

La Geria



CASAS ITER
BIOCLIMÁTICAS

HOW DOES THE IDEA COME ABOUT?

The idea of the house **La Geria** arises from the traditional method of growing the vine on the island of Lanzarote, planted in a semi-walled hole that protects it from the wind, preserving moisture and environmental balance.

The walls of the house collect and protect those who live it. The ubiquitous Tosca stone and the wood give warmth to the house. The living room is connected to the front and back gardens, which embrace the dining room. The house is perfect to accommodate a family or group of friends who wish to enjoy both the common spaces to meet and intimate. A relaxing bath overlooking the garden will be a hard-to-forget experience.

This house has been designed to achieve optimal indoor climatic conditions of temperature and relative humidity with the help of the user. Comfort conditions for temperature are assumed between 21oC and 26oC and between 20% and 80% for relative humidity. All the strategies proposed will be aimed to maintain the house within these parameters, especially thermal, without using energy consuming appliances, only through bioclimatic techniques. The climatic data of the house can be accessed through a screen in the interior.

BIOCLIMATIC STRATEGIES

The main bioclimatic strategies used in the **La Geria** are:

- Basic rectangular typology with long north and south facades enclosed by a circular wall that creates two separate courtyards with different climatic characteristics.
- Air chamber between the ground and the floor of the house, this provides isolation and cools the air that is introduced into the rooms through air vents.
- Cavity between the concrete roof slab and the wooden ceiling. This cavity opens through air vents to the north and the south courtyards.
- Inverted U- beams that set up horizontal air shots that drag the hot air from the rooms thanks to the gratings.
- Green roof that improves thermal inertia giving stable climatic conditions to the interior.
- Pergolas on the south facade with adjustable louvers for the control of solar gains.
- The east and west facades openings represent less than 18% of the total wall surface and has great thermal inertia.
- Cross ventilation in all rooms.

HOW IS THIS BIOCLIMATIC HOUSE USED?

If it's warm

- Abre las puertas para propiciar la ventilación cruzada
- Baja los estores para impedir la entrada directa del sol
- Abre las rejillas en las esquinas del suelo
- Coloca las lamas de protección solar en posición cerrada

If it's cold

- Sube los estores para que entre el calor del sol
- Cierra las puertas para que no se escape el calor acumulado
- Cierra las rejillas en las esquinas del suelo
- Coloca las lamas de protección solar en posición abierta



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El Caminito



CASAS ITER
BIOCLIMÁTICAS

HOW DOES THE IDEA COME ABOUT?

The idea of the house **El Caminito** arises from a square in which the architect wanted to produce an oasis. This oasis creates its own microclimate in the south of Tenerife. If we create a path in which we build one square next to the other, adapting to the landscape, on the outside we will get a wind shaded path.

This house has been designed to achieve optimal indoor climatic conditions of temperature and relative humidity with the help of the user. Comfort conditions for temperature are assumed between 21oC and 26oC and between 20% and 80% for relative humidity. All the strategies proposed will be aimed to maintain the house within these parameters, especially thermal, without using energy consuming appliances, only through bioclimatic techniques. The climatic data of the house can be accessed through a screen in the interior.

BIOCLIMATIC STRATEGIES

The main bioclimatic strategies used in **El Caminito** are:

- Central gutter that runs from east to west on the longitudinal axis that divides the tiled gable roof, This gutter has a glazed vertical surface that also provides diffuse and direct light according to orientation throughout the day.
- Evacuation of overheated air by Venturi effect through the gutter.
- Extension of the roof on the East facade so that the only direct radiation they receive is that of the early hours of the morning.
- Awnings on the east side that minimize the wind speed that hits the facade.
- Versatile design (kitchen) so that it can belong indoors in winter or outdoors in summer in relation to its interaction with the contingent demands of the climate.
- The south facades openings represent 18% of the total wall surface, avoiding excess heat and maximizing the entrance of natural light.

HOW IS THIS BIOCLIMATIC HOUSE USED?

If it's warm

- Open doors and windows to encourage cross-ventilation
- Lower the blinds to prevent direct sunlight
- Open the gutter windows for overheated air to come out

If it's cold

- Raise the blinds to allow the sun radiation to enter
- Close the doors to prevent the accumulated heat from escaping the space
- Close the gutter windows so hot air doesn't come out



La Estrella



CASAS ITER
BIOCLIMÁTICAS

HOW DOES THE IDEA COME ABOUT?

The radial structures of the stone walls create the layout of the **La Estrella** house benefiting from the surrounding views.

The house is organized as a succession of rooms that communicate and are in relation with a central courtyard that distributes, ventilates and gives light to the house. This scheme foments a very close relation between the inhabitants of the house. The smell of rosemary planted in the green roof is soaked by the whole house.

This house has been designed to achieve optimal indoor climatic conditions of temperature and relative humidity with the help of the user. Comfort conditions for temperature are assumed between 21oC and 26oC and between 20% and 80% for relative humidity. All the strategies proposed will be aimed to maintain the house within these parameters, especially thermal, without using energy consuming appliances, only through bioclimatic techniques. The climatic data of the house can be accessed through a screen in the interior.

