An Island Escape

Emma Davidson Jones

"All art ," said Picasso, "is copying, and Architects, with rare exceptions, have learned from one another in their designs with pride as well as abandon."

— Jonathan Glancey —

Architecture is probably the most influential of all art forms because it works on us at all times, and can transform the lives of everyone who comes in contact with it. It has been said to be kaleidoscopic in nature, and through its study you gain a diverse medium through which to express your ideas and propose solutions to age-old questions.

The goal of this thesis is to create a combination of buildings that not only meld with, and utilize, their surroundings, but also enhance them; creating a balance and harmony with the location and its culture, past and present.

Contents

Location

Latitude and Longitude

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Latitude & Longitude

www.maps.com

Approximately half way between Miami and the Virgin Islands, the Turks and Caicos Islands lie between 21* and 22* N and 071* and 072* 30' W. The Turks and Caicos are comprised of thirty cays, of which only eight are inhabited, and a scattering of small cays, spread over one hundred and sixty six square miles.

The site is on an island named Providenciales, one of the eight inhabited islands that makes up the Turks and Caicos archipelago. Providenciales, or Provo as it is called by the locals, is five hundred and seventy five miles south of Miami, Florida. It is a small island measuring seven miles wide and twenty one miles long, covering an area of thirty eight square miles, and is the most developed island in the Turks and Caicos chain.

Each of the islands of the Turks and Caicos chain are small and when combined have a total area only two and a half times the size of Washington, DC. Cumulatively the islands population is thirty two thousand one hundred and twenty two. The island of Providenciales boasts the largest population of twenty five thousand, and in addition has the most diverse non-native population made up of British, Haitians, Dominicans, French, Canadians, Germans, and Americans.

History

Landfall / Discovery

Economy

Architecture

Peter Buescher

Landfall / Discovery

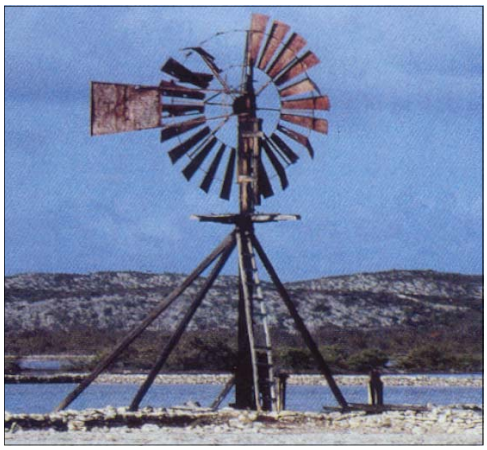
Christopher Columbus
Arawak Indians
pirates
loyalists
slaves

Christopher Columbus is thought to have been the first European to visit the islands of the Turks and Caicos archipelago. He landed on the island of Grand Turk in 1492. Others experts claim the islands were not discovered until Ponce de Leon sailed there in 1512.

The islands were originally inhabited by Arawak Indians, who were either killed or enslaved by the Spanish. They were later settled by Bahamian salt rakers.

At one time the Turks and Caicos islands were well known for piracy. Pirates such as Jack Calico Rackman, Anne Bonney, and Mary Read took up residence in the quiet group of Caicos cays, on the route for Spanish Galleons laiden with treasure lumbering north from Havanna on their way back to Spain. This group of bandits would lurk in the waters off Parrot Cay waiting to attack the unwieldy vessels.

Over the years possession of the islands went back and forth among the British, French and Spanish. American Loyalists fled there in the 1700's . Unhappy at the prospect of living in the new United States, they sought to start a new life secure under the British flag. The original plantations produced cotton and salt and then later sisal, which was used to make rope. The plantation era lasted only until the 1800's when hurricanes and poor soil drove settlers from the islands, leaving behind them most of their slaves. Ninety percent of the present population are the descendents of those former slaves. They are known as "Belongers."



'Discover'

Economy

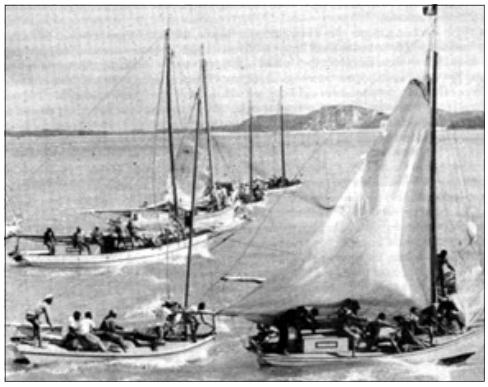
Turks Island Landfall

The abandoned slaves of the Loyalists relied on fishing (largely conch and lobster), boat building , wrecking, and salt production, for their survival.

Salt production continued in the Turks Islands until 1964. Salt Cay was at one time the world leader in the salt business. The Caicos islands supported the sea island cotton and sisal trades; the two largest cotton plantations Cheshire Hall and Richmond Hill were located on the island of Providenciales.

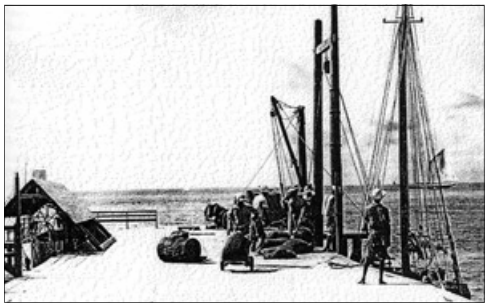
The economic success of the islands faltered in the early 1800's when the crops of cotton and sisal were wiped out by depleted soils, insects, and the hurricane of 1813.

Today the economic strength of the Turks and Caicos economy lies in tourism, fishing and offshore banking which blossomed in the 1990's.



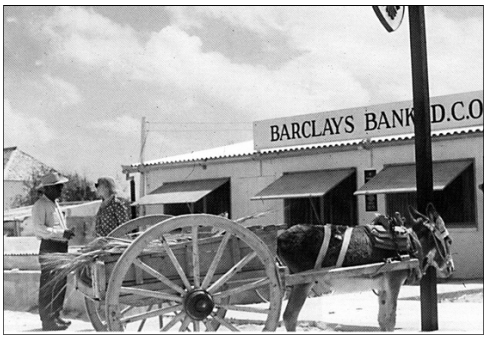
Turks Island Landfall

Turks Island Landfall



Turks Island Landfall

salt
sisal & cotton
boat building
fishing



Turks Island Landfall

Turks Island Landfall

Architecture

The building practices of the Turks and Caicos Islands have changed over time from primarily wooden structures to concrete buildings. The original dwellings were made from drift wood and small trees with palm frond roofs. Loyalists introduced limestone dwellings, native stone cemented together by ground conch shells. Today buildings are made primarily of concrete with either metal or tile roofs.

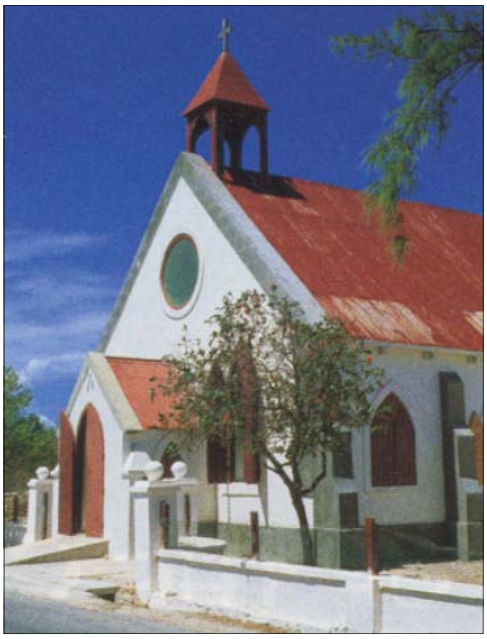
Though there has been an evolution of building materials the primary elements of the island house have remained the same; open plan interiors, windows on at least two sides of the building to allow for cross ventilation, shutters or some other means of closing up the windows for hurricanes, a cistern and rainwater collection area, and a shaded place to take an afternoon nap.

