

Sustainable Consumption and Enhanced SDGs Utilizing Digital Techniques in Scenic Design

Dr. Samah Nassar

October University for Modern Sciences and Arts, Faculty of Arts and Design, Cairo, Egypt,
snassar@msa.edu.eg

Abstract:

Quite possibly the most well-known types of amusement for individuals are a visit to the theatre. For quite a long-time individual have appreciated dramatization, satire, music, and different types of amusement. Truth be told, the historical backdrop of theatre can be followed back to the sixth century B.C. where the Antiquated Greeks were quick to introduce emotional introductions. The issues related to the topic will be discussed in the report how the theatres previously were facing issues and how can this be resolved using digital theatricals. The objective of the report is that points out the theatrical design. The aim of this research is to highlight an insight into how digital theatre performance and production can processes integrate sustainability literacy. This article describes the establishment and enhancement of theatre performance and green structures used to perform the work in two spaces. Free philosophies have so been employed across various times. Subjective techniques used in this examination incorporate practice drove inventive advancement strategies explicit to theatre and creation measures. In addition, the need for fundamental changes to digitalizing the theatrical design can quite beneficial the development goals for UN.

Keywords:

Sustainable, Consumption, Digital, Theatrical, Techniques

Paper received 18th May 2021, Accepted 5th July 2021, Published 1st of September 2021

Introduction

The past quarter century has seen a change in outlook in the realm of dramatic plan. Set pieces that once required the human dash of a profoundly gifted fine craftsman would now be able to be delivered on a PC. Tedious three-dimensional set models can be made in only a couple hours. Gigantic grand drops can be printed for a negligible portion of the expense, time, and work needed to have them painted by beautiful specialists. The computerized age has shown up, and numerous individuals feel its advancements are a demise chime for a whole industry of picturesque specialists (Ryerson, 2020). This research discusses how theatrical design are used and how sustainable practices can be implemented in theatres. Subjective techniques used in this examination incorporate practice drove inventive advancement strategies explicit to theatre and creation measures and can entirely transforming, the economic, ecological and social calculation of the performing arts.

Discussion:

Scenic Design and Construction

Recently, the united nation invited the global to participate in the sustainable development goals known as SDGs as a pressing movement to improve and rescue the quality-of-life hand in

hand with all the countries and within strategical plans for 2030. The 17 goals are tackling all the issues and main concerns, and direct industries, education and all social and economic targets towards a more sustainable direction. That defiantly, include and impact my research today in order to produce more sustainable theatre. Including greener and ecological theatrical consumptions. Our societies should become more committed to theatrical workable solutions, and that mainly focus and lead us to think about the theatrical digitalization. Surly, our framework will include the ecological, economic and social awareness. Those poles also should be connected all the time and measuring the impact of this transformation in the theatre practices.

To comprehend more this point we would take the case of 'dark water'. A theater in which cully long is a scenic designer and Boss Dan Gallagher is the assistant director. In order to ensure the amazing parts of dark Water, scenic designer Cully Long and Concentrated Boss Dan Gallagher has achieved their goal to reduce, reuse and reuse any quantity of the beautiful segments that one would expect. Cully has established his own marvelous arrangement on their platforming circuit rather than constructing fresh, magnificent bespoke pieces. Believe it or not, no new lumber was

purchased for this creation. Despite our stock stages, Cully also joined parts from past manifestations into his pleasant arrangement for the show. Cully and Dan combined the total mise-en-scene of the set improvements from both School Theater's prop storage from "show shed," allowing to create a stunning setting without having to buy new items. The set frivolity seems

to depict the hostile effects of human trash on the everyday landscape as well as animals. They assembled around 500 plastic containers through endowments across grounds to make the sculptural rooftop part. The whole of the containers will be reused close to the completion of the show. ("Sustainable Theatre Practices Theatre & Sustainability", 2021)



Figure (1) photo courtesy Dan

Gallagher

Sweigart-Gallagher, A. (n.d.). *Theatre & Sustainability*. Sustainable Theatre Practices | Theatre & Sustainability.

<https://www.sustainabletheatre.org/narrative/sustainable-theatre-practices>.

