Comments on the Snowflake, Arizona public housing project for people with MCS

The State of Arizona funded a four-unit housing project for low-income people disabled by multiple chemical sensitivity (MCS). The houses were finished in early 2008. The project design is described in detail in the separate document "An Arizona public housing project for people disabled by MCS".

The houses have been finished two years as of this writing (summer 2010). This document provides some comments on the project, based on the insights gained, which may be helpful for future projects of this kind.

Any and all comments in this document are strictly the opinion of the author.

Experience of the first two years

It is rare that people with MCS can move into a new house right away, even one specially built. A period of airing out is usually needed. Unfortunately, the management kept the empty houses closed up all the time. At least one window could have been kept open 24/7 on the side of the house with a covered porch. A staff member was living in a separate house on the property at the time and could have kept an eye on things too.

Several prospective renters came to visit the new houses over the first summer, but the houses were still too new for most. After two years, this author could still smell the odor of "drywall" in one that had sat closed-up all that time with no airing out. Presently, three houses are rented out.

The first renter moved in four months after completion. It was spring and she was able to live there by keeping the windows open and vigorously fanning the house. When she moved out, the house had improved so much a more sensitive renter could move in and not use fans.

The second renter only stayed a few months, but was a smoker and used some products that were fragranced or otherwise toxic. Smoking is a very powerful addiction and there are a few people with MCS who do smoke. A lightly sensitive person may be able to use some regular products that are generally not tolerated by people with MCS. As these products are cheaper than the non-toxic alternatives, there is an incentive to use them.

The problem is that smoke and chemical fumes get absorbed by the building, especially the porous drywall. They are then slowly released again over many years. This is a major reason people with MCS have such difficulty finding housing.

The smoker moved out once he was told he could no longer smoke inside the house, but had to go outside. The house has been empty for over a year since, and has not yet been rented out. Many prospective renters have come to see it, but were not able to live there. At least the management now understands the need for airing out the house and it is getting better.

A second house also became contaminated by another lightly sensitive renter, who used essential oils and other products. This house had to sit unused for many months due to contamination.

The management has now instituted a smoke-free policy on the entire premises, including outdoors. There is also a policy for less-toxic household products, and that no fragranced person may enter any of the houses.

The present renters seem generally pleased with the houses they live in.

Management

The state funding agency required a local non-profit organization to manage the facility. Only one organization met the requirements. It had extensive experience

managing several low-income/subsidized multi-unit projects for recovering substance abusers — a very different clientele than MCS patients. This organization had no prior experience with MCS.

Initially, the MCS residents were treated like substance abusers. It was assumed they would steal and sell whatever they could. They were not allowed free access to the laundry room but each time had to borrow the key from a staff member, who lived in an old house on the property. The free-standing shelving unit in the kitchen was bolted to the wall.

The state funding agency did not require any form of MCS awareness training for the managers, which became a problem.

In the author's opinion, training and understanding is crucial to the success of a housing project. It can prevent much conflict and many problems, including the contamination of housing units. People with MCS are made very sick by exposures to chemicals, mold and many other substances at levels that regular people cannot even detect. It is difficult for people who do not have MCS to understand what is not in their own experience. It is much easier to accept this if they are told by an authority figure rather than their own renters.

According to the renters, some of the staff indicate they believe the renters are mental patients. This apparently was after the leader of the organization attended some sort of seminar about MCS (unknown who organized it or who spoke, but there are some who actively promote this false idea). This can explain why the management seems to not believe what the renters try to tell them. Another reason may be that the leader of the agency is a smoker and heavy user of fragrances.

The management was sued by one of the first renters. They settled out of court with the management agreeing to a few changes, especially enacting rules for the renters.

Following these early problems, the management received advice from the manager of Ecology House. Ecology House is a federally funded MCS housing facility in San Rafael, California. The Ecology House rules were adopted, which prohibits smoking and the use of pesticides and other toxic products on the premises, especially fragranced laundry products.

The need for MCS house rules

Special MCS house rules are essential for a multi-unit MCS facility. They need to be clearly written and handed to each new resident before they move in.

There are many levels of sensitivity among people with MCS. It cannot be assumed that just because a person has MCS, then he or she will refrain from using products that make their neighbors sick, or may contaminate the house they live in so others cannot live there afterwards.