One common misconception is that the houses have large verandas and roof overhangs for shade. Quite the contrary: Island houses are designed with no roof overhang to prevent them from being ripped off by updrafts during hurricane season, so shade is often found under a nearby palm tree., and residents retreat inside during the hottest part of the day.

concrete
windows
no roof overhang
light colored walls
wood doors
wood shutters
metal roofs

Peter Kerrigan

Peter Kerrigan



'The Times of the Islands'

The Island

Environment

Economy

Architecture

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Environment

www.turksandcaicos.com

Ecologically the Turks and Caicos islands, like the Bahamas, are made up of "shallow sub-sea platforms and some isolated sub-sea mountain peaks, separated by deep ocean troughs." (Bahamas Cruising Guide, pg. 340)

The terrain is relatively flat, with the highest elevation on Providenciales at one hundred and sixty three feet. The island is made up of coral and limestone. There is abundant marine wildlife on the surrounding reefs, and the island's coast line is highlighted by it's spectacular white beaches.

The natural vegetation on Providenciales is scrub, savanna, marsh swamp and shrubs, with cactus inter-dispersed.

The soil in the inner regions of the island is mainly eroded limestone rock and sand. The occasional sink holes contain rich soil, from decayed vegetation, and because they act as water reservoires, they may contain larger trees than are normally found on the island.

"The native wild life is typically Caribbean with iguanas and flamingoes as exotic extras."
(Bahamas Cruising Guide, pg. 340)

The climate on Providenciales is hot and dry, and the natural environment is very harsh. Temperatures average 75*-80*F in the winter (November to April) and 85*-90*F in the summer (May to October). The prevailing winds are the trades that blow from the southeast.

www. Turksandcaicos.com

ocean
limestone rock
iron shore
palm trees
sand
scrub bushes
cactus

'The Times of the Islands'

Economy—present

www.turksandcaicos.com

political economics
tourism
off-shore banking
tax exiles
fishing

'Discover'

'Discover'

The Turks and Caicos Islands are still linked to the United Kingdom, though they are semi-autonomous. There is a Governor appointed by the Crown, but the islands have their own government.

The building boom in the islands came in the 1990's, in conjunction with the addition of a large desalination plant on the island. This surge in building brought back to the island many of those Belongers who left to find work in the USA during the economic depression of the late eighties.

Today the Turks and Caicos economy depends almost entirely on tourism and its tax free status, which has attracted some seven thousand foreign financial institutions to establish themselves on Providenciales. Though there is still some fishing, and the Turks and Caicos Islands are home to the only conch farm in the world, the islands rely mainly on tourism related activities to provide work for the population.

Economically Providenciales is the most successful of all the islands, flourishing because of offshore banking and tourism. Since it is a British crown colony, and thus exempt from the tax laws of the United States and Canada, the island is a refuge for tax exiles, and retirees. The climate, beaches, and clear turquoise water attract people interested in second homes as well as tourists.

The standard planning permission for lots on the island is for two dwellings per acre. Many people build a main house and a guest house, which serves not only as a guest house but more commonly as a rental property. This ensures an income to the owners and absentee owners, and maintains a level of security; the tenant operates as a caretaker.

The Escape that I have designed is one of these guest houses.

'Discover'

Architecture

Caribbean Style

Caribbean Style

concrete

cross ventilation

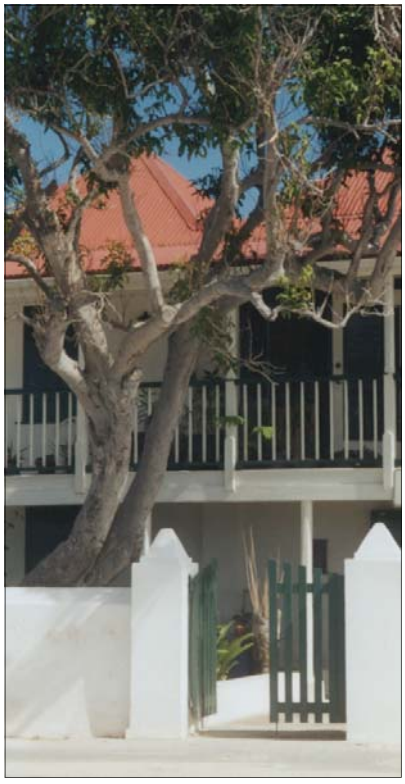
no roof overhang

light colored walls

wood doors

wood shutters

metal roofs



Caribbean Style

The look of today's island architecture may be more modern, but the underlying principles of the layout and the designs of the buildings remain similar to the old island style.

Building Materials:
The most apparent similarities are building materials. Concrete is used in the buildings almost exclusively and the predominant roof material is metal with the occasional tile or asphalt shingle roof.

The Roof:
The buildings, for the most part have little or no overhang on the roof to prevent the roof being ripped off during hurricanes, and have an overall large surface area to maximize water collection; for this reason many people will opt for a one story house so that they can collect more water by having a larger roof than a two story house.

Natural Ventilation:
The houses have windows on two or more sides to help with natural ventilation. Even though air conditioning is common in most houses located in hot climates, electricity is so expensive in the Caribbean that owners prefer to take advantage of the prevailing winds to cool their houses than trying to cool them artificially.

The Walls:
The walls of the houses are thick, to prevent thermal transfer and insulate the buildings.

Shading:
Shade in this climate is important. The houses each have some method of shading incorporated into their design, usually some sort of pergola or louver design.

The Site and the Building

Building Placement

Site

Approach

Entrance

Building Placement

Caribbean Style

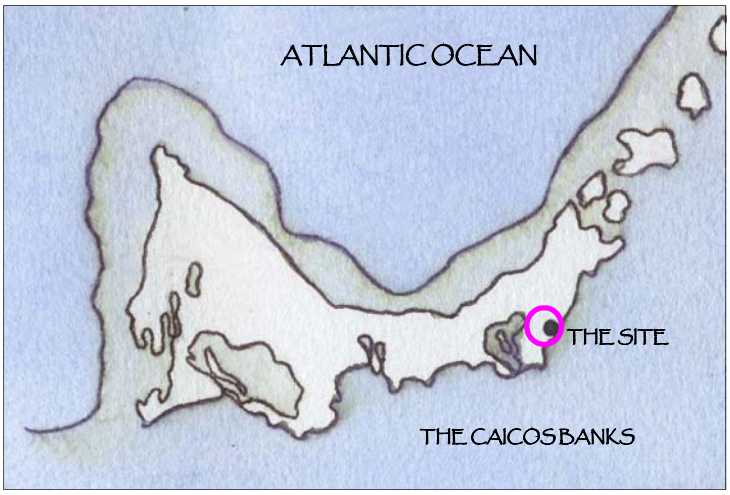
Buildings are designed to interact with their site. They are designed to either be in agreement with the site and compliment it or be in opposition to it. The Pecard house, on the island of St. Barts and the Casa Malparte, on the island of Capris, are examples of the various ways a building can relate to, or differentiate from, its surroundings.

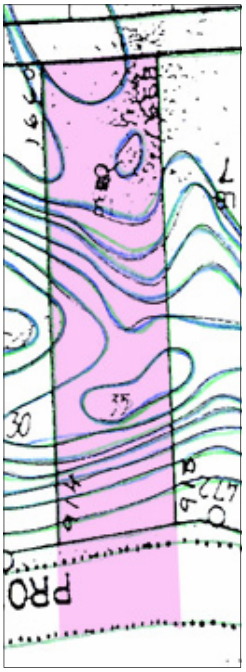
The Pecard House, designed by Francois Pecard, is located on the island of St. Barts, Pecard utilized the natural contours of the site to design the building, complimenting the site by becoming a part of it

Casa Malaparte, located on the island of Capris, is a good example of a building placed onto a site. The architect has used the site as a pedestal upon which to display his building.

