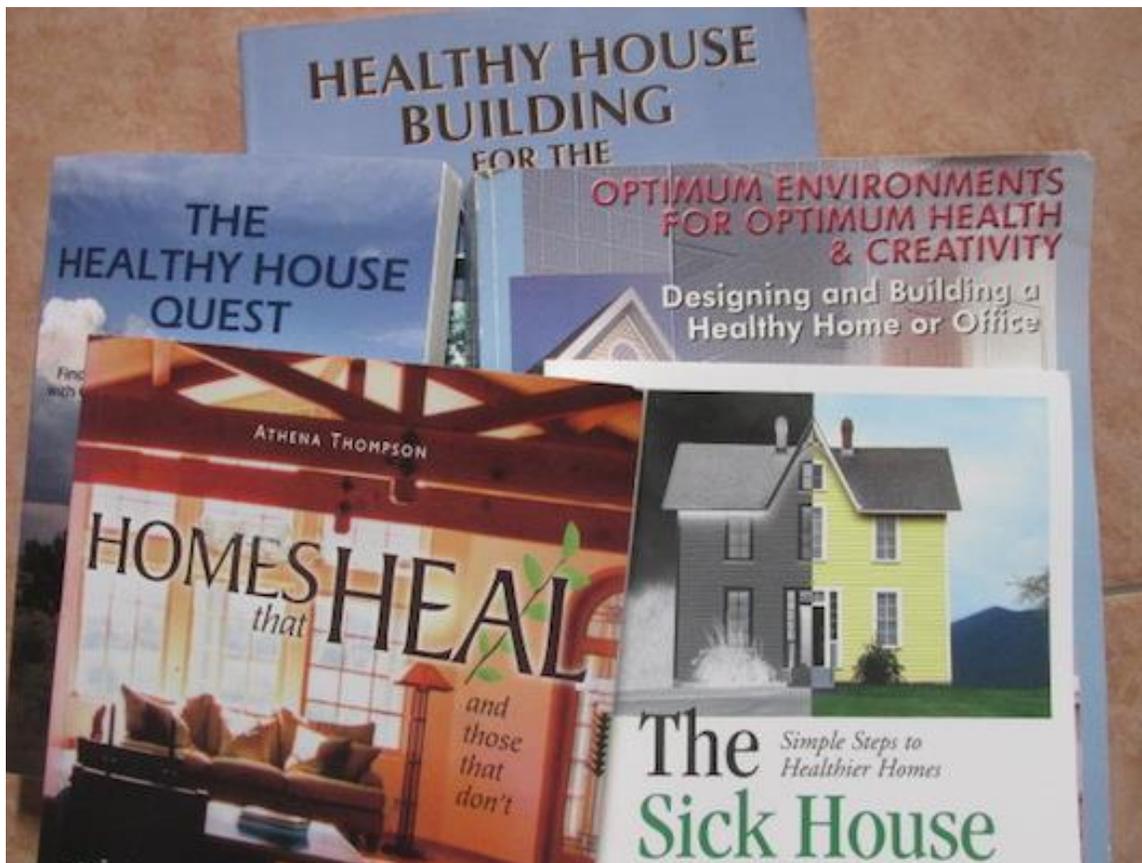


## Healthy housing book reviews



*We review eight books about how to renovate or build housing for people with environmental sensitivities.*

*Keywords: healthy house, indoor air quality, sick building, MCS, chemical sensitivity, electrical sensitivity, book, review*

### **The need for healthy housing books**

*The 1973 oil crisis was a wake-up call that energy efficiency was necessary. In response buildings became tighter with less fresh air. At the same time many synthetic building products began to replace natural materials. The result was that the air inside a building could be a hundred times as polluted as outside air, even in a major city, according to a study by the U.S. Environmental Protection Agency (Silver, 1988; Toufexis, 1988).*

*The problems with sick buildings got national attention in 1988 when the U.S. Environmental Protection Agency installed new carpeting in its Washington, DC. headquarters and more than a hundred people got sick (Toufexis, 1988). But not much was actually done in the following decades to improve building air quality.*

*As more people got sick building syndrome and multiple chemical sensitivity in the 1980s, a few people started thinking about healthier alternatives, such as John Bower in the United States and Helmut Ziehe in Germany (later also in the United States).*

*Parallel to these efforts there was also a movement to create more “green” buildings, with a focus on energy efficiency and use of renewable and recycled materials. Better indoor air quality is encouraged, but is often secondary, so a “green” building may not be a “healthy” building, even when it is certified “green” (Steinemann, 2017). In a healthy house the indoor air quality is paramount. A healthy house may use materials that are not considered “green.”*

