

Converting an existing house in Dallas for two people with MCS



A newlywed couple were both in their thirties and both had MCS. They were living in some of the temporary MCS housing in Dallas, but wanted a safe and healthy home of their own.

Keywords: healthy house conversion, MCS housing, MCS renovation

Finding the house

They found a house that was about a dozen years old in a lower middle class neighborhood on the outskirts of Dallas. In a more upscale neighborhood many of the homes would have lawn care services and other problems.

The house is located on a $\frac{1}{4}$ acre lot at the bottom of a cul-de-sac, so there is no through traffic. The couple was also able to purchase an empty lot next door. Behind the house is an open greenspace. This provided some distance from the neighbors.

2 *Dallas conversion*

The house was about a dozen years old when they bought it in 1995. Newer houses might still need to offgas the original building materials, while much older buildings often have various problems, especially with mold.

The foundation is a concrete slab on grade, no basement or crawlspaces, which very often have mold problems.

The exterior is mostly brick, which won't need any painting. There were originally a few wooden panels on the sides. The inside is gypsum drywall, which has a tendency to absorb fragrances like a sponge.

The house is about 1500 square feet (140 m²) and has three bedrooms and two baths. Some of the rooms have cathedral ceilings, which adds extra airspace.

The prior owner claimed he never used pesticides in the house. There had been earlier owners, so it was not possible to get the full history.

The owner didn't use fragrances much. The couple didn't notice any plug-in fragrance emitters, and the house didn't smell too bad to start with. There were no tobacco smells.

There were no gas appliances in the house. Gas usage tends to strongly contaminate a house.

That the house was not heavily contaminated to start with was essential to the success of this project.

The couple looked carefully for any signs of roof leaks, water damage or mold. They used a mold test kit in each room and had an MCS housing specialist check out the house. The house was also checked by a regular building inspector.

Hiring specialists

The couple hired someone who advertised his services as an MCS housing expert, to advise how to proceed modifying the house. There is no training or certification available for doing such consulting work, and he was only offering trivial advice. He was soon fired.

A new specialist was hired who was much better. He was also a contractor and ended up doing most of the work converting the house.



The kitchen/living room has cathedral ceiling, which provides extra airspace to dilute pollution. The walls in the kitchen were tiled to cover up odors, while the original wood cabinets were kept.

Converting to a safe home

The conversion work took most of a year. The first job was to remove all the carpets and wash all the walls, ceilings and floors.

Then they removed all the old flexible air ducts, which were impossible to clean. New, rigid steel air ducts were installed (the flexible types are more problematic). A new and larger heat pump was installed in the attic, as it didn't fit where the old unit was, along with the rigid steel air ducts. The more powerful fan was able to pull air through a HEPA air filter.

The kitchen cabinets had real oak fronts, with fake-wood interiors. The interiors of the cabinets were sealed with aluminum foil. Replacing the cabinets would have been costly.

All the floors were tiled.

Then the bare house was thoroughly ozoned. Ozone can be risky, but helpful if done carefully, i.e. a little at a time.

With all the basics taken care of, the conversion then proceeded more piecemeal. It was like peeling an onion. After each task was done the house was re-evaluated (sniffed out) to find the most important issue to focus on next.

Walls that were still “fragranced” were tiled to cover it up, one at a time. They used the least-toxic commercial grout and thinset, which had to be wet-cured. This added a lot of labor time.

The only wall-tiles available in 1995 were small 6x6 inch bathroom tiles. Today, much larger and nicer wall tiles are readily available.

The ceilings in two bedrooms were covered with aluminum foil, held in place with strips of wood.

The doors were left as is, and just painted some years later.

Some walls were painted with Glidden 2000 paint and later using the Sherwin Williams Harmony paint.

Moving in

The couple was living in high-rent MCS housing, so they moved to their new house when it was about 90% finished.

Living in a house that is being renovated is difficult with MCS. The rear bedroom and walk-in closet had not been worked on yet, and was sealed off. This could be worked on at a more leisurely pace, using less costly methods. The couple decided to try to seal those walls with paint instead of tile. Paint is a very poor sealer, it took six coats to make it better, though the room still needed a long time to offgas. That was not a problem, as the room was not needed.

The big walk-in closet had to be tiled on all surfaces.



One bedroom with tiled walls and foiled ceiling.

Other features

The house has an attached garage, but the cars are kept outside. Fumes from cars will enter the house if kept inside an attached garage.

A whole-house sediment filter was installed, and a Seagull filter provides drinking water. The couple didn't like the more typical carbon water filters.

The roof had standard tar shingles, which were left in place and covered with a new steel roof.

The wood panels on the side of the house were replaced with cement board siding from James Hardie.



*The exterior is mostly brick, which never needs painting.
The wood panels at the end were replaced with cement siding.*

The final result

The house was a great success. The major part of the project took about a year and cost \$70,000 in 1995. About 1/3 of the walls are covered with tile, which was the most costly part of the conversion. The new heating system was the second-most expensive part.

The same couple was living in the house when the author visited in 2012, seventeen years later. They had both largely recovered from their MCS. They both had jobs and could do many things they could only dream about in 1995. But they still rely on their safe house to help in keeping them this functional.

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