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The Living Stage: A Case Study in Ecoscenography

By Tanja Beer

Abstract

The rising global consciousness of environmental degradation brings with it an opportunity to rethink current practices in cultural sectors. In the performing arts, many design methods have little regard for their environmental impact, and are largely unsustainable. This paper will discuss the application of ecological design for performance, with a focus on *The Living Stage*; a project that explores the potential of ecological strategies to influence the creative process, and deliver new modes of artistic expression. A centrepiece of the 2013 Castlemaine State Festival (Australia), *The Living Stage* combined stage design, permaculture, and community engagement to create a recyclable, biodegradable, and edible performance space. The paper has been written to accompany a film on *The Living Stage* and reveals how the project was achieved through the application of Sim Van der Ryn and Stuart Cowen's ecological design principles. Moving beyond recycling and efficiency, this enquiry poses a more radical question: 'Can we create designs that not only enrich our audience, but our community and environment as well?'

A film recording of *The Living Stage* can be accessed online via <https://vimeo.com/117488908>.

The Living Stage: A Case Study in Ecoscenography¹

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As the world enters a new age of environmental awareness, the performing arts is in a position to take a leading role in demonstrating sustainability. Like all roles in the theatre industry, stage designers have the opportunity to address current environmental and social issues by questioning existing practices, initiating design alternatives, and driving radical and progressive changes. Currently however, many design practices in the performing arts have had little regard for their environmental impact and are largely unsustainable.²

In 2012, I set out to test a novel concept of sustainability for the performing arts using the platform of the 2013 Castlemaine State Festival in Victoria, Australia. Under the title, *The Living Stage*, the project combined stage design, permaculture, and community engagement to create a recyclable, biodegradable, and edible performance space. Part experiment, part theatre, part garden, and part food-growing demonstration, *The Living Stage* featured vertical garden walls, suspended pots, and portable garden beds, each culturing edible plants. The structure was created by the rural community of Castlemaine, guided by local permaculturalists Hamish MacCallum and Sas Allardice (hereafter “Hamish” and “Sas”), with myself as stage designer.

¹ A film recording of *The Living Stage* can be accessed online via <https://vimeo.com/117488908>.

² Tanja Beer, “An Introduction to Ecological Design for the Performing Arts,” in *Cultural Ecology: New approaches to Culture, Architecture and Ecology Symposium, 2012*, edited by Mirjana Lozanovska (Geelong, Victoria: School of Architecture and Built Environment, Deakin University, 2013), 92-98.

The Living Stage acted as both a venue and inspiration for a number of local performance groups, whose brief was to create experimental works that drew on the concept of regeneration and interacted with the unique design that surrounded them. At the end of the Festival, *The Living Stage* was consumed by the community; its physical structures became their garden beds, its plants became their food, and its waste became their compost. The project explored the role of the stage designer as an activist and facilitator of change within the performing arts, and, through its community focus, also illustrated the potential of the theatre industry to take a leading role in demonstrating sustainable practices to the broader community.

This paper has been written to accompany a film recording of *The Living Stage* and reveals the thinking behind the work. Moving beyond recycling and efficiency, the enquiry poses a more radical question: “Can we create designs that not only enrich our audience, but our community and environment as well?”

Ecoscenography: Applying the Principles of Ecological Design to *The Living Stage*

The primary focus of *The Living Stage* was to investigate the potential of ecological design to influence creative processes and deliver new modes of practice. Ecological design, as defined by Sim Van der Ryn and Stuart Cowen is an “environmentally responsible discipline that minimises environmentally destructive impacts by integrating itself with living processes.”³ Primarily applied within the field of architecture, the concept embraces broader notions of sustainability, such as conservation, regeneration, and stewardship, and places nature at the heart of the

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

design process. Taking ecology as the basis for design, designers ask: “How can we design in such a way that acknowledges and responds to living systems, nature’s cycles, and patterns?”

