An Introduction to Ecological Design for the Performing Arts

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Abstract

The global environmental crisis brings with it an opportunity to rethink current practices in both commercial and cultural sectors. In the Performing Arts, design practices currently have little regard for their environmental impact, and are largely unsustainable. The industry requires a creative and comprehensive exploration of sustainable strategies, to determine how design practices can be updated to comply with environmental considerations, and to enable the industry to take a central role in environmental advocacy and education. This paper will provide an overview of the current status of ecological design in the Performing Arts. It will review some of the barriers associated with the implementation of sustainable design strategies, and suggest how designers and organisations in the Performing Arts might move forward on the agenda.

Keywords

Ecological Design, Stage Design, Scenography, Green Theatre, Performing Arts, Sustainability.

Introduction

> *Historically theatre brought people together to witness enactments in different ways of looking at the world. Out of these cosmologies arose the culture's values, ethics, priorities, methodologies.....; its patterns of thinking and doing.....Theatre can be a hothouse for germinating new ideas and imagining new possibilities. It can be a collective dreaming through which we re-envision what it is to be human*[1].

As the world enters a new age of environmental awareness, the Performing Arts are well placed to take a leading role in exploring and demonstrating opportunities for sustainable practice[2]. Ecological design is an emerging field which promises sustainable solutions for the industry. Defined broadly by Sim Van der Ryn and Stuart Cowan as 'any form of design that minimizes environmentally destructive impacts by integrating itself with living processes'[3], ecological design is an alternative approach to planning, developing and producing objects, spaces and experiences.

Despite their potential, the Performing Arts have been slow to embrace the principles of ecological practice. Current notions of sustainability are seen as dogmatic, restrictive and stifling; the perception that sustainability and theatre don't mix is a common assumption[4]. Morris[5] and Lawler[6] have drawn attention to the problem, noting the linear wasteful practices that theatre design typically adopts. They argue that it is the responsibility of stage designers to embrace the possibilities of sustainable practice, and to lead the theatre industry out of its wasteful ways:

> *In the 20th century there were, modestly, hundreds of thousands of productions that moved through millions…of tons of waste. This waste, classified as construction and demolition waste, is one of the most prevalent materials in our landfills. To curb the waste we create in the theatre industry we must find new ways of thinking and new ways of working without it*[7].

The advocacy of Morris, Lawler and others has raised the profile of sustainable practice in the Performing Arts, and precipitated small-scale initiatives in this area. Nevertheless, the change called for by Morris remains poorly investigated. The environmental impacts of theatrical design are yet to be adequately documented, nor has there has been well researched attempts to examine means by which current design practices can be updated to comply with ecological principles[8]. Designers and Performing Arts organisations require an innovative and comprehensive investigation of these concerns, to define how ecological design can contribute to a sustainable future for the industry.

Background: The Beginnings of an Ecological Movement in the Performing Arts

> *We can begin to call ourselves an ecologically responsible theatre when the quality of life of actors and technicians is as important as a good review; when how we build and discard our sets is as important as how they look*[9].

Greening up our houses: A guidebook to an ecologically sensitive theatre organization, published in 1992, was the first book to specifically address sustainability and the Performing Arts. Its mission was to educate the community on its more toxic, hazardous and wasteful practices, and inspire an ecological ethic that would move the industry out of environmental complacency. Despite breaking new ground, and generating academic interest, the publication failed to shift the industry forward on this agenda. While the 1990s were beginning to build mainstream consciousness on environmental issues, the Performing Arts were largely oblivious and unwelcoming of environmental concerns[10]. In a pointed discussion of the issue, Damond Morris concluded:

'The theatrical industry is broken, plundering the earth of valuable resources without a thought for the wellbeing of future generations. While other industries are taking on board green practices, the theatre industry is painfully unaware'[11].