Costume Design & Its Construction

As indicated by a 2016 report by the Ecological Insurance Organization, calfskin and material waste make up in any event 10% of the strong waste advancing toward landfills. Cully Long, the ensemble fashioner, and Selina French, the Outfit Shop Manager, collaborated to ensure our Dim outfit strategy. Water gave this waste stream less materials. Cully's show ideas drawn from the

creatures in the show as far as surface, shade and shape are concerned. To rejuvenate them while meeting our manageability objectives. They used less clothes, brought no or minimal new clothes and reused the clothes that were used previously. (Appletons & Lyon, 2016)

Lighting Design and Electric

In the production of "dark water" the lightning designer put in efforts to reduce the use of electricity and resources by using new technology and efficient lighting system. They replaced the old bulbs with less consuming led bulbs with consumed a lot less power than the previous high voltage bulbs. (Walters in Rowan, 2015, p. 99)



Figure (2) photo courtesy Dan Gallagher

Sweigart-Gallagher, A. (n.d.). *Theatre & Sustainability*. Sustainable Theatre Practices | Theatre & Sustainability. <https://www.sustainabletheatre.org/narrative/sustainable-theatre-practices>.

Usage of Paper

Paper utilization is a factor to be considered as far as showcasing theatre creations inside the division, particularly as far as free program distribution to crowd individuals. Inside Industry and College settings paper utilization incorporates configuration, including all reproducing printed materials as a feature of creation promoting methodologies. Since 2015 and starting with the Residue project Griffith College Feline creation division has carried out dominantly advanced roads comparable to programming and promoting. This choice was pointed toward eliminating assets utilized in conventional promoting strategies paper, ink, and card.

Greening the Theatre

In explaining all these ideas, Johnson describes common sensitivity as "the decrease in misuse, energy consumption and maneuver of harmful matters," financial acceptance as a "pruning in cost and conserving quality of production," contributing experts with live remuneration and assuring the sensitivity of drama associations in relation to long-range financial resources." He goes on to define the communal component of sensibility as "the construction and conservation of consistent and sustainable interactions, broadened relationships with encompassing organisations, advancement of inventive assortment, in addition construction of social capital." Those concepts are in line with Griffith School's 2017-2020 Viability Plan. The basic argument for sensitive development is that these three zones [environment, economics and social] are interconnected indiscriminately, and should be tended to be components of the larger whole. Johnson points out. The sensitivity ethos of the production of the Water Wars certainly impacted the people of the creative lot and so the legacy of creation was made tangible. Water Wars may be an arrangement for future events for this attention The project came into being when qualified experts and associated practises in Australia began to consider the environment change, the ozone drainage substance emissions and a terrestrial temperature support in Brisbane, Queensland. This evaluation was carried out. Sensitive creative actions taken and carried out when Build up was being cleared out. In order to tolerate this green heritage, the presentation work considered how the theatre's specialists and specialists might best be examined in terms of how to combine sensitivity in their conference room practise at the school level. The creative strategies addressed address natural and social sensitivity methods used to theatre production and usage in school, a

methodological framework which recognises a viable proposal to create and execute theatre. Through the Greening the Exhibition, Rowan takes into account the illogical practise of creating three key positions; magnificent lighting, a change in events and progress. Through strong sensitivity tactics which take into account plan, creation, and association, understood structures that promote affordable cycles and practises in the school learning and teaching environment were established. These cycles are in keeping with the green theatre development and employ techniques constantly linked in the legitimate region of the Australian assembly room. (Hassall & rowan,2019)

Transformation of Theatre Using Technology

It very well may be contended that theatre and shows have consistently, somewhat, utilized the most recent advancements of the time. Mechanical gadgets, lighting, and materials have gotten standard as a component of any exhibition. Yet, as innovations like 3D printing, CGI and different advancements improve apace that the auditoriums of things to come could get unrecognizable to those that gone before them. (arrisacado, quesado & sousa ,2019). And the expression of techno drama is yet to discover more application through virtual and augmented reality combining those new and trendy technology with the 3D affects in the theatre scenic design for overcome the space limitation and to unlimited the creativity.

Multimedia

Current theatre manifestations moreover advantage from a mix of live and pre-recorded film to give striking and connecting with shows. (borisov et al,2015). For example, the new making of and a short time later They Came for Me: Reviewing the Universe of Anne Impending from the Jersey City Theatre Centre featured a mix of recorded gatherings with sidekicks of Anne Obtuse and live performers.