20th Century Architecture

Site





view from main house
view from escape
great entrance
natural ventilation
natural cooling

The interaction between the building and the environment was one of the most important investigations of this thesis, the predominant concern being how the building related to the site. There were five primary concerns that governed the placement of the buildings: The maintenance of the view from the main house was the most important concern since the main house was designed around the view. The view from the guest house was the second major issue since the view gives the site its value. A great entrance with a strong axis. A great entrance is like an opening paragraph in a book it has to draw you in and catch your interest. Natural ventilation was the main functional concern since the climate is dry and hot. The placement of the building on the site being the determining factor of the exposure to the prevailing winds. The utilization of the site to provide the buildings with natural cooling through thermal transfer, obtainable by insulating some of the walls with the earth.

Taking all of these concerns into consideration I decided that the ideal location for the Escape was on the canal side of the second ridge. By placing the house in this location, not only did I satisfy my original stipulations, I gained some additional advantages; no south facing slopes, protection from bad weather, good drainage, natural shading, and evaporative cooling.

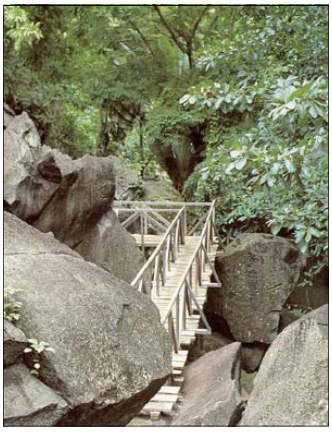
Approach

The Essential House Book

There are a variety off approaches to a building on a sloped site, each method has its own merits but not every approach is suitable for every situation.

The most common approaches are; a bridge, a stair, a raised walkway , and the natural path.

The means to which you approach the building is dependent on the building and in response to the terrain of the individual site.



The Essential Garden Book

20th Century Architecture

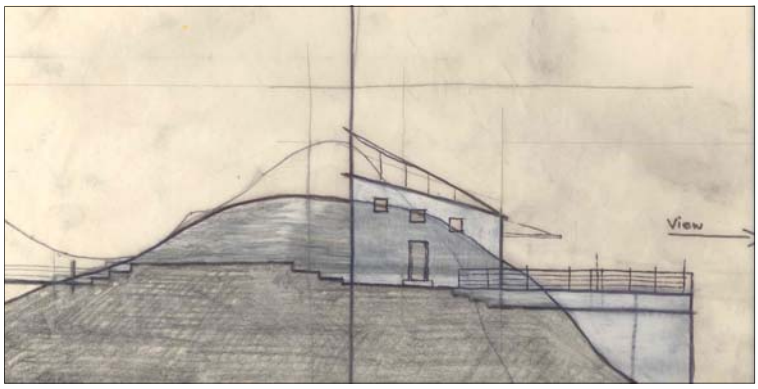
walkway
bridge
ramp
stair
corridor

The Essential House Book

The Essential House Book

The Essential House Book

Entrance



The building is located behind the second, lower ridge of the site. Because the second ridge is a ways from the main road the approach to the building requires you to traverse a variety of terrains. As you make your way to the house from the main road you descend a set of stairs cut into the stone leaving the main house to your left. At the base of the stairs there is a step down onto a raised walkway, made of wood with wire railings, that takes you across the middle of the site, serving to bridge the two ridges of the site. At the end of the walkway is a corridor, with wall heights of eight feet and a floor of stone tile, carved through the second ridge. This final rock hallway leads you to the front door of the house and frames the magnificent view that can be seen from anywhere in the house.

walkway
bridge
ramp
stair
corridor

The Escape

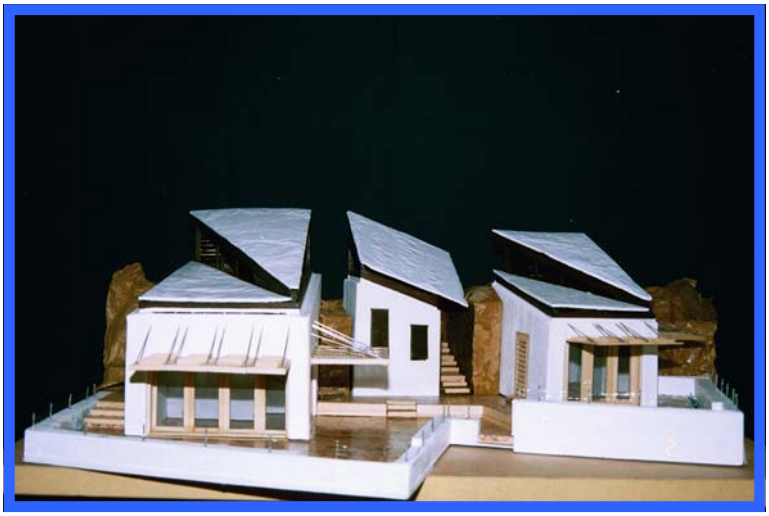
Process

Plan

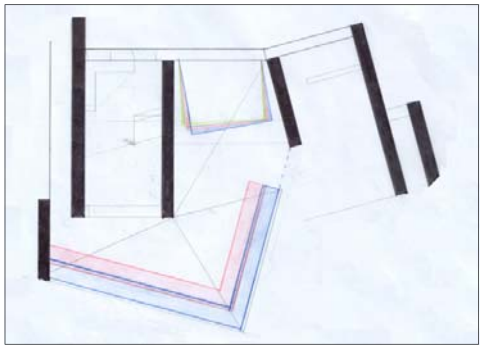
Main Room

Bathroom

Bedroom

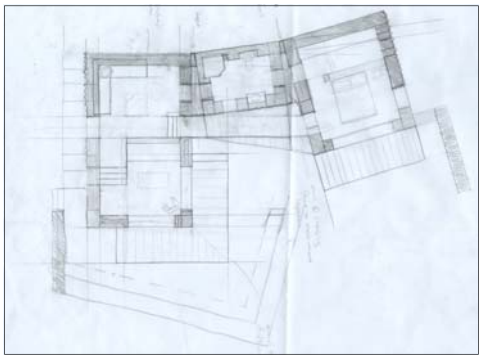


Process

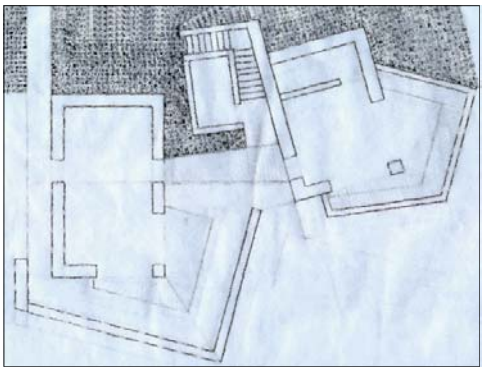


The design for the house went through a number of phases before the final plan came about. This design began with the entrance corridor through the second ridge; this strong linear axis was the main concept from which the rest of the house grew, and came long before the design of the house.

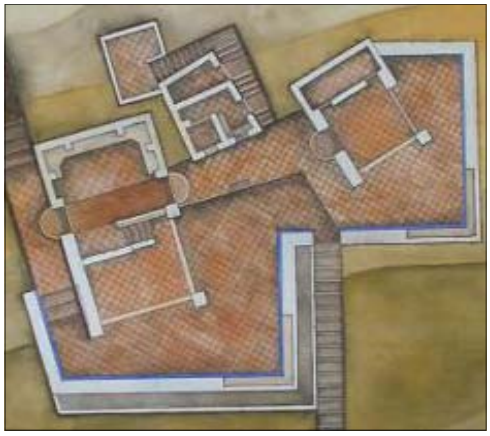
The original concept:
The original idea for the house was to have separate rooms contained under the same roof separated by strips of outdoor space, with the major walls parallel in the direction of the water.



The second phase:
This plan left the bathroom and bedroom attached but separated the main room, and gave each of the rooms their own roof, creating the large outdoor patio space connecting all the buildings.

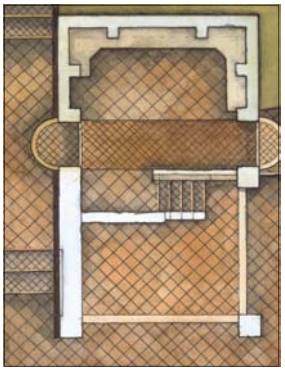


The final plan:
This plan created buildings for each of the rooms and angled each room so that it had its own private view of the water. A raised walkway was also added to distinguish the path of travel through the house with the patio area. The roof was re-designed, dividing the roofs in half diagonally, to create a visual axis of movement within the buildings, take advantage of the natural light while avoiding any direct sunlight, and enhance the natural ventilation through the buildings allowing air to flow throughout the space evenly.