BIOCLIMATIC STRATEGIES

The main bioclimatic strategies used in the **La Estrella** house are:

- Semi underground construction allows softer temperature fluctuations and acoustically protects the house from the incident wind.
- Patios allow the entrance of natural light and the renovation of the air in the different rooms.
- Green roof improves the thermal inertia.
- Adobe tile floor as heat absorbing element.
- Ventilation induced by stratification; high openings in the south-facing windows and low openings in the north-facing areas.

HOW IS THIS BIOCLIMATIC HOUSE USED?

If it's warm

- Open doors and windows to help cross-ventilation.
- Lower the blinds to prevent direct sunlight.
- Open the windows for ventilation by stratification
- Shut the louvers

If it's cold

- Raise the blinds to let the sun heat in.
- Close the doors so that the accumulated heat doesn't escape.
- Close the windows to prevent the accumulated heat from escaping the space by the stratification ventilation.
- Open the louvers



El Cubo



CASAS ITER
BIOCLIMÁTICAS

HOW DOES THE IDEA COME ABOUT?

The Cube house nourishes from historical examples and adapts to a modern design. In order to create favorable micro climatic conditions the surface of the house is reduced to a very compact volume: the cube. Intimate, tight and welcoming are some of the adjectives that inspired this house. Wood and clay transmit the pure nature of this house. It's articulated around a patio that can be opened to the exterior and refreshes the house.

This house has been designed to achieve optimal indoor climatic conditions of temperature and relative humidity with the help of the user. Comfort conditions for temperature are assumed between 21oC and 26oC and between 20% and 80% for relative humidity. All the strategies proposed will be aimed to maintain the house within these parameters, especially thermal, without using energy consuming appliances, only through bioclimatic techniques. The climatic data of the house can be accessed through a screen in the interior.

BIOCLIMATIC STRATEGIES

The main bioclimatic strategies used in **the Cubo** house are:

- Double skin façade made of wooden blinds with semi-orientable louvers.
- 30 cm thermo clay walls with plaster for greater thermal inertia.
- Wind collectors that put fresh air inside the house.
- Open patio protected from excess radiation in the summer.

HOW IS THIS BIOCLIMATIC HOUSE USED?

If it's warm

- Open the doors to help cross-ventilation.
- Lower the blinds to prevent direct sunlight.
- Open the patio windows for air circulation
- Shut the louvers of the patio's double skin.

If it's cold

- Raise the blinds to allow the sun radiation to enter.
- Close the doors to prevent the accumulated heat from escaping the space
- Open the louvers.
- Open the louvers of the patio's double skin.



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Bernoulli



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HOW DOES THE IDEA ARISE?

The fundamentals of the Bernoulli house are the combination of the use of an effective energy technology with the shapes and techniques of native construction and of similar climates. The barrel vault and flying buttress brand the house with an amazing luminosity and amplitude, also channeling the evacuation of hot air. The upper level is an open space that combines kitchen, living room and dining room, with large windows that communicate the inside with the natural environment.

This house has been designed to achieve optimal indoor climatic conditions of temperature and relative humidity with the help of the user. Comfort conditions for temperature are assumed between 21oC and 26oC and between 20% and 80% for relative humidity. All the strategies proposed will be aimed to maintain the house within these parameters, especially thermal, without using energy consuming appliances, only through bioclimatic techniques. The climatic data of the house can be accessed through a screen in the interior.

BIOCLIMATIC STRATEGIES

The main bioclimatic strategies used in the Bernoulli house are:

- Skylights in the vault roof allow natural light to enter through reflection.
- Wooden blinds protect the south oriented glazed surfaces.
- 50 x 20 x 10 cm masonry walls of white Tufa stone.
- Wind extractors arranged at the top of the buttresses to extract hot air.

HOW IS THIS BIOCLIMATIC DWELLING USED?

If it's warm

- Open the doors and the windows to help cross-ventilation
- Open the air vents of the walls to encourage the removal of hot air inside the house
- Shut the louvers

If it's cold

- Close windows and doors to stop cross-ventilation
- Close the air vents of the walls to block the removal of hot air inside the house
- Shut the louvers



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El Alisio



CASAS ITER
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HOW DOES THE IDEA ARISE?

The trade winds are the essence of El Alisio house. They forge its shape, its energy, its freshness and waft the scents of the garden. The 4 elements inspire the different systems.

The house has beautiful views and a large common meeting space. It is surrounded by terraces, which include a private to the bedrooms on the top. The resting area and the common area are located in 2 independent constructions that dissociate the uses.

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BIOCLIMATIC STRATEGICS

The main bioclimatic strategies used in El Alisio house are:

- The east wall protects the dwelling from the wind and also acts as a wind collector.
- 20 cm high thermal inertia wall built between two other walls with a separation of 40cm.
- East-oriented wind collector connected to 45 cm pipes buried under the house, introduce the fresh air inside the house through air vents
- Cross ventilation from the interconnection of the different facades of the house.

HOW IS THIS BIOCLIMATIC DWELLING USED?

If it's warm

- Open the doors to help cross-ventilation.
- Lower the blinds to prevent direct sunlight.
- Shut the louvers.

If it's cold

- Raise the blinds to let the sunlight in.
- Close the doors to prevent the accumulated heat from escaping the space.
- Open the louvers.



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El Muro



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HOW DOES THE IDEA COME ABOUT?