Using Projection for Digital Backdrop

We must admit that using the projection in the theatrical backdrops will change the future of theatrical set design. this technique will open endless gates to creativity and renew the old traditional old fashion schools in painting the backdrop and end the limitation age for it. Possible varieties for projection backdrop techniques would be available like go wide with projection, use rear projection, use a brighter projection and motion backdrop which would highly suggest being treated as simple as possible for more digested outlook. As we see in the figure (3) below , we see how digital mean like projection can assist in creating a whole perfect scenic instead of the

actual building for the same design, which lead to enormous amount of waste from different

materials

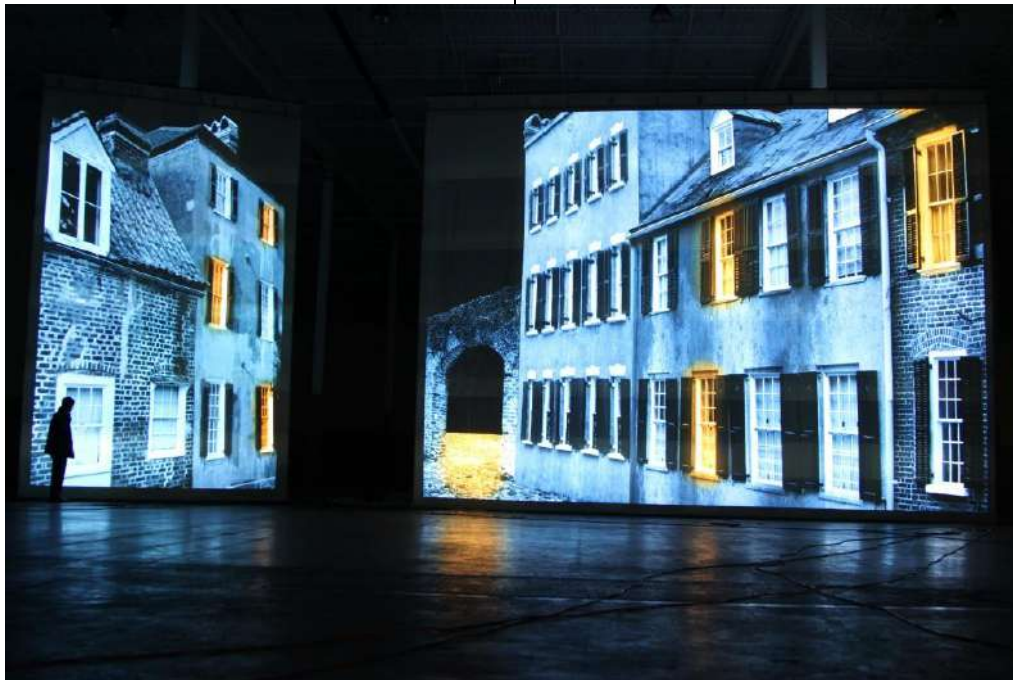


Figure (3) The University of Kentucky uses projection for a major theatrical production.

3D Printing

3D printing is an illustration of an innovation that is 'stirring up' set plan and, as a substitute, shows. Stage plans and props would now be able to be made utilizing this innovation saving the multiple times and, likewise, costs. scale models of sets should have been worked as a feature of the arranging interaction (Dean,2016). This used to require heaps of froth center, X-Acto blades, and heated glue. With 3D printing, nonetheless, this interaction has been improved on considerably. Set creators would now be able to make models on the web and send them to be printed off in plastic structure. This cycle saves them a great deal of time and exertion and truly assists them with fulfilling tight time constraints that are regular in the business.

Sound Design

While the stage plan, entertainers, outfits, props, and lighting are clear pieces of any creation, sound plan has consistently been one of the subtlest (however significant) portions of the whole experience (Kendrick,2017). Truth be told, it very well may be contended, that extraordinary sound plan is nearly as significant as possible involvement in your eyes. Sound catching gadgets like receivers are currently a lot more modest and simpler to convey than at any other time. Sound creation can be refined effectively today with even little movements of receivers making colossal contrasts to the last creation. After the entirety of its the objective of theatre to drench crowds in the message, at that point upgrades to sound

innovation and microphones can just improve the extraordinary experience. (deiorio ,2018)