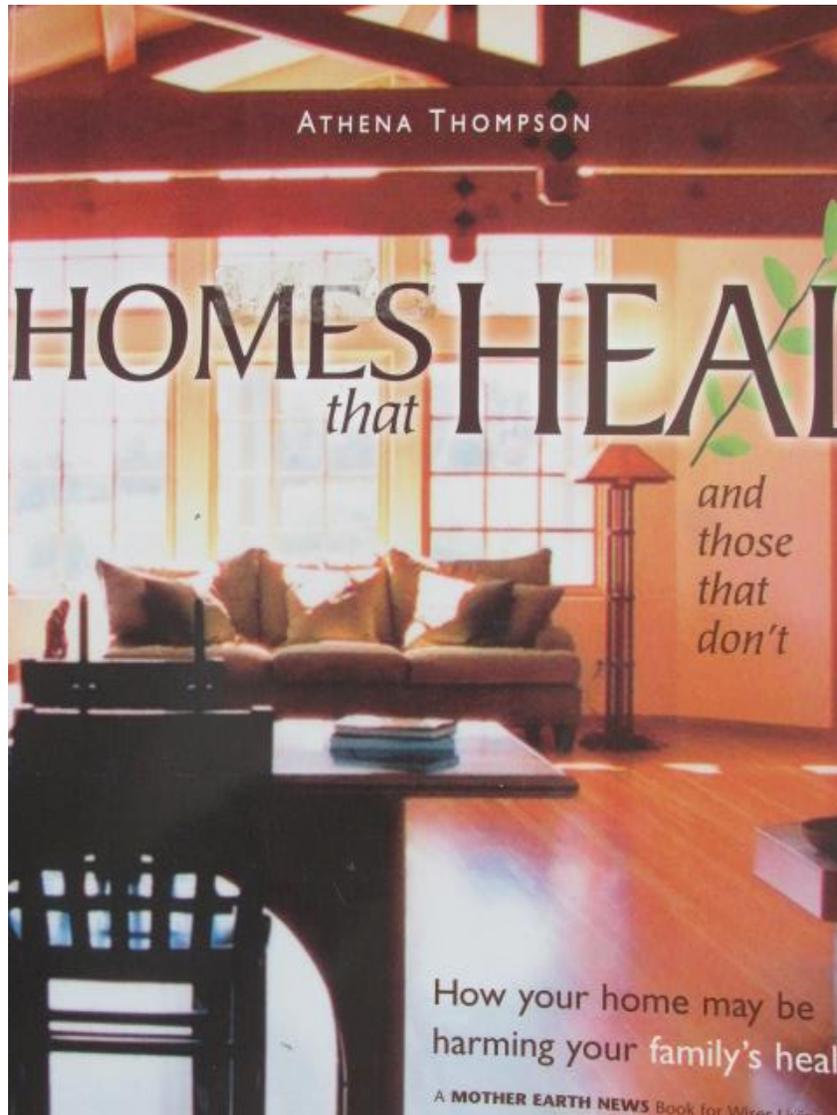
*Several books about healthy houses have been published over the past three decades. We here review eight of them. Three follow the German Bau-Biology philosophy, that incorporates both “green” and healthy features.*

*No single book has all the answers; every book has something to add to what the others say. There are multiple philosophies and approaches that may be at odds with each other. There is no single blueprint and list of “safe” materials these books all agree upon.*

*Most books tend to assume a certain level of sensitivity and level of finance. If you are lightly sensitive and can afford a million-dollar home, the task of building or renovating will be a lot different than if your sensitivities are severe and financing is difficult. There are books focusing on both kinds of situations.*

## Homes that Heal

By Athena Thompson, New Society, 2004



*Consider reading this book first. It is the easiest book to read and it introduces most major issues to consider. It is also well suited to educating other family members who are doubtful this is at all necessary.*

*Thompson's book gently walks through the subjects and explains things through a fictional story about two sisters and their friend who live in three houses: one brand new, one being remodeled and one built with many natural materials. The*

*two sisters struggle with their toxic houses and toxic lifestyles while their friend lives happily in her non-toxic home.*

*It tells the story in an upbeat manner, peppered with cartoons. A little humor is occasionally thrown in, such as when an uncle is about to use some very toxic glue and remarks it is fine to ignore the warning that it is known to cause cancer in California – after all, they don't live in California!*

*The first half of the book is about how the houses are built and renovated. The second half is about all the toxic products they put in them (cleaners, laundry products, gadgets, etc.).*

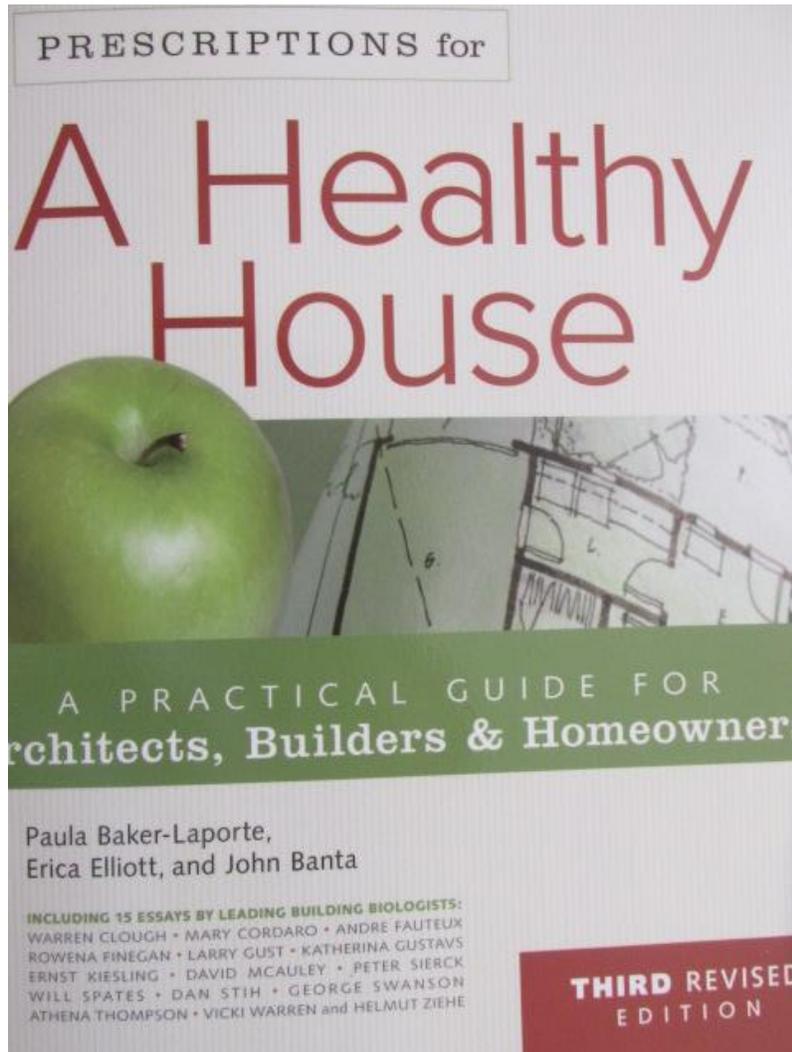
*The book is an excellent introduction to the subject of healthy housing. For people who are lightly sensitive it may be the only book needed. For people with severe sensitivities the book does not go far enough and it recommends some natural products that may not work, such as linoleum, wool and essential oils. It also doesn't really discuss the serious tradeoffs when choosing paints, wall coverings and other materials that, though all-natural, can make a house unlivable for severely sensitive people.*