El Muro house is conceived for and from the site, integrating in its architecture the landscape, culture, history and local materials of the area, reinterpreting the traditional skills. A central wall divides the house into two spaces: day and night areas. The living room opens to the terrace and to the magnificent views. This outer-inner space invites to the coexistence and interpersonal communication with nature. The basaltic rock wall, the wood and the vegetation that is introduced in the house through the windows make this house a particularly welcoming place.

This house has been designed to achieve optimal indoor climatic conditions of temperature and relative humidity with the help of the user. Comfort conditions for temperature are assumed between 21oC and 26oC and between 20% and 80% for relative humidity. All the strategies proposed will be aimed to maintain the house within these parameters, especially thermal, without using energy consuming appliances, only through bioclimatic techniques. The climatic data of the house can be accessed through a screen in the interior

BIOCLIMATIC STRATEGIES

The main bioclimatic strategies used in **El Muro** house are:

- Central basaltic rock wall concentrates the heat emitted at night (thermal inertia).
- Patios that allow the entrance of natural light and the renovation of the air in the different rooms.
- Cross ventilation in all rooms of the house.
- Solar protection with adjustable louvers.
- Optimum orientation to protect the house from wind and overheating.

HOW IS THIS BIOCLIMATIC HOUSE USED?

If it's warm

- Lower the blinds to prevent direct sunlight
- Open the top of the wall to create air drafts (not exceed)
- Shut the louvers

If it's cold

- Raise the blinds to allow the sun radiation to enter and be stored in the wall.
- Close the top of the wall to prevent air drafts
- Open the louvers



El Gavión



CASAS ITER
BIOCLIMÁTICAS

HOW DOES THE IDEA COME ABOUT?

The **Gabión** house, robust and with distinct identity that balances land integration and the need to create its own spaces uses dynamic lightweight construction techniques based on a minimal environmental impact architecture. The walls are conformed by a wire basket "Gabion" system of construction filled with basaltic volcanic rock. This gives the house a special atmosphere by integrating it in the dry desert-like surroundings and protecting it from the sun and the wind. The house is surrounded by a wooden terrace shaded by the wide deck, which can be accessed from all rooms. The views and the surrounding gardens soften its character, allowing a direct connection with nature.

This house has been designed to achieve optimal indoor climatic conditions of temperature and relative humidity with the help of the user. Comfort conditions for temperature are assumed between 21oC and 26oC and between 20% and 80% for relative humidity. All the strategies proposed will be aimed to maintain the house within these parameters, especially thermal, without using energy consuming appliances, only through bioclimatic techniques. The climatic data of the house can be accessed through a screen in the interior.

BIOCLIMATIC STRATEGIES

The main bioclimatic strategies used in **El Gabión** house are:

- Light solar protection roof that protect the interior spaces
- Cross-ventilation of all rooms including potholed gaps in the predominant wind direction.
- Perimeter walls filled with basaltic stone that protect the house from the wind and transmit heat when solar radiation is low or none.

HOW IS THIS BIOCLIMATIC HOUSE USED?

If it's warm

- Open the doors to help cross-ventilation.
- Lower the blinds to prevent direct sunlight.
- Shut the louvers.

If it's cold

- Raise the blinds to let the sun heat in.
- Close the doors to prevent the accumulated heat from escaping the space.
- Open the louvers.



La Geoda



CASAS ITER
BIOCLIMÁTICAS

HOW DOES THE IDEA COME ABOUT?

The design insertion of **La Geoda** in the area will be discreet, delicate, respectful and non traumatic with the environment. A large Geode-shaped inclined roofing covers a group of glass panels.

The inclination of the large sloped roof allows natural ventilation and has a volcanic ash based thermal isolation system. The night area of the house is partially buried next to the basaltic wall on which the deck rests. With a privileged view, the magnificent dining room invites to let go and be driven to the horizon, allowing us to dawn in the sea and dusk in the volcanic cone.

This house has been designed to achieve optimal indoor climatic conditions of temperature and relative humidity with the help of the user. Comfort conditions for temperature are assumed between 21oC and 26oC and between 20% and 80% for relative humidity. All the strategies proposed will be aimed to maintain the house within these parameters, especially thermal, without using energy consuming appliances, only through bioclimatic techniques. The climatic data of the house can be accessed through a screen in the interior.

BIOCLIMATIC STRATEGIES

The main bioclimatic strategies used in **La Geoda** house are:

- Glazed surface facing south allows thermal gains when needed.
- Deck over the southern façade protects from excessive radiation the spaces to enjoy during the day.
- Skylights in the north that contribute to illuminate the bedrooms without contributing to its warm up.
- Semi underground spaces to increase the thermal inertia of the night spaces.
- Complementary ventilation through air vents located in each room.

HOW IS THIS BIOCLIMATIC HOUSE USED?

If it's warm

- Open the doors to help cross-ventilation.
- Lower the blinds to prevent direct sunlight.
- Shut the louvers.

if it's cold

- Raise the blinds to let the sun heat in.
- Close the doors so that the accumulated heat doesn't escape.
- Open the louvers.



La Tea



CASAS ITER
BIOCLIMÁTICAS

HOW DOES THE IDEA COME ABOUT?

