUILDS - WHY..??









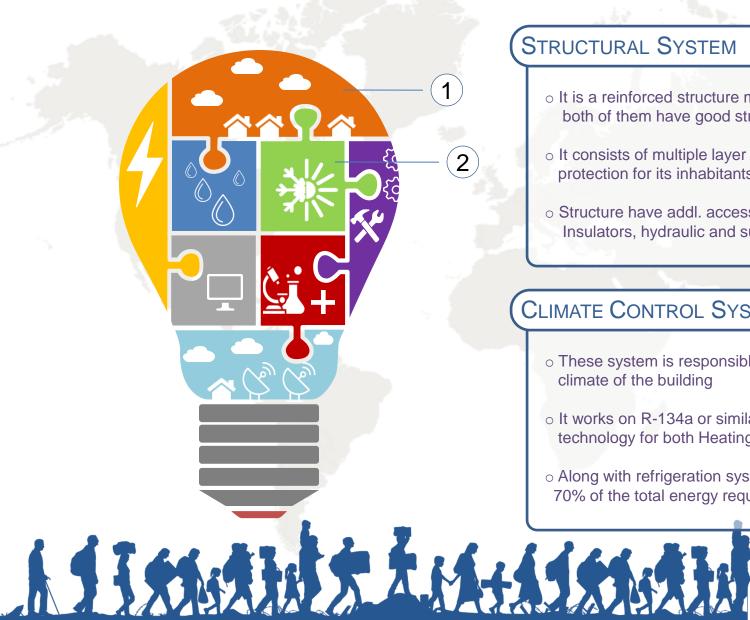


COMPONENTS OF RAPID BUILD

- 1) STRUCTURAL SYSTEM
- 2) CLIMATE CONTROL SYSTEM
- 3) CONTROL & OPERATION SYSTEMS
- 4) MEDICAL EQUIPMENT
- 5) Power Generation & Distribution
- 6) WATER PURIFICATION & DISPOSAL
- 7) COMPUTER SYSTEM
- **COMMUNICATION SYSTEMS**



RAPID BUILD COMPONENTS

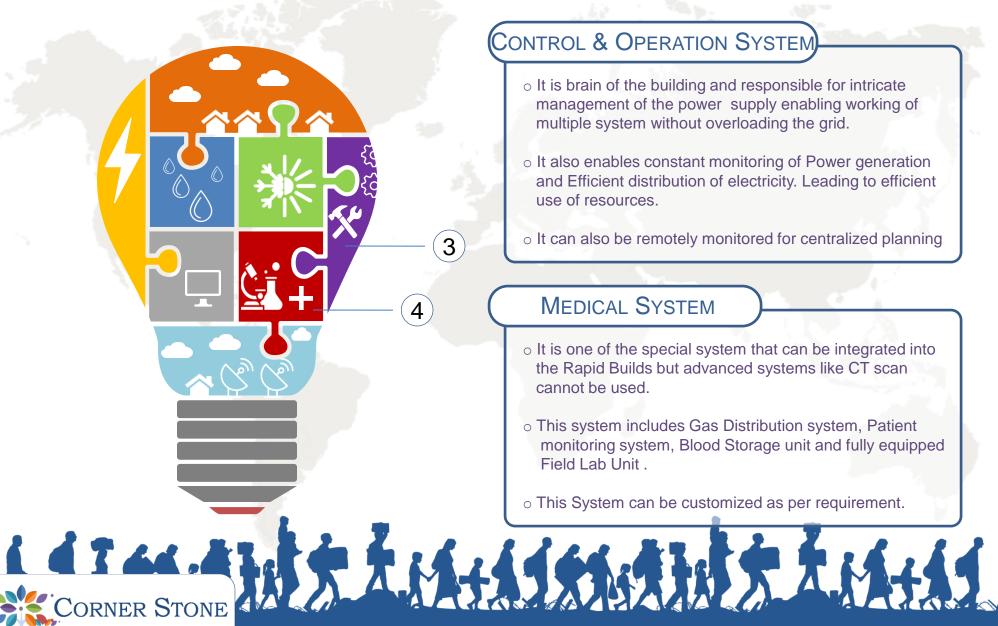


STRUCTURAL SYSTEM

- o It is a reinforced structure made up of Composite and steel, both of them have good strength to weight ratio.
- o It consists of multiple layer that provide structural strength, protection for its inhabitants and enable ease of transport.
- Structure have addl. accessory system like Dampeners, Insulators, hydraulic and suspenders.

CLIMATE CONTROL SYSTEM

- These system is responsible for maintaining the internal climate of the building
- o It works on R-134a or similar gases and uses inverter technology for both Heating - Cooling of the building.
- o Along with refrigeration system It is estimated to use about 70% of the total energy requirement of the building.



CONTROL & OPERATION SYSTEM

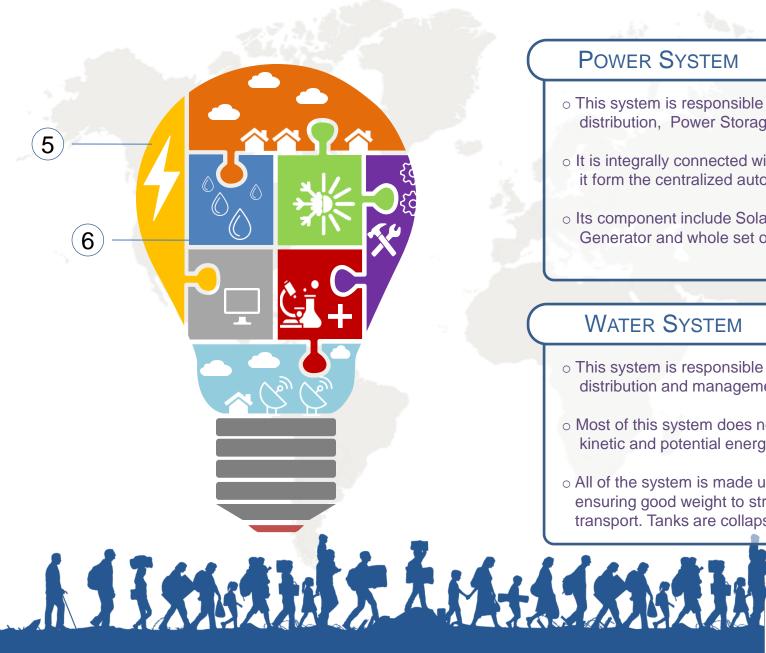
- o It is brain of the building and responsible for intricate management of the power supply enabling working of multiple system without overloading the grid.
- o It also enables constant monitoring of Power generation and Efficient distribution of electricity. Leading to efficient use of resources.
- o It can also be remotely monitored for centralized planning

MEDICAL SYSTEM

- o It is one of the special system that can be integrated into the Rapid Builds but advanced systems like CT scan cannot be used.
- o This system includes Gas Distribution system, Patient monitoring system, Blood Storage unit and fully equipped Field Lab Unit.
- o This System can be customized as per requirement.



RAPID BUILD COMPONENTS



POWER SYSTEM

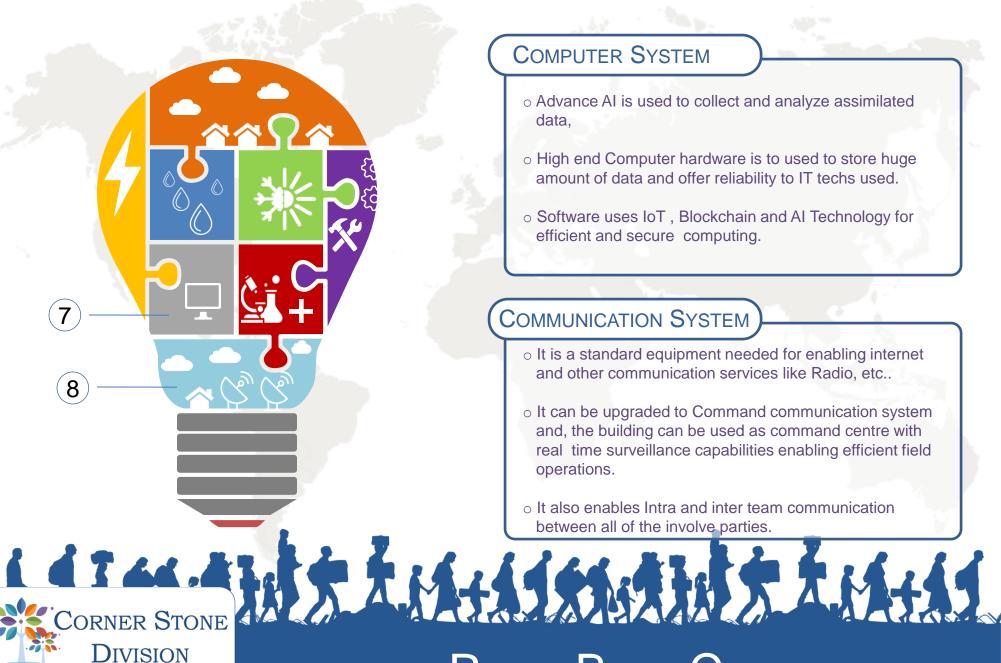
- o This system is responsible Power Generation, Power distribution, Power Storage and Power Management.
- o It is integrally connected with the Control system and with it form the centralized automation system of the building
- o Its component include Solar Power plant, External Generator and whole set of Batteries.

WATER SYSTEM

- o This system is responsible for Storage, Purification distribution and management of Water
- Most of this system does not use electricity instead uses kinetic and potential energy.
- o All of the system is made up of lightweight composites ensuring good weight to strength ratio and ease of transport. Tanks are collapsible.