*The book follows the German Bau-Biology (Building Biology) system. Thompson vigorously promotes its philosophies and frequently encourages the reader to hire a Bau-Biology consultant, such as herself. The problem here is that the requirements to become such a consultant are quite low (no college-level education needed) so the quality of these consultants can vary dramatically.*

*The book is now out of print, but second-hand print copies are still available. An e-book version can still be purchased. The publisher ([www.newsociety.com](http://www.newsociety.com)) also offers a PDF version, which can be downloaded and printed.*

**Prescriptions for a Healthy House (third edition)**

**By Paula Baker-Laporte, Erica Elliot and John Banta, New Catalyst Books, 2014.**



*The primary author is Paula Baker-Laporte who is an architect in Santa Fe, New Mexico. She became sick with MCS herself and specializes in healthy housing.*

*The book has a chapter about each stage in the construction of a new house and along the way discusses the philosophy, materials and methods Baker-Laporte uses in her projects.*

*This book is an essential read for anyone who wants to build a healthy house. Written for architects, builders and homeowners, it contains a wealth of information about products to consider. The many options can be overwhelming, especially since the book caters to a wide span of people, from green-minded healthy people to various levels of sensitivities. Many options are not appropriate for people with severe chemical sensitivities, which is pointed out several times.*

*A large number of less-toxic building products are listed, such as sealers, paints and caulks. These lists can form the basis for testing and then choosing which products to use.*

*The listed products are probably not available outside North America and the book doesn't discuss generic alternatives, such as fired bricks, sodium silicate and aluminum foil.*

*The construction methods focus on natural materials in the style of the American Southwest, such as adobe, strawbales, tile and plasters. These are labor intensive and often require skilled workers, so they are costly. Houses built this way can be very beautiful and are perfect for the high desert climate, but other climates may require other materials and methods, which this book doesn't cover.*

*The authors subscribe to the German Bau-Biology philosophy, with its emphasis on natural materials that require minimal resources to produce, and general energy efficiency. The philosophy also encourages natural earth energies and limiting exposure to man-made electromagnetic radiation.*

*A peculiar part of this philosophy is an almost mystical aversion to metallic building products – some purists even refuse to use nails and screws in their houses, though this book doesn't advocate such radical measures. The book does correctly point out that metal building products can provide a path for stray electricity (net current) though that can be avoided by good design.*

*It has a few alarmist statements, such as:*

*Avoid metal tubing, which can transmit EMFs (Division 15).*

*Such statements have helped produce a variety of myths about metals.*

*Metal siding and roofing is a safe and low-maintenance material that can work well if used correctly. Since it is much cheaper than more natural materials, it helps make healthy homes more affordable, which is a huge problem.*

