



A Practical Guide to Greener Theatre

Introduce Sustainability Into Your Productions

by Ellen E. Jones
with Jessica Pribble

Additional Contributions by Paul Brunner and Maja E. White



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Protecting the environment should be a priority of every theatrical production, but it can be challenging to mount an environmentally friendly show with limited time, resources, and information. *A Practical Guide to Greener Theatre: Introduce Sustainability Into Your Productions* not only gives you the information you need to make greener decisions, but provides you with practical, workable solutions. You will learn how to assess and improve every production area—from costuming and painting, lighting and technical direction, to administrative offices and the rehearsal process. Checklists, examples of successful strategies, and step-by-step instructions will show you how to identify areas where manageable, sustainable changes can make your productions greener, and advice from working professionals, with experience greening their own productions, will leave you confident that your processes are environmentally sound. Even non-technical people who find themselves responsible for supervising productions will find green solutions that can be instituted with a staff of volunteers or students. Remember: Every step toward sustainability is a step forward.

- Discover small fixes that will make your theatre productions greener.
- Examine ways to introduce greener practices in the design, execution, and strike process.
- Explore how introducing sustainability into your theatre productions can save your company time and money.
- Learn how sustainability and safety intersect to help protect your workers and volunteers.

Ellen E. Jones holds USA Local 829 credentials as a lighting designer, scenic designer, and scenic artist. She has held numerous academic posts as well as working for theatrical vendors. Her 20-plus year career in the industry has included designing and painting scores of productions for various theatre companies and shops in the United States. She particularly enjoys working with students as emerging artists and joined the faculty of the Department of Theatre and Dance at Youngstown State University in the fall of 2013, where she serves as the scenic and lighting designer.



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Foreword

The entertainment industry's best known amphibian once sang, "*It's not that easy being green.*" Though I am reluctant to disagree with the famous frog's sentiment, *A Practical Guide to Greener Theatre: Introduce Sustainability Into Your Productions* will make it easier—if not easy—for every person working in theatre to be greener. By bringing together a small cast of knowledgeable and experienced contributors, Ellen E. Jones has produced a valuable resource for making theatre practices more environmentally responsible at every level of production.

Theatre people have largely resisted putting greener practices into place, whether from ignorance or concern about somehow lessening the aesthetic impact of our work. This book provides incontrovertible evidence that we can indeed make art while helping to preserve the environment. Many ideas offered in these pages can easily be put into practice without additional cost. Other proposals will serve the added benefit of protecting our health while preserving the environment. Some suggestions may require rethinking techniques we have used uncritically for generations. Still other plans will demand a major commitment to the ideal of environmental sustainability over the long term.

Change will come to our practices inevitably. It is in our best interest to determine how those changes will happen. Some of us may remember when we lauded the fire-safety benefits of papier-mâché props made from asbestos pulp. Others will recall when new regulations forced manufacturers to stop using mercury-based fungicides in scenic paint. While those just entering the profession may be horrified to

think anyone ever thought of such practices as sound, we now acknowledge that our understanding of environmental issues is constantly evolving. Sustainability and environmental concerns are not passing fads; these issues will fundamentally affect how we do our work in the future. This book, the first of its kind, challenges us to think about how that future should look.

A Practical Guide to Greener Theatre provides suggestions we can and should embrace the moment we finish reading them, as well as complex solutions requiring serious planning and resources to accomplish. Ellen E. Jones' volume pushes the issue downstage center for our consideration. After all, as theatre production people, we pride ourselves on our ability to solve problems creatively, despite limitations of time, money, or labor. Can we ask any less of ourselves when considering the potential global consequences of our actions?

This book will motivate readers to take serious steps toward creating greener theatre today; it will promote conversations that will lead to better and bigger ideas for achieving sustainability within our industry; and it will remind each of us about the importance of the choices we make—big and small—along this journey. Using the tools, ideas, plans, and resources provided in these pages, we may soon find ourselves singing with new enthusiasm and conviction the final line with Kermit, "*I'm green, and it'll do fine; it's beautiful, and I think it's what I want to be.*"

Andi Lyons
Lighting Designer/Professor of Theatre
University at Albany, SUNY

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Preface

This book is not a lighting design, scene design, or costume design book. Nor does it pretend to be a stagecraft textbook, a safety manual, or an introduction to industrial hygiene or arts management. All of these topics are linked to greening production and where needed there is a rudimentary explanation of technical information or production practices. Professionals in those specific disciplines will undoubtedly find some of that information a review, but it is included to provide a basic foundation for those who have been assigned responsibilities outside their own area of expertise. Readers looking for more comprehensive information can use the included bibliography as a list of suggested further reading.