It remains unclear why the Performing Arts did not progress sooner on the environmental agenda. At a recent Greening Our Performance (GOP) event negative preconceptions of sustainable design – 'expensive', 'boring', 'time-consuming' and 'fear of limiting high quality aesthetics' – were identified as the main contributors to environmental complacency[12]. Another contributing issue is the fact that the theatre industry has been too preoccupied with its own struggles to acknowledge, or tackle, its effect on the environment[13]. Indeed, many theatres have struggled for years to merely survive economically; even contemplating sustainability boarded on hubris[14]. However, there also appears to be a sense of entitlement and complacency in some sections of the Performing Arts with regard to environmental concerns. As performance artist Mojisola Adebayo describes in her interview on the Ashton Directory:

'Some people in theatre believe they are above climate change…that theatre is inherently good for you and therefore, nothing in our work could be harmful. The attitude that we are above this subject needs to change'[15].

Adebayo's comments are representative of a societal shift in environmental awareness that has characterised the beginning of the 21st century. Mainstream exposure to the risks of climate change has been an important driving force, with popular films such as Al Gore's *Inconvenient Truth* and broader media coverage presenting a call for action that has begun to filter through to even the most reluctant sectors and industries. As this new era of environmental awareness has dawned, a number of stage designers have begun to question the ecological impact of their own practices, moving away from environmental complacency[16]. Moreover, designers are recognising that they can

utilise the highly visible position of the Performing Arts to further engage audiences in the issue of environmental sustainability. Theatre can be a platform for designers to confront societal values, ethics and issues head on and to facilitate change.

The Design Issue: Creative Restrictions versus Creative Possibility

Despite its slow start, the sustainability movement in the Performing Arts is now progressing rapidly. In 2008, two major campaigns were independently announced for reducing environmental impacts: the Mayor of London's Green Theatre Plan, and the Broadway Green campaign[17]. Many organisations are currently pursuing sustainable strategies for their venues and productions[18], and a handful of independent practitioners are beginning to question existing practices, initiate sustainable alternatives and drive positive changes[19, 20]. Yet despite these initiatives, green design is still considered the most challenging and least investigated component of sustainable practice in the Performing Arts[21].

It can be argued that designers in the Performing Arts do not have the same opportunities as those in larger industries to embrace environmental practices. Larger sectors, such as architecture and industrial design, usually have much more substantial budgets, produce longer lasting designs and have more opportunities to repeat sustainable strategies across projects. Every stage design is unique in every aspect, from its size and materials to the people involved, making it hard to standardise an approach[22].

Most importantly however, current notions of sustainability, limited to the principles of reduce, reuse and recycle, do not fit the model of extravagance to which the industry aspires. Producers and directors encourage designers to create a visual experience that serves the audience's 'high quality' expectations: a 'world' that is both sophisticated and entirely different from other designs seen previously[23]. Moreover, no artistic director will tell his or her designers to 'limit themselves' in order to reduce consumption and waste generated by their productions[24]. Environmental action needs to be invigorating, innovative and engaging for the Performing Arts to embrace new ways of thinking that will turn around existing and intrinsically unsustainable modes of practice. These considerations are the crux of the sustainability challenge.

Progressing Ecological Design in the Performing Arts

Learning from other sectors further ahead in the field of sustainable practice will open up opportunities for understanding the broader objectives, principles and methodologies of ecological design for the Performing Arts. Table 1 describes key components of ecological design from industries including architecture, industrial design and product design, and discusses their potential application in the Performing Arts. For example, an eco-efficient approach, with its focus on fewer resources and less waste, might produce a minimalist design outcome. In contrast, an eco-effective design, where waste is seen as a potential resource, might provide a more maximalist aesthetic if the concept is capable of creating positive ecological results. Other movements, such as biophilic design, offer a different perspective on the ecological agenda. Biophilia focuses on enhancing human affiliation with natural systems. It offers inspiration for site specific theatrical work where the performance is integrated with the natural environment, thereby encouraging empathy for, and understanding of, ecosystem processes. These strategies offer theatre designers an array of

opportunities to incorporate ecological practices, and to overcome the industry's fear of limiting artistic practice.