RAPID BUILD COMPONENTS



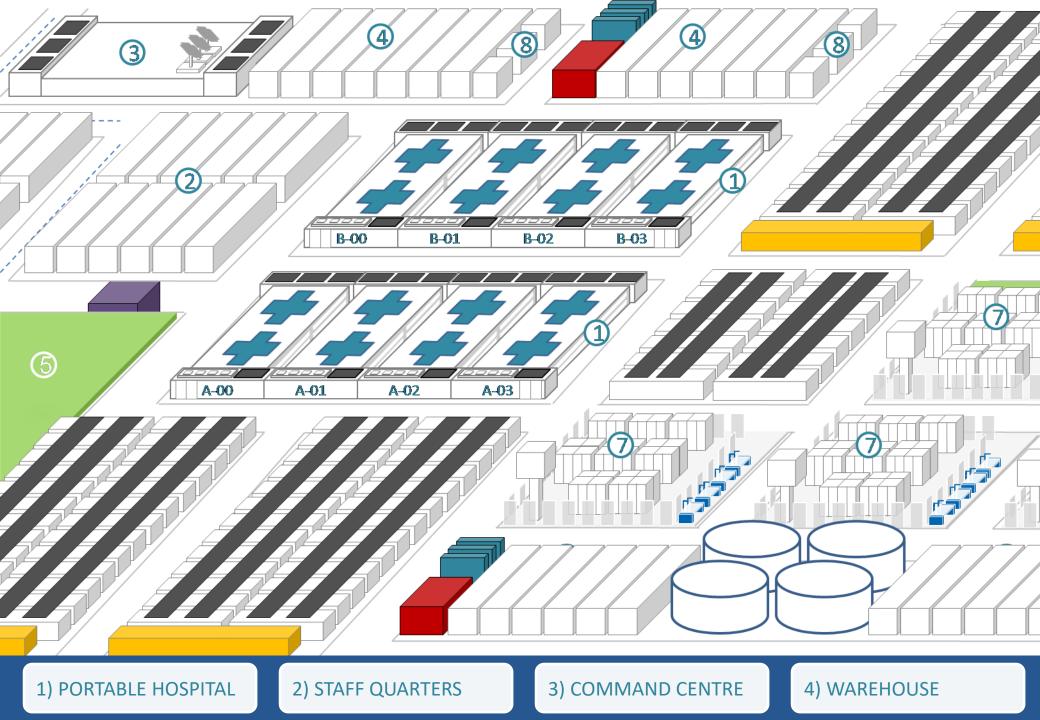
COMPUTER SYSTEM

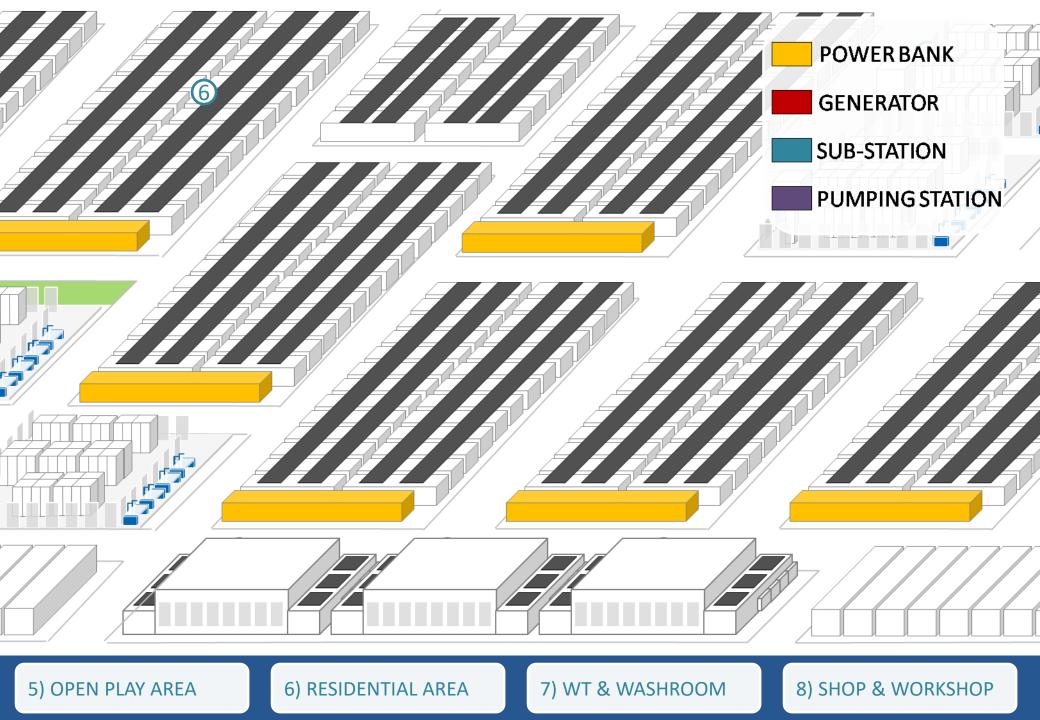
- o Advance AI is used to collect and analyze assimilated data.
- o High end Computer hardware is to used to store huge amount of data and offer reliability to IT techs used.
- o Software uses IoT, Blockchain and Al Technology for efficient and secure computing.

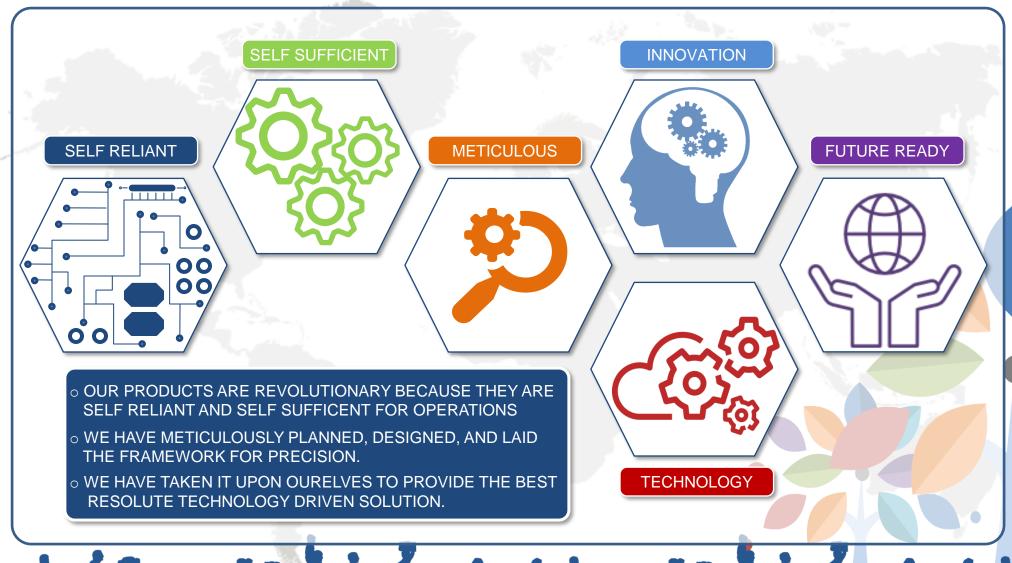
COMMUNICATION SYSTEM

- o It is a standard equipment needed for enabling internet and other communication services like Radio, etc..
- o It can be upgraded to Command communication system and, the building can be used as command centre with real time surveillance capabilities enabling efficient field operations.
- o It also enables Intra and inter team communication between all of the involve parties.















HOSPITAL UNIT

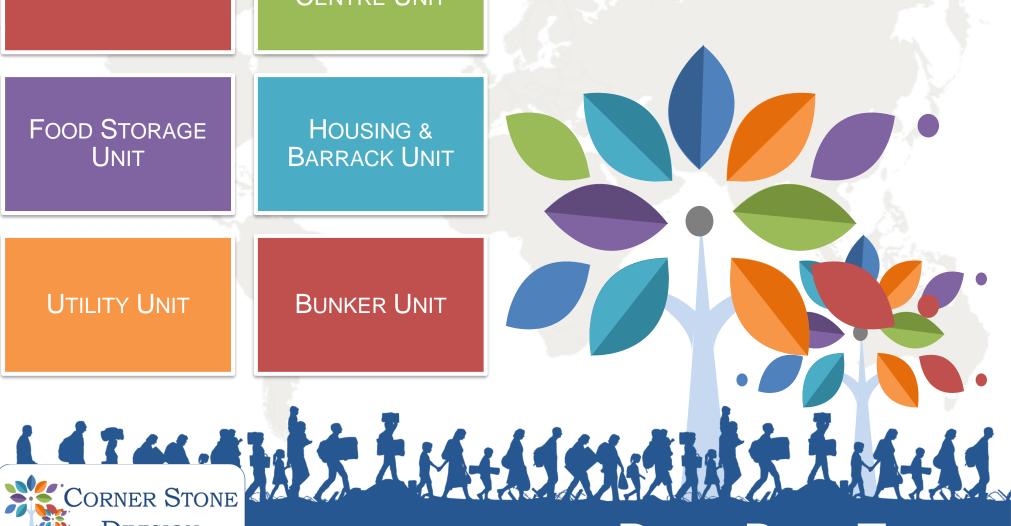
COMMAND **CENTRE UNIT**

FOOD STORAGE UNIT

Housing & **BARRACK UNIT**

UTILITY UNIT

BUNKER UNIT





RAPID BUILD TYPES



MOST OF THE REFUGEE CAMP LACK HOSPITAL AND **HEALTHCARE FACILITY**

EVEN IF THESE CAMP HAVE HOSPITAL THEY LACK PROPER **ELECTRCITY, WATER** AND OTHER SERVICES

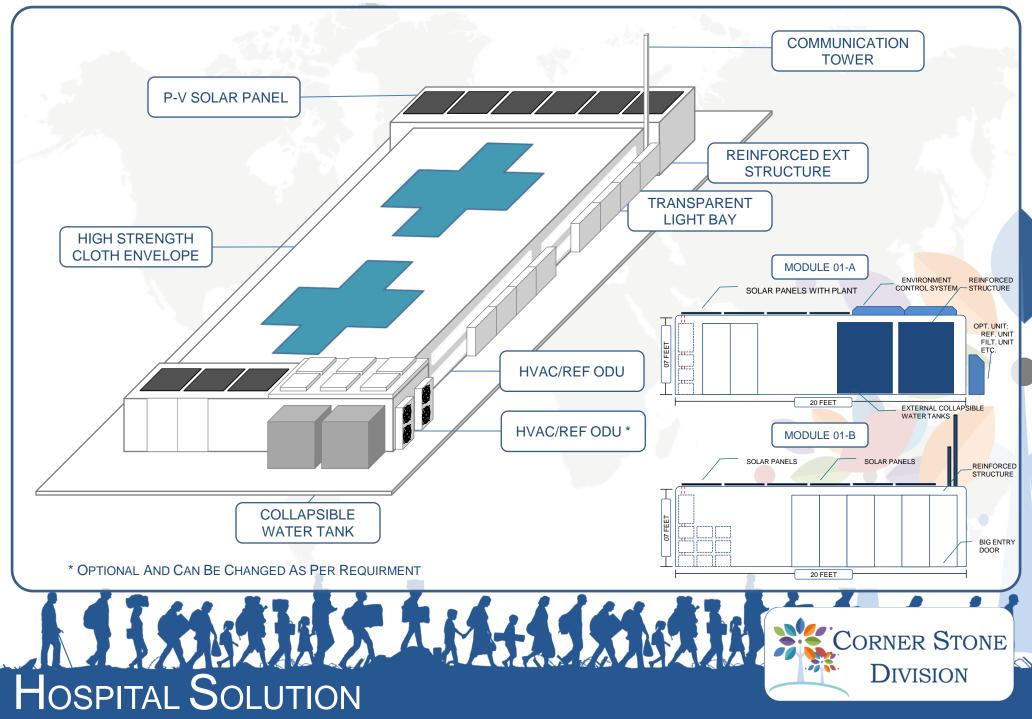
SETTING UP PROPER CONVENTIONAL **HOSPITAL TAKES A LOT** OF TIME AND **INFRASTRUCUTRE**