The greening process takes time. The competing goals of remaining financially sustainable, working within available resources, filling the audience seats, and adopting a greener production process must receive equal focus and respect. There is no one-size-fits-all solution because the circumstances of each company and staff are so different.

The ideas presented in this book are meant to be educational and motivate readers to consider if there is a greener choice before approaching any task “*the way we have always done it.*” Hopefully the included strategies, experience based

tips and specific information will spark your imagination and offer guidance or inspiration that allows your company to move toward a more sustainable production model.

It can be difficult to focus on the issues of environmental stewardship when mounting every show is a challenge. For small producers who create theatre as an avocation or for the individual for whom production is a tiny sliver of her job responsibilities, the staff and financial reserves may be so small that finishing the show is the primary focus. This book recognizes those dilemmas and is based on the notion that all theatre companies and academic institutions can find manageable common ground between greener theatre and mounting a show with the production values they desire.

If you have thoughts and ideas that you want to share please contact me through my web page: <http://ellenejones.com>. All of us can make a difference as we move forward in this new world of environmentally conscious production and design.

This book is dedicated to all of my past, present, and future colleagues, students, friends, associates, and employers in the industry. Thanks for making my exciting and challenging professional life possible.

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Special Thanks and Acknowledgments

Thank you to Hillary Stevens whose support (and willingness to edit material) was vital to finishing this project. Steve Shelley also deserves special thanks for all his advice and good humor throughout the writing of this book.

The contributors, Jessica Pribble, Paul Brunner, and Maja White, also have my sincere appreciation as well as Stacey Walker and Meagan White of Focal Press who have shepherded me through this process. To Michael Mehler, the technical reader, thank you for taking on this project and providing such insightful comments and suggestions. I also want to acknowledge those who allowed their work to be reproduced: Amanda Nelson, the artist who created *Kinkadee*; Bob Smith of Image Photography; David Rodger of Broadway Press; and Terry Gips of Sustainability Associates.

For those who were willing to read copy and make comments—Claire Dana, Chris Fretts, Andi Lyons, Timothy Spencer, Wayne Pribble, and Rob Gerlach—thank you!

To the many individuals who agreed to formal interviews or provided face time on the 2013 USITT show floor (and these are in no particular order): Peter Borchetta, Joe Fahey, Kal Poole, Stephen Rueff, Monona Rossol, Bob Usdin, John Saari, Kim Bent, Madison O'Brien, Justin Miller, Ian Garrett, James McKernan, Michael Mahler, Rachel Keebler, Alan Kibbe, Seema Sueko, Sholeh Johnston, Alison Tickell, Garvin Eddy, Lea Asbell-Swanger, Damon Runnels, Lea Dutton, Erika Baily-Johnson, Rebecca Burgess, Jerry Dougherty, Renae Skoog, and Matthew Armenariz-Kerr: Thank you.

Thanks go as well to those who provided information in more casual conversations and emails, again in no particular order: David Rodger, Robert Zuckerman, James Bedell, Richard Cadena, Brenda K. Brown, William Beautyman, Kathleen Keenan, Kim Bent, Patrick Hudson, Lisa Lazar, Donald Fox, and everyone involved in the MN Sustainability in Theatre Task Force.

Many companies and organizations were generous in providing images of their products or their organizational logos and emblems for use in this book. All are credited within the text, but each deserves a special thank you for allowing that reuse.

If I have missed including anyone, the fault is in my memory, not in the value of your help. Thank you again to one and all.

– Ellen E. Jones

I would like to reiterate Ellen's thanks and add a very special thanks to my colleagues at Central Washington University both for supporting my work as a designer and giving generously of their time in support of this project. Especially to M. Catherine McMillen who understands the costume shop to be a laboratory where we experiment, challenge, and grow together with our students. And finally a thank you to my husband, Timothy, a true artist and my dearest friend.

– Jessica Pribble

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Tips for Using the Book

Several icons are used throughout the book to draw attention to specific ideas.



Icon 1 The leafy footprint icon denotes a larger concept of philosophical idea. art4all/Shutterstock.



Icon 2 The handprint icon is associated with ideas to develop strategies or action plans. miha19750405/Shutterstock.