Conclusion

Ecological design is an exciting new territory for stage designers. Yet there remain important barriers to the implementation of ecological practices in the Performing Arts. Rather than succumbing to these limitations, this paper has discussed the importance of actively pursuing sustainable practices that embrace the challenges and creative possibilities of environmentally conscious theatre. We should look towards other industries for inspiration on ecological design, but also recognise that the Performing Arts must investigate and instigate its own environmental strategies. Only then will theatre truly find its voice in the sustainability agenda.

Endnotes

[1]Larry K. Fried and Theresa J. May, *Greening Up Our Houses: A Guidebook to an Ecologically Sensitive Theatre Organization* (Seattle: Theatre in the Wild, 1992), *v*.

[2]*Ibid*, 21.

[3]Sim Van der Ryn and Stuart Cowan, *Ecological design* (Washington: Island Press, 2007), *x.*

[4]In discussion with participants at Melbourne's "Greening our Performance" symposium at the Abbotsford Convent, Melbourne, May 2012.

[5]Damond G. Morris, "Towards a Recycled Theatre: Industrial Ecology Theatrical Applications for the Next Industrial Revolution" (MA diss., Western Washington University, 2007), 43.

[6]Mike Lawler, "Mike Lawler on theatre and sustainability," *American Theatre* 25 (2008), 59.

[7]Morris, "Towards a Recycled Theatre", 43.

[8]*Ibid*, 18.

[9]Fried and May, *Greening Up Our Houses*, 8.

[10]Eleanor Margolies (ed.), *Theatre Materials* (London: Centre for Excellence in Training for Theatre, Central School of Speech and Drama, University of London, 2009).

[11]Morris, "Towards a Recycled Theatre", 2.

[12]In discussion with participants at Melbourne's Greening Our Performance (GOP) production symposium at the Arts Centre in September 2012. GOP is an alliance of performing arts companies and individuals striving to reduce the industry's carbon footprint.

[13]Margolies, *Theatre Materials*.

[14]John Stancato, "Sustainable Sustenance: Launching Community Supported Theatre," *CSPA Quarterly* 2 (2010), 36.

[15]The Ashden Directory, "Ashden Directory DVD: Six ways to look at climate change and theatre - our online film for 'Earth Matters on Stage'", The Ashden Directory, http://www.ashdendirectory.org.uk/featuresView.asp?pageIdentifier=2009521_19735354&view=

[16]Including: Tanja Beer, Soutra Gilmour, Anna Tregloan and Donyale Werle.

[17]Sam Goldblatt, "Code green - A Comparative Look at Worldwide Cultural Policies for Green Events", *CSPA Quarterly* 1 (2009), 9.

[18]Including: Arcola Theatre, Julie's Bicycle, Mo'olelo Theatre and Sydney Theatre Company.

[19]Pamela Howard, *What is scenography?* 2nd ed. (London and New York: Routledge, 2009), XXI.

[20] Steen V. Mitchell, "Sustainability in Theatre Design", *CSPA Quarterly*, 2 (2010), page numbers.

[21]In discussion with Julie's Bicycle, Malthouse Theatre and Sydney Theatre Company, 2012

[22]Sydney Theatre Company, "Theatre Production". http://greeningthewharf.com/wp-content/uploads/2012/02/1156_gtw_CS_theatreproduction_revart1.pdf.

[23]Morris, "Towards a Recycled Theatre", 21.

[24]Lawler, "Mike Lawler on theatre and sustainability," 61.

[25]Livio D. DeSimone and Frank Popoff, *Eco-efficiency: the business link to sustainable development* (Cambridge: MIT Press, 1997).

[26]McDonough and Braungart, *Cradle to Cradle*.

[27]Stephen R. Kellert, Judith Heerwagen and Martin Mador (ed.), *Biophilic design : the theory, science, and practice of bringing buildings to life* (Chichester: John Wiley, 2008).

[28]Maibritt P. Zari, "Ecosystem services analysis for the design of regenerative built environments," *Building Research & Information* 40 (2012), 54-64.