WE HAVE THE Solutions



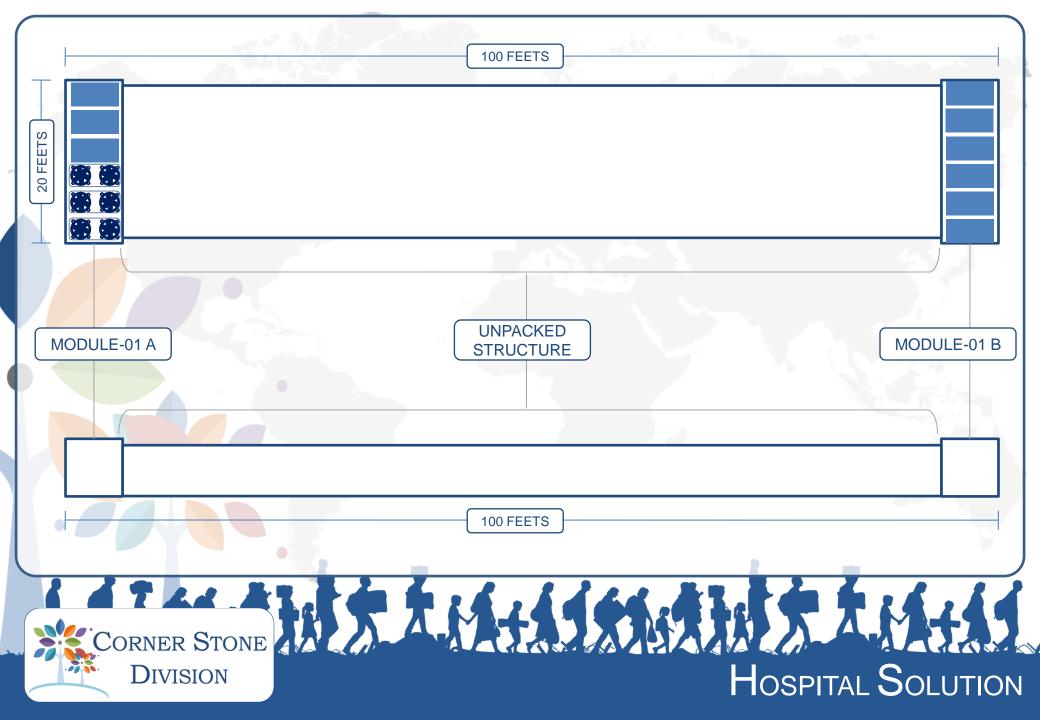


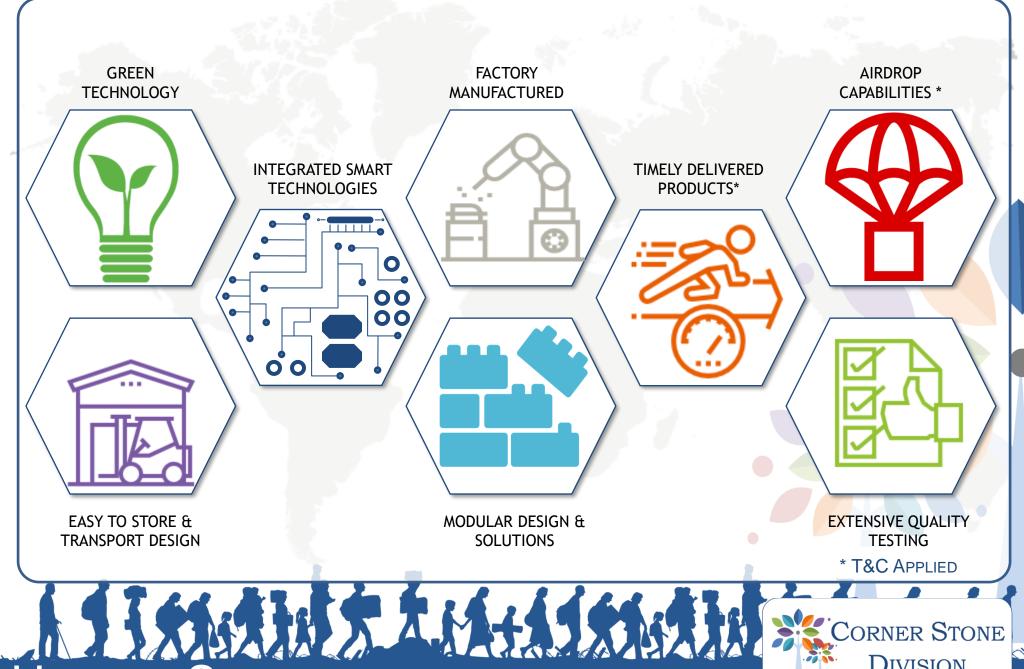
Hospital Solution





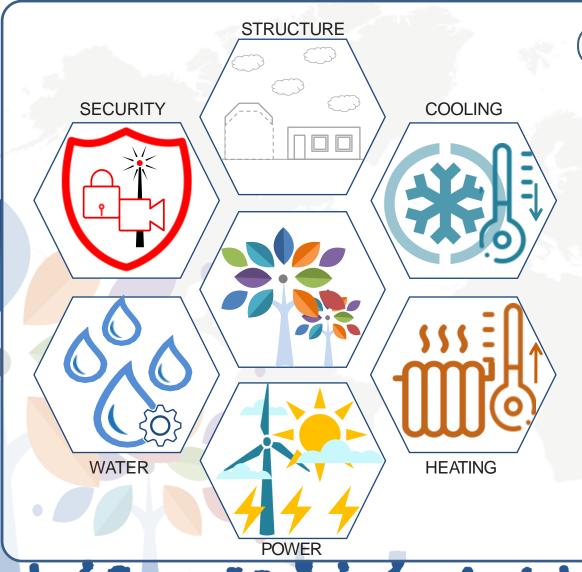












GENERAL SYSTEM

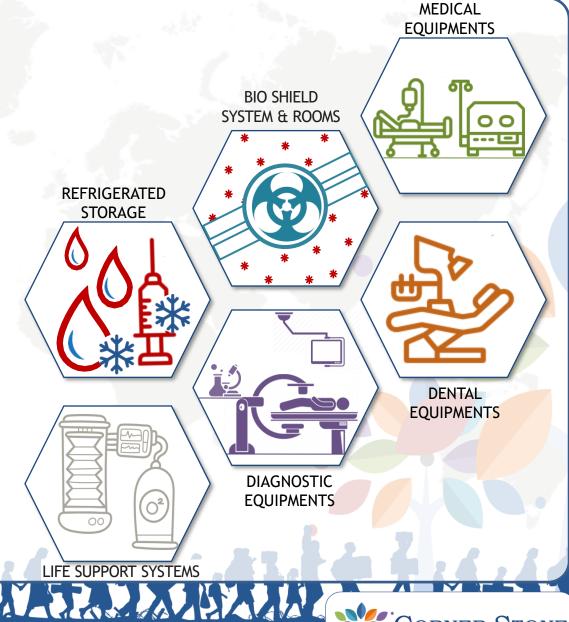
- All of Our Hospital units have reinforced structure that is designed to withstand stress of moving and can be upgraded to even withstand air drop.
- Our Hospital units are equipped with energy efficient HVAC system that can integrated with heating system for air and water.
- Hospital units have multiple ports of energy generation, they can harness energy from sun, wind, Diesel Generator and Even grid if its available.
- Each Hospital unit has onboard battery backup that can provide backup for 24 hours. These battery packs are modular in nature and easy to maintain.
- We have outfitted each Hospital unit with state of the art water filtration system. We also include Collapsible pressure water tank with
- All of the components used in Hospital unit are designed to be modular in nature, allowing for easy maintenance, swapping for change of parts and Enable Future Upgradation
- Each Hospital unit is connected and covered with advance security systems





MEDICAL SYSTEM

- All of our hospital module are outfitted with State of the art Medical Equipments.
- Each unit can be unpacked to have 30 bed capacity per unit. All units have deployable life support system.
- We have outfitted each of the hospital unit with Energy efficient, well insulated And smart cooling-refrigeration system.
- Each of our hospital unit has been carefully designed to have Hygienic, clean and isolated Environment, making them perfect for handling complex and infectious diseases.
- Most of our hospital unit can be modified and equipped with multiple diagnostic equipments ranging from laboratory to imaging equipment like x-ray, etc.
- Hospital units can also be fitted with dental chairs and Major OT modules.





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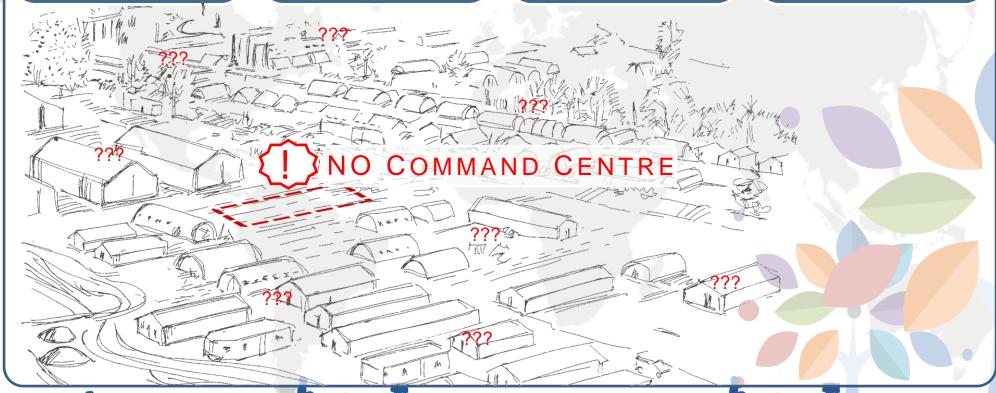


