

Copyrighted Material

# **GREEN YOUR HOME**

**Healthy, Money-Smart, and Sustainable Living  
Begins at Home**

**A KELLER WILLIAMS® REALTY GUIDE**

**P r o d u c e d   b y   K e l l e r   I n k**

Copyrighted Material

## Copyrighted Material

Copyright © 2011 by Rellek Publishing Partners, Ltd. All rights reserved. Printed in the United States of America. Except as permitted under the United States Copyright Act of 1976, no part of this publication may be reproduced or distributed in any form or by any means, or stored in a data base or retrieval system, without the prior written permission of the publisher.

1234567890 DOC/DOC 0987

ISBN 978-1-932649-19-2

This publication is designed to provide accurate and authoritative information in regard to the subject matter covered. It is sold with the understanding that neither the author nor the publisher is engaged in rendering legal, accounting, or other professional service. If legal advice or other expert assistance is required, the services of a competent professional person should be sought.

— From a Declaration of Principles jointly adopted by a Committee  
of the American Bar Association and a Committee of Publishers

## **OUR MISSION**

At Keller Williams Realty, we care about the place you call home. We understand that it's more than a collection of concrete, wood, and steel. It's more than an asset to be bought and sold. It's where you feel safe, where you can take a deep breath, where you gather with your family and friends, and where you build your strength.

Since our founding, it has been our company's stated mission to build careers worth having, businesses worth owning, and lives worth living. We realize now, more than ever, that a life worth living is one that is healthy, money smart, and sustainable—priorities that are essential to the “Green Your Home” model. Greening your home not only builds lasting value in what is yours, but it cements a life worth living for future generations.

## **OUR BELIEF**

We believe that greening your home is a quality-of-life choice for here and now, as well as a necessary step to protect our planet and its resources for future generations. We trust in the power of individuals and their ability to learn, change, and make sustainable choices. We believe that now is the time to start—and that change begins at home.

# CONTENTS

<b>Introduction .....</b>	<b>1</b>
Going Green Begins at Home .....	2
<b>Chapter 1: Laying the Groundwork .....</b>	<b>5</b>
A Green Adventure Awaits .....	5
Fears and Facts About Going Green .....	6
The Green Your Home Model .....	10
Six Things to Consider Before You Begin .....	18
<b>Chapter 2: Four Steps to Greening Your Home .....</b>	<b>25</b>
Understanding the Greening Process .....	25
Step 1: Clarify Your Green Priorities .....	26
Step 2: Create Your Green Team .....	30
Daniela and Eric’s Story: Lessons in Teamwork .....	39
Ready for Action .....	41
<b>Chapter 3: The Inside Zone .....</b>	<b>43</b>
Sara’s Story: A Healthy Home Comes First .....	43

