

House Construction “Upgrades”

41230 Kelley Rd.
Hempstead, TX 77445

The house was built beginning in late 2004 and continuing into 2005. The day before Hurricane Rita was to make landfall it blew us out of the trailer into the house.

These “upgrades” are things we went out of our way to do.

Codes	Waller County did not have residential building codes; however, we had this house built to code, at least.
Soft water	Water softener (installed in 2000 and located at the well) minimizes mineral deposits, reduces detergent use. (Stable water is softened, too.)
Septic system	Oversized (to allow an additional dwelling) aerobic system was installed in 2000. Currently serves house and stable.
Slab	The slab was engineered based on a soil test and planned load. Concrete is 3500(?)# post-tension. Reinforcing beams are located under the spa room to support that unusual load.
Slab penetrations	Piping coming up through the slab is protected from termites by a fine stainless-steel mesh extending out into the concrete. This is an approved alternative to chemical treatment of the soil.
Framing	2X6 exterior walls and roof for extra strength and thicker insulation
Insulation	“Thermal envelope” foam insulation under the roof and in exterior walls. Foam is open cell (allowing water vapor to escape) Demilec brand. Therefore, the attic space is essentially heated and cooled (great for electricians and A/C guys). No attic ventilation is needed. Garage is not insulated and is conventionally ventilated.
Roof Trusses	After the manufactured trusses were erected, numerous weak looking spots were marked by owners and then reinforced by contractor. Hurricane clips were installed between trusses and walls.
Windows	Energy efficient replacement windows have been installed throughout, except for the master bath. Replacements are fiberglass so they won’t rot.
Skylights	Strategically placed “SolaTube” skylights are located throughout the house. These are the <u>only</u> roof penetrations.

Roof Galvalume from HilCo in Navasota. Roof is designed so there is a space between the roof decking and the metal. Air circulates up through vents at the lower edge of the roof up to ridge vent at the peak, pulling moisture out of the attic and keeping the roof dry.

After one panel was damaged by Hurricane Ike, additional material was added and screwed down at all side edges to prevent wind from getting under the side of the roof panels.

HVAC A 3-ton geothermal heat pump handles 3 zones (unit could handle 4 or, maybe, 5 zones). The ground loop is about 1800' horizontal loop in the southwest pasture about 6' down.

A mechanical ventilator system is included to bring in fresh air when desired.

The spa room has a separate mini-split heat pump specifically to handle the increased humidity in that room. It would also allow separate control of the room if it is converted to a "granny apartment."

Plumbing Softened well water enters north and south ends of the house. Piping is PEX and distribution is to individual faucets, fixtures and areas (kitchen prep sink and island) through "ManaBloc" boxes. Essentially, ManaBloc is a central cutoff for each line, like a breaker box for water.

Venting Venting for all plumbing is located at the gable end of the house, thereby avoiding a roof penetration

Electrical Service at the meter is 400 amp. It was designed to handle a "worst case" of usage when there is a heavy demand...like Thanksgiving and there is a lot of company. Separate breaker boxes serve the north and south ends of the house.

All service is underground in conduit; **no overhead wires**.

Hot Water Heaters There are separate on-demand tankless electric hot water heaters for the north and south ends of the house. The northern one (kitchen, laundry room, back porch sink and spa room bath) is original. The southern one (master and guest bath) is a replacement.

There is a small conventional HWH under the kitchen sink to provide "instant" hot water at that heavy use location.

There is a small on-demand electric heater in the stable so you can bathe as many horses as you want in warm water.

Garage	The 2-car garage is a spacious (24' X 24') with separate 10' wide and almost 8' tall doors. (Compare with the more normal 20' X 20' garage with a single 16' X 7' door.)
Spa	The spa room contains a Sunbelt swim spa (Houston-made). If desired, it can be removed through the garage and specially designed wall...same way it came in. The spa room floor is slightly lowered to protect the rest of the house...just in case the spa ever leaked.
Speakers	Wall speakers are mounted in the great room, master bedroom and spa room. Wired connections are available in the spa room.
Kitchen Counters	Countertops are Kashmir Gold granite. (The sills of the kitchen windows are also of this granite.)
Doors	Doors are 3' wide for ease of wheelchair passage. Exterior doors are fiberglass so they will not rot or dent.
Receptacles	Extra receptacles have been placed on most walls and all are at ADA height.
Age in place	House was designed to help people "age in place." There are no stairs and only a small step up from garage to the house and from yards to porches.
Perimeter lighting	There are security perimeter lights controlled from more than one location.
Bedroom lights/fans	Can be controlled from the door or from a switch adjacent to the bed.
3-way switches	Heavy use of 3-way switches eliminates many useless trips to turn things off.
Porch ceilings	Porch ceilings are painted "sky blue" to reduce insect activity.
Frost-free faucets	Frost-free faucets are located around the house, by the stable and barn and where the trailer used to be. Those by the house and where the trailer was provide softened water for hoses and drip irrigation of flower beds and raised garden beds.
Track lighting	Lighting in master bedroom, office and kitchen can be adjusted to provide lighting precisely where desired.
Closets	Master closet wardrobes have doors to protect clothes from dust.

Central vacuum Unit has 5 outlets, 4 of which are “sweep to”.

Washing Machine There is a floor drain under the washer.

Stable Although it’s not part of the house, we had the barn and stable (built in 2000) upgraded to handle 120 mph winds. Stalls and aisle are fully matted.