The **La Tea** is designed based in the interaction between architecture and the trade winds. The volumes of stone protect the dwelling from the wind while using it to create a microclimate. The Tufa stone and the open sky wrap the construction. The simplicity and austerity of the materials, and the proper disposition of the house, are its main strengths. The common areas encourage meetings both inside and outside. The patio feeds the rooms with fresh air, providing a refuge of tranquility where a lemon tree shelters from the afternoon sun.

This house has been designed to achieve optimal indoor climatic conditions of temperature and relative humidity with the help of the user. Comfort conditions for temperature are assumed between 21oC and 26oC and between 20% and 80% for relative humidity. All the strategies proposed will be aimed to maintain the house within these parameters, especially thermal, without using energy consuming appliances, only through bioclimatic techniques. The climatic data of the house can be accessed through a screen in the interior.

BIOCLIMATIC STRATEGIES

The main bioclimatic strategies used in **La Tea** house are:

- High index of glazing with high solar gains that allow temperature regulation in the interior through the use of louvers and blinds in the living room and the upper room.
- Thermal inertia through thick walls with a coarse plateau coating on two sides.
- Interconnection of different oriented spaces generating a natural air flow.

HOW IS THIS BIOCLIMATIC HOUSE USED?

If it's warm

- Open the sun protected doors to help cross-ventilation.
- Lower the blinds to prevent direct sunlight.
- Close the louvers of the patio to prevent direct solar radiation

If it's cold

- Allow direct sunlight in to increase thermal gains
- Raise the blinds to allow the incidence of direct sunlight.
- Open the louvers of the patio



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Las Bóvedas



CASAS ITER
BIOCLIMÁTICAS

HOW DOES THE IDEA COME ABOUT?

Las Bóvedas house is the result of a cave transformed into a house, formalized by 3 vaults of volcanic stone. It is a partially buried dwelling, with two patios to the North and a large garden terrace to the South, which is protected from the direct sun by fixed and regulated wooden louvers. The vaults that constitute the axis of the construction and the burial create calm and relaxing and sanctuary like atmosphere. The sea views from the garden terrace evoke a relaxing mood throughout the dwelling.

This house has been designed to achieve optimal indoor climatic conditions of temperature and relative humidity with the help of the user. Comfort conditions for temperature are assumed between 21oC and 26oC and between 20% and 80% for relative humidity. All the strategies proposed will be aimed to maintain the house within these parameters, especially thermal, without using energy consuming appliances, only through bioclimatic techniques. The climatic data of the house can be accessed through a screen in the interior.



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BIOCLIMATIC STRATEGIES

The main bioclimatic strategies used in **Las Bóvedas** house are:

- Semi underground construction allows softer temperature fluctuations and acoustically protects the house from the incident wind.
- Patios that allow the entrance of natural light and the renovation of the air in the different rooms.
- Green roof that improves its thermal inertia.
- Walls of light volcanic stone with a thickness ranging from 80 cm in the lower parts to 50 cm in the encounters with the vaults.

HOW IS THIS BIOCLIMATIC HOUSE USED?

If it's warm

- Open the doors to help cross-ventilation.
- Lower the blinds to prevent direct sunlight.
- Open the steel vertical ventilation tube to evacuate heat and/or heated air from each room.
- Shut the louvers.

If it's cold

- Raise the blinds to let the sun heat in.
- Close the doors to prevent the accumulated heat from escaping the space.
- Close the steel vertical ventilation tube to impede the evacuation of warm of heated air from each room.
- Open the louvers.

La Compacta



CASAS ITER
BIOCLIMÁTICAS

HOW DOES THE IDEA COME ABOUT?

The **Compacta** house seeks comfort through its relationship with the exterior space, the views and the landscape. It is characterized by a pyramid that crowns the structure symbolizing the sun, light and energy.

The house is a south-facing parallelepiped with a north patio. The Tufa stone, the basalt and the wood are everywhere. The house welcomes us among its strong walls and invites us to enjoy its freshness and silence. It has an interior courtyard with a sheet of water where you evade from the world, and also a front porch with a few steps to lie under the sun, read or relax watching the sea.

This house has been designed to achieve optimal indoor climatic conditions of temperature and relative humidity with the help of the user. Comfort conditions for temperature are assumed between 21oC and 26oC and between 20% and 80% for relative humidity. All the strategies proposed will be aimed to maintain the house within these parameters, especially thermal, without using energy consuming appliances, only through bioclimatic techniques. The climatic data of the house can be accessed through a screen in the interior.

BIOCLIMATIC STRATEGIES

The main bioclimatic strategies used in the **Compacta** house are:

- Semi underground construction allows softer temperature fluctuations and acoustically protects the house from the incident wind.
- Patios that allow the entrance of natural light and the renovation of the air in the different rooms.
- Green roof that improves its thermal inertia.
- Facade to the South with a 15% area dedicated to the passive solar reception.
- Air vents with automatic sealing under the sill to the Tower of Winds.
- Thick stone and lime walls that provide high thermal inertia and deferred heat.

HOW IS THIS BIOCLIMATIC HOUSE USED?

If it's warm

- Open the doors and windows to help cross-ventilation.
- Lower the blinds to prevent direct sunlight.
- Shut the louvers.

If it's cold

- Raise the blinds to let the sun heat in.
- Close the doors and windows so that the accumulated heat doesn't escape.
- Open the louvers.