Plan

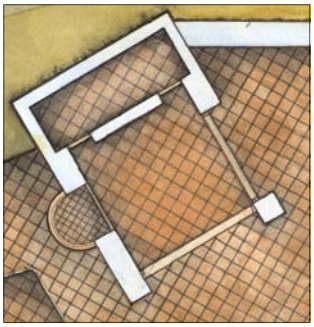
corridor/entrance
main room
patio
raised walkway
bathroom
reading plateau
bedroom



main room

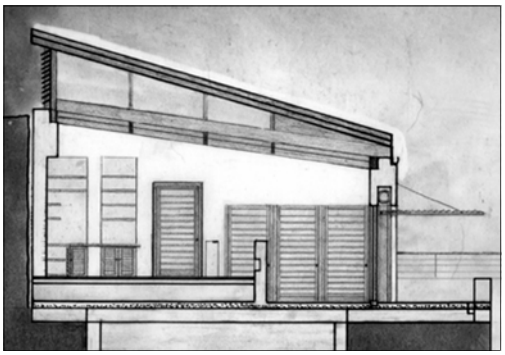
The plan for this house centers around the idea of indoor/outdoor living. The pod design facilitates the idea of indoor/outdoor living by connecting all of the buildings by patios, creating outdoor hallways. The use of the patios enables the square footage of the house to be large without creating a large mass. The major components of the house; the main room, the bathroom, and the bedroom, each have their own building with a separate view.

bathroom



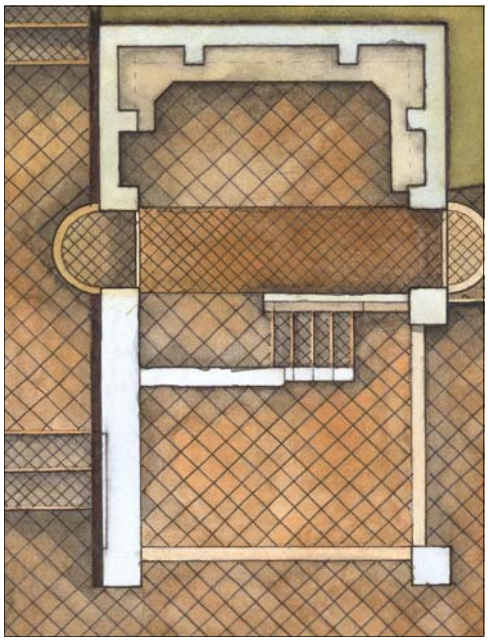
bedroom

Main Room

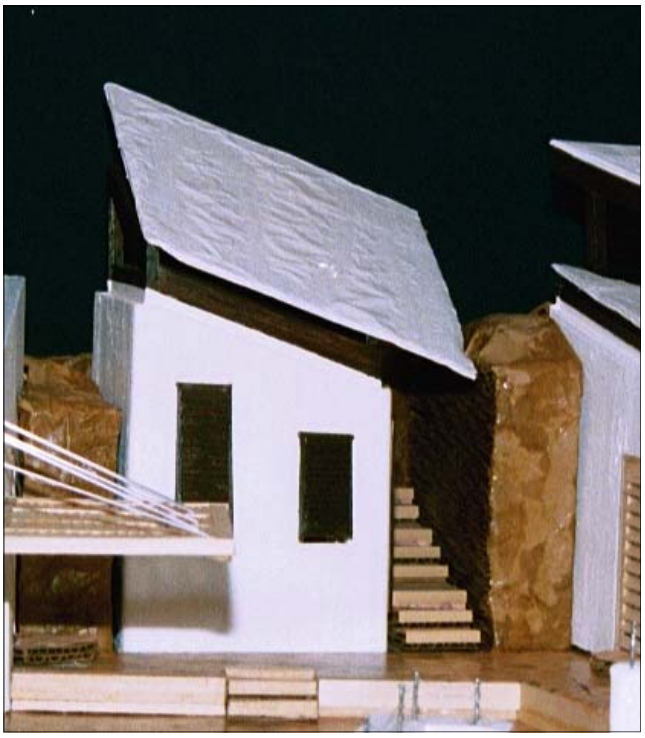


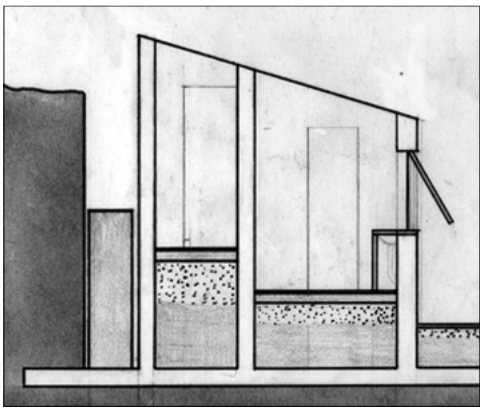
The main room is the largest of the three buildings measuring eighteen feet wide by thirty feet long. It is a multi-purpose room containing the kitchen, dining and living spaces arranged in an open plan. There are no interior walls so that the prevailing winds are able to flow freely through the space.

The northwest and southwest sides of the building are enclosed by louver doors that can be raised and fixed to act as a pergola allowing for a large indoor/outdoor living room space.



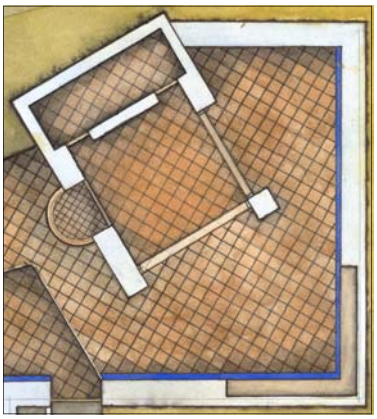
Bathroom

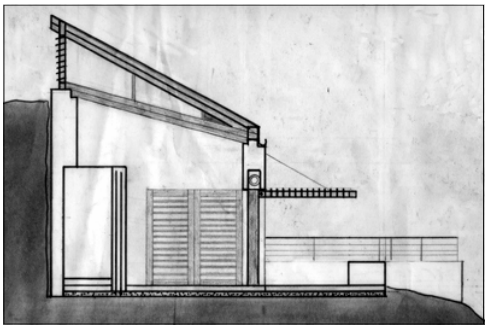




The bathroom is located between the main room and the bedroom. It is nestled back into the site and is surrounded on three sides by natural rock. The stairs to the bathroom are located to the right of it and are free standing. The first flight lead to the bathroom which is equipped with a shower, toilet and sink and has two windows on the front wall facing the water. As you continue up the stairs you come to the laundry room which has a washer and the hot water heater. At the top of the stairs is a patio, on the top of the second ridge, for reading or sitting.

Bedroom





The bedroom is fourteen feet wide by eighteen feet long and has its own separate patio. It is located the farthest to the right of all three buildings and has the most private view. The only internal wall in the bedroom is a three quarter partition wall, located to the left of the door, that separates the closet space and the main space, but still allows the air to flow freely through the room. The southwestern side of the building is enclosed by the same type of louver doors used in the main room and can be secured open to act as a pergola allowing the bedroom space to be an indoor/outdoor living space.