MOST OF THE REFUGEE CAMPS LACK **CENTRAL COMMAND** AND MONITORING

EVEN IF THESE CAMP HAVE SOME FORM OF **COMMAND CENTRE** THEY LACK MODERN **AMENITIES**

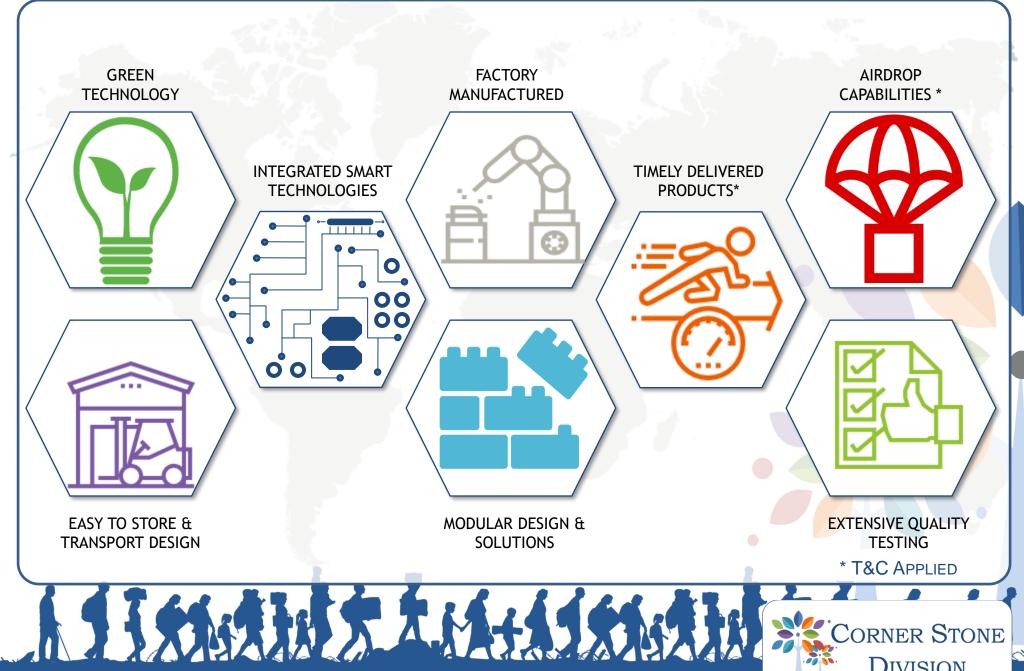
SETTING UP PROPER COMMAND CENTRE IS ESSENTIAL TO MANAGE THE CAMP EFFICIENTLY.

WE HAVE THE Solutions



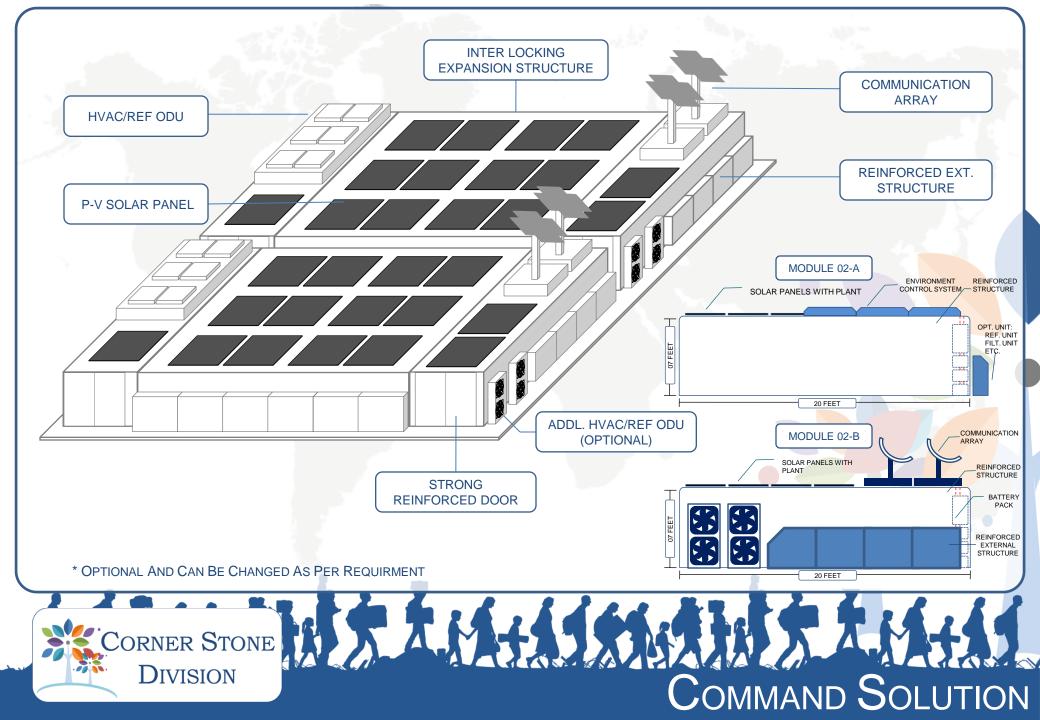


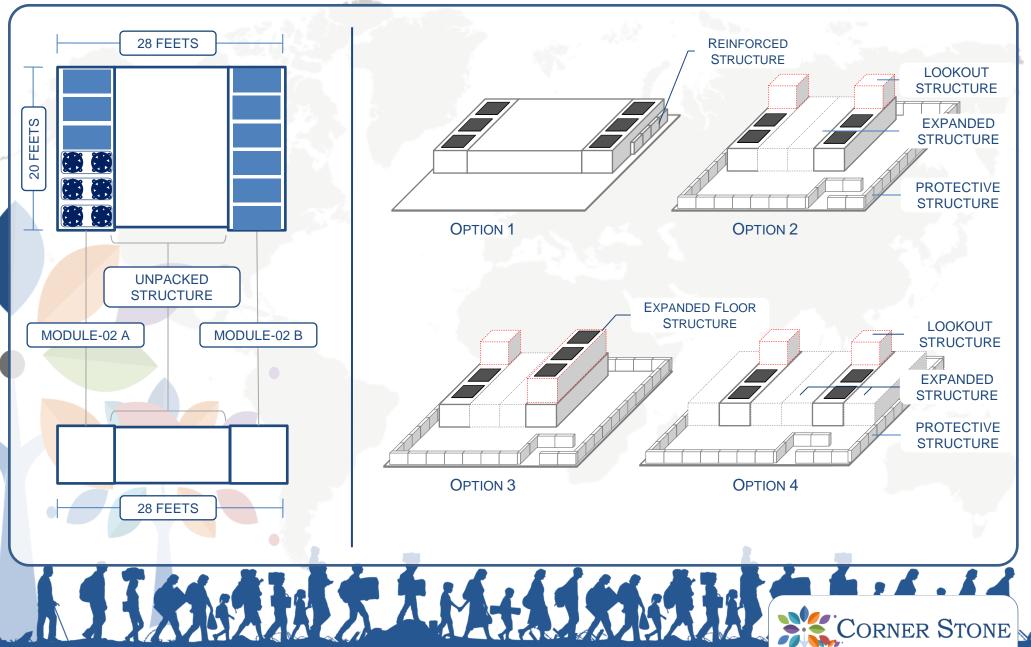
COMMAND SOLUTION















STRUCTURE **SECURITY** COOLING WATER **PROTECTION SYSTEMS POWER**

- All of Our Command Centre units have reinforced structure that is designed to withstand stress of moving and can be upgraded to even withstand air drop.
- Our Command Centre units are equipped with energy efficient HVAC system for precision cooling.
- Command centre units have multiple ports of energy generation, they can harness energy from sun, wind, Diesel Generator and Even grid if its available.
- Each Command Centre unit has onboard battery backup that can provide backup for 48 hours. These battery packs are modular in nature and easy to maintain.
- · We have outfitted each Command Centre unit with multiple protection systems like EMP protection, Data Banks, Insulation system, and even Bullet protection envelope if required.
- All of the components used in Command centre unit are designed to be modular in nature, allowing for easy maintenance, swapping for change of parts and Enable Future Upgradation.
- Command centre unit is connected to complete security system of camp which enable real time monitoring and management of the camp.





COMMUNICATION SYSTEM

- All of our Communication centre are outfitted with Advanced Communication Equipments.
- Each unit modules can be expanded and interconnected to form approx. 510 sq.ft. area Command Centre.
- We have outfitted each of the command centre unit with Energy efficient, well insulated And smart precision cooling system.
- Each of our command hospital unit has been carefully designed to have clean & isolated Environment, making them perfect for handling complex computing, Data Storage and Advance monitoring.
- Our Command Centre units are also equipped with advance computing systems, high speed Servers and high capacity Data banks.
- Command centre unit can also be outfitted with Reinforced ext. structure air filtration system and Life support systems