El Río



CASAS ITER
BIOCLIMÁTICAS

HOW DOES THE IDEA COME ABOUT?

The project of **El Río** is oriented to the control of two natural elements as the sun (opening the house to the South) and the wind (to protect the house from the dominating winds by burying it in the hill). The name of the dwelling (river in Spanish) hints on its main characteristic, a small water stream that crosses the house from the garden, across the living room and ends in a pool that borders the wooden solarium. From here we see the sea, the volcano and enjoy the sunrise and sunset. The night space is located at the back, in the semi-buried area of the house to guarantee a low temperature and immense peace. When opening the huge mobile walls, the garden, the living room and the terrace unify creating a unique and magical space.

This house has been designed to achieve optimal indoor climatic conditions of temperature and relative humidity with the help of the user. Comfort conditions for temperature are assumed between 21oC and 26oC and between 20% and 80% for relative humidity. All the strategies proposed will be aimed to maintain the house within these parameters,

especially thermal, without using energy consuming appliances, only through bioclimatic techniques. The climatic data of the house can be accessed through a screen in the interior.

BIOCLIMATIC STRATEGIES

The main bioclimatic strategies used in **El Río** house are:

- Semi underground construction allows softer temperature fluctuations and acoustically protects the house from the incident wind.
- Courtyards that allow natural light and air renewal in the different rooms.
- Water course that softens high temperatures due to solar radiation.
- Louvers that open completely to allow sunrise and cross ventilation.

HOW IS THIS BIOCLIMATIC HOUSE USED?

If it's warm

- Opens doors for cross ventilation
- Shut louvers
- Overnight stays (bedrooms) should have a more pleasant temperature

If it's cold

- Close the doors so that the accumulated heat doesn't escape
- Open the louvers
- The living room of the house will be the most pleasant place of the house



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El Pueblo



CASAS ITER
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HOW DOES THE IDEA COME ABOUT?

The **El Pueblo** dwelling proposal is based on locality. It is a metaphor of a small scale town: with a square, trees and the streets around the square. The chimneys are used as natural cooling systems that use the trade winds. The color and warmth of the Tufa stone evoke the earth as an element. The U-layout of the house, articulated around a fountain and an olive tree, invite us to inhabit it.

This house has been designed to achieve optimal indoor climatic conditions of temperature and relative humidity with the help of the user. Comfort conditions for temperature are assumed between 21oC and 26oC and between 20% and 80% for relative humidity. All the strategies proposed will be aimed to maintain the house within these parameters, especially thermal, without using energy consuming appliances, only through bioclimatic techniques. The climatic data of the house can be accessed through a screen in the interior.

BIOCLIMATIC STRATEGIES

The main bioclimatic strategies in the **El Pueblo** house are:

- Large opening windows with internal protection in the living room.
- Patio that let in natural light and air renewal in the different rooms.
- Thermal inertia contributed by its 50 cm master walls and 5% openings in the West facade.
- Roof ventilation towers, wind tunnel vents to adjacent rooms, air vents in walls, kitchen, showers and toilets.

HOW IS THIS BIOCLIMATIC HOUSE USED?

If it's warm

- Open doors for cross ventilation
- Lower blinds to prevent direct sunlight entry
- Open air vents at the top of the bedroom wall.
- Open wind tunnels and vents in walls

If it's cold

- Close doors to avoid cross ventilation
- Raise the blinds to facilitate the direct entry of the sun
- Close the doors of the ventilation vents at the top of the bedroom wall.
- Close wind tunnels and vents on walls



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Noche y Día



CASAS ITER
BIOCLIMÁTICAS

HOW DOES THE IDEA COME ABOUT?

The philosophy of the **Noche y Día** house is based on balancing the maximum cost optimization with the comfort of its inhabitants. Its name comes from the marked separation between day and night uses. The house has 2 well differentiated structures that interact by a gardened patio: the day space, and the semi underground night space. The whole complex is enclosed by a semicircular wall that protects it from the prevailing winds. The private courtyard protected from external views will be one of the preferred areas of the house. The materials used, including furniture, are deliberately simple and generally recycled.

This house has been designed to achieve optimal indoor climatic conditions of temperature and relative humidity with the help of the user. Comfort conditions for temperature are assumed between 21oC and 26oC and between 20% and 80% for relative humidity. All the strategies proposed will be aimed to maintain the house within these parameters, especially thermal, without using energy consuming appliances, only through bioclimatic techniques. The climatic data of the house can be accessed through a screen in the interior.

BIOCLIMATIC STRATEGIES

Las principales estrategias bioclimáticas utilizadas en la vivienda **Noche y Día** son:

- Enterramiento parcial con el que se consigue suavizar las fluctuaciones de temperatura además de quedar protegida acústicamente del viento incidente.
- Patios que permiten la entrada de luz natural y la renovación del aire en las diferentes estancias.
- Cubierta ajardinada que mejora su inercia térmica.
- Lucernarios en el bloque semienterrado que permite la entrada de luz natural
- Ventilación inducida por estratificación; aperturas altas en los ventanales orientados hacia el Sur abiertos a la vez que los huecos en la parte baja en las zonas dispuestas a Norte.

HOW IS THIS BIOCLIMATIC HOUSE USED?

If it's warm

- Open doors for cross ventilation.
- Lower blinds to prevent direct sunlight entry.
- Open windows to allow air circulation.
- Shut the louvers.