Ecological design is the underlying framework for “ecoscenography” – a practice I define as the integration of ecological principles into all stages of scenographic thinking and production.⁴ Ecological thinking acknowledges that materiality and environments are mutually dependent in making beings, things and places – it recognises humans as part of nature’s system, rather than a separate entity to use nature at its disposal. This means that the quality and success of ecoscenographic work is not only measured by its aesthetic outcome, but also by how it relates and contributes to environmental and social systems beyond the theatre. The notion of the scenographer making an environmental and social contribution beyond the theatrical work is precisely where ecoscenography differs from more conventional approaches to sustainability in stage design practice, such as eco-efficiency (which strives purely to minimise ecological impacts, but does not seek to have a positive legacy).

In the making of *The Living Stage*, Sim Van der Ryn and Stuart Cowen’s ecological design principles were used as an initial framework for testing ecoscenography in practice, where ecological ethics and environmental impacts are seen as opportunities rather than constraints: values that can illuminate and be integral to aesthetics. In this paper, I focus specifically on the significance of these principles which are used as “an inspiration to creativity, rather a definitive set of rules”⁵ and explore

⁴ Discussed further at “What is ecoscenography?”, <http://ecoscenography.com/what-is-ecoscenography>

⁵ *Ibid.* xi.

their application to the project.⁶ The architects' five ecological principles – “Solutions Grow from Place,” “Ecological Accounting informs Design,” “Design with Nature,” “Everyone is a Designer,” and “Make Nature Visible” – and their application to *The Living Stage* are discussed in detail below.

1. Solutions Grow from Place

The first principle, “Solutions Grow from Place,” grounds design ideas in the ecological, material, and human character of place. It asks the designer to begin by actively seeking out the characteristics of the proposed site or space, and to respond creatively to the conditions and possibilities available. This principle proposes that ecological design is both “small scale and direct, responsive to both local conditions and local people.”⁷ It suggests that if we are sensitive to the details of place, we can respond to it more receptively. “Solutions Grow from Place” acknowledges that resourcefulness comes from being responsive to what is available first and foremost, and is a key strategy for avoiding excess consumption and waste. As Van der Ryn and Cowen reflect, “Ultimately, ecological design deepens our sense of place, our knowledge of its true abundance and its unsuspected fragility.”⁸

The Living Stage began with acquiring a localised response to the social, cultural and environmental potential of place. The principle encouraged a design approach that allowed scenography to emerge out of

⁶ I acknowledge that there are many strategies and tools for exploring sustainable design practice. Some of these include: Ecological Sustainability (David Orr 1992), Living Machines (Todd and Todd 1994), Regenerative Design (Lyle 1994), Permaculture (Mollison 1996 and Holmgren 2002), Biomimicry (Benyus 1997), Eco-effective Design (McDonough & Braungart 2002) and Regenerative Development (Reed 2003). I chose Ecological Design (Van der Ryn and Cowan 2007) as it was the most applicable to *The Living Stage* project.

⁷ Sim Van der Ryn and Stuart Cowan, *Ecological Design* (Washington: Island Press, 2007), 77.

⁸ *Ibid.* 40.

the site rather than devising a preconceived idea of the constructed theatrical space. While the concept of *The Living Stage* had a clear goal of creating a “recyclable, biodegradable, edible performance space,” it did not have any defined plans or fixed aesthetics. It was only once the site was decided upon that the specifics of the structure started to emerge.

Ideas for *The Living Stage* began with the performance site of Victory Park (situated in the town centre) and also considered the wider context and potential of the town’s agricultural community. Castlemaine is situated at the heart of apple-growing country. This became the impetus and inspiration for the portable growing containers that were chosen as a central feature of the design. Van der Ryn and Cowen suggest that being highly receptive to place allows us to discover efficiencies and possibilities that may not have been contemplated originally. Engaging with the local agriculture community allowed us to borrow apple crates, and adapt the design so that the empty boxes could be returned to the farmers after the season, helping to minimise both financial and environmental costs of the project. By collaborating with the Castlemaine community, we were also able to seek out potential “homes” for the plant-filled boxes after the performance season and build this into our plans for construction, dismantling, and distribution. Ultimately, this allowed for the plants to be dispersed into the gardens of the community and continue growing after the festival concluded.