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MOST OF THE REFUGEE CAMPS LACK PROPER **HOUSING**

EVEN IF THESE CAMP HAVE HOUSING THEY LACK AMENITIES LIKE **SEWAGE DISPOSAL & CLEAN WATER**

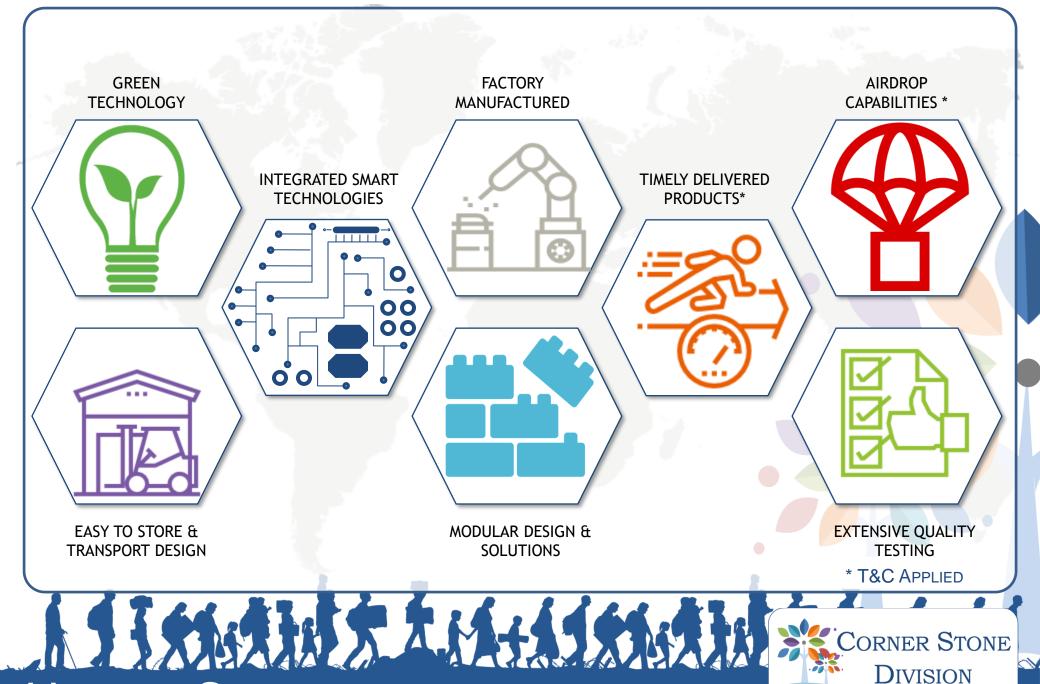
SETTING UP PROPER **HOUSING UNIT IS IMPORTANT FOR SUCCESS** OF RELIEF EFFORTS

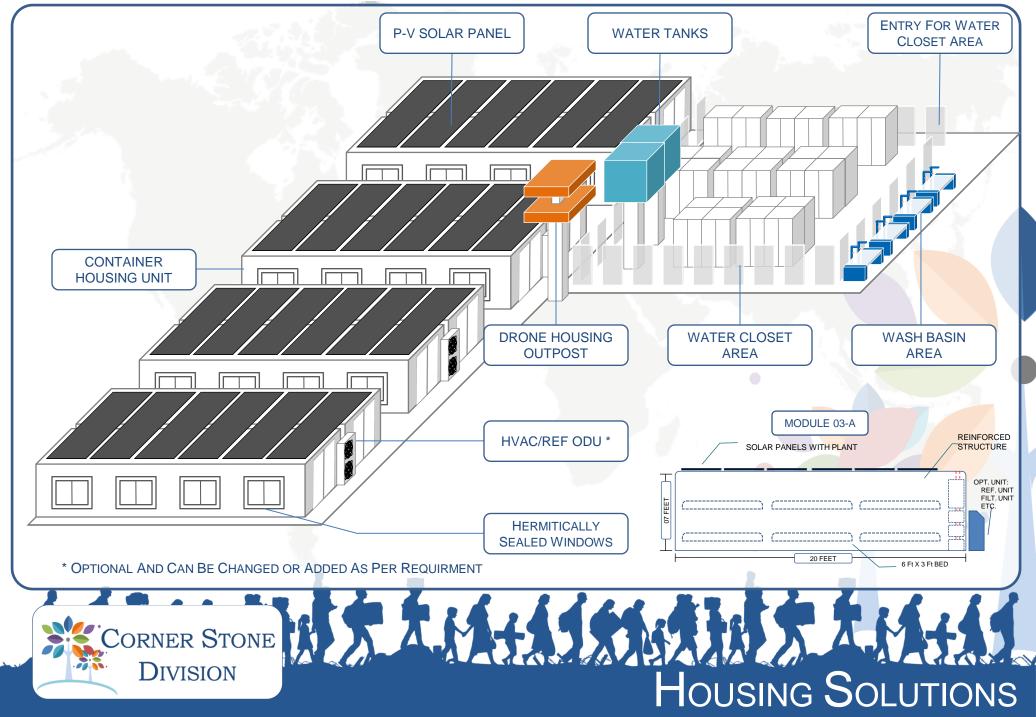
WE HAVE THE SOLUTIONS



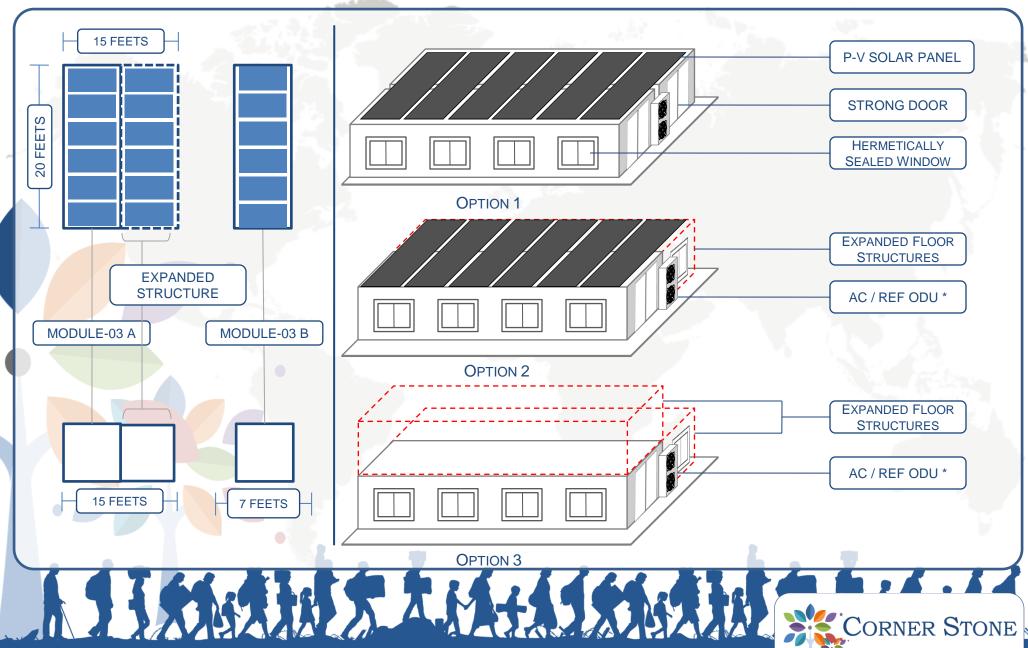


Housing Solutions









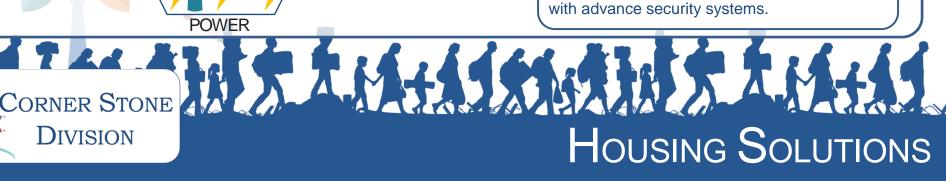




STRUCTURE **SECURITY** COOLING WATER **HEATING SYSTEMS**

- All of Our Residential units have reinforced structure that is designed to withstand stress of moving and can be upgraded to even withstand air drop.
- Our Residential units can be equipped with energy efficient HVAC system that can integrated with heating system for air and water.
- Residential units have multiple ports of energy generation, they can harness energy from sun, wind, Diesel Generator and Even grid if its available.
- Each Residential unit has onboard battery backup that can provide backup for 12 hours. These battery packs are modular in nature and easy to maintain.
- We have outfitted each Residential unit with state of the art bedding, insulating, protecting, and comfort features
- All of the components used in Residential unit are designed to be modular in nature, allowing for easy maintenance, swapping for change of parts and Enable Future Upgradation.
- Each Residential unit is connected and covered with advance security systems.





HOUSING SYSTEM

- All of our housing units are outfitted with high quality comfort furniture that ensure comfortable leaving for the occupants.
- Each unit can house various number of occupants depending on the variant selected i.e.; 1 pax to 15 pax.
- We have outfitted each of the housing unit with Energy efficient, well insulated And smart HVAC system.
- Our housing unit have been carefully designed to have Hygienic, clean and isolated Environment, making them perfect for long term residence.
- All of our housing units are accessorized with water closet and Wash area Units that provide additional hygiene facility for the occupants.
- Housing units can also be fitted with drone outpost that provide security, and deliver necessities to the occupants.









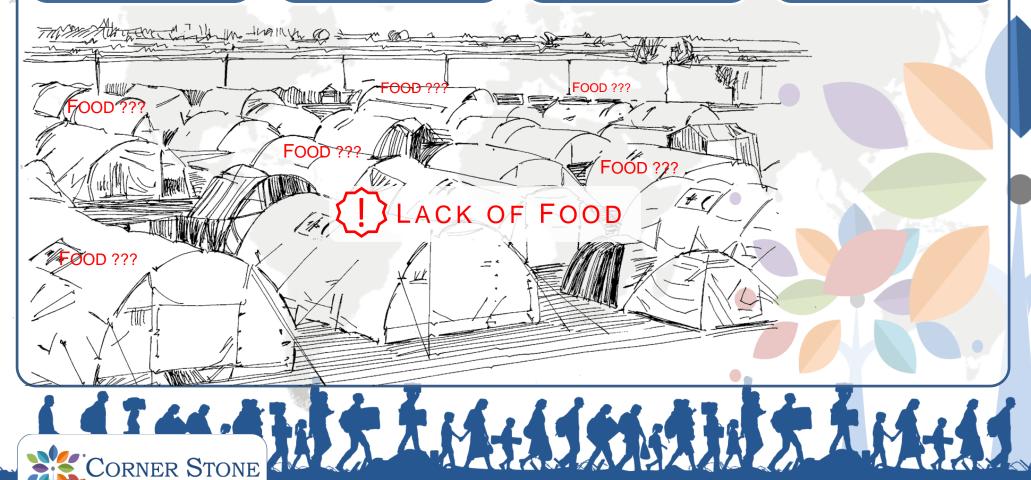


MOST OF THE REFUGEE **CAMPS HAVE FOOD SHORTAGES OR** RATIONING.

THESE CAMP HAVE FOOD SHORTAGES MOSTLY DUE TO WASTING OF FOOD, DUE TO LACK OF PROPER **FOOD STORAGE AND SHORT SHELF LIFE**

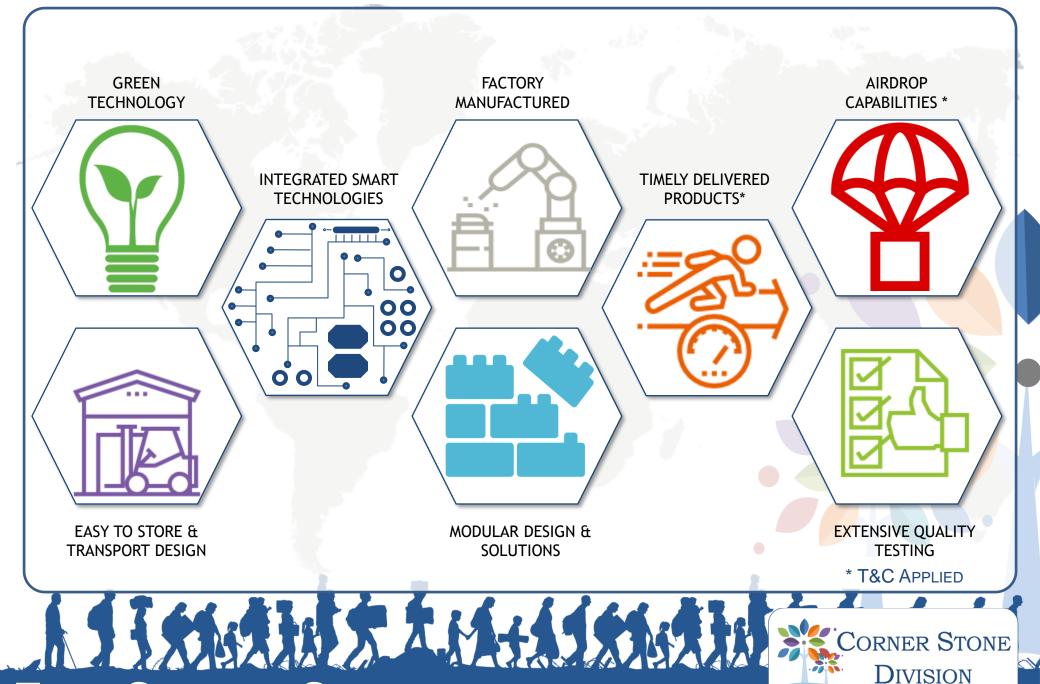
SETTING UP PROPER FOOD STORAGE UNITS WILL PREVENT FOOD **WASTAGE AND ENABLE** FOOD SECURITY.