Icon 3 This fuzzy friend connotes experience based tips. Albert Ziganshin/Shutterstock.



Icon 4 The green idea pencil is linked with checklists. thaikrit/Shutterstock.

Additional Important Information

Writing a book occurs months before publication. Any websites indicated within the text were active at the time of writing. Because of the value of the material included on those sites I chose to include them knowing there was a possibility they might no longer be active at a future date.

Throughout the book you will see references to Material Safety Data Sheets (MSDS) followed by Safety Data Sheets (SDS). In 2003 the United Nations adopted the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) as the criteria for the classification of health, physical, and environmental hazards. The GHS also specifies what information should be included on labels of hazardous chemicals as well as safety data sheets. In 2009 OSHA proposed aligning its Hazard Communication Standard to meet those requirements.

In March 2012 Secretary of Labor Hilda L. Solis announced that this change would indeed take place. Manufacturers and distributors do not have to be in full compliance with the changes until December 2015. (<http://www.osha.gov/as/opa/quicktakes/qtGHS03212012.html#10>).

The transition is in progress at the time of writing. Some readers may have MSDS, some may have the newer SDS, and some may have a mix of the documents. Use whichever version of the documents you have and keep checking with manufacturers and distributors for the newest version.

Frequently Used Abbreviations

There are several organizational and agency abbreviations that are used through the text. The names are written out completely the first time they are used, but anyone reading chapters out of order may miss the full names.

- AHJ—Authority Having Jurisdiction: The governmental agency or law enforcement entity having authority in a given area.
- ANSI—American National Standards Institute: An organization that oversees the development and assessment of norms and guidelines across industries.
- EPA—Environmental Protection Agency: US governmental agency charged with protecting the public by protecting the environment.
- LEED—Leadership in Energy and Environmental Design: A voluntary program that provides certification for green buildings.
- NFPA—National Fire Protection Association: An international not-for-profit agency that originates many standards for public safety. Established in 1896.

- OSHA—Occupational Safety and Health Administration
- USA Local 829—United Scenic Artists: The labor union and a professional association for designers, artists, and craftspeople working in theatre, film, television, opera, ballet and other dance, exhibits, commercials, and industrials.
- USITT—United States Institute for Theatre Technology: US Association of professionals, educators, and students involved in design and technical production in the entertainment industry.

The Disclaimers

Nothing in the book should be taken as a substitute for advice from a licensed or otherwise certified, qualified, and/or trained professional with expertise in the area addressed. It is the responsibility of the reader to understand and obey any local, regional, state, federal statute or standard associated with the topic.

Any equipment or materials suggested or pictured in the book are products that we, the collective contributors, are familiar with or have seen in use by others. We may use that product exclusively or we may use a range of similar products. It is not meant to be an advertisement or endorsement for any manufacturer or vendor nor is the failure to mention any manufacturer, business, or product intended as an evaluation of quality of their products, expertise in the industry, or meant to have any negative connotation.

The Authors and Contributors

I was fortunate to meet and talk with **Jessica Pribble**, an experienced costumer who was also interested in greening her production and design processes. She is the primary author of the costume chapters and has brought a delightful and unique vision to the material overall.

Paul Brunner, Assistant Professor of Technical Direction at my graduate school alma mater, Indiana University,

Bloomington, and I met at an LDI Green Day Session. Since then we have worked on several presentations and published a juried article together for *TD&T*, *Green at the University: Teaching Green by Being Green*. I wanted to add his expertise to the book and he is a major contributor to the scene shop chapter, particularly the segments on commonly used materials and best construction techniques.

Maja White, Assistant Professor at University of Richmond, and I became acquainted through various professional organizations including USITT and ATHE. When I learned she had completed a research project lighting the same production with both conventional and LED fixtures that was not just about energy savings, but also the impact for performers and the audience in response to the art of the lighting design, I wanted to include her story about the project.

Biographies



Ellen E. Jones holds USA Local 829 credentials as a lighting designer, scenic designer, and scenic artist and her professional credits include work in Chicago, the Midwest, and the eastern United States. She has served USITT as both a Lighting Vice-Commissioner and Commissioner and as Co-Chair of the Caucus on Human Issues.

Ms. Jones' professional career has been intertwined with academic posts around the country. She has focused on introducing safety and sustainability in theatre design and production to interested schools and theatre companies and has presented on the topic at LDI, USITT, ATHE, and the inaugural 2012 *Sustainability in Theatre Conference* in Minneapolis. As of fall semester 2013 she has been a faculty member in the Department of Theatre and Dance at Youngstown State University in Youngstown, OH.