The Inside Zone: Health Is Your 20 Percent ..... 45

Step 3: Build Your Green Project List ..... 47

A Healthy Inside Zone ..... 49

    Action Item 1: Bring Fresh Air Inside ..... 51

    Action Item 2: Get to Know Your Pollutants ..... 54

    Action Item 3: Test for Possible Pollutant Sources in Your Home .... 59

    Action Item 4: Keep Pollutants Out ..... 63

A Money-Smart Inside Zone..... 71

    Action Item 5: Improve Your Lighting Design..... 72

    Action Item 6: Boost Energy Efficiency ..... 76

A Sustainable Inside Zone..... 82

    Action Item 7: Get Water Wise ..... 82

    Action Item 8: Add Smart, Sustainable Interior Design Features..... 84

A Healthy Inside Zone Is a Few Action Items Away ..... 90

**Chapter 4: The Systems Zone..... 91**

The Bonds' Story: Rickety Farmhouse to High-Performance Home ..... 91

In the Systems Zone: Money Smart Is Your 20 Percent ..... 93

Continuing Step 3: Build Your Green Project List in the Systems Zone.. 95

A Money-Smart Systems Zone..... 96

Action Item 1: Understand How You Use Energy .....	97
Action Item 2: Pay Yourself Back with Easy Energy Updates.....	101
Action Item 3: Tighten the Building Envelope.....	105
Action Item 4: Maintain Your Mechanical Systems.....	117
Action Item 5: Work with Nature .....	121
A Healthy Systems Zone .....	127
Action Item 6: Optimize Your Ventilation System .....	128
A Sustainable Systems Zone.....	131
Action Item 7: Upgrade the Water-Wise Way.....	132
<b>Chapter 5: The Outside Zone .....</b>	<b>139</b>
The Spanglers' Story: A Teaching Moment.....	139
In the Outside Zone: Sustainability Is Your 20 Percent .....	141
Continuing Step 3: Build Your Green Project List in the Outside Zone.	143
A Sustainable Outside Zone .....	143
Action Item 1: Water Your Lawn More Efficiently .....	144
Action Item 2: Create a Sustainable Landscape.....	151
Action Item 3: Plant a Garden of Your Own .....	157
A Money-Smart Outside Zone .....	164
Action Item 4: Improve Your Energy Efficiency from the Outside In	165

A Healthy Outside Zone .....	169
Action Item 5: Practice Safe Landscaping Techniques.....	170
Action Item 6: Bring Your Home Outside .....	174
A Sustainable Outside Zone Is a Few Action Items Away .....	177
<b>Chapter 6: Complete the Green Your Home Transformation.....</b>	<b>179</b>
Anna’s Story: Getting It Done through DIY and Delegation .....	179
Step 4: Turn Your Project List into a Plan of Action .....	181
Four Keys to Keeping Green in Good Order.....	185
<b>Appendix: More Green Your Home Success Stories .....</b>	<b>190</b>
The Inside Zone: Small Steps Can Make Big Differences.....	191
The Systems Zone: Green Spells Quiet and Comfortable.....	195
The Outside Zone: Creating a High-Functioning Yard .....	199

# FOREWORD

*Today's population uses in one day what it took the world  
10,000 days to create.*

PAUL HAWKEN, *THE ECOLOGY OF COMMERCE*

## WHY ISN'T EVERYONE ALREADY GREEN?

We can't watch TV, go shopping, or dine at a restaurant without “seeing green”—*locally grown, organic, biodegradable, sustainable*. We now know that most every decision we make these days has an environmental consequence and a green alternative—*recycled, energy efficient, chemical free, eco-friendly*.

What troubles me is that all of this exposure may be clouding our view and creating a sort of “green fatigue” in the world—a collective desensitization that’s beginning to feel more like a fad or a fashion statement instead of an urgent call to arms. It’s starting to feel a little squishy instead of dire. If we want to get to a place where everyone is thinking and living green, then, in truth, we have a long way to go.

## SO WHY AREN'T WE “SEEING GREEN” IN EVERYTHING WE DO?

I think the answer comes down to three fundamental reasons: our mindset, our habits, and our lifestyle. In other words: what we think, how we behave, and how we’re accustomed to living. Because they each require change, together these three

challenges prevent us from easily going green. It is difficult to swim against the current, so we continue to live in a way that is out of balance with our available resources. It's simply unsustainable.

We know that we have our work cut out for us. I'm confident that together we can green our mindsets, change our habits, and adjust our lifestyles for the better. Not just for the here and now, but for the future too. When I look at my professional world—the housing and building industry—I can see that this may be the best place to begin. Since the housing and building industry accounts for nearly 40 percent of the world's energy and raw material consumption,\* our ability to green our home lives truly has the ability to change the world. Will you join us on this journey?

A handwritten signature in black ink, appearing to read "Gary Keller", with a long horizontal line extending to the right.

Onward!  
*Gary Keller*  
*Cofounder and Chairman of the Board*  
*Keller Williams Realty, Inc.*

---

\* Johnston, David, and Master, Kim. "Green Remodeling: Changing the World One Room at a Time." Canada: New Society Publishers, 2004.