“Solutions Grow from Place” is a process of engagement that also encourages interdisciplinary and participatory processes. It envisions the designer as a catalyst, facilitator, cultivator and co-creator in the cultural processes underlying sustainability.⁹ This requires new skills, an open mind and a willingness to “let go” of ownership in a traditional design sense. The

⁹ Alastair Fuad-Luke, *Design Activism: Beautiful Strangeness for a Sustainable World* (London, UK: Earthscan, 2009), xxi.

strategy inspires new kinds of partnerships – including opportunities to engage with non-theatre professionals, and to encourage new sets of knowledge and communication. Essential to the project was the collaboration with two local permaculturists, Hamish and Sas, whose local expertise was vital in choosing plants and growing techniques that were suited to the Central Victorian environment. Plants included sunflowers, zucchinis, tomatoes, strawberries, eggplants, and a large variety of lettuces and herbs. Permaculture companion planting techniques – a method which makes use of synergistic properties and cooperation between plants – were also incorporated in order to achieve optimum plant growth. During the hottest weeks, Hamish and Sas ensured that plants were watered multiple times during the day to cope with Victoria’s scorching temperatures of approaching 40°C (104°F). Their detailed knowledge of the region, culture and climate (especially during a season where high temperatures and drought prevailed) was crucial to the success of the project.

2. Ecological Accounting Informs Design

The Second Principle, “Ecological Accounting Informs Design,” considers the environmental impacts of a proposed design to determine the most ecologically sound possibilities. Designers are encouraged to incorporate ecological planning directly into the design process – considering energy and water usage as well as the toxicity and life-cycle of products – allowing this to inform the work.

Minimisation of environmental impact was a defining feature of *The Living Stage* – from pre-production (planting & plant care), production (harvesting & celebration) to post-production (distribution & evaluation). The project team minimised impact in a variety of ways, including our

travel to and from the site. For example: Sas, a Castlemaine local, rode her bike to and from meetings and plant-watering sessions; Hamish traded his motorbike for electrical bicycle to commute from the outskirts of town, and I chose to travel by train from the nearby town.

Creating a waste-free, low-impact performance space required continuous consideration and was not always feasible. The site chosen for plant growing was the courtyard of the Old Castlemaine Gaol, which once having been a community garden, was already equipped with two full water tanks and an irrigation system. However, an unusually hot and dry Australian summer meant that after one month, our water tanks ran dry, forcing us to connect to the main water supply to keep the plants alive. Waste, energy use, and transportation for the project were largely mitigated, but we still required cars to transport supplies and a forklift to install the crates, as well as plastic sheeting and power tools to construct the space.

While we worked hard to maximise efficiencies, the strength of *The Living Stage* was its capacity to synthesise with and contribute to environment and community. As such, the success of the project was judged by its ability to connect community members to living processes through permaculture, collective practice, celebration and performance. Our aim was to follow design processes that were capable of creating “positive legacies” for both communities and the environment.¹⁰ In other words, we sought a performance space that produced more resources than it consumed. This notion of “building capacity” was achieved by enlivening people’s connection with nature, as well as producing portable

¹⁰ Dominique Hes and Chrisna du Plessis, *Designing for Hope: Pathways to Regenerative Sustainability* (Forthcoming in Routledge). In this forthcoming book, Hes and Du Plessis ask: ‘How can projects focus on creating a positive ecological footprint and contribute to community? How can we as practitioners restore and enrich the relationships embodied in our projects? How does design focus hope and create a positive legacy?’

gardens that could be utilised by the Castlemaine community for many years after the show.¹¹

3. Design with Nature

The third principle, “Design with Nature,” encourages designers to think cyclically, and engage with processes that benefit both people and eco-systems. This principle suggests that minimising impacts by working in partnership with nature and integrating with natural systems promotes a deeper respect for the environment.¹²

Collaborating with permaculturists on *The Living Stage* allowed the team to engage with nature’s systems to maximise plant life and productivity without toxic pesticides or chemicals. Permaculture is ‘Design with Nature’ at its best – a waste-free discipline that employs local composting, recycling, seasonal and companion planting, natural sunlight, and rain or tank water to grow food.¹³ Hamish, Sas, and I worked consistently over the hot summer months to look after the plants and cater to their needs. Being a gardening novice, I had much to learn about the challenge of maximising plant growth, which I soon discovered was much more than just keeping the crops “watered and fed.” And while efforts were made to tend to the plants on a daily basis, plants could also be in danger of being overwatered, overfed, or even watered at the wrong

¹¹ For more details on capacity building, see Bill Reed, “Shifting from ‘Sustainability’ to Regeneration”, *Building Research & Information* 35, no.6 (2007):674–80.