Jessica Pribble is a professional costume designer and educator currently based in Washington State. She received her MFA in Theatre from Purdue University. Before and during graduate school, Jessica was a freelance designer for the Chicago area.

She has worked for several regional Shakespeare Festivals as a designer (Fairbanks Shakespeare Festival, Kentucky Shakespeare Festival), Craft Artisan (Idaho Shakespeare Festival), and First Hand (Lake Tahoe Shakespeare Festival). She currently teaches costume design and technology at Central Washington University. Her professional work also includes designing for Cirque Shanghai's production of *Cirque Shanghai: Bai Xi* at Chicago's Navy Pier, and KAT Company's production of *The Wizard of Oz* for which she won a New Hampshire Theatre Award for Best Costume Design.



Paul Brunner is faculty Technical Director and Head of the Theatre Technology program for the Indiana University Department of Theatre and Drama. He teaches courses in technical management, structural design for the stage, electronics for theatre, mechanical design for scenery, and theatrical drafting. He has presented numerous workshops on greener theatre at two high school theatre festivals, USITT, SETC, and LDI.

He has worked professionally as a technical director or designing mechanical effects for Notre Dame Shakespeare Festival, Southern Ohio Light Opera, and Indiana University's Opera and Ballet Theater.

An active member of USITT, he currently serves on the Board of Directors and is a Commissioner for the Technical Production Commission. Regionally, he is a Director at Large on the board of the USITT-Midwest Regional Section and serves as editor of *Design and Production Review* (DPR), the Midwest Regional newsletter. He is also a member of the Broadway Green Alliance and is co-chair of their Education Committee.



Maja E. White (Lighting Designer) has designed lighting for Opera, Theatre, and Dance. Recently, her work has allowed her to light works choreographed by Francesca Harper, Sean Curran, Dana Tai Soon Burgess, Jessica Lang, and Kanji Segawa, among others. Maja is a member of the United Scenic Artists 829 and IALD.

She is an Assistant Professor at the University of Richmond and her current research is on the impact and effects on environmentally friendly lighting on live performance.

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Part I

Understanding Sustainability and Defining Greener Production

Figure 1.1 Krivosheev Vitaly/Shutterstock.

Time to Make a Change

What happens to the scenery, props, and costumes after the run of the show? What about scrap pieces of the virgin construction materials that were used in the creation of visual elements? Theatre productions can generate an enormous amount of waste both during the construction process and at the end of the run.

Early in my career I worked as a freelance scenic artist and designer for urban special events companies as well as theatre companies. While some elements could be stored and reused, every swanky birthday party, wedding, or product

launch generated mountains of garbage ranging from hand-crafted personalized decorative elements to live plants that died within hours because they were painted the party theme colors with an airless sprayer. When scenic pieces from these live industrial productions were struck at the end of the evening, the dumpsters were filled to overflowing with material that was not salvaged.

The artisans who created the props and scenery would sadly comment, “*There are visual artists who collect trash and create art. We buy art supplies and create garbage.*”

We are only beginning to understand the real impact of producing waste. It is time to embrace a change.

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Chapter 1

Setting the Stage for Greener Production

I grew up in upper east Tennessee where for many people, including some of my older relatives, *Reduce, Reuse, and Recycle* was a way of life because there was no other choice. My grandmother had no idea she was ahead of the cultural curve growing her own vegetables or recycling leftover fabric from her sewing job into garments. Nor did my great-uncle consider making his own wine a way to be closer to the earth. (To be honest, his stories about the life he and his ten brothers led as young men suggested that making adult beverages at home was simply a long-standing family tradition.)

The self-proclaimed local sophisticates who had managed to go to college or get jobs somewhere other than the farm, the railroad, a factory, or the military viewed those practices as backward country ways or only for the very poor. At this time a focus on ecology for its own sake was viewed as the domain of those disconnected from day-to-day reality. What a difference a few decades make?

Before global warming and greenwashing entered the lexicon, I was interested in environmental issues. By the time I left college, I was the one driving everyone else crazy turning the lights off in empty rooms and collecting everything possible for recycling. I even had a worm composting bin in a fourth floor walk-up apartment in Chicago.