Copyrighted Material

# ACKNOWLEDGMENTS

As you embark on your Green Your Home journey, you'll soon discover that it's an adventure you rarely take alone. From green consultants to skilled tradespeople, there are a host of experts out there who can help you each step along the way. It's an adventure not unlike the one we took as we set out to write this book. We'd now like to thank the many people who contributed their time and expertise during this book's creation.

First and foremost, thanks to the homeowners who shared stories of their green renovations and lessons learned: Sara Alvarado, Marilyn Barber, Daniela Bell, Ed and Ellen Bond, Dale and Pat Bulla, Greg and Susan Corman, Eric Foster, Steve and Beth Griffith, Diana Guidry, Jason and Jennifer La Fleur, Pat Lando, Michael McFadden, Jeff Miner, Martin and Melissa Scanlan, Jason and Lisa Spangler, Ron and Shelly Suzuki, Anna Weier, and Wanda Zinski.

Also, thank you to the industry experts who shared their specialized expertise and guidance, including green real estate professionals Matt Fetick, Gayle Fleming, Michelle Foy, Ben Kaufman, Cheryl King, Cynthia Lippert, Julie Nelson, Jennifer Rupnow, Craig Schriber, Doug Sutton, Mike Tavener, and Ken Williams, as well as the following green home consultants: Dr. John Beldock, Nate Burger, Joe Cooper, Tom Liptan, Dan Morris, and John Stovall. We also want to express our gratitude to the green architects, designers, and builders we interviewed, especially Scott Blunk, Hunter Ten Broeck, Ben Falk, Dean Hill, Craig Jenkins-Sutton, Ron Mann, Rich Radford, Marcus Renner, Alan Rossing, and Ron Wickman. Finally, we want to give a special shout-out to the members

of our Green Leadership Council who advocated for this book from day one: Ron Armstrong, Vida Ash, Judy Farr, Chuck Frankel, Stuart Galvis, Mary-Anne Gillespie, Janice Hall, Nan Cie Hamilton, Cheryl King, Helen Martin, and Colleen McLean.

We're grateful to the following organizations and entities for their robust data and research on green living issues: the Asthma Society of Canada, Beyond Pesticides, California Energy Commission, Circle of Blue, EcoBroker, Health Canada, National Aeronautics and Space Administration, National Association of Home Builders, National Association of Realtors and their NAR Green Designation, National Audubon Society, National Center for Environmental Health, National Fenestration Rating Council, National Gardening Association, National Pesticide Information Center, Natural Resources Canada, U.S. Department of Energy, U.S. Energy Information Administration, and the U.S. Environmental Protection Agency.

Conceiving, researching, writing, and producing this book was a three-year journey, and many talented individuals played key roles. Writer Rachel Proctor May took our original outline, researched it extensively through books and interviews, and produced an excellent early draft. Her fingerprints are throughout. She worked closely with our editors—first Mark McFarlane and later, Jonas Koffler. Jonas, in particular, dedicated many months to this project and helped execute a number of important revisions. Without Jonas' dedication, this book might never have happened. Artist Dave Bregande contributed some terrific art, which you'll find in our case studies. Lastly, we called on writer and

editor Katie Ford to lend her fresh perspective to the work and to perform a final round of editing and revision which resulted in the book you now hold in your hands.

Our crack team at Keller Williams Realty International also deserves a big shout-out: Victoria Schneider Lukachik for ferreting out numbers, facts, and quotes through her research, as well as timely editing support; Tamara Hurwitz for leading the production team of Jeff Ryder, Maryanne Jordan, Jennifer Boyd, and Mary Keith Trawick; Teresa Metcalf for expertly coordinating all tasks and communications; Ellen Marks for her marketing eye, writing contributions, and wisdom to recommend Katie for the job, as well as her creative cohorts Annie Switt, Michael Balistreri, Hiliary Kolb, Caitlin McIntosh, Amber Presley, Laura Price, and Dustin Struhall; Anthony Azar, Tom Freireich, and Danny Thompson for championing this book to our agent, broker, and vendor partners. Mary Tennant, Mark Willis, Mo Anderson, Bryon Ellington, and Jim Talbot for lending their leadership and ideas. Finally, a huge thanks to Gary Keller who envisioned this project for what it could mean for our families, friends, professional partners and, frankly, the world.