If it's cold

- Raise the blinds so that the heat of the sun may enter.
- Close the doors to prevent the accumulated heat from escaping the space.
- Close windows to prevent air circulation.
- Open the louvers.



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La Vela



CASAS ITER
BIOCLIMÁTICAS

HOW DOES THE IDEA COME ABOUT?

The design strategy of the house La Vela is determined by the use of the prevailing winds and the maximization of the sea views. Its enclosure aims to emulate the sails of a ship. The living area, on its south front, is completely open to the sea, extending outwards through a terrace that resembles the wooden deck of a sailboat. This cover merges the house with the landscape and integrates them. The upper level has a light weighted and nocturnal atmosphere almost suspended in the air. The house is full of interesting plays of natural light. The sun and the moon interact with the house.

This house has been designed to achieve optimal indoor climatic conditions of temperature and relative humidity with the help of the user. Comfort conditions for temperature are assumed between 21°C and 26°C and between 20% and 80% for relative humidity. All the strategies proposed will be aimed to maintain the house within these parameters, especially thermal, without using energy consuming appliances, only through bioclimatic techniques. The climatic data of the house can be accessed through a screen in the interior.

BIOCLIMATIC STRATEGIES

The main bioclimatic strategies used in the house La Vela are:

- Southeast orientated solar protection in the interior with venetian blinds of about 30 m².
- Bedrooms situated on the first floor to use accumulated heat.
- Windows located on facing facades and movable panels to allow cross ventilation throughout the house.
- Smaller windows located at a lower height in the kitchen to use reflected natural light avoiding the heat of direct radiation.

HOW IS THIS BIOCLIMATIC HOUSE USED?

If it's warm

- Use pivoting panels to direct the air at will
- Regulate louvers
- Open doors and windows for air circulation
- Water plants indoors with moderation and thus refresh the atmosphere a little

if it's cold

- Closes pivoting panels to prevent heat loss inside
- Opens louvers
- Close doors and windows to allow heat to build up inside
- Clothing and activity level (sedentary, medium and high) are essential for your thermal comfort. For temperatures below 21° with all windows closed and without increasing the relative humidity of the environment minimum values of 1.0 clo are recommended



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El Bernegal



CASAS ITER
BIOCLIMÁTICAS

HOW DOES THE IDEA ARISE?

El Bernegal house is designed as an exchanger of experiences with the environment. The sun, heat and light are the natural energy flows incorporated in the project.

The large curved roof, is opened at midday to favour the house with the best sun, covers the central space that is opened to two patios. The entrance patio is buried in the ground with a cistern and another one in the front that rises to the sky and fades with the landscape. A wall encloses the house on its northeast facade and a vegetable pergola covers the front patio. The materials used are one of its main charms: exposed concrete, volcanic stone, recycled wood panels worked in collage and recycled chip panels.

This house has been designed to achieve optimal indoor climatic conditions of temperature and relative humidity with the help of the user. Comfort conditions for temperature are assumed between 21oC and 26oC and between 20% and 80% for relative humidity. All the strategies proposed will be aimed to maintain the house within these parameters, especially thermal, without using energy consuming appliances, only through bioclimatic techniques. The climatic data of the house can be accessed through a screen in the interior.

BIOCLIMATIC STRATEGIES

The main bioclimatic strategies used in the **El Bernegal** are:

- Direct solar capture in bedrooms to improve thermal comfort
- Courtyards that let natural light in and favour air renewal in the different rooms.
- 40 cm walls to increase thermal inertia by insulating the housing from unwanted energy flows.

HOW IS THIS BIOCLIMATIC DWELLING USED?

If it's warm

- Open doors for cross ventilation.
- Lower blinds to prevent direct sunlight entry.
- Shut the louvers.

If it's cold

- Raise the blinds so that the heat of the sun may enter
- Close the doors to prevent the accumulated heat from escaping the space
- Open the louvers.



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El Dispositivo



CASAS ITER
BIOCLIMÁTICAS

HOW DOES THE IDEA COME ABOUT?

The concept of the design of **El Dispositivo** is to include bioclimatic devices in the living area, merging them with the space. The structure is made up of two displaced rectangular cubes, with a "Fortran" wall and the service ditches. The dwelling has an open plan with no interior walls; the main floor opens to the landscape with a sheet of water that gives life to the living room and a solarium that extends it. It is a stranded ship facing the ocean with various decks open to different horizons, el Teide and the sea, among others.

This house has been designed to achieve optimal indoor climatic conditions of temperature and relative humidity with the help of the user. Comfort conditions for temperature are assumed between 21°C and 26°C and between 20% and 80% for relative humidity. All the strategies proposed will be aimed to maintain the house within these parameters, especially thermal, without using energy consuming appliances, only through bioclimatic techniques. The climatic data of the house can be accessed through a screen in the interior.

BIOCLIMATIC STRATEGIES

The main bioclimatic strategies used in **El Dispositivo** are:

- Sheet of water that humidifies the air and lowers possible high temperatures
- Sliding louver panels used to prevent overheating due to the incidence of sunlight
- Glazed staircase that provides natural light to the kitchen, in summer is protected with a dissipater element.
- Wind Regulator System (SRE) composed of wind chimney, facade and wind solar wall openings and evaporative cooling devices.
- Circulating water containers with in the openings of the wall and the wind chimney.