In spite of these choices in my personal life, I managed to achieve a complete disconnect from the same concepts in my work environment. My career includes time as a freelance lighting and scenic designer and scenic artist for professional companies, commercial shops, special event companies, and live industrial producers. I also design for a number of smaller theatre companies that are strongly linked to a specific cultural or geographical community. Most have tremendous artistic heart but few resources. I have spent many years mentoring students in academic settings. I also worked for theatrical vendors who were generous enough to allow me to spend as much time educating customers as selling them products.

I and my colleagues might comment on the amount of garbage produced by a show or event, but we never tried to do much about it. It was only when I became more

aware of health and safety in the workplace that I started to think about the environmental impact of my work. To me the intersection of safety and sustainability became obvious and compelling.

When I joined the theatre faculty at Bemidji State University in northern Minnesota, I was able to experiment with production and facility maintenance strategies to green the technical theatre and design process. Director of Theatre, Dr. Patrick Carriere, and Interim Dean of the College of Arts and Sciences, Dr. Elizabeth Dunn, supported those efforts and encouraged the development of a sustainability initiative.

The theatre students and employees were engaged and independently developed ideas for the project. Their enthusiasm for greener theatre production was invigorating and inspiring. Sadly, Minnesota state budget issues led to the total elimination of the Theatre Department there, but what I learned has moved forward with me.

An Introduction to Sustainability

Numerous books about sustainability have been published, but only *Readings in Performance and Ecology*, edited by Wendy Arons and Theresa J. May focuses specifically on theatre. Trade publications have documented green solutions adopted by some theatre companies, but many of the case studies focus as much, or more, on construction based venue changes than operational changes.

At the more manageable, but possibly less effective, end of the solution spectrum are the books of lists—*101 Things to Do to be Green*. These assume a universality of circumstances and most are specific to consumer products and domestic settings rather than entertainment venues. While some of these techniques are applicable to theatre, following a list of instructions does not provide a thoughtful strategy to greening your theatre. A broader foundation is required to make the long-term commitment that a sustainability initiative requires.

Earth Day celebrations and blue recycling bins have been with us for nearly four decades, yet our environmental impact seems to have grown more significant over time instead of decreasing. Are those committed to ecological concerns just a small but vocal slice of the population?

A February 2013 Reuters news article reported that a survey by the international group Globe Scan found that political and financial concerns overshadowed environmental concerns for the polled population. The survey was conducted in July–September 2012 and participants were asked to rate the seriousness of six concerns: air pollution, water pollution, species loss, automobile emissions, fresh water shortages, and climate change. 58% rated the potential lack of fresh water as a significant concern while only around 50% found global warming and the loss of biodiversity a significant worry. The survey contacted almost 23,000 citizens in 22 countries (Reuters: Nina Chestney London | Thu Feb 28, 2013).

Has the general public really lost interest in environmental stewardship? Or is it simply easy to ignore the ramifications of environmental degradation when asked broad, general questions by someone you don't know? Perhaps actions can speak louder than statistics compiled from surveys.

Many theatres and related organizations have begun the conversation about how to make productions, essentially short-term installations, greener to reduce environmental impact. Blogs, feature stories in trade publications, and web pages on green theatre are popping up with regularity. Some regional theatre organizations and public interest groups are committed to disseminating information and creating consortiums to discuss how to reduce the environmental impact of theatre production. This movement includes artists creating theatre at the local level as well as national and international organizations and corporations. It is the result of concern, not regulatory legislation. This evidence of widespread efforts to preserve rather than squander natural resources is exciting and suggests it is time for all of us to explore ways to support this perspective. Engaging your colleagues and patrons in these conversations is

one way to reinforce the connection between individual actions and global problems.

In some circles disregarding environmental impact has become a social taboo. Even multinational corporations with poor environmental track records hire publicists to mitigate a potential negative image. The public concerned about adopting a greener lifestyle may choose to vote with their wallets. Consider the rash of advertisements after news coverage of business practices or accidents that impacted the ecosystem.

The Greening of Fill-in-the-Blank Industries



Zern Liew/Shutterstock

Figure 1.2 We at Fill-in-the-Blank Industries, known as FIB in the trade, are really sorry we dumped something bad in the ocean or leveled those mountains or poured awful things into the groundwater and air. Just turn your head away from those pictures while we distract you with our new greenwashed products. Look! There is less packaging to throw away, because the container is now only twice as big as the product. And we have placed an artistic representation of a green tree on the plastic bottle. See, we are all really swell folks. FIB is just misunderstood as an environmental leader.