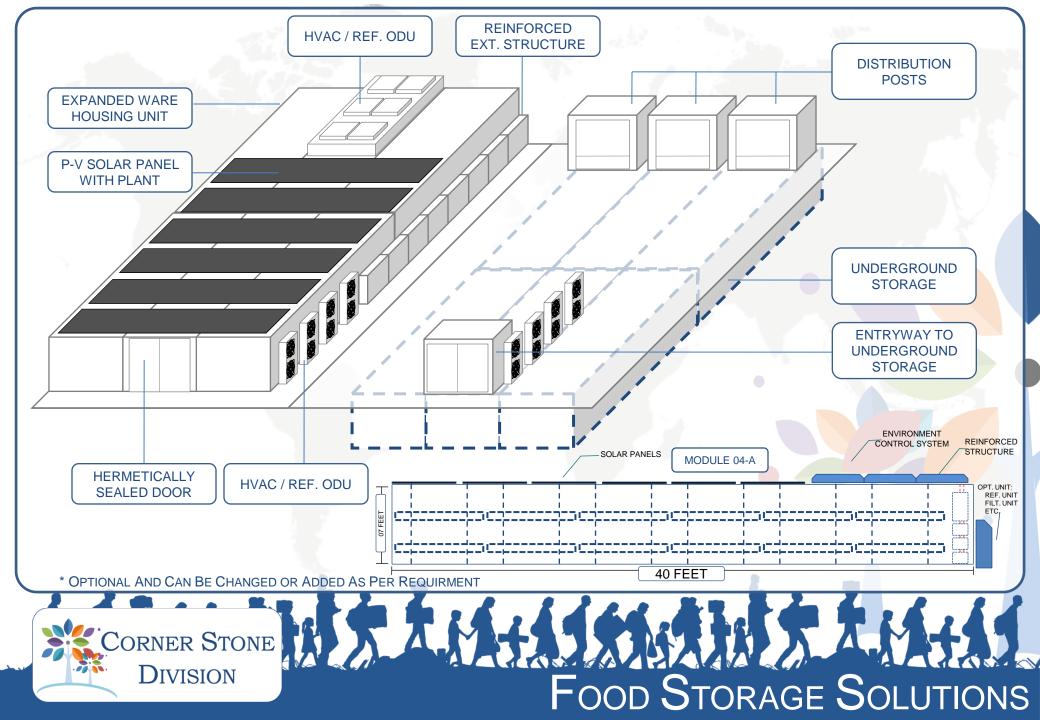
WE HAVE THE SOLUTIONS

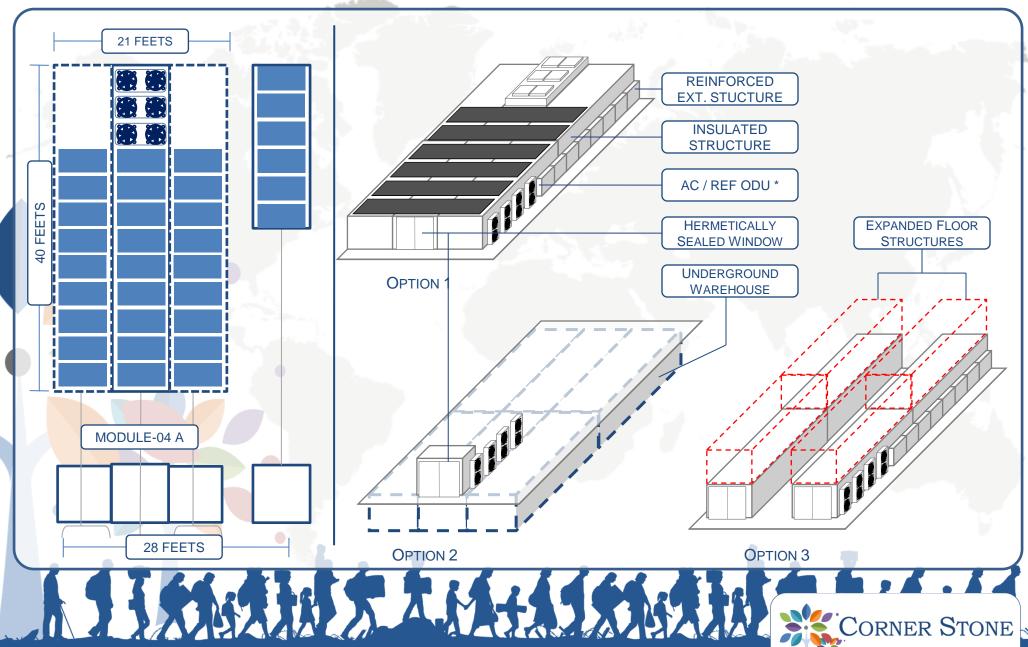




FOOD STORAGE SOLUTIONS











STRUCTURE **SECURITY** COOLING **PROTECTION AUTOMATION** SYSTEMS **SYSTEMS POWER**

- All of Our Warehouse units have reinforced structure that is designed to withstand stress of moving and can be upgraded to even withstand air drop.
- Our Warehouse units can be equipped with energy efficient HVAC/Refrigeration system...
- -Warehouse units have multiple ports of energy generation, they can harness energy from sun, wind, Diesel Generator and Even grid if its available.
- Each Warehouse unit has onboard battery backup that can provide backup for 12 hours. These battery packs are modular in nature and easy to maintain.
- We have outfitted each Warehouse unit with state of the protection envelopes that increase shelf life of the stored food. Addl. Protection like Reinforced ext. structure can be added for making unit more secure.
- All of the components used in warehouse unit are designed to be modular in nature, allowing for easy maintenance, swapping for change of parts and Enable Future Upgradation.
- Each Warehouse unit is connected and covered with advance security systems.





STORAGE SYSTEM

- All of our Warehouse units are outfitted with advance Racking & Sorting system
- Warehouse units have two types of transport length of 20 feets and 40 feets
- Each of the warehouse unit can be outfitted with Energy efficient, well insulated And smart cooling-refrigeration system.
- Each of our Warehouse unit has been carefully designed to have Hygienic, clean and isolated Environment, making them perfect for handling, storing and distributing large quantities of food.
- Warehouse unit can be designed with multiple chambers for storing in which each chambers have different temp.
- -Portable and fixed Distribution outpost can be setup through out the camp.











MOST OF THE REFUGEE **CAMPS LACK BASIC INFRA NECESSARY FOR BASIC** LIVING STANDARDS

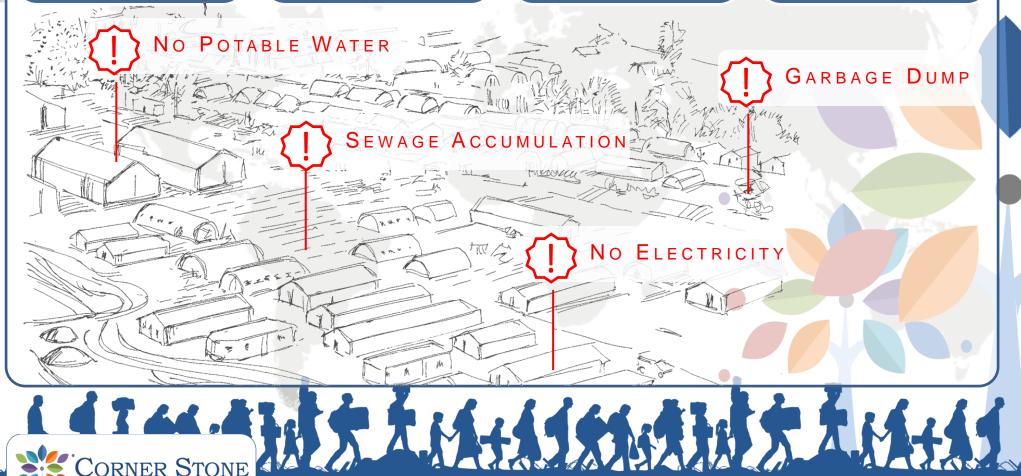
CORNER STONE

DIVISION

THESE CAMP DO NOT HAVE THESE INFRA STRUCTURE BECAUSE **SETING THEM UP REQUIRES A LOT OF TIME** AND MONEY.

SETTING UP PROPER INFRATRUCTURE WILL **ENABLE BETTER LIVING** SANDARD AT THE REFUGEE CAMP.

WE HAVE THE Solutions









Power infrastructure consists of 3 main components

01) Power Generation :

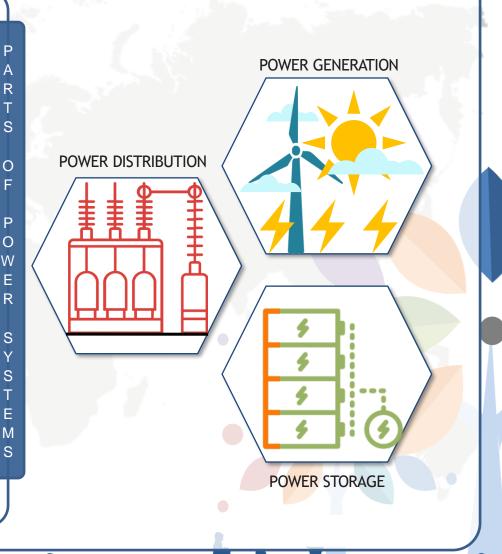
- Both Renewable and Non- Renewable power generation systems like P-V solar panels atop containers units used together as distributed solar farm.
- Addnl. Power sources like Wind turbine can be used if power generated from solar panel is not enough or fuel is in short supply.
- Depending on the Rapid house type and location of the deployment, combination of power generation units are used.

O2) Power Distribution :

- Power Distribution comprise of power distribution system designed at two level one for the Rapid Housing Unit and other for camp. Both systems are intelligent and be seamlessly integrated with each other.
- They are smart systems and can distribute electricity from multiple sources to port as per demand and on their own.