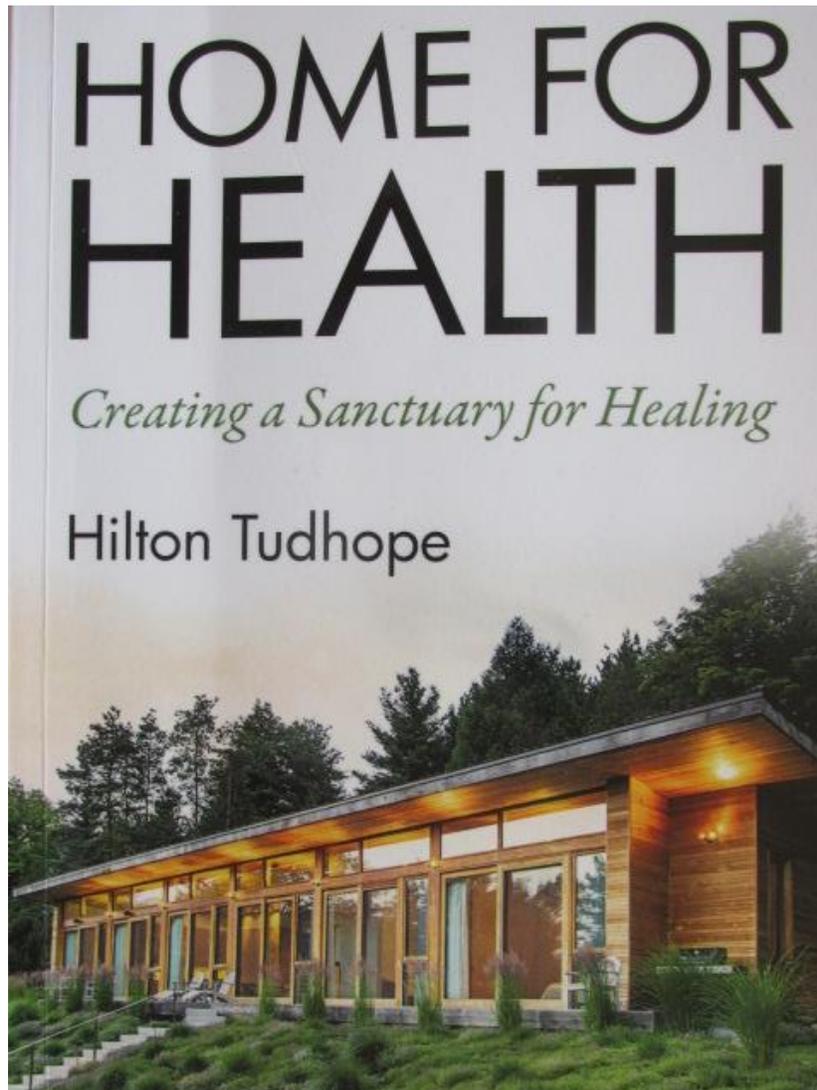
*The book provides much good advice on building a house that expose people to less radiation. There are just a few non-sensical statements, such as:*

*Heating systems with mainly convection heat...[such as] ... hot-water baseboard heaters and hot-water radiators...create electromagnetic fields (Division 15).*

*Despite these minor warts, this is an essential book for anyone planning on building a healthy house. It can also be used as a base for discussing the project with an architect or general contractor.*

**Home for Health: Creating a sanctuary for healing**

**By Hilton Tudhope, Building for Health Press, 2018**



*This book calls itself a companion to Paula Baker-Laporte's Prescription book, and it is. It tells the story of the design and construction of one home where they used Baker-Laporte's book as the starting point for all decisions. The house was built in a different climate, using different materials, so the building team had to spend a lot of effort researching the materials.*

*Some of the interesting material choices include the Durisol insulated blocks for the outer walls and the DensArmor Plus wallboards and clay plaster for the inside walls. The floors are sealed concrete, with a few rugs.*

*The ceilings are made of cedar that is sealed so it is less aromatic. There is also a lot of wood cabinetry.*

*The house was built to accommodate a person with MCS and EHS. She approved every material used. Her sensitivity seems to be medium severe, since she likes essential oils and reports that patients fled from her when she visited Dr. William Rea's Environmental Health Center in Dallas.*

*The couple had an early lesson in dealing with contractors when they had a specially made less-toxic carpet installed in their other home. They sternly instructed the installers not to glue it down, but use carpet strips. They did not supervise the installation and when they came home the carpet was glued down. They had to throw it out and install cork instead.*

*They rode first class with their new house. The budget was a million dollars and they used three architects plus various consultants. To test materials they flew in and met with two architects in a hotel room. The architects brought hundreds of samples on two luggage carts and took notes while she sniffed each sample. (A severely sensitive person would not be able to stay in a regular hotel room, and not test more than a few materials in a day.)*

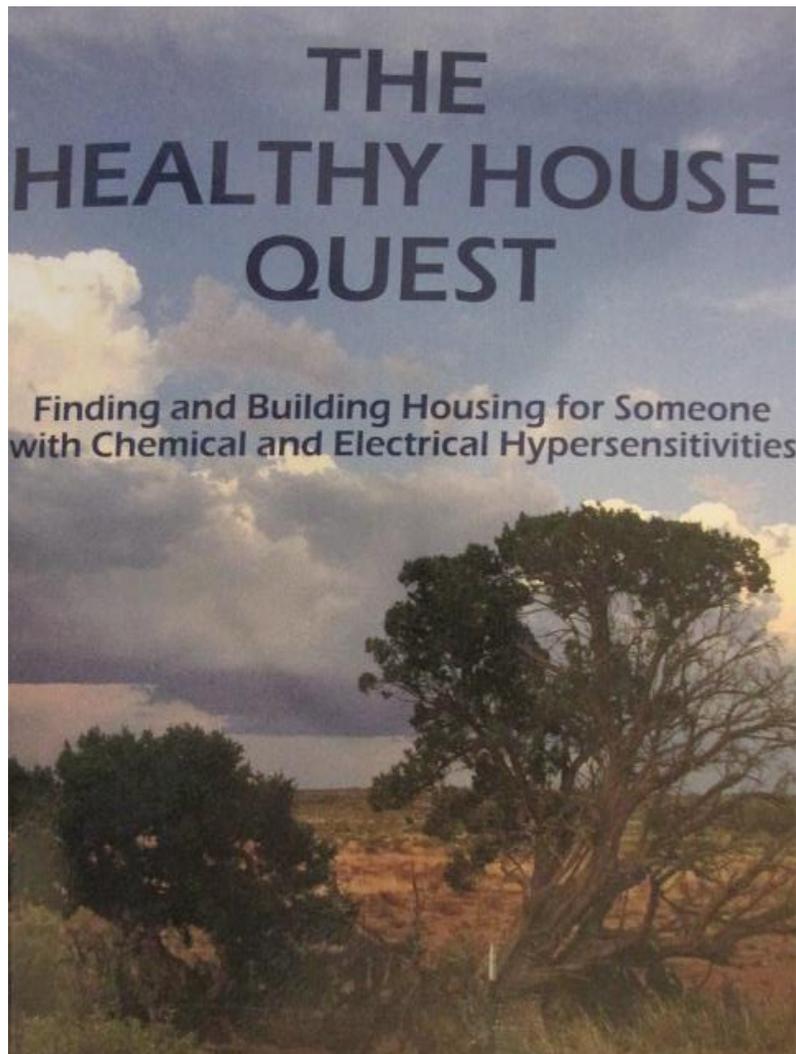
*Despite the big budget, they still had to trim down the house size and omit some features. Otherwise, they would need double the budget. They had to be involved in many decisions throughout the project and rented a nearby cabin for six months during major construction (The cabin was rented unseen and was only six months old, so a major detox operation was needed).*