Architecture & Environment

Shading

Shade and the Louver Door

A New Louver Door

Rainwater

Rainwater Collection

Walls

Multi-purpose Walls

Roof and Structure

Natural Ventilation

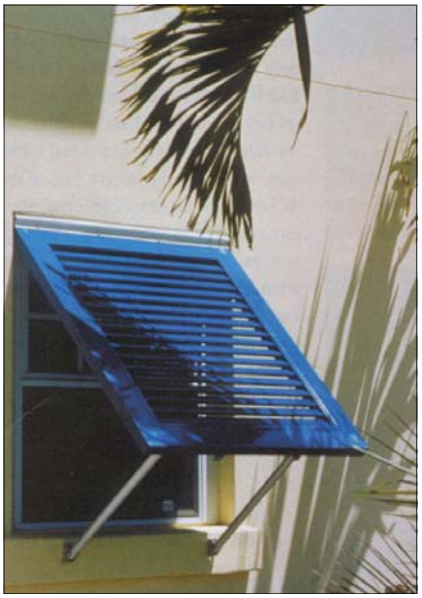
Indoor/Outdoor Rooms

Indoor / Outdoor Living

www.caribbeantravel.com

Shading

Shade is an important part of every island building. There are three main types of shading devices used in island building; the tilt-up shade or louver, the fixed louver, and the pergola.



Discover

The Tilt-Up Shade Or Louver:
This type of shading device is usually attached to the building and is pushed out at the bottom and propped open to allow the air to circulate through the room. The tilt-up louver can also double as a hurricane shutter and be fixed in place during storms to protect the windows.

Rural Studio

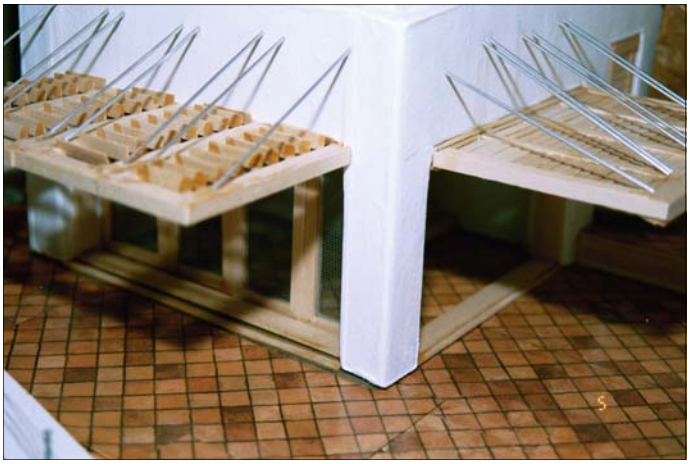
The Fixed Louver:
The fixed louver acts as a stationary shading device. The louvers are opened by a mechanical system built into the window. These can also act as hurricane shutters.

Caribbean Style

The Pergola:
A pergola is either attached to the outside of the building or is free standing. It is a horizontal shading device perpendicular to the building and acts in the same manner as a roof overhang or verandah. The drawback to the pergola is that it acts only as a shading device and cannot be used for hurricane protection.

Caribbean Style

Shade and the Louver Door

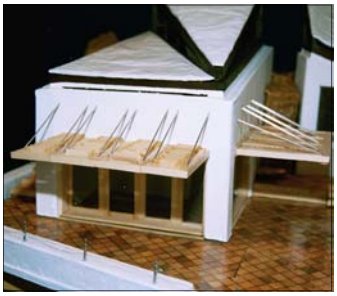


The three usual types of shading methods; the tilt-up louver, the fixed louver, and the pergola are each effective methods of shading.

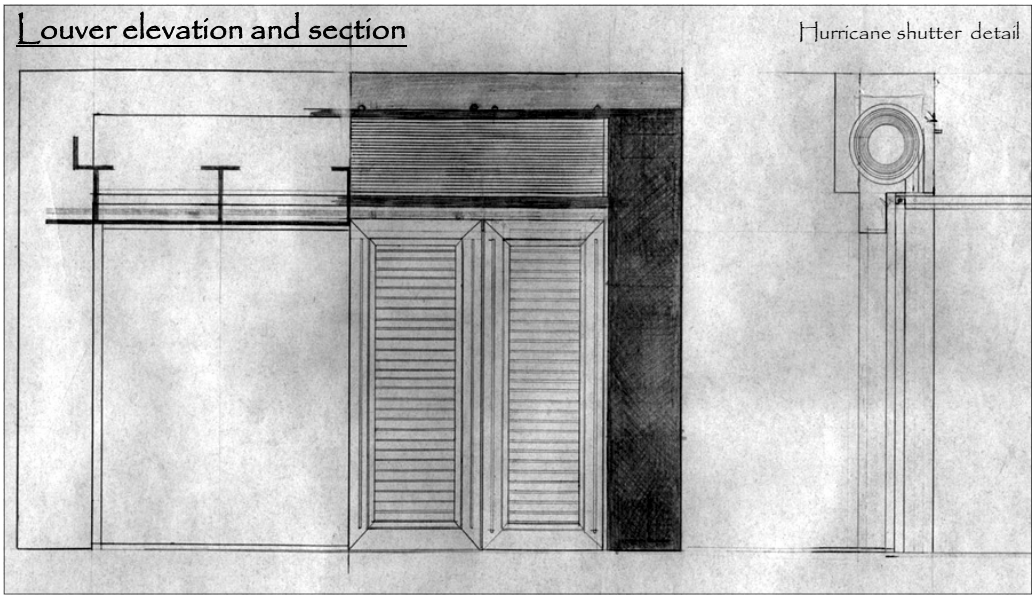
The louver door is combined of two parts; a louver door and a screen door, and can be used in three ways:

1) When the doors are combined, and left in a vertical position they act as operable louver doors that open out. In this position they can be either be walls, windows, or doors, that let in light and fresh air.
2) When the louver door is raised, from its base, into a horizontal position above the screen door, and the screen door is left in a vertical position the horizontal louver door acts as a pergola and the vertical screen doors open out. In this position the doors enable the space to be used as a screen porch.
3) When the louver doors and the screen doors are attached and lifted by their base into a horizontal position, and locked into place over the door opening ,they act as a pergola. In this position the doors give shade to the openings and enable the spaces to be used as covered rooms.

louver door
screen door
pergola



A New Louver Door



The design for the louver doors on this house combines the best attributes of the three shading methods to create a louver door that enables you to utilize all three types of shading with the same door. The door is designed in response to the climatic changes that the island can under go through out the year. There are really only three seasonal changes; winter, spring, and hurricane season, from June to November.

Hurricane Season

June—November is the hurricane season. The summer months tend to be the hottest. There is often little breeze and this is when the sun is its strongest. The ideal outdoor living space in this situation would be both sets of doors raised as a pergola. While the louver doors are raised their louvers are left open to prevent any up-draft forces from ripping them off in the stronger winds. The house is also designed with a built in roll down hurricane shutter, that is housed just above, and to the outside, of the opening for the louver doors. This shutter rolls over the outside of the doors and can be secured quickly in the event of a hurricane.

Spring

The spring has the most mosquitoes. The ideal living space in this situation would be the screen room with the louver doors raised as a pergola, giving you the coolest living arrangement without mosquitoes.

Winter

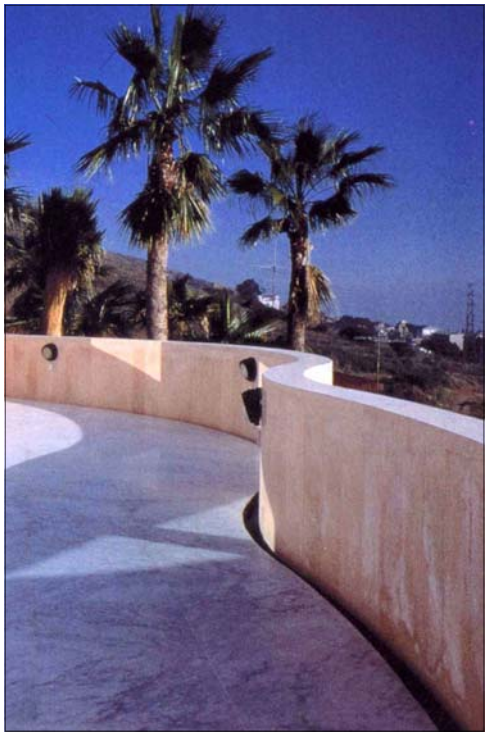
In the winter months the temperatures remain between 75-80* and there are few mosquitoes so any of the outdoor room combinations would be suitable, though on the chillier evenings, when the temperature goes down into the 60's, closing up the doors my be the best idea.