*Jay Papasan*  
*Vice President of Publishing and Executive Editor*  
*Austin, Texas*  
*July 25, 2011*

Copyrighted Material

# INTRODUCTION

American journalist Elizabeth Kolbert once wrote in an article for *National Geographic* that man’s impact on Earth “may look as sudden and profound as that of an asteroid” to future geologists.

Seems a bit sensationalist, doesn’t it?

That’s what we thought too—until we began our research for this book. Our research team made countless inquiries into how our daily choices impact the environment and what we can do in our homes to better conserve natural resources. It turns out that Kolbert’s words merely echo what scientists\* worldwide are declaring: Human consumption in the past two centuries has released enough carbon dioxide to cause measurable, irreversible changes in the atmosphere. If we continue at this rate, we could see *in this century* climate change that would cause entire species of plants and animals to die off and our oceans to acidify to levels not recorded since an asteroid struck our planet 65 million years ago, marking the demise of the dinosaurs and the end of the Cretaceous Period.

Can you imagine that this might be our legacy? Certainly it’s not what any of us want. But all signs suggest that we are marching full steam ahead in that direction. When people debate whether or not human activity is contributing

---

\* Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor, and H.L. Miller (eds.) “Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change.” Cambridge University Press, 2007.

to the problem, it makes us scratch our heads. If we were at sea in a boat that was taking on water, we wouldn't be arguing about whether it was a mechanical defect or human error. We would just grab a bucket and start bailing water! Instead of debating the cause of the problem, it seems wiser to be part of the solution. After all, this is the only boat we get. If it sinks, we're all sunk.

While the rise of global industrialization has magnified our impact on the environment dramatically, it also has brought about scientific discoveries and governmental policies that have catalyzed green thinking and measurable conservation efforts. In the marketplace, green-friendly products, practices, services, and materials are becoming more mainstream. However, it will be the decisions that we make in our daily lives that will have the greatest impact on what life on Earth will be like for the next generation. Indeed, it is at the grassroots level where we can make the *greenest* impact.

That's what this book is about.

## **GOING GREEN BEGINS AT HOME**

When it comes to our environment, no matter how much we know or think we're doing to conserve and preserve, there's always room for new understanding and smarter choices. A logical place to begin your green journey is at home, the place where most of us spend the majority of our time.

Across North America, homeowners are putting increased awareness about green practices to good use. Jason and Jennifer La Fleur epitomize this trend.

A young couple, they purchased a vintage house in a wonderful neighborhood in Chicago, Illinois. From the beginning, they shared a vision of turning their old home into something even more special: a greener home. With a faith in their abilities and the helpful support of friends and family, they slowly and methodically began a step-by-step process of green retrofitting.

The limitations of their budget worked to their advantage, since Jason and Jennifer preferred doing most of the work themselves. They devoured green remodeling books, one after the next, and let careful research and smart advice from other remodelers guide them. In every aspect of the home, from the inside and internal systems to the outside, they sought opportunities—like putting in reclaimed interior doors that scream, “I’m old and beautiful!” or installing a tankless water heater. As avid gardeners, they especially loved assembling their rainwater collection system.

The La Fleurs recognized that each change they made added lasting value to the home they loved, so it was a worthwhile pursuit and a source of great pride. Each phase of their renovation felt right for them, and demonstrated to their friends and neighbors how even the smallest changes have a positive impact on the environment and on one’s budget. People like Jason and Jennifer prove that a green home is attainable for anyone, even those who don’t have a limitless supply of money to spend.