HOW IS THIS BIOCLIMATIC HOUSE USED?

If it's warm

- Open opposite doors on different floors to allow cross ventilation, including the ventilation chimney.
- Lower blinds to prevent direct sunlight entry.
- Shut the louvers.

If it's cold

- Raise the blinds so that the heat of the sun may enter.
- Close the doors so that the accumulated heat does not escape and close the ventilation chimney.
- Open the louvers



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El Escudo



CASAS ITER
BIOCLIMÁTICAS

HOW DOES THE IDEA COME ABOUT?

The house **El Escudo** is designed as a thermodynamic machine that uses the microclimate of the site. It is an example of standardization and cheapness unified in a good result. The exterior hides the surprise that waits inside. The dwelling, elevated from the ground, with an interior garden that articulates the house, warm despite the sandwich panel that from its walls. With a magnificent terrace that extends towards the Atlantic, perfect to enjoy the sunsets.

This house has been designed to achieve optimal indoor climatic conditions of temperature and relative humidity with the help of the user. Comfort conditions for temperature are assumed between 21oC and 26oC and between 20% and 80% for relative humidity. All the strategies proposed will be aimed to maintain the house within these parameters, especially thermal, without using energy consuming appliances, only through bioclimatic techniques. The climatic data of the house can be accessed through a screen in the interior.

BIOCLIMATIC STRATEGIES

The main bioclimatic strategies used in the house **El Escudo** are:

- Sun protection by adjustable blinds to regulate manually the energy's intensity.
- Interior garden that articulates the day and night spaces of the house and regulates relative humidity.
- Cross ventilation thanks to the interaction of the patio and the mobile facades in different orientations.

HOW IS THIS BIOCLIMATIC HOUSE USED?

If it's warm

- Open doors and windows for cross ventilation
- Water moderately the inner garden to humidify the environment
- Shut the louvers

If it's cold

- Close doors and windows so that the accumulated heat does not escape.
- Open the louvers.
- Enjoy the rooms facing south with 16,74m² glazed.



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La Religa



CASAS ITER
BIOCLIMÁTICAS

HOW DOES THE IDEA COME ABOUT?

The house **La Religa**, far from invading the environment, tries to establish a different relationship with the environment by transforming the elements. The water sheet is the air conditioning of the house and a captivating mirror of the environment. Its two heights and its orientation towards the mountain create many attractive and different spaces in which to get lost.

This house has been designed to achieve optimal indoor climatic conditions of temperature and relative humidity with the help of the user. Comfort conditions for temperature are assumed between 21oC and 26oC and between 20% and 80% for relative humidity. All the strategies proposed will be aimed to maintain the house within these parameters, especially thermal, without using energy consuming appliances, only through bioclimatic techniques. The climatic data of the house can be accessed through a screen in the interior.



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BIOCLIMATIC STRATEGIES

The main bioclimatic strategies used in the house **La Religa** are:

- The water mirror and vegetation favour different microclimates and decrease daily temperature variations.
- Interconnection of spaces with opposite orientations and openings to generate and modulate the wind better.

HOW IS THIS BIOCLIMATIC HOUSE USED?

If it's warm

- Open doors and windows for cross ventilation.
- Lower blinds to prevent direct sunlight entry.
- Shut the louvers.

If it's cold

- Raise the blinds so that the heat of the sun may enter.
- Close the doors so that the accumulated heat does not escape.
- Open the louvers.

El Patio



CASAS ITER
BIOCLIMÁTICAS

HOW DOES THE IDEA COME ABOUT?

The design of **El Patio** is develops the two level classical solution with living rooms in the ground floor and the bedrooms in the upper one. The house patio configuration enlarges under the bedrooms where the adjacent patio and totally cover the ground floor. The bedrooms in the upper floor have splendid views to the sea.

This house has been designed to achieve optimal indoor climatic conditions of temperature and relative humidity with the help of the user. Comfort conditions for temperature are assumed between 21oC and 26oC and between 20% and 80% for relative humidity. All the strategies proposed will be aimed to maintain the house within these parameters, especially thermal, without using energy consuming appliances, only through bioclimatic techniques. The climatic data of the house can be accessed through a screen in the interior.

BIOCLIMATIC STRATEGIES

The main bioclimatic strategies used in the **El Patio** are:

- Central patio that allows the entry of natural light and air renewal in the different rooms.
- Pond inside the courtyard to humidify the environment when temperatures are high.
- Additional solar control mechanism through wooden louvers in the rooms located on the upper floor.
- Minimization of heat input through the West and East facades through a very low percentage of exposed voids.

HOW IS THIS BIOCLIMATIC HOUSE USED?

If it's warm

- Open doors for cross ventilation.
- Lower blinds to prevent direct sunlight entry.
- Shut the louvers.

If it's cold

- Raise the blinds so that the heat of the sun may enter.
- Close the doors so that the accumulated heat does not escape.
- Open the louvers.



La Arcilla



CASAS ITER
BIOCLIMÁTICAS

HOW DOES THE IDEA COME ABOUT?

The design of **La Arcilla** combines the traditional hot and arid climate house and the possibilities of modern ecotechnology. The architecture uses the basic forces: sun, earth, air and water.