*All the architects and contractors were fully committed to building as healthy a house as needed, but it was still necessary to watch out for the many assumptions they made. Pestering them with questions was a necessity throughout. That also added to the cost, as the answers sometimes resulted in major changes.*

*The result was a gorgeous 2200 square foot (230 m<sup>2</sup>) house that obtained a LEED Gold certification for “green” construction and extensively followed the Building Biology philosophy. More importantly, the owners could move right in and feel good inside. It was a great success. But few people can afford such a house, and the most sensitive may not be able to live there with all that wood.*

## **The Healthy House Quest**

**By Jerry Evans, Turquoise Rose Publishers, 2019**



*After reading about the million-dollar house, it seems like Mission Impossible to build a healthy house on a budget most people can afford. Jerry Evans did just that (disclosure: this reviewer has slept in Jerry’s house and knows him well).*

*What Jerry did was visit a lot of homes built or modified for people with severe MCS and EHS and learning what works in practice by using standard building products as much as possible and avoiding expensive consultants, materials and philosophies. His house would not get any “green” certificates, few architects would put their name on the design and the school of Building Biology would surely frown on it, but it works great for both him and a dozen others who have built the same way. And it cost about a sixth of the house in Hilton Tudhope’s book, without becoming tiny, ugly or uncomfortable.*

*This is Jerry Evans’ second book. His first book is about him getting so sick he could not tolerate the radiation in a normal car and had to use a respirator when going into any store. That book is summarized in a chapter in his new book and then the story continues with constant focus on finding a house that does not make him sick.*

*The second half of the book is about how his house was built; a project he was involved in on a daily basis.*

*The book walks the reader through the entire project, including finding the land, testing materials and working with the contractors and inspectors.*

*The house had to be affordable without compromising health or comfort. There is a whole chapter about how he kept the cost down, which included cutting out all consultants, architects and managers. Instead he relied on the expertise of people who had built successful healthy homes in the area – homes that he felt good inside, so he knew their methods worked for him too.*

*The house is basically wood-frame construction on an insulated concrete slab with radiant floor heating. The siding and roofing is steel, the walls are covered with gypsum wallboards that are sealed with aluminum foil which is painted with clay. A DC-only solar system provides the electricity. The EMF levels are so low most RF meters and gaussmeters don’t show anything at all.*

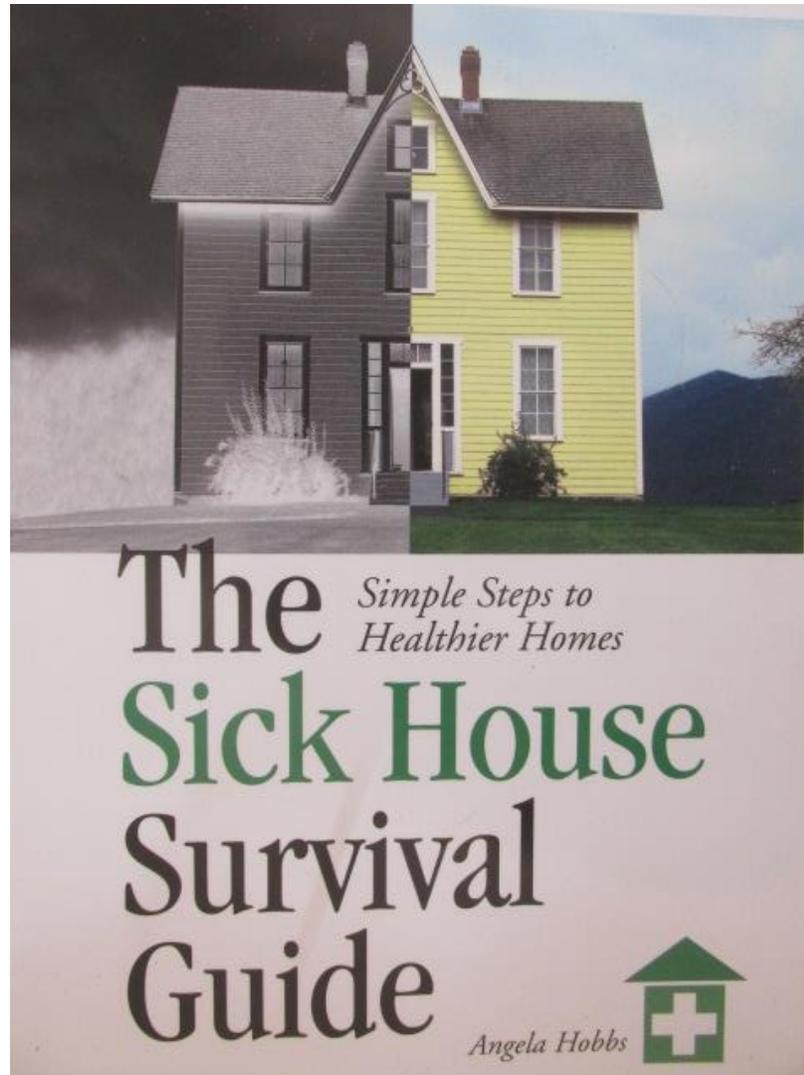
*He managed the project himself, which he was able to do by going slower than a commercial project. A slower pace also helped on the finances.*