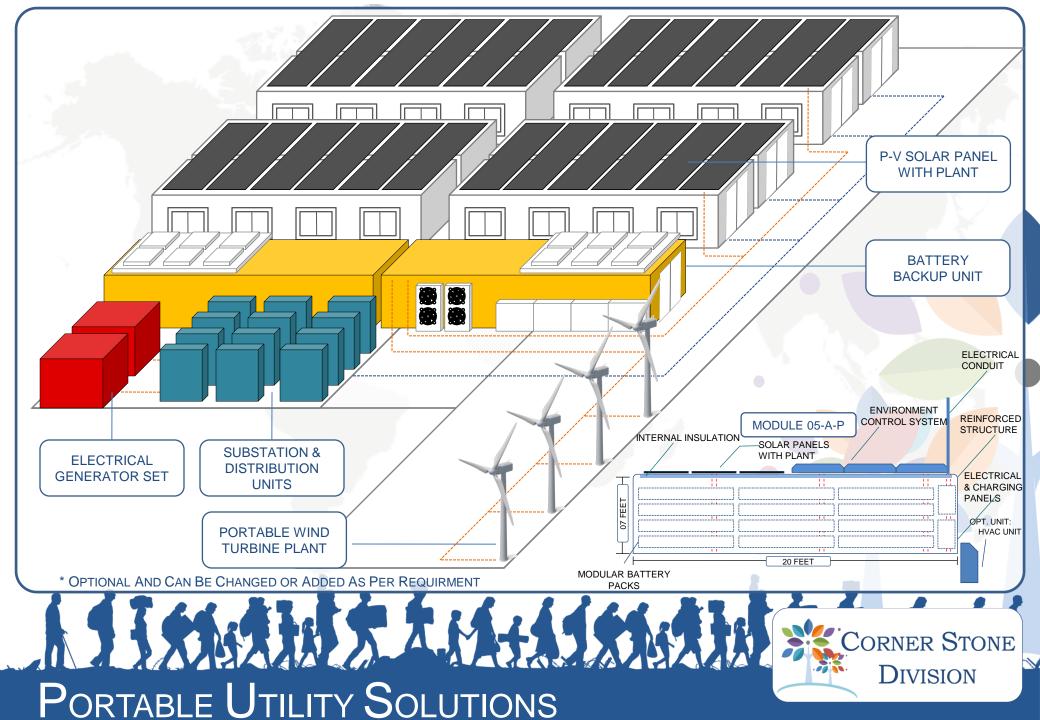
o3) Power Storage :

- Like Distribution, storage system is designed on two level the Rapid Build unit level and camp level.
- These batteries are designed to be modular and have long life.











 Potable water infrastructure consists of 3 main components

o1) Water Collection & Extraction :

- It's a combination of high tech and low tech practical soln. for collection and extraction of water from multiple sources
- Collection of water is achieved by digging pits that are at least 10 feet deep and lined with plastic sheet.
- Pumping unit consists of two parts; pump and pumping system assembly which enables seamless transition from one source to other and even change pump when they are rendered ineffective.

O2) Water Filtration :

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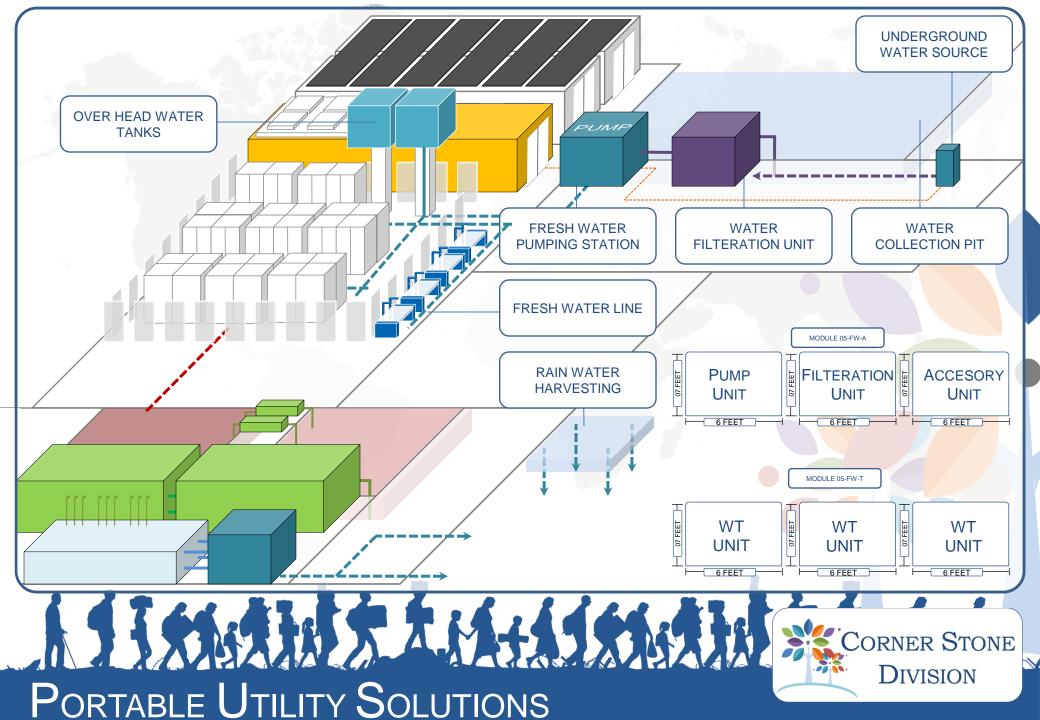
- Water Filtration systems is state of the art system that employs multiple stages of filtration to remove debri, remove toxic chemicals, and most types of pathogens to make water good for drinking and other Human Consumption.
- Filtration system is also outfitted with Reverse Osmosis module for making water suitable for drinking. It can be further upgraded with Ozone filtration system to improve the quality of water.

o3) Water Storage :

- To conserve energy overhead tanks are used for storage of water over extended period of time and for distribution of water throughout the camp.







o Potable water infrastructure consists of 3 main components

o1) Waste Collection :

- it's the first step in waste management for human habitats, towards this end many color coded waste collection bins are placed all over the camp where residents can dump their waste for further processing.
- Color Code Description:

Organic waste

In-Organic waste

Chemical waste

Bio-Medical waste

O2) Waste Recycle :

- Once waste is dumped in their respective bins then the waste is collected and transported to sorting facility where they are sorted into recyclable and disposable category.
- Recyclable material is recycled into reuse or repurposed as other items or materials.
- Biomedical waste is transported directly to Bio Incinerator.

O3) Waste Disposal :

- After sorting is done and material are marked for disposal then all safe organic material are buried in ground for decomposition while all the non-safe waste material is sent to incinerator.
- Incinerator are of two types one for Biohazard waste and other for regular incinerator waste. Both Burn at Temp. above 1500 C*.



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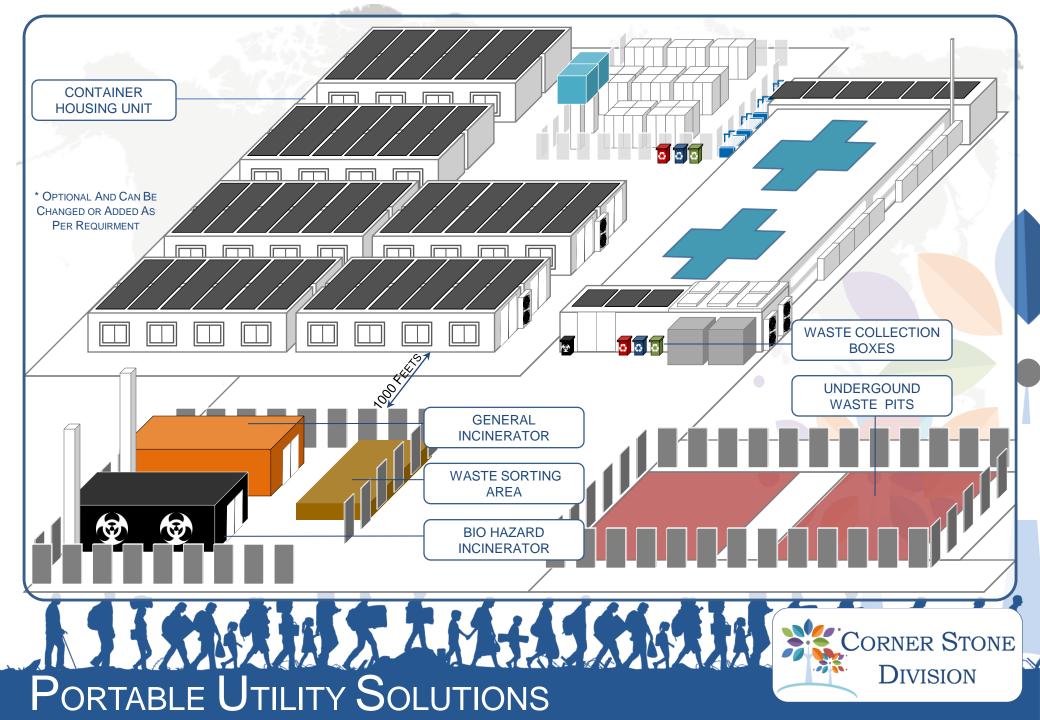
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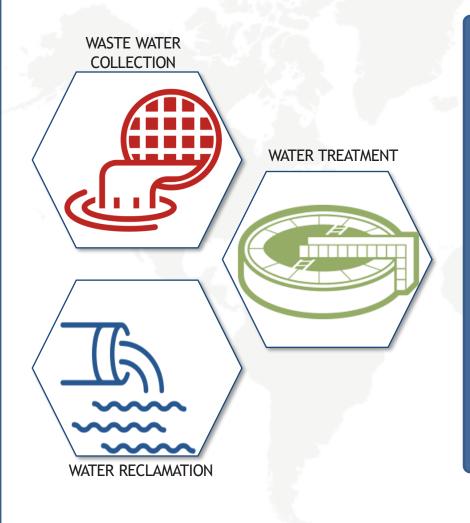
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Waste water treament infrastructure consists of 3 main components

o1) Waste Water Collection :

- Network of pipelines are laid throughout the camp that transport waste water from washroom area to the waste water treatment units for further processing.
- It is mostly done by transporting waste water by using Gravity.

O2) Waste Water Treatment :

- Once Waste Water is transported they are collected in pits for stage 1 treatment. From there waste water is passed through various stages for further and further treatment of the water.
- Waste water treatment unit consist of multiple components for treatment over multiple stages, except for pit rest all of components need active power supply for functioning.

o3) Waste Water Reclamation :

- After removing all the harmful impurities from the waste water it is then transferred to running stream by means of pipes or sent to soak pit for soil absorption and reuse.
- Absorption pit is made on site by digging a minimum pit of size 20x20x10 for soil absorption and percolation into terra firma.