Each interior space has its external counterpart, extending the living space outdoors, where hammocks invite us to rest and relax. The use of natural materials such as clay, lime, mud and wood and the colours used for the house, make it blend in the environment. It resembles a Mediterranean oasis transplanted into the Atlantic.

This house has been designed to achieve optimal indoor climatic conditions of temperature and relative humidity with the help of the user. Comfort conditions for temperature are assumed between 21oC and 26oC and between 20% and 80% for relative humidity. All the strategies proposed will be aimed to maintain the house within these parameters, especially thermal, without using energy consuming appliances, only through bioclimatic techniques. The climatic data of the house can be accessed through a screen in the interior.



BIOCLIMATIC STRATEGIES

The main bioclimatic strategies used in the **La Arcilla** are:

- Each interior space has an external counterpart, extending the living space outdoors.
- Design of a reduced glazed surface on the upper floor to protect the room from excess solar radiation.
- Windproof awnings arranged on the upper terraces.
- Wind tower that wind vents connect the tower with the bedrooms generating suction currents. Cross ventilation from two opposing terraces.
- Shells placed on the roof to reflect excessive solar incidence.

HOW IS THIS BIOCLIMATIC HOUSE USED?

If it's warm

- Open doors and windows for cross ventilation
- Lower blinds to prevent direct sunlight entry
- Open windows in the lower part of the rooms, in the middle wall to allow cross ventilation
- Open the air vents of the fireplace.
- Place hammocks in the most comfortable hours in outdoor spaces

If it's cold

- Raise the blinds so that the heat of the sun may enter
- Close doors and windows so that the accumulated heat does not escape
- Close the windows at the bottom of the rooms to prevent excessive air movement
- Closes the ventilation slats of the fireplace.
- The best place to enjoy pleasant temperatures is near the glazed areas facing west.

La Duna



CASAS ITER
BIOCLIMÁTICAS

HOW DOES THE IDEA COME ABOUT?

The house **La Duna** is characterized by a rubblework wall arranged according to the direction of the prevailing winds. This semicircular shaped wall is inspired on those from Lanzarote, protecting the living areas and creating cool interior patios. This dwelling has been magnificently designed to delight the user and to transform all the environmental resources and transforming them into energy. This beautiful house, adapted for disabled people, is oriented towards the south and the sea, with a front garden and several patios that green and sweeten the atmosphere. This house has been designed to achieve optimal indoor climatic conditions of temperature and relative humidity with the help of the user. Comfort conditions for temperature are assumed between 21oC and 26oC and between 20% and 80% for relative humidity. All the strategies proposed will be aimed to maintain the house within these parameters, especially thermal, without using energy consuming appliances, only through bioclimatic techniques. The climatic data of the house can be accessed through a screen in the interior.



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BIOCLIMATIC STRATEGIES

The main bioclimatic strategies used in the **La Duna** are:

- Eaves over the wall surface with a length coefficient corresponding to 0.675 the vertical height of the glazed surface. This canopy allows radiation to hit the house during the winter, but protects it from the excess heat during the summer.
- Masonry walls combining basalt and Tufa stone.
- Fixed wind chimney facing the prevailing wind direction located in the inner courtyard.
- Underground ventilation ducts where air is cooled and returned to the dwelling through slatted vents.

HOW IS THIS BIOCLIMATIC HOUSE USED?

If it's warm

- Opens doors for cross ventilation.
- Lower blinds to prevent direct sunlight entry.
- Open the wind chimney vents.
- Shut the louvers.

If it's cold

- Raise the blinds so that the heat of the sun may enter.
- Close the doors to prevent the accumulated heat from escaping the space by the stratification. ventilation.
- Close the wind chimney vents.
- Open the louvers.

El Cangrejo



CASAS ITER
BIOCLIMÁTICAS

HOW DOES THE IDEA COME ABOUT?

The **El Cangrejo** dwelling is shaped by vaulted roofs spring from the ground leaping towards the South West, so that the North East winds fly over unobstructed. The living spaces are arranged around a patio that provides privacy and facilitates the flow between the indoor and outdoor activities. Its interior is full of geometric shapes, different from any other dwelling, generating singular spaces full of interest

This house has been designed to achieve optimal indoor climatic conditions of temperature and relative humidity with the help of the user. Comfort conditions for temperature are assumed between 21oC and 26oC and between 20% and 80% for relative humidity. All the strategies proposed will be aimed to maintain the house within these parameters, especially thermal, without using energy consuming appliances, only through bioclimatic techniques. The climatic data of the house can be accessed through a screen in the interior.

BIOCLIMATIC STRATEGIES

The main bioclimatic strategies used in the house **El Cangrejo** are:

- Large glazed surfaces, one facing west and one facing south to facilitate direct thermal gains protected with an overhang.
- Strategic orientation to avoid solar radiation from afternoon to sunset.
- Cross-ventilation through the interconnection of opposite spaces.

HOW IS THIS BIOCLIMATIC HOUSE USED?

If it's warm

- Open doors for cross ventilation.
- Lower blinds to prevent direct sunlight entry.
- Shut the louvers.

If it's cold

- Raise the blinds so that the heat of the sun may enter.
- Close the doors so that the accumulated heat does not escape.
- Open the louvers.



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