Rainwater

Caribbean Style

Turks Island Landfall

collection area
transportation system
storage area



The Essential House Book

Rainwater is a precious commodity in the islands since it is the only source of fresh water apart from a few wells. Systems used to collect the rain water vary in their sophistication from the original very primitive wooden barrel at the end of a down spout to today's high tech solutions that incorporate filters and chemicals into their systems. Regardless of the complexity of the system there are three required parts to any rainwater collection system to make it work; a collection area, storage tank, and a transportation system that transports the water from the collection area to the storage tank.

The Collection Area:

The most common area on a house used for collection is the roof. In order for a roof to be effective it must have a large surface area, for this reason many houses in the islands are single story to maximize the amount of roof area. Patios, made of concrete or tile, are also used as collection areas. The water collected from patios is normally used in toilets and for irrigation purposes., since it is not as clean as the water collected from the roof; it contains all the pollutants that people track onto it on the soles of their shoes.

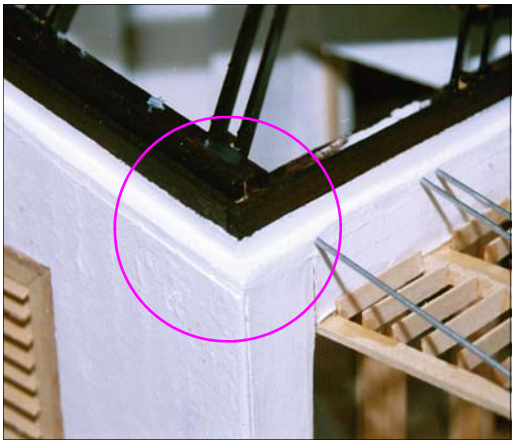
The Transportation System:

The transportation system is the backbone of the collection system. It must be sized according to the roof to prevent spillage. In the past the transportation system was nothing more than a system of gutters that made its way to the cistern. Today the gutters are located on the houses and collect the water from the roof and funnel it directly to a cistern, usually located, under the house.

Cistern:

The cistern is the storage area, a holding tank, and is probably the most important part of the water collection process. It must not only be water tight to prevent any water from escaping but it must also be sized in accordance with the collection area so that no water is lost from overflow. The cistern was originally a separate structure from the house, but now they are being incorporated into buildings, and are usually placed under the house where a basement would be located.

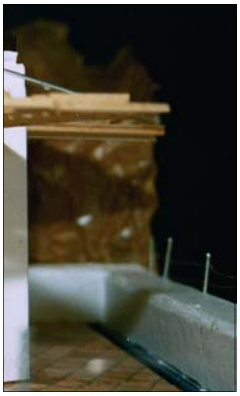
Rainwater Collection



collection area

transportation system

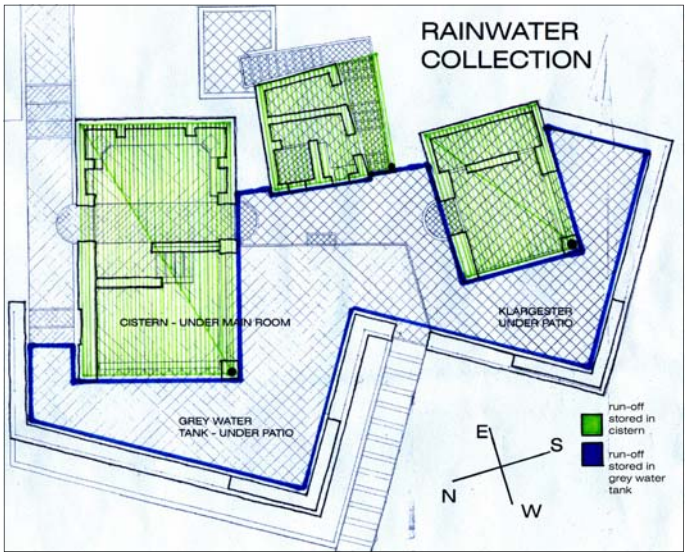
storage



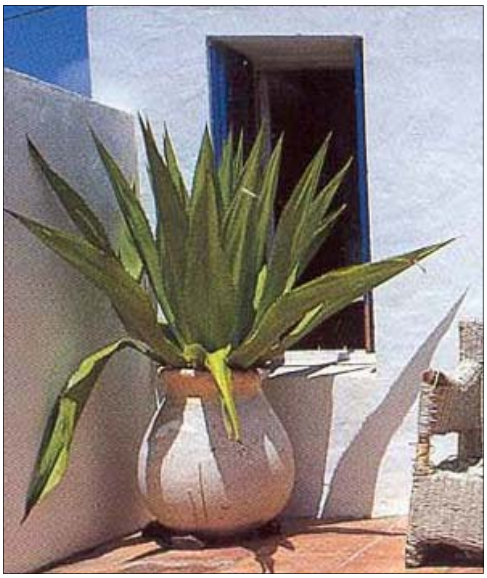
Collection area:
The Escape is designed with an extensive collection area since the primary source of water for the house is rainwater. The roof was designed with a large surface area, as was the patio, in order to maximize the collection of rain.

Transportation system:
The method of transporting the water from the roof to the cistern is very important and must be designed to have minimal water loss. The gutters on the house sit on the exterior wall just below the edge of the roof, allowing the water to run directly from the roof to the gutter. The gutters are sloped toward the down spouts which are set in the corners of the buildings, and feed directly into the primary cistern located under the main room. The patio gutters are located at the edges of the patio. They collect the run off and feed it directly into the secondary cistern located under the large patio.

Storage:
The collected rainwater is stored in two concrete cisterns. The water from the roofs is stored in the primary cistern located under the main room, and will be used in the toilets, sinks, and showers. The water from the patios is stored in a secondary cistern, located under the patio, and is used for irrigation purposes since it will contain more pollutants.



Walls



Caribbean Style

www.caribbeantravel.com

In hot and humid climates buildings are designed to keep out the heat, promote ventilation, and keep their interiors cool. Buildings in these types of climates are usually made of thick stone or concrete approximately 18"-24" thick, and painted in a light color. These thick walls insulate the buildings, prevent thermal transfer, and deflect a portion of the sun's rays. In addition to their thermal properties the thick concrete walls perform well in hurricanes.

Today's island architecture tends toward concrete construction, but the buildings gain their strength by reinforcing the concrete with rebar rather than the traditional means of concrete massing.

Stone/Concrete Walls:

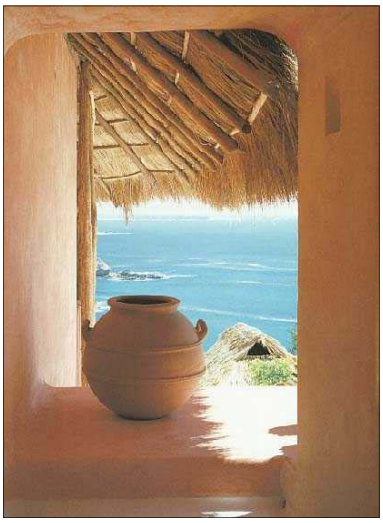
The traditional walls of the islands were made of stone, found in the islands, held together with mortar made from sand and ground up conch shells. The outsides of the buildings were coated with a sand and conch shell mixture to give them a smooth stucco look. Buildings in hot climates are still constructed of either stone or concrete because of the material's ability to slow heat transfer. Per 12" thickness a wall has 6 hrs. lag time until heat transfer occurs from inside to outside; therefore the greater the thickness the longer the lag time.

Color:

In many hot climates the buildings are painted light colors; typically white, or pale yellow, to keep them cool. The light colors reflect a portion of the sun's rays, which lowers the surface temperature of the walls, and helps reduce the amount of heat transfer.

