

Shotgun Chameleon

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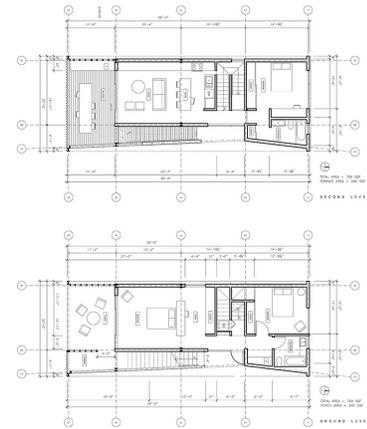
Prairie View A&M University

Situated at Historical Fourth ward Houston, Texas, Shotgun Chameleon is inspired by the flexibility of Gulf Coast raised shotgun houses floor plan and the versatility of chameleon skin. The design emphasizes programmatic flexibility and response to climate. The chameleon-like front screen element provides a myriad of facade possibilities to adapt this design to different urban contexts and to a variety of solar/ wind orientations. Possibilities include wood siding painted to blend with the streetscape, billboards where commercial uses are feasible on the ground floor, louvered wood (vertical or horizontal depending on orientation) to allow for breezes while blocking direct sun and providing privacy, solar panel screen to harvest solar energy, or vine covered screens reminiscent of French quarter balconies. As for the alternating wood slats screen on the sides, they provides privacy for both residents and the neighbors while allowing sunlight and wind to move through the house. The double height glass windows frame an ever evolving urban view at the South whereas the floor to ceiling window frame the four seasons views of nature at the north.

This 1,500 square feet house is designed with cross ventilation in mind. Summer breeze is channeled through the south facing balcony and porch to passively ventilate the house. Angle of roof was carefully calculated to allow lower winter sunlight to enter the interior spaces while higher summer sunlight stays outside. The balcony and porch which extend the spaces whenever needed by opening glass sliding doors without adding additional air conditioned space. The choice of renewable wood material, high efficient mechanical equipment (mini split ac units and tank-less water heater), dual flush toilet, led lighting, foam insulation and low-e insulated windows drastically reduces energy consumption.

Flexibility and adaptability of interior space is key to this design. Closing the internal stair, this 3 bedrooms and 2 baths single family home could become an up and down duplex for rental or

accommodate multi-generational family arrangement. Tenant on upper floor could use the external stairs. This same setting could also be used as live-work space with the bottom unit as office spaces. The renting out option helps generate income to offset the cost of mortgage. This encourages a more sustainable way of home ownership. The design of the house also aims to revisit and to celebrate the idea of balcony and porch living which rooted heavily in the vernacular of the neighborhood, Freedmen's Town. The balcony not only provides a great social space for the residents but also encourages interaction with neighbors on sidewalk or across the street.



SHOTGUN CHAMELEON

An Adaptive Disaster Replacement Home

Situated at Historical Fourth ward Houston, Texas, Shotgun Chameleon is inspired by Gulf Coast raised shotgun houses and versatility of chameleon skin. The design emphasizes programmatic flexibility and response to climate. The chameleon-like front screen element provides a myriad of facade possibilities to adapt this design to different urban contexts and to a variety of solar/wind orientations. Possibilities include wood siding painted to blend with the street-scape, billboards where commercial uses are feasible on the ground floor, louvered wood (vertical or horizontal depending on orientation) to allow for breezes while blocking direct sun and providing privacy, solar panel screen to harvest solar energy, or vine covered screens reminiscent of French quarter balconies.

The alternating wood slats screen on the sides provides privacy for both residents and the neighbors while allowing sunlight and wind to move through the house. A double height glass window frames an ever evolving urban view at the south and a floor to ceiling opening in the second floor bedroom frames the four season views of nature at the north. Flexibility and adaptability of interior space is key to this design (see floor plans). Closing the internal stair, this 3 bedrooms and 2 baths single family home could become an up and down duplex for rental or accommodate multi generational family arrangement. Tenant on upper floor could use the external stairs. This same setting could also be used as live-work space with the bottom unit as office spaces. The renting out option helps generate income to offset the cost of mortgage. This encourages a more sustainable way of home ownership. The design of the house also aims to revisit and to celebrate the idea of balcony and porch living which rooted heavily in the vernacular of the neighborhood, Freedmen's Town. The balcony not only provides a great social space for the residents but also encourages interaction with neighbors on sidewalk or across street. This 1,500 sqf house is designed with cross ventilation in mind. Summer breeze is channeled through the south facing balcony and porch to passively ventilate the house. Angle of roof was carefully calculated to allow lower winter sunlight to enter the interior spaces while higher summer sunlight stays outside. The balcony and porch which extend the spaces whenever needed by opening glass sliding doors without adding additional AC space. The choice of renewable wood material, high efficient mechanical equipment, dual flush toilet, led lighting, foam insulation and low-e insulated windows drastically reduces energy consumption.



	SHOTGUN CHAMELEON	HOUSE NEXT DOOR
One Year Total	6972 kWh/yr	14270 kWh/yr
Texas Average		14263 kWh/yr