¹² For example, see Center for Ecoliteracy, “Systems Thinking”, accessed September 21, 2014, <http://www.ecoliteracy.org/essays/systems-thinking>. Systems-based thinking originated out of broader fields of Environmental Engineering, Architecture, Urban and Industrial Design as a way of problem solving, by viewing problems within systems (rather than as separate parts or smaller systems in isolation) and focusing on cyclical (rather than linear) processes.

¹³ For example, see David Holmgren, *Permaculture: Principles and Pathways beyond Sustainability* (Washington: Holmgren Design Services, 2003).

time of the day. For Van der Ryn and Cowen, ecological design typically begins with questions, rather than answers, and the act of ‘listening’ becomes a central part of the process. In *The Living Stage* this meant observing and responding to what the plants needed on a day-to-day basis, and could entail anything from adjusting the flow of the irrigation system, to repositioning boxes in or out of the shade.

Perhaps the biggest challenge of working with nature was learning to collaborate with natural systems on their own terms. As *The Living Stage* progressed, I became acutely aware of the need to work in synchronicity with nature’s processes. Integral to this understanding was the (sometimes harsh) realisation that nature could not be hurried or slowed down. Instead, I had to find ways to adapt my design to local conditions and unreliable sources, such as extreme climatic conditions or nutrient-poor soil. This became a key aspect of planning and developing the design. Working in tune with living systems allowed me to become more in touch with the local ecology and climate. By growing things I learned to slow down, to test the moisture of the soil, welcome the presence of bees and rejoice in the promise of rain.

4. Everyone is a Designer

The 4th principle, “Everyone is a Designer,” asks designers to listen to every voice in the design process. This principle suggests that solutions evolve organically out of situations and patterns of communication, and invites designers to seek out the involvement of communities in the development of the work. Van der Ryn and Cowen contend that it is through active participation that design projects have the capacity to facilitate, develop, and sustain meaningful connections, partnerships, and cultural networks. “Everyone is a Designer” is the crux of what brings

culture, community, and sustainability together: “As people work together to heal their places, they also heal themselves.”¹⁴

The authors suggest that community participation is an effective way for the public to become aware of sustainability issues and engage with creative strategies. *The Living Stage* included a number of workshops that invited the local community to be involved in the project in every stage of its production – from planting workshops to harvesting, to celebration and distribution of the produce. At our early workshops, local residents were invited to plant seedlings and learn about permaculture principles, as well as partake in art workshops to create plant labels for the set. Many of the participants were experienced gardeners and artists who contributed their valuable expertise during the project development. Children of all ages were also active in the workshops. These events often became family activities with communal lunches where we were also able to relax and engage in conversation.

Van der Ryn and Cowen acknowledge that the best design experiences occur when no one can claim credit for the solution – when the solution grows and evolves organically out of a particular situation, process and pattern of communication. A sense of community ownership quickly became evident during *The Living Stage*, with several workshop participants arriving early in the festival to view the final design and engage with the public to talk about the work. To my surprise, it was not only the participants that expressed their pride over the project. On the day of the opening, a local orchard grower turned to me, pointing at the stage, exclaiming, “They’re *my* apple boxes,” revealing a sense of ownership and joy in the execution of the work.

5. Make Nature Visible

¹⁴ Sim Van der Ryn and Stuart Cowan, *Ecological Design* (Washington: Island Press, 2007), 169.

The 5th Principle, “Make Nature Visible,” acknowledges that making ecological design visible can generate a greater awareness of, and connection with, nature. It involves investigating a new aesthetic for built environments, one that explicitly celebrates the symbiotic relationship between nature, culture, and design.