Hurricanes:

Though no building is completely impervious to hurricanes, concrete and stone buildings fare better than most, usually only loosing their roof or porch.



www.caribbeantravel.com

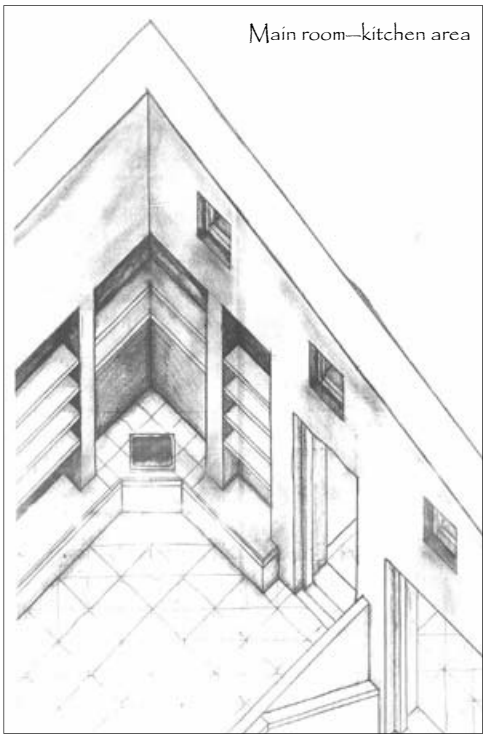
stone/concrete

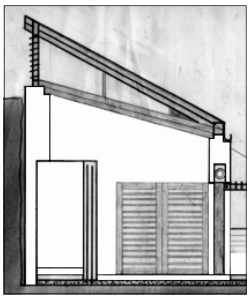
color

hurricanes

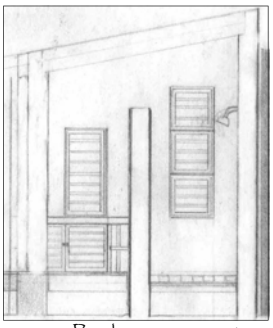
Caribbean Style

Multi-purpose Walls

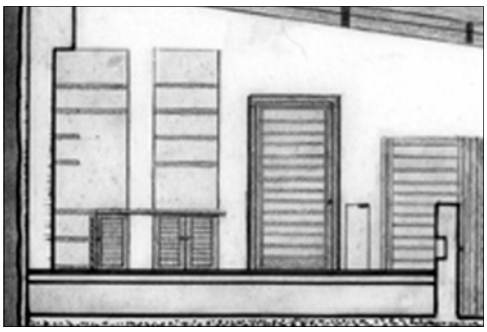




Bedroom



Bath room — section



Main room — section

The walls in the Escape are made of concrete block, reinforced with rebar, and are 24" thick. The exterior of the buildings are covered with a layer of slip and painted white. The thick walls give the house excellent thermal properties and the building gains additional cooling from the earth since the rear walls and portions of the side walls are completely below grade. The walls of the Escape are multi-purpose, they were designed not only to have excellent thermal properties but also to be used for storage.

Main Room:

In the main room the kitchen area gets the most advantage of using the walls for storage. The walls are cut out, 12" deep and the countertop, which is 24" deep, is recessed into the wall so that only 12" protrudes from the face of the wall. Above the counter top, starting at 24" above and continuing in 12" intervals, are shelves, each 12" deep. Below the countertop are cabinets that are recessed into the wall, and sit 4" back from the edge of the countertop. By using the wall as shelving no kitchen space is lost from overhead cabinets, and the plates can be used as decoration instead of being hidden away.

Bathroom:

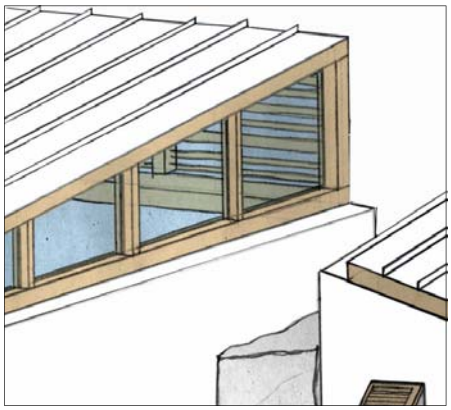
In the bathroom the walls are used the same way as in the kitchen with shelving either side of the sink, instead of a medicine cabinet. The shower is also cut into the walls and into the floor to gain additional space. The shower sits 12" into the wall on two sides and is recessed into the floor 6" eliminating the need for a shower curtain and a bath mat, as well as improving drainage.

Bedroom:

In the bedroom the walls are utilized in the closet area, where the rear wall is cut out 12" deep allowing for a curtain rod to extend the full length. The side walls are also cut out 12" deep and have shelves recessed into them like in the kitchen, increasing the closet area and eliminating the need for a free standing chest of drawers.

By using the walls the interior spaces of the rooms are used more intelligently, which keeps the buildings square footage small while increasing the living space.

Roof and Structure



walls

roof

main room

bedroom

bathroom

Main room roof framing

One goal for the design of the Escape was to keep the building visually simple; clean lines, simple structure, and not a lot of add-ons.

Walls:

The design for the walls was simple 24" of concrete block reinforced with rebar, with a layer of concrete slip on the faces of the walls; no drywall and no wood.

Roof:

The framing of the roofs is designed so that the load bearing elements, sit on the inside of the walls on a cut out ledge 12" deep and 12" tall.

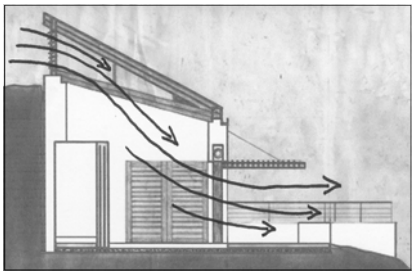
Main Room and Bedroom:

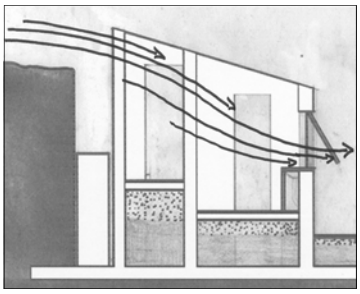
In the main room and the bedroom the main roof beam runs from the rear left corner of the room to the front right corner of the room. It is a glue lam beam with a depth of 24", and rests on stainless steel bearing plates in both corners, which are bolted into the walls. Attached to this beam are five vertical pairs of 2"x 6" s, one on either side of the main glue-lam beam and bolted together, at the bottom, through the beam, and at the top through another glue-lam beam that is 12" deep. There are five vertical posts 6"x 6", each on its own stainless bearing plate, bolted to the ledge in the wall on the right side. The beams that support the roof are hung from these vertical elements and span widthwise across the main room. The plywood and tongue and groove sit on top of these beams with a standing seam metal roof on top. The windows and louver elements go between the vertical elements on the glue-lam beam and are attached to the outside of the posts on the wall side and rest on a metal l plate on the top of the wall. On the lower side of the roof the beams span from the left wall to the glue-lam beam. The left end of the beam sits on stainless bearing plate and is bolted to the wall. The right end is hung from the glue-lam beam, and the tongue and groove, plywood, and metal roof sit on top of the beams.

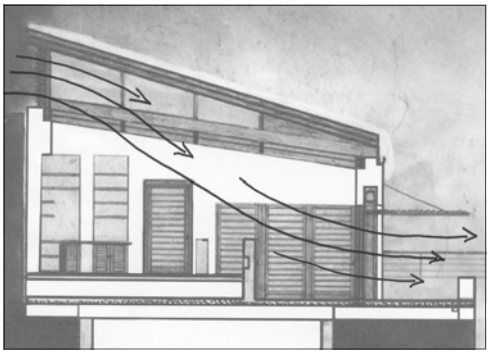
The Bath Room:

The bath room is framed in the same way as the other two rooms but instead of the glue-lam beams spanning diagonally they span parallel to the exterior walls. The beams are hung from the glue-lams at both ends and span the width of the bathroom.