[29]Janis Birkeland, *Design for sustainability: a sourcebook of integrated, eco-logical solutions* (Sterling: Earthscan Publications, 2002).

[30]Kiel Moe, *Integrated design in contemporary architecture* (New York: Princeton Architectural Press, 2008).

Table 1. Key components of ecological design and their potential application to the Performing Arts

Design Movement	Key References	Approach	Aims/Principles/Strategies/Tools	Applicability to the Performing Arts
Eco-efficiency	DeSimon and Popoff 1997[25]	A "carrying capacity" approach which aims to achieve carbon neutrality with maximum efficiency	Focus is on using fewer resources and producing less waste and pollution. Strategies include: Design for disassembly and recyclability; design that minimises energy consumption; design that endorses alternative sources of power; design for endurance; design with 3R's (reduce, re-use and recycle). Uses existing industrial frameworks and conventional design methods. Can be cost effective and straight forward to implement. Does not seek to achieve positive environmental outcomes.	Offers some useful strategies that are easily transferable to the Performing Arts. Can be implemented within a business-as-usual framework. Offers an alternative for theatre organisations that have limited knowledge about ecological strategies and are more resistant to change. Cost effectiveness is an incentive for saving money on tight budgets. An Eco-efficiency approach may lead to a more minimalist design aesthetic for the Performing Arts.
Eco-effective Design	McDonough and Braungart 2009[26]	A cradle-to-cradle approach that seeks positive environmental outcomes	Uses ecologically intelligent design processes (biomimetic or closed loop cycles) to create positive or regenerative environmental outcomes. Designers employ the intelligence of natural systems to sustain, protect and enrich the environment. Designs aim to be waste-free or 100% recyclable. Waste is also seen as a potential resource so designs do not necessarily need to minimise output.	Goes beyond the "being less bad" model that is currently practiced in the Performing Arts and introduces greater possibilities for creating a positive environmental footprint. Can be difficult to implement without some understanding of ecological principles and the benefits of healthy ecosystems. Stage designers may require extra research and training to undertake this methodology. Aesthetic outcomes can be maximalist if the design is capable of creating positive environmental results.
Biophilic Design	Kellert, Heerwagen and Mador 2008[27]	Seeks to engage with the inherent human inclination to affiliate with natural systems	Encourages designers to think about how reciprocal benefits between the built environment and the natural environment can be sustained and achieved. Inspires sensory, emotional and spiritual satisfaction in the design outcome. Designs include: Environmental features, natural shapes and forms, natural patterns and processes, light and space, place-based relationships and evolved human-nature relationships.	Nature could become inspiration for site-specific work where the performance is integrated with the natural environment. A set design in an indoor space could include environmental elements such as water, plants, sunlight and natural materials - thereby also generating a human-nature connection. While Biophilic design offers some simple and effective strategies transferable to the Performing Arts, stage designers may require greater ecological understanding, research and training to undertake the more complex methodologies of this approach.
Biomimicry	Zari 2012[28]	A process where ecosystems are emulated as a basis for design	The act of borrowing designs and strategies from nature. Designers look to the living world for inspiration – their process may be inspired by characteristics, behaviour, or functions of an organism or ecosystem. Encourages restorative and regenerative design strategies.	Mimicking eco-systems offers a radical approach to designing for the Performing Arts. Understanding the common principles of healthy eco-systems could inspire completely new strategies for stage design. Can be difficult to implement unless designers are educated in biological processes.
Integrated Approach	Birkeland 2002[29], Moe 2008[30]	Reconciles complementary environmental design movements to maximise opportunities	Uses a number of combined techniques, frameworks and processes to achieve the most effective use of resources. May result in regenerative, restorative, eco-efficient or conventional development outcomes, depending upon the motivation and knowledge of the design team.	Offers the Performing Arts a number of diverse and combined approaches to meet the needs of various production requirements. Proposes a holistic, integrative and varying approach that can be adapted to suit any organisation. Can be incorporated by designers with different levels of experience and ecological knowledge.