*Managing such a project is not for everyone. It takes focus and discipline to prevent costs from getting out of control, and a talent for organizing things.*

*But even if you can't do these things, there is still much valuable information. He didn't invent these methods himself; as they were already used successfully in several other houses.*

## **The Sick House Survival Guide**

**By Angela Hobbs, New Society Publishers, 2003**



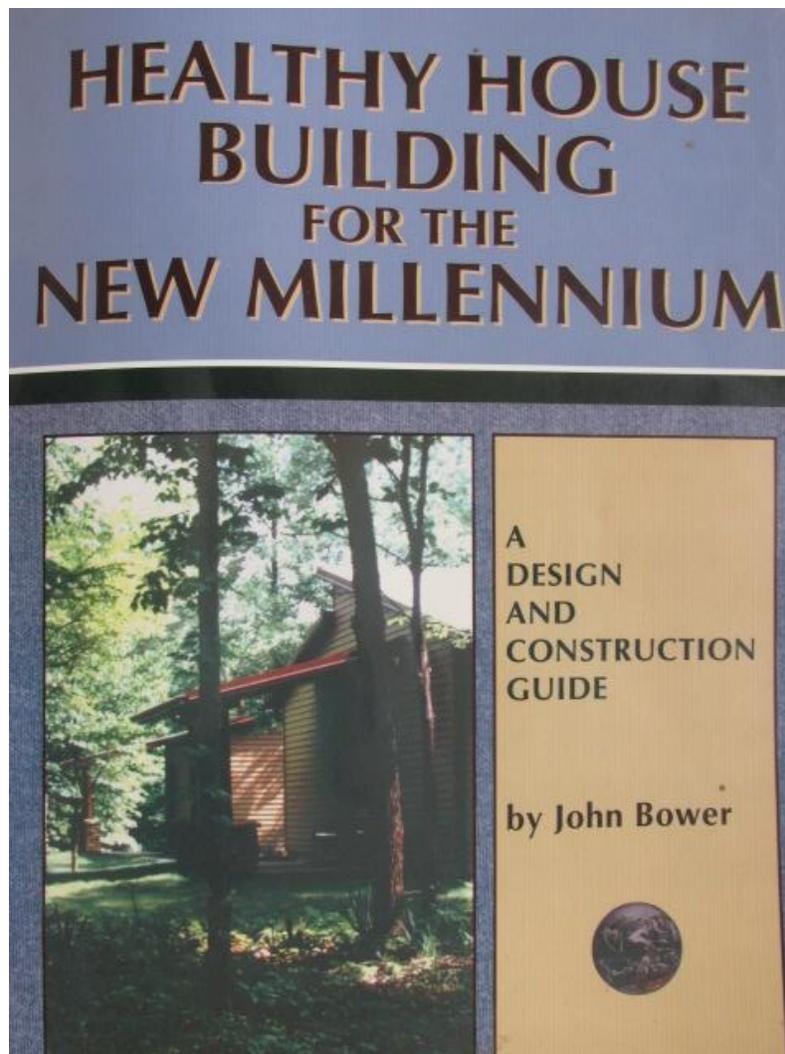
*This book is not really about building or modifying a healthy house, but is the story about how a sick house made a family sick. In 1996 a Canadian family of four moved into a newly renovated all-electric house. There was new carpeting, fresh paint, new cabinetry and a damp basement. The levels of EMF and dirty electricity also appeared to be high, though they did not have access to instruments to measure it properly.*

*It's a powerful story about what a toxic/high-EMF house can do to the health of a family and is an easy read.*

*The latter part of the book contains suggestions on how to clean up the toxic and high-EMF lifestyle. This is mostly basic information that is better covered in other books, such as Athena Thomson's. The EMF information is dated and in many cases inaccurate with several myths. The latter part can simply be skipped.*

## **Healthy House Building for the New Millennium**

**By John Bower, The Healthy House Institute, 2000**



*John Bower is a professional house builder whose wife got sick with MCS in 1984. He pioneered many of the healthy house techniques over the years and published*

*several books. This book was first published in 1993 with the title Healthy House Building. The 2000 edition is an updated version.*

*Bower's book follows the design and construction of a specific house he built in southern Indiana. He built this Model Healthy House in 1992 to document the procedures and materials he finds optimal for a generic MCS house at a reasonable price. Once the house was finished he sold it to someone with MCS.*

*Despite the age, this is still an important book. His methods and material choices are still very useful today.*

*Bower uses regular building products as much as possible to keep costs down. It is cheaper and easier to buy materials from the local building supply than having them shipped long distance from specialty shops. But he still avoids the most toxic products – there is no manufactured wood (plywood, OSB, MDF) in the entire house.*