Natural Ventilation



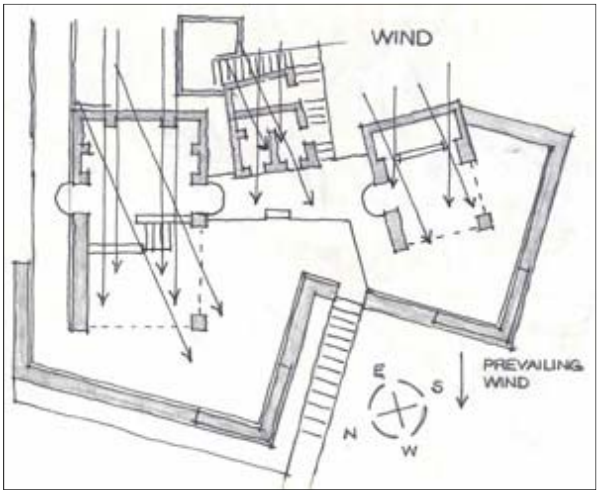




In hot climates natural ventilation is an important cooling method. In the Turks and Caicos islands the prevailing winds blow constantly from the northeast, so natural ventilation is a great cooling solution.

Summer:
In the summer months, on the site for the guest house, the winds travel in a northeasterly direction from the top of the site into the valley, and then up and over the second ridge. To capture these winds the rear walls of the rooms are raised eight feet above grade., and are made of louver doors. This construction acts as a wind scoop to trap the wind as it comes up and over the second ridge and filter it through the building. The large openings at the fronts of the buildings create negative pressure which pulls the air through and out the fronts of the buildings.

Winter:
In the winter months the system works in reverse by creating the stack effect. When the wind blows from the northwest it comes across the canal, up the second ridge and into the front of the buildings. As the air enters the large openings at the front of the buildings it warms up, rises, and the pressure created by the louvers at the tops of the rear walls pulls it up and out of the buildings.



Indoor / Outdoor Rooms

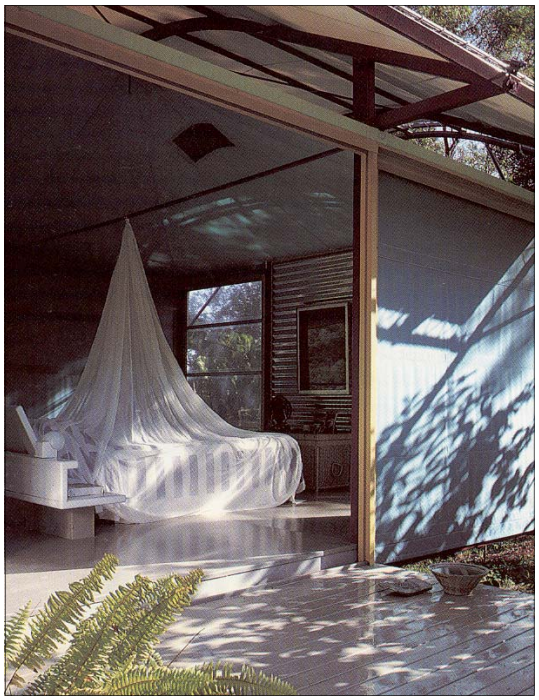
In climates that are mild year-round indoor/ outdoor living spaces are a great opportunity to increase the square footage of a house without increasing its mass.

Lake-Flato

Screened Room

A screened in room or porch works especially well in areas that have a lot of bugs. It gives you the freedom of being outside with out the problem of keeping bugs away from you or your food . A screen porch also allows you to enjoy the outdoors even when it's raining.

Outdoor Rooms

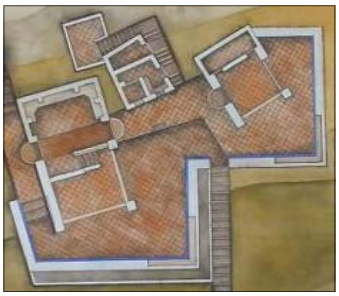


Outdoor Rooms

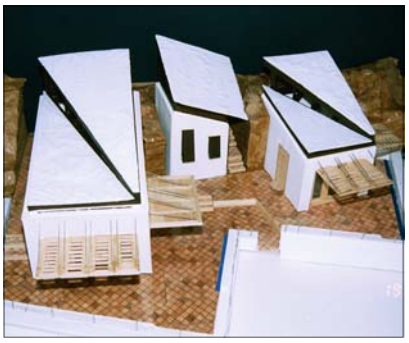
Covered Room

A covered room allows you the same freedom as a screen porch but is better suited for climates that do not have bug problems. It is a great way to enjoy all the comforts of home while being outdoors, and it affords protection from rainy weather.

Indoor / Outdoor Living



'open' style plan



The design of the indoor/outdoor living spaces in the Escape combines the screen porch, or room, with the covered room to make the spaces more flexible. The indoor/outdoor living spaces in the house, which are the main room and the bedroom, revolve around the design of the louver doors that enclose them.

The doors were designed to create three indoor/outdoor room possibilities for the main room and the bed room;

1) When both the doors are attached and in a vertical position they create an enclosed room.

2) When the louver doors are tilted up and locked in a horizontal position, to behave like a pergola, and the screen doors are left in a vertical position they create a screened room or porch.

3) When both sets of door are attached and tilted up and locked in a horizontal position they behave like a pergola, creating a covered room/open porch.

4) The adaptability of these rooms makes the spaces comfortable in any weather, and thus makes the spaces and the entire house more versatile.

Conclusion

Conclusion

Turks Island Landfall

Conclusion

'Discover'

Caribbean Style

'Discover'

'Discover'

The architecture of the Caribbean, though heavily influenced by the Spanish and French, tends to be island specific. Each island has its own style whether it has adopted the clean lines and tiled roofs of the Spaniards or the ornate wood working of the French. An island's buildings used to be a representation of it's settlers and their cultures.
Unfortunately the majority of recent architecture in these islands has disregarded the cultures and history of those that founded the island and is based upon imported money and glamour. The only reason the new architecture can survive in the islands is because of modern technology; specifically a limitless supply of water from desalination plants and abundant electricity. For example the roofs of buildings are no longer designed with water catchment in mind. The installation of large electricity generating plants has virtually eliminated the need for natural ventilation because air conditioning is now a viable source of cooling , even though the cost is exorbitant. Natural ventilation can now be disregarded as an important design feature so that a building's location on a site can be arbitrary. Similarly many of the new buildings use construction techniques and materials that are not appropriate for the islands, and fall victim to salt water, beach erosion, and wind damage resulting in high maintenance costs or structural damage making them unusable after only a few years.

Today's buildings in the islands should take into consideration cultures past. The architects should look closer at old island buildings; their construction, design principles, and techniques. Many of the old island buildings incorporated the same environmental building concepts that we think of today as ground breaking new ideas; the use of thick stone walls to keep the cool in and the heat out; today we would say that those walls have good insulating properties and prevent heat transfer. Architects need to spend more time researching and learning from the past before they design a building for a place they have never lived. Design and building ideas from the past may seem archaic but they are field tested methods and have evolved over time to be efficient in their environment.
Instead of always looking ahead to discover new, more innovative, solutions to building design a better approach is to look back, learn from the past, and incorporate modern technology where it can compliment proven designs.

Resources

Research

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2. Dean, Andrea Oppenheimer and Hursley, Timothy. Rural Studio, copyright 2002 Princeton Architectural Press.
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4. Sadler, H. E. Turks Island Landfall, copyright 1997, United Cooperative Printers Ltd.
5. Taylor, Julie D. Outdoor Rooms: Designs for Porches, Terraces, Decks, Gazebos, copyright March 2001, Rockport.
6. Zevan, Susan. Outside Architecture: Outdoor Rooms Designed by Architects, copyright April 2002, Rockport.
7. 'The Times of the Islands', December 2002 edition.
8. www.turksandcaicos.com, The Tourism Board of the Turks and Caicos Islands.

Photographs and Illustrations

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Magazines:

1. 'Discover Turks and Caicos 2002', American Airlines – December 2002 edition, Ralston Publications Ltd.
2. 'Dwell Magazine', August 2002 edition, Dwell LLC.
3. 'The Times of the Islands', December 2002 edition.

Photographers:

1. Buescher, Peter
2. Kerrigan, Peter

Web pages

1. www.caribbeantravel.com
2. www.turksandcaicos.com

- All other photos and images taken by author.