There is also the possibility that non-MCS people of low income move in, as federal regulations really do not allow such a project to exclude them.

People who do not have MCS are usually very resistant to changing their use of laundry products and personal care products, even when they are told they make someone else sick. Since it does not affect them, they may rationalize that it can't be such a big deal.

People with MCS are human too, and can be just as resistant to change if a product does not seem to bother them. In many cases, the MCS patient later discovers that the products they use are harmful to themselves, but they needed to live in a less-toxic environment to find out. If feeling sick all the time from many causes, it can be very difficult to discern what is harmful.

Having house rules forcing some residents to forego toxic products is to the benefit of all residents, even if they may not see that at first.

The rules are there to protect the more sick or sensitive people against those who are less so, and to protect the houses against contamination. The object of MCS housing is to allow people who are disabled to have a place to live, and rules are an essential part of that.

The types of restrictions may fall in these categories:

- smoking
- pesticides
- air fresheners/deodorizers
- personal care products
- laundry products
- wireless transmitters (wireless network, etc.)
- maintenance

It is best if staff that interacts with the residents follow the rules themselves. If that is not possible, then the staff must fully accept that they may have to meet with residents outside and talk at a distance, regardless of the weather. Inside maintenance also becomes more complicated.

In this case, the house rules prohibit fragranced people from entering the houses, including guests and staff.

The maintenance rules specify that the renters are notified prior to any maintenance, except in emergencies. In case of maintenance involving potentially toxic products, the renter must be notified in writing 30 days in advance.

Recommendations for future projects

This section is the author's personal recommendations based on the architectural plans and other documentation, inspection of some houses, and the author's own experiences living in MCS housing and designing/managing an MCS building project.

The overall impression is that this is a good building project. The design is well thought out, especially given the constraints placed upon the project. As the houses are aired out more, they should become usable to more people. The management is also gaining experience with a very different type of renter than they are used to.

The future status of the one house that became contaminated is uncertain, however. Hopefully a mildly sensitive person may be able to use it, and air it out over time. Otherwise, the drywall may need to be replaced or sealed with an airtight barrier.

The Ecology House project in California had problems in the first years as well, but is now a complete success.

Of concern is a looming mold issue. Mold is a common problem that can permanently make a house unusable to someone with MCS, even at levels that are not noticeable to healthy people.

In this case, there are three concerns: The houses are built on a sloped area, which can gather much runoff during heavy rain. The walls facing the slope are virtually level with the ground, and residents report water rises close to the door during severe rains. The houses may become flooded at some point, which would then easily lead to mold growth. Repairs, such as replacing drywall, would make the houses uninhabitable for many months, perhaps a year, for more sensitive people. The drainage around the houses should be improved.

Residents report much condensation in the windows during the winter. The condensation gathers on the window frames and wets the drywall on the sides of

the window. The window sills are tiled, the sides should have been tiled as well, or some other moisture-resistant material used.

The condensation seems to be caused by the aluminum frame being cold. An aluminum frame with a thermal break was specified in the plans, but does not seem to have been actually installed. Houses which have the frames with thermal breaks sometimes have condensation, but much less so.

The bathroom is only tiled to protect against splashes, not mold growth from humidity. Mold-retarding drywall ("green board") was not used, since it may contain biocides. The light and ventilation from the large window may be sufficient to retard mold growth on these walls, but it will remain to be seen. Perhaps the HardiBacker cement board or similar water resistant board could have been used, and painted. This author prefers tiling the walls and ceiling, though that is costly.

The bathroom does not have mechanical ventilation. Some of the residents believe that would improve on the humidity level in the house. If a fan were to be installed, it should be a low-noise model, as many people with MCS are particularly bothered by such noise. It should be controlled with a dedicated switch, not wired together with the light.

The laundry building is upwind from the houses much of the time. There have been problems with the dryer exhaust, which can drift pretty far. With the stringent house rules for laundry products, this problem seems to have disappeared.

The climate is windy, with winds from the west and southwest being dominant. Porches on the southwest and northwest sides of a house are much less usable than porches on the other sides.

The window area should be reduced on the west side, as the afternoon sun makes the houses too hot in the summer.

