

# Preface

It has been said that we shape our buildings and then our buildings shape us. When we consider that the average North American spends 90 percent or more of life indoors, the significance of this statement becomes apparent. In this era of unprecedented technological advancement, it stands to reason that we would use our knowledge to create indoor environments with exceptional vitality that would enhance our health and our sense of well-being. But this has not been the case.

Indoor air pollution is one of the top four environmental health risks identified by the US Environmental Protection Agency (EPA) and the Scientific Advisory Board authorized by Congress to consult with the EPA on technical matters.<sup>1</sup> Indoor pollution is estimated to cause thousands of cancer deaths and hundreds of thousands of respiratory health problems each year. Millions of children have experienced elevated blood levels of contaminants resulting from their exposure to indoor pollutants.<sup>2</sup>

How has this sad state of affairs developed? Since the oil embargo of 1973, we have placed a high priority on energy efficiency, creating buildings that are increasingly airtight. Concurrently, the building industry has promoted inexpensive synthetic building products and furnishings that are mass-produced and re-

quire little maintenance. Since little attention has been paid to the toxicity of these products until very recently, consumers have remained largely ignorant of the health threats they pose.

The average person has little background in chemistry and makes the false assumption that building products must be reasonably safe to be allowed on the market. The disturbing truth is that, according to the EPA, there are now more than 88,000 chemicals in common use.<sup>3</sup> Many of these have been associated with cancer, birth defects, reproductive disorders, and neurological and behavioral problems. Furthermore, “as amazing as it may seem, there are no mandatory pre-market health testing or approval requirements under any federal law for chemicals in cosmetics, toys, clothing, carpets, or construction materials, to name just a few obvious sources of chemical exposure in everyday life.”<sup>4</sup>

The limited testing that has been implemented rarely takes into consideration the ongoing, low-level exposure to the hundreds of chemicals we inhale or absorb simultaneously throughout our daily lives. The toll on human health resulting from exposure to the chemical soup surrounding us is finally becoming clear. In 1986, the National Academy of Sciences estimated that 15 percent of the population

suffered from chemical sensitivities.<sup>5</sup> Based on current unofficial reports by physicians specializing in environmental medicine, that number is rising rapidly. These figures do not include people who unknowingly suffer from problems either directly or indirectly related to chronic, low-level toxic exposure. All too often symptoms are falsely attributed to the normal aging process.

Exposure to toxins in the indoor environment, even at low levels, has been linked to a vast spectrum of illnesses ranging from chronic sinus infections, headaches, insomnia, anxiety, and joint pain to full-blown multiple chemical sensitivity and other immune system disorders.

In spite of overwhelming evidence of the health risks, the majority of new construction in the United States continues to create environments that harm human health. There is, in fact, nothing complicated about creating a healthy building. The solution is composed of many simple but important steps. Many safer alternative materials and methods of design and building are becoming readily available. Nevertheless, the homeowner who desires to create a healthy building or remodel an existing building is still a pioneer facing the following major obstacles:

- Building for health is not the current standard of the construction industry. Although most architects and builders are now aware that health problems are associated with standard building practices, the industry in general has not responded with appropriate changes. There are no set and sanctioned prescriptions to follow for healthy building. In the nine years since the publication of the first edition of *Prescriptions for a Healthy House*, several

organizations have emerged with the purpose of demonstrating and rewarding the creation of healthier, more energy efficient, and more ecologically friendly homes. The American Lung Association has built exemplary model homes. Several voluntary rating and certification programs, such as LEED-R, Green Seal, and the National Association of Home Builders' Green Rating System, and various county and state guidelines have emerged to promote the creation of healthier homes. The California Air Resources Board has defined stringent environmental codes that have been adopted throughout the US and have influenced manufacturers of building products. As encouraging as these advances are, there is still no guarantee that a new home built today will support the health of its occupants.

- The homeowner receives false information. Most building professionals are uninformed about the details of healthful design and building. The prospective client who has heard about healthful building is often advised by professionals either that there is no need for concern or that healthful building is cost prohibitive.
- There is a dearth of concise information. If homeowners are still committed to creating a healthy house and have managed to find an architect and builder who are receptive to working with them, then they must undertake together the daunting task of educating themselves and others. Distilling enough information to create a set of specifications for a project is an undertaking requiring extensive time and dedication.
- Even if healthy materials and practices are

specified, a lack of quality control may result in a major degradation of the building, which in turn can lead to occupant health problems, decline in energy efficiency, and structural damages. These damages may be especially difficult to discover and costly to repair when they are hidden in wall cavities or other inaccessible spaces.

The purpose of this book is to take the mystery out of healthy house building by walking the owner/architect/builder team through

the construction process. We explain where and why standard building practices are not healthful, what to do differently, and how to obtain alternative materials and expertise. The Resource List in Appendix B provides sources for all products and services printed in bold type in the text.

We hope you will find this 3<sup>rd</sup> revised and updated edition of *Prescriptions for a Healthy House* to be a useful tool in your quest for healthier living.