The Living Stage used ecological design to explore new aesthetics and artistic paradigms that are inspired by nature. The space offered a platform for performance artists to respond to themes of regeneration and abundance, and to celebrate in its vision with a series of locally based performances that took place over the festival weekend. The primary performances were: (1) a performance of *Garden Chef* where local actors collaborated with Winters Flat Primary school to create a live “cook off” using ingredients from the garden set; (2) *Produce*, a physical theatre performance where a local mixed-ability group CreateAbility performed with Born in a Taxi (a physical theatre group specialising in outdoor performances) to interact with the structure and greenery of the stage, and; (3) a *Long Table Feast*, where Growing Abundance (a local sustainability community group) served up a feast of locally sourced food amongst the set.

The highlight of the performances was *Produce*, a powerful movement piece accentuated by the environment of *The Living Stage* exploring human relationships with the natural world through themes of growth and change. The performers utilised the space in a number of ways: a marketplace of characters nibbled at herbs, climbed up apple-crate walls, cut wheatgrass (to reveal someone behind it), juggled tomatoes and played “catch” with vegetables from the garden. As one audience member noted, the show’s playful interaction with *The Living*

Stage helped captivate the “intricate talents and idiosyncrasies of its performers to build a poetic and unique show.”¹⁵

During the festival, the stage was also an interactive installation where people were encouraged to walk amongst the structure and engage with the greenery. Audiences were free to touch, smell and taste the produce, as well as pick herbs and salads to take home with them at the end of the day. Children were perhaps the most engaged audience, reveling in the chance to “have a nibble at the stage.” One of my fondest memories in audience interaction was captured when a little boy ran across the stage during a performance of *Produce* to grab a cabbage from the garden set. Turning towards us with a wide and cheeky grin, he toddled back to his parents with the cabbage nestled between his arms. Needless to say, the boy “stole the show” as well as the vegetable.

The aim of the collaborative and hands-on nature of *The Living Stage* was to encourage communities to take action in building thriving and resilient communities, and to demonstrate to our audiences that a sustainable future is not only possible, but also incredibly exciting. After the performance, our 14 larger crates were donated to the Bendigo Regional Institute of TAFE and the Salvation Army to facilitate food growing projects in otherwise underutilised spaces. A year after the festival the local council donated AUD \$25,000 towards community garden projects, all of which are still thriving today.

Almost two years after we planted the first seeds of *The Living Stage*, there is still an abundance of collective activities around food growing in Castlemaine. In October this year, *Fair Food Week*¹⁶ hosted a tour of Castlemaine’s edible gardens to demonstrate how they have

¹⁵ Born in a Taxi, “Produce,” accessed December 22, 2014, <http://www.borninataxi.com.au/theatre/current-productions/item/48-produce/48-produce/>

¹⁶ Fair Food Week, “Yea Incredible Edible Castlemaine Tour,” accessed September 21, 2014, <http://fairfoodweek.org.au/event/yea-incredible-edible-castlemaine-tour>.

continued to flourish, growing in size and productivity, helping to nurture local food systems and community connections. This tour could be seen as a conscious act in making “nature visible” and a testament to the local community who have continued to extend and surpass the legacy of *The Living Stage* far beyond the structure itself.

Conclusion

As we move towards a future of increased environmental and social awareness, ecological design presents an exciting new paradigm for stage designers. This paper has briefly discussed one approach to actively pursuing sustainable practices which work beyond recycling and efficiency to embrace the challenges and creative possibilities of environmentally conscious theatre. The approach is by no means a panacea. There can be no question that the application of many of Van der Ryn and Cowen’s ecological design principles to more conventional theatre practices presents significant challenges. For example, it can be legitimately asked how “Design with Nature” might be applied to a set design *inside* a theatre venue, or “Solutions Grow from Place” to an international touring production.

It is only through the investigation of a number of ecological practices, tools, and techniques that we will uncover the diversity of ecoscenographic principles required to overcome such challenges. Testing Van der Ryn and Cowen’s ecological design principles with *The Living Stage* has highlighted the possibilities for site-specific outdoor theatre, including the value of stage designers placing stakeholders at the centre of the design process to maximise efficiencies, or using community engagement to help facilitate positive legacies. More fundamentally, *The Living Stage*

demonstrates the potential of reframing sustainability as a creative process which is capable of generating positive and far reaching rewards.

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