The houses are too close together. They were put this close due to political reasons, but it should be avoided if possible. There have been various problems caused by the closeness. Privacy is also an issue, since there are windows facing each other. People's use of cordless phones, cell phones, satellite receivers, etc., is also an issue. This author suggests a distance of 100 ft (30 meters) or more.

The wall paint does not appear durable enough for a rental unit. Since the walls are not sealed, the house needed significant outgassing time anyway, so a more durable but less safe paint could have been used.

It would have been better if the walls had been fully sealed with a sealer or membrane, so the houses could be tolerable much sooner, and the walls less absorbent of contamination.

The exterior paint on the wooden trim strips around doors and windows started peeling after one summer in the Arizona sun. A better method would have been to encase the trim and door frames in metal plates.

There is a lack of counter space around the sink and stove. This is a problem when washing dishes or other tasks. People with MCS generally use a kitchen more than the general population, as most cook all meals from scratch (due to food allergies and intolerance of preservatives).

A double sink would have been preferable, as it works better for washing dishes.

The back splash behind the stove is insufficient, since the walls are clay painted and more fragile.

The plumber used pipe dope around sink drains and fixtures. This material contains biocides and is unacceptable in MCS housing. Silicone and Teflon tape are better alternatives.

The sound-deadening material on thin-plated stainless steel sinks is a problematic chemical compound. It is better to use sinks of better (thicker) quality which do not contain this material.

The stove is better placed up against the exterior wall. This will allow better ventilation of cooking odors through the window or if installing a low-noise exhaust fan.

Placing the refrigerator by the mudroom moves this source of noise and radiation away from the living room. Some residents have moved the refrigerator into the mudroom for these reasons.

Locating the stove and refrigerator on the exterior wall also provides for better routing of the electrical wires, for lower EMF levels.

The door between the mudroom and kitchen is better if it is more airtight, instead of a simple pocket door. This would allow more toxic items to be used or stored there. One resident was affected by the fumes from her printer, through the closed pocket door, which has an airgap between the door and the floor.

Each house has only one phone outlet, located in the kitchen. Extra outlets are needed in the living room and bedroom, as that would allow people to use corded phones and wired internet. The houses did not have telephone lines installed when finished. The first renters had to get that done.

The wireless phones and computers are biologically active and should be discouraged in a facility of this kind, especially so close together. It is still controversial whether wireless transmitters are harmful, but large groups of physicians have urged caution and restraint, such as through the Freiburger appeal and the BioInitiative. Many people with MCS report being bothered or harmed by these devices.

The storage rooms in the mechanical building have no ventilation openings of any kind, which causes buildup of fumes from stored materials and possibly future mold problems. This also makes the rooms unusable for offgassing materials.

An area for clotheslines is needed. These are important for breaking in new clothes, etc. Some residents have had to borrow clotheslines elsewhere in the area. It is unfortunate that clotheslines are considered unsightly by some.

The residents need outside covered space to offgas new items that are too toxic for their mud room. If using their own porches is considered too “junky,” a carport or simple steel shed could provide the same service in a more suitable area. Alternatively, the storage rooms in the mechanical building could be used, though less effectively, if they were ventilated.

The electrical meter is located on the outside of the mud room, which is optimal for house-mounted meters. A safer location would be placing it with a master panel on a pedestal away from the house, and a sub-panel on the mud room wall.

All electrical meters in the country may eventually be changed to the new types that communicate directly with the utility company (so-called “smart meters”). They communicate using pulses traveling on the existing wiring, or by cell-phone or wireless internet. Sometimes as often as every fifteen seconds. All these technologies may be harmful to some people with MCS. Placing the electrical meter away from the house is essential to mitigate this problem.

Placing the master panel and meter on a pedestal, and using only a true sub panel (without its own bonding) on the house can also reduce ground currents and stray voltages.

Notes

This document was written in 2010, but the residents were afraid that if it was made public the management might blame them for the criticism and retaliate in some form. The relations between the management and the residents have been rocky over the years.

So it is first now, fourteen years later, that we make this document public. All the people who lived there in 2010 moved out years ago, none of the present residents have contributed any information used here. The leadership of the managing agency has also changed.

After the initial problems, all four houses have been rented out constantly. There is a long waiting list of people hoping to get in.

Smart meters were installed in the area some years later, but the electrical company allowed the residents to keep their old analog meters. At least for now.

2010 (updated 2024)