*The foundation is an insulated concrete slab. The walls are framed with steel studs (making sure to avoid thermal bridging). The roof is steel plates over purlins, without toxic plywood decking underneath.*

*The outer walls are covered with aluminum siding, and the insulation is fiberglass. There is no toxic sheathing under the siding.*

*He used foilbacked gypsum drywall sheets on all walls and ceilings, both interior and exterior. The foil seals in the fumes from what is inside the wall (insulation, wiring, etc.), as well as fumes from one side of the drywall sheet. The non-foiled room-side of the drywall was sealed with a special sealer (Crystal Shield, which unfortunately is no longer available). He used the non-toxic joint compound M-100, which is still available.*

*John Bower pioneered the sealed wall system, which has since been enhanced by others. He correctly points out that his system should not be used in hot-and-humid climates, due to moisture control issues (see chapter 12, about diffusion retarders).*

*The floors are covered with glazed ceramic tile, using a commercial thin-set and a home-made grout. The doors are steel or poplar wood. The kitchen cabinets are steel and poplar.*

*Another of his inventions are book cases with glass doors, to enclose stinky books and dust-gathering knick-knacks.*

*The house is heated by less toxic electric baseboard heaters and is cooled using a mini-split system. Both remains popular in MCS housing today.*

*There is also a separate central air filtering and ventilation system. The ventilation system removes air from the most polluted areas, such as the closets and the bathroom. The book has extensive coverage of ventilation system designs.*

*To demonstrate how healthy the house is, he had the air quality tested. They found the inside level of formaldehyde to be 0.01 ppm, which was identical to the air outside the house (a forested lot in rural Indiana).*

*The house does not have any intentional low-EMF features, though the heating and cooling systems happen to be somewhat low EMF. The house has several built-in fluorescent lights, and what little discussion there is about EMF is well out of date.*

*The book has extensive instructions about installing building products that contractors may not be familiar with, such as steel studs, metal siding and ceramic floor tiles. No other book in this review has this level of detail.*

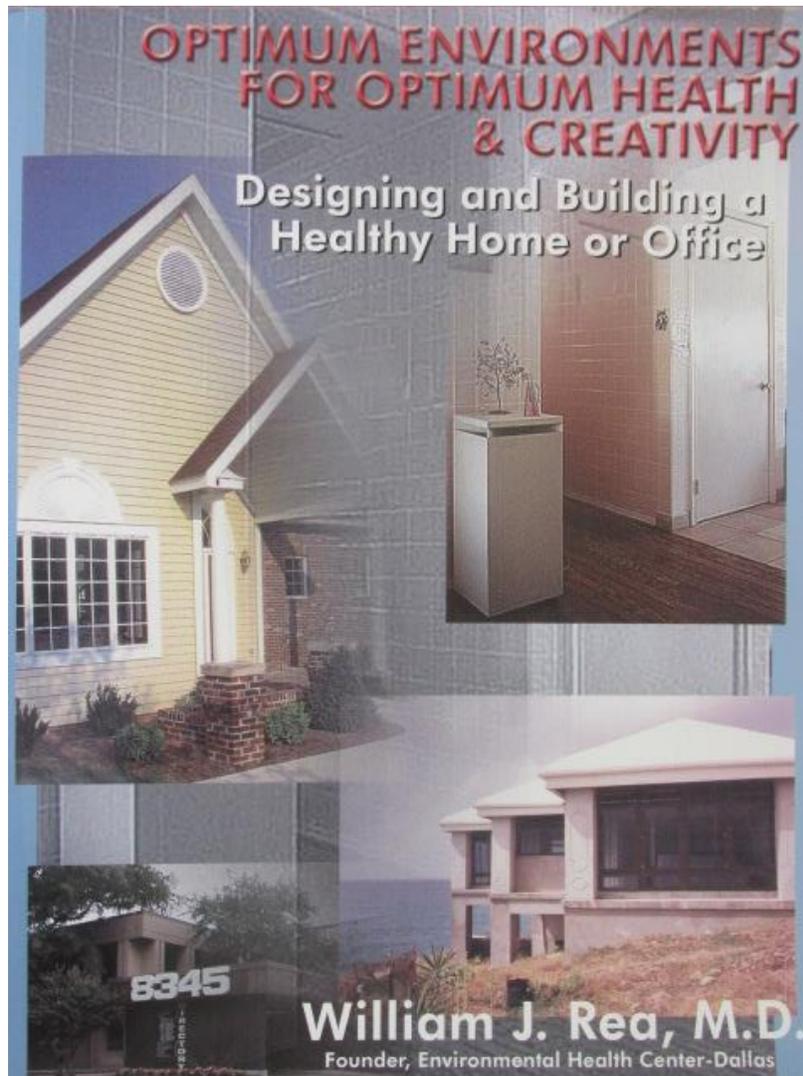
*With 410 pages this is a rather heavy read, which is best read after a couple of the other books in this review.*

*With its clear division into logical chapters and an extensive index, this would be an excellent handbook during actual construction.*

*The book is unfortunately long out of print, but may be obtained second hand or through a library.*

**Optimum Environments for Optimum Health and Creativity.**

**William J. Rea, Crown Press, 2002**



*This should not be the first or second book you read about healthy housing. This book is best read once you've decided to build or renovate a house and are ready to get serious. Before that, it can seem overwhelming and may deter from undertaking such a project.*