Echoing the money-smart approach used by the La Fleurs is the Griffith family, who live in Northern California. This party of five consists of Steve and Beth, their two kids, and Beth’s mother.

Steve and Beth sought out a local company to expertly assess every inch of their home for potential green improvements— especially upgrades that would help conserve money and energy. It turns out that no matter how much they thought they were already doing to live green (such as using compact fluorescent lightbulbs and monitoring energy consumption), there was a great opportunity to do a whole lot more. The team of experts provided a road map of change to make the Griffith home healthier, more comfortable, and more efficient. Some recommended changes were no-brainers—like when their team made a startling discovery: asbestos, a dangerous carcinogen, lined the ductwork and heating system. So, before making any other changes, Steve and Beth made sure their indoor environment was safe for the family. A healthy home now became their top priority.

To address the asbestos and stay within their budget, other improvements had to be moved to their wish list. Features like a new Energy Star washing machine and roof-mounted solar panels would have to come later. Because the Griffiths planned to stay in their home for many years, they knew they'd have the opportunity to fulfill their wishes for a truly green home in time.

For many, making upgrades means making greener choices—choices that are healthier, money smart, and sustainable. There are countless ways to make your home better, from the way you furnish, clean, and maintain it to improving the way you use energy and water. In the end, remember that the home where you live, love, and create lasting memories is part of the great planetary balancing act we call “green.”

# CHAPTER 1: LAYING THE GROUNDWORK

*Do your little bit of good where you are; it's those little bits of good put together that overwhelm the world.*

ARCHBISHOP DESMOND TUTU

## A GREEN ADVENTURE AWAITS

Imagine you're preparing for a special trip. Call it the adventure of a lifetime: a safari in Africa, a trek in the Himalayas, a weeklong rafting excursion through Grand Canyon National Park with your friends and family. Maybe you'd prefer a visit to historic sites in an old-world city like Rome, Italy. Or perhaps your ideal adventure is just a relaxing week spent on a beach someplace.

No matter your preference, you would likely make your choice based on some personal priorities—the things that are most important to you. Priorities might include ensuring that your adventure enhances your sense of well-being, that you have the financial means to enjoy yourself while you're on your trip and that you have experiences rich enough to create lasting memories—stories that you can share with others.

We'd like you to think of greening your home as a similar type of adventure. Like travel, you get to shape your own experience. Greening involves planning and is often a multistep process—it takes time. Rome wasn't built in a day and

you don't green a home overnight. Your green home improvement journey will be full of options. Some are more important than others, and some are more demanding. Not everyone wants to green every aspect of a home, just as not everyone wants to encounter lions in the wild while on vacation. Some prefer ease and comfort and will work with a team, some might favor a challenge and are willing to get their hands a little dirty, and others might go all out with a *I'm game for whatever it takes* mentality. You get to decide what's best for you.

## FEARS AND FACTS ABOUT GOING GREEN

So, what does “green” mean to you? Does the thought of a greener home and a greener lifestyle make you excited, apprehensive, or maybe a little of both? Let's start by taking a look at some of the common fears and facts about what it means to go green. Like us, you may be surprised.

### Five Fears about Going Green

1. Green is just a bunch of hype.
2. Green is too expensive a lifestyle change.
3. Green is too difficult a lifestyle change.
4. Green will not benefit me personally.
5. Green will not really make a difference.

**Fear #1: Green is just a bunch of hype.**

**Fact #1: True “green” is anything but hype.**

Sure, there are plenty of confusing messages out there. There are those who bash green and spread mistruths and those whose washed-out claims of being green are anything but the truth. So let’s quickly cut through the misinformation about what green is and what it’s not. At its heart, green is real, green is common sense, and green is likely already a part of your life, whether you know it or not. Your decision to go green is about a commitment to having better choices, now and in the future. Greener choices can help you save money and enable you to lead a healthier life, while conserving energy and natural resources. Is there something wrong with the idea of living more in tune with the natural world? Not at all. In fact, it’s the best possible way to live.