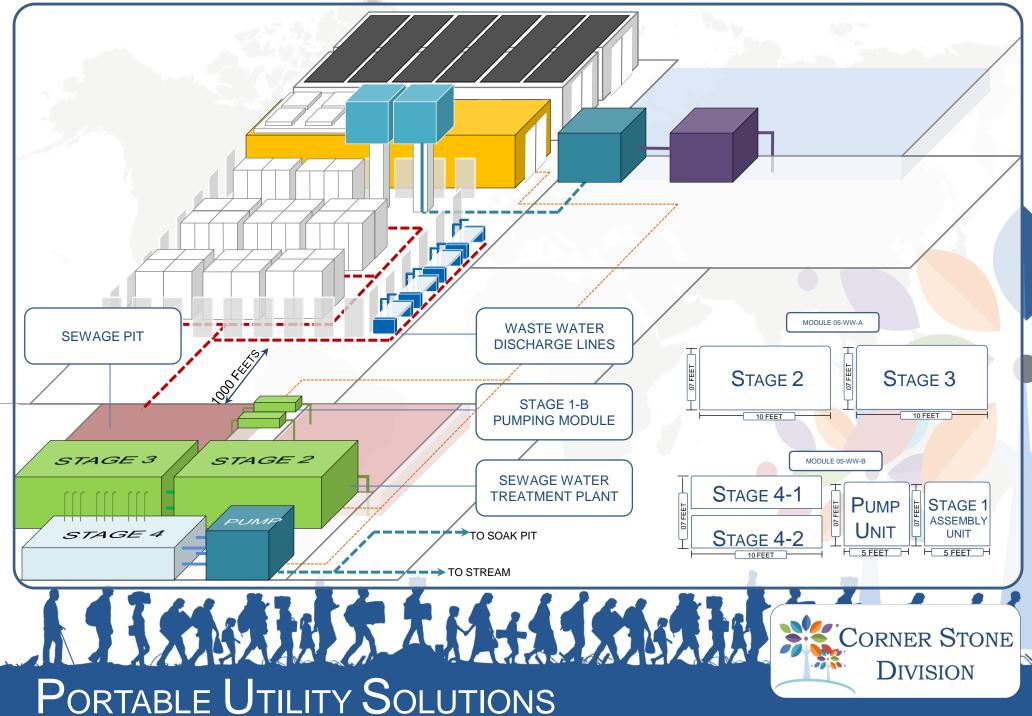


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MOST OF THE REFUGEE **CAMPS LACK PROPER** PROTECTION FOR THE RESIDENTS.

REFUGEES ARE LIKE SITTING DUCKS FOR SECOND ARY ESCALATION OF CONFLICT OR **DESTRUCTION**

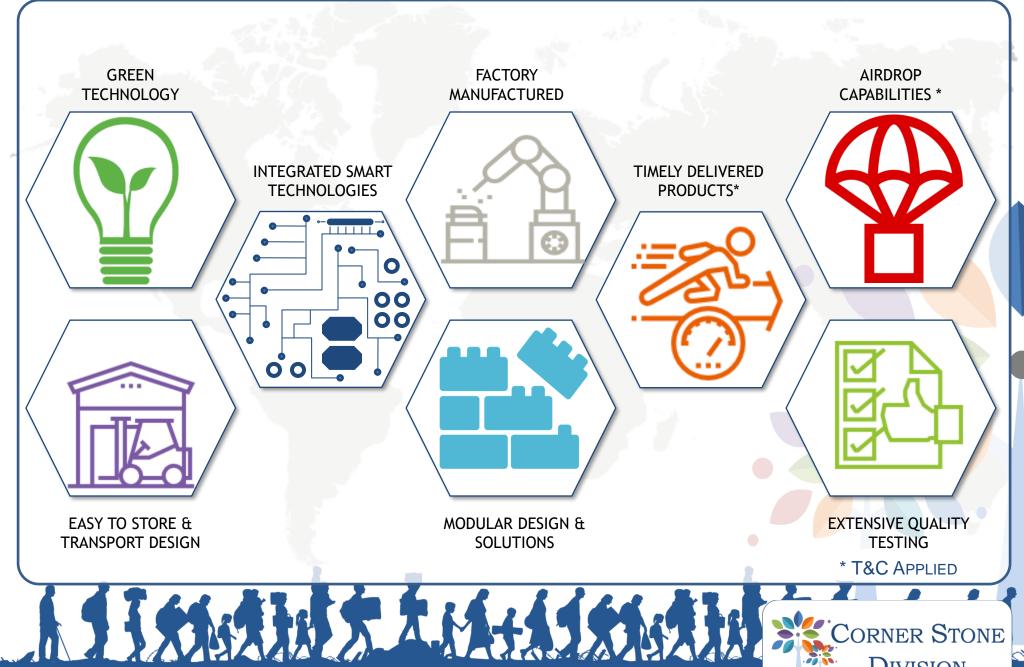
SETTING UP PROPER **BUNKER UNIT IS IMPORTANT FOR SUCCESS** OF RELIEF EFFORTS

WE HAVE THE SOLUTIONS



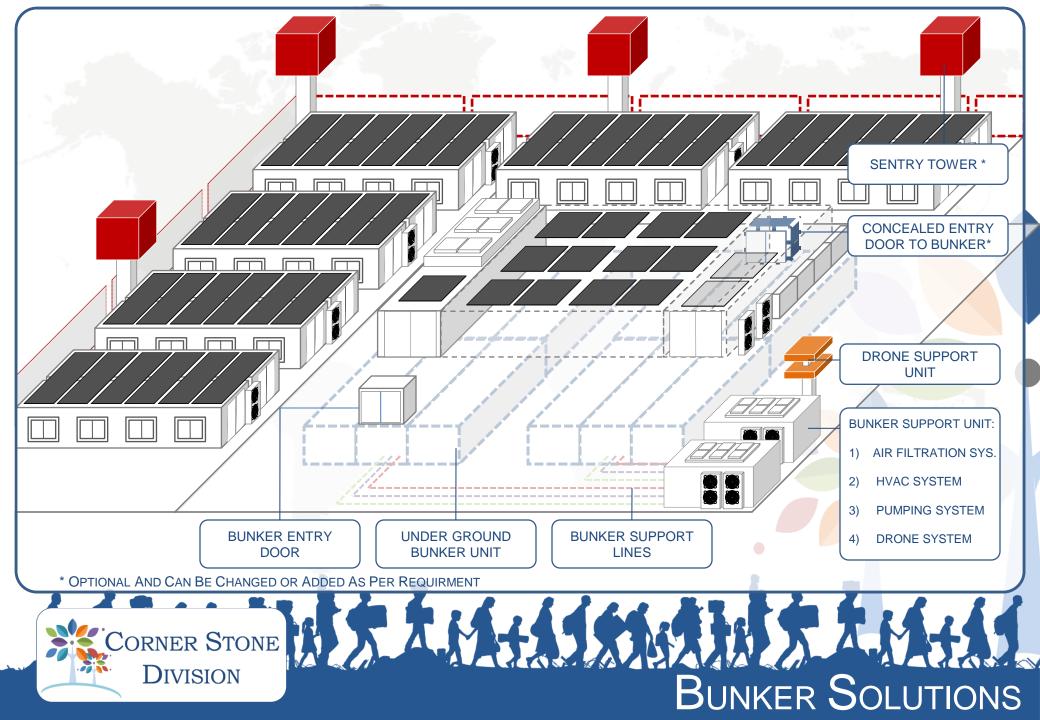


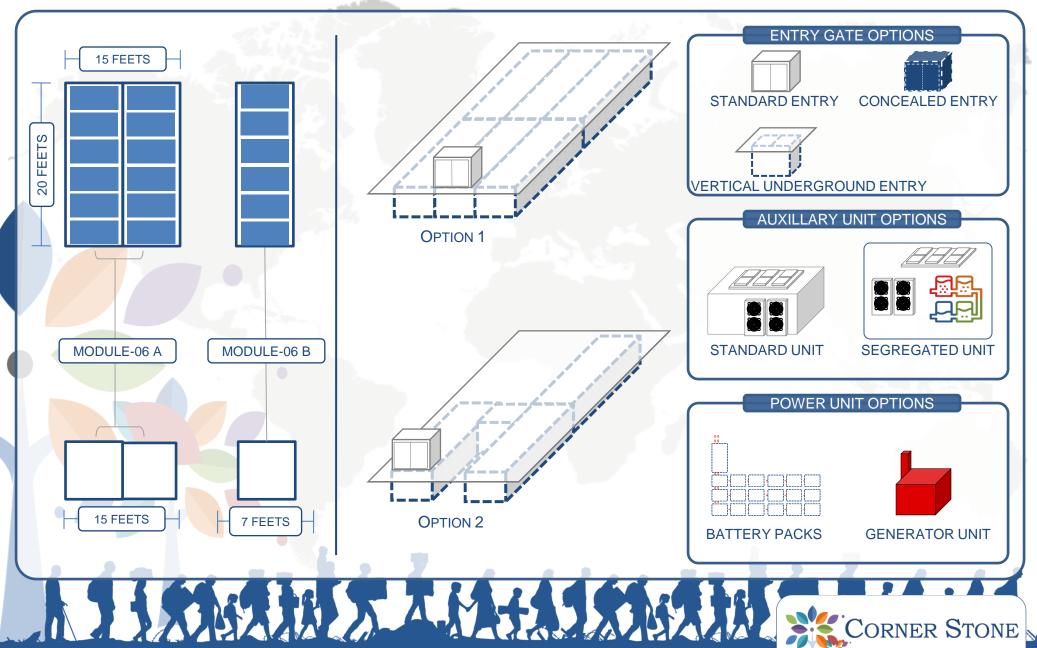
BUNKER SOLUTIONS













STRUCTURE **SECURITY** COOLING WATER **HEATING SYSTEMS POWER** * T& C applied

- All of Our Bunker units have reinforced structure that is designed to withstand great amount of and pressure since its underground.
- Our Bunker units can be equipped with energy efficient HVAC system that can integrated with heating system for air and water.
- Bunker units have 3 ports of energy generation, they can harness energy from Generator, grid and battery.
- Each Bunker unit has onboard battery backup that can provide backup for 48 hours. These battery packs are modular in nature and easy to maintain.
- We have outfitted each Bunker unit with state of the art bedding, insulating, protecting and other comfort features
- · All of the components used in Bunker unit are designed to be modular in nature, allowing for easy maintenance, swapping for change of parts and Enable Future Upgradation.
- Each Bunker unit is connected and covered with advance security systems.
- They are cheaper* than conventional bunker





BUNKER SYSTEM

- All of our bunker units are outfitted with high quality comfort furniture that ensure comfortable leaving for the occupants.
- Each unit can house various number of occupants depending on the variant selected i.e.; 1 pax to 15 pax.
- We have outfitted each of the bunker unit with Energy efficient, well insulated And smart HVAC support unit.
- Our bunker unit have been designed meticulously to have Hygienic, clean and isolated Environment, making them perfect for long term residence.
- All of our housing units are accessorized with water closet. They are equipped with support system.
- Support Unit houses HVAC, Air filtration water filtration and pumping components
- Bunker support units can also be fitted with drone outpost that provide security, and deliver necessities to the occupants.











Hope In Times Of Crisis