*William Rea was a physician who specialized in treating people with environmental illnesses from 1975 until his death in 2018. He presents an abundance of design features and material options seen nowhere else. He suggests basic materials, such as concrete, glass, steel, aluminum, wood, brick, stone,*

*ceramic tile, porcelain, olive oil and more. His philosophy can be summarized as "if it works, it works," and does not have the philosophical hang-ups of some books. He recognizes that toxic alkyd paint is better for some people than no-VOC paints, if it can be offgassed for a year before using the room. He also likes the use of some metals, such as anodized aluminum and aluminum wallpaper.*

*Many design details are covered, such as using a vestibule as an airlock, the installation of sunspaces and even vapor barriers. The book has more than 250 photos and illustrations, most of them in color.*

*There is also a chapter about how to check out a house or apartment before buying or renting it.*

*Most of his methods are covered in other books, and sometimes in more detail. But where this book goes beyond other books is the chapters about water systems and heating-cooling-ventilation. He even provides data from his own laboratory that tested various brands of bottled water, types of water filters, leaching from plastics, etc.*

*There are also diagrams on how to install floor-heating on existing floors, whether they are wooden floors or concrete slabs (fig. 10.25B).*

*Perhaps his most salient advice is:*

*No matter how good a ventilation system is, it will not overcome severely toxic emissions.*

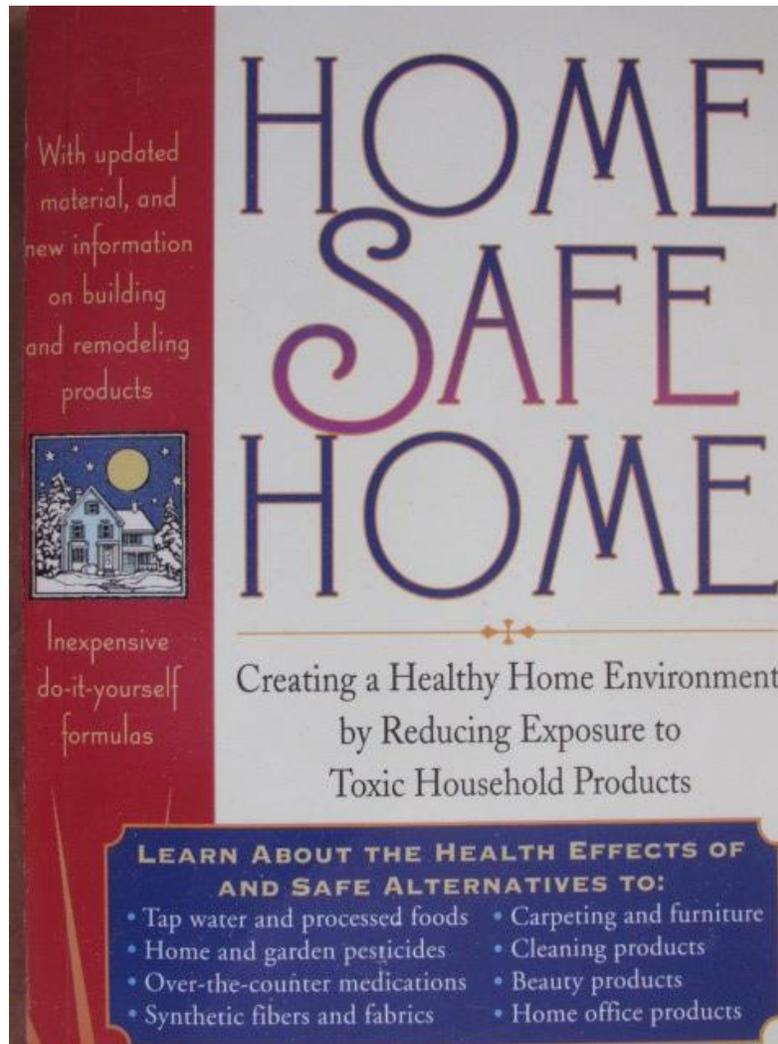
*One chapter is a mostly historic discussion of how various MCS clinics were built, with pictures from Australia, Britain, China, Germany and the United States.*

*The book lacks an index, which makes it hard to look for specific details – another reason this book should be read once you get more specific on what information you need. It is not an easily read book – it could have benefited from an editor to lighten up the wording and catch some obvious mistakes such as mixing up the units "mil" and "mm"*

*At 348 pages it is a tome to get through, but there are many gold nuggets to be found.*

## Home Safe Home

By Debra Lynn Dadd, Tarcher/Penguin, 2004



*This book is mostly about how to substitute toxic cleaners and personal care products with non-toxic versions. It is an excellent resource for that purpose.*

*It has one chapter about remodeling a house, which is not up to the standard of the rest of the book. It declares a wide range of products safe to use, even though most people with severe MCS will have problems with them, such as plywood, gypsum wallboard and fiberglass insulation. She also neglects to warn that low-VOC/no-VOC paints and siding of cedar or redwood are not tolerated by many people with MCS. She also recommends using steel studs in exterior walls, even*

*though that can be a serious mold hazard due to thermal bridging and condensation. This chapter should be ignored in an otherwise excellent book.*

### **More information**

*For more articles about healthy housing, go to:*  
<http://eiwellspring.org/saferhousing.html>.

*For other book reviews, go to:* <http://www.eiwellspring.org/booksandreviews.html>.

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