**Fear #2: Green is too expensive a lifestyle change.**

**Fact #2: Green can save you money over time.**

Some view green homes and green lifestyles as the exclusive domain of the wealthy. Actually, this is the realm of the financially smart and the healthy. Why? Because most of the simple green actions you can take cost nothing, whether you do them at home or in your day-to-day behaviors. Think of reducing, reusing, and recycling—the basic language of going green. Instead of shrinking your bank account, going green can actually help you save money.

And if you choose not to spend a dime on new materials like solar panels or new windows, it will only cost you a little thought and effort to reuse materials and reduce your energy and water consumption habits.

For example, take a shorter daily shower and keep your thermostat set a few degrees higher in the summer and lower in the winter. Small changes like these can actually save you hundreds of dollars each year. Try them out and then compare your energy bills after a year. Should you choose to spend money on home-efficiency systems upgrades, then there's often a local, state, provincial, or federal tax incentive or rebate program available from your utility provider. In some locales, you can even take advantage of dual rebates. These add up to immediate savings and meaningful money over the long haul as energy prices rise. Being money smart is also about being healthy. Think about it: If the changes you make to your home make it less toxic, logic tells us that over time, you'll be making fewer sick visits to the doctor. That's saving more than just money.

**Fear #3: Green is too difficult a lifestyle change.**

**Fact #3: Green is about ease and simplicity.**

Green is not a complex undertaking. Green begins in our minds, and it requires us to slow down and focus our awareness a bit differently. It starts with our habits and extends throughout our homes. For many, leading a greener life might be a matter of recycling more regularly, using less water and energy at home, walking

more and driving less. Are these dramatic, impossible lifestyle changes? Not at all. Keep in mind that green as a process is only as difficult as you decide to make it. You don't have to give up your car, your clothes, or your lattes and go live in the forest to be green. You can do it in more practical ways. There are different shades of green, from those who are a deeply committed dark green to the more moderately minded light green. You define your level of commitment and your vision. This book will help you identify the few green changes that can help you achieve whatever shade of green you aspire to become.

**Fear #4: Green will not benefit me personally.**

**Fact #4: Green benefits you directly (and your neighbors too).**

First and foremost, going green will make you feel good as you contribute to the well-being of the whole world. That's not just perception, that's reality. Do good, do right, and live well; enjoy the positive effect you have on others. If you're still not convinced, then let's consider what you stand to gain personally. If you can save money by consuming fewer resources and using less energy and water, is that not a material gain? If you can improve the air quality that you, your family, and your guests breathe inside your home, is that not a health gain? If you're acting as a steward of the planet for yourself and your family, imagine the millions of people in the future applauding you for your forward-thinking approach. And beyond the stewardship argument, going green is an educational and inspirational experience. Green can be a creative endeavor that's rewarding and most certainly worth doing.

**Fear #5: Green will not really make a difference.**

**Fact #5: You alone can make all the difference in the world.**

What you may perceive as impossible is actually very doable. You just need to consider where and how to begin. As an individual, every contribution you make can change the world for the better. As part of a family of billions of people, your example and influence can make a huge difference. Just by reading this book, you're already taking the first step. The point is, you can do as Mohandas Gandhi did and "be the change you wish to see in the world." Just think and act wisely. You can make a difference in your life, for your children, and for theirs.

## **THE GREEN YOUR HOME MODEL**

When we set out to write this book, it occurred to us that green is really about understanding our priorities for a life well-lived. These are often abstract priorities, like living healthily, being money smart, or acting more sustainably. But how do we make these ideas more concrete? We can best do this through applying a three-stage model (see figure 1), which will help you understand your priorities, focus on the tangible elements and take key actions in areas of your home that matter most. We call these areas our "three green home zones," and we've organized this book around taking on specific green improvement projects in each. You'll experience this exciting process in the pages to come.

It's important to note that our model is based on extensive research of what works—the tried-and-true practices of many green-minded homeowners,