Sustainable Future

The futuristic sustainability for theatre design according to Mehler and Brunner's article, coins the term "CLIP" which can be used to guide sustainable development in theatre arts. CLIP stands for Community-minded, Local, Intergenerational, and Positive, which are proposed to be the 4 main aspects that can move theatre production towards sustainability. Institutional size also impacts the pace by which different academic institutions can implement sustainable changes. Although, larger academic institutions possess greater resources that can aid them in sustainable development, the larger sizes of departments' administration layers as well as the number of students implies that these changes may be more difficult to approve and execute. The physical panel materials used in theatre also presents an opportunity through which sustainable development can be achieved. Careful examination of commonly used as well as novel materials are crucial to ensure that theatre materials align with sustainability goals. As well, small changes to stage lighting protocols such as introducing LED stage lights can help theatres in reducing their energy footprints.

Limitations and Future Research

This paper examines the different digital mediums and productions that can be used in theatrical scenic design and its effective role to lead to greener theatre, while this green consumption can

serve our environmental futuristic plans as directed and set by the United Nation known as the 2030 development goals. Future research is needed to measure these digital means. In addition, collecting more ethical attributes related to scenic design and theatrical practices. This research intended to highlight the conceptual definition of greener theatre and eco-friendly usage means. However, a call for further research is required to measure the true impact related of the outcomes of using the digital theatre on the environment, it can also investigate and involve the impact of using digital means on the audience. The researcher suggests investigating the digital technologies combined with the artificial intelligence technology as will for an absolute sustainable consumption application on the scenic design attributes. Furthermore, a future research can explore the findings of this research to more outgrowth variables.

Recommendations

This paper investigates about how digital technique can affects theatrical design as well as the sustainability of theatrical design, there are a few recommendations that can be given from this paper to improve theatrical design and its sustainability which include use of ecological products as much as possible in building sets and scenes. Use of less consuming light bulbs in reduce power and use of cleaner resources to reduce environmental pollution. Use of non-toxic materials in building sets. Minimum or no use of new clothing old clothes can be used which can further be preserved for reuse and redesigning. In addition, Rising the awareness of the importance of the arts, which will create a social response from the community to adopt the better sustainable solutions while practicing different artistic forms.

Conclusion

As the risks of disastrous environmental changes accelerate, a growing understanding of the craft can help solve biological alterations (Wiseman, 2016). As theatre-makers, the organisations around ecological change may respond to these challenges by providing challenging ice breakers and that include all life disciplines. Exciting and exercise study and development is an exceptional approach to investigate the topic and to provide useful kinaesthetic learning experience, which incorporated suitable instruction one and the other learning and realistic settings (Hassall, 2017a). In addition, A Gestalt way to deal with dramatic plan is to focal point is on the future rather dealing with the presents and appears to give some prepared and stable clarifications for various issues in the

grand expressions. Gestalt fills in as the hypothetical base for various tests in brain research whose discoveries seem to outline the standards of craftsmanship to be utilized in scene plan. The basic thought of gestalt hypothesis recognizes a significant undertaking for the part of the scene fashioner. Looking to stimulate and occasionally alleviate pressure in the crowd through the association of the plan components of the stage picture (size, shading, bearing, structure, and position), the fashioner is basically welcoming the crowd to take part in the creation, turning into an accessory with the craftsman. To fathom the setting, to repeat the gestalts proposed by the originator, the crowd must, by the idea of the interaction, include itself effectively in the play. The more intricate the gestalts, the more prominent the pressure; and the really fulfilling the arrival of strain, the more elaborate the crowd part has become. The exactness with which the plan is executed, tastefully just as actually, is the accuracy with which the planner speaks with the crowd. The more successful this correspondence is, the more noteworthy is the dramatic experience that its crowd accomplishes.

Furthermore, the course of action of theatrical artists later for social engagement issues in an overall culture indicates that intelligent evaluation and trade in natural changes in changing relationships might occur, incorporating distinct digital techniques. Therefore, this paper concludes how theatrical design can be used to add sustainability and use of digital techniques can transform soon to assist the global needs and the sustainable developments goals by an efficient understanding and actions applied in the theatrical design.

Reference List

1. Arons, W., & May, T. J. (Eds.). (2012). *Readings in Performance and Ecology* (p. 1). New York: Palgrave Macmillan.
2. Advancing Sustainable Materials Management: 2014 Fact Sheet. United States Environmental
3. Appleton, E., & Lyons, T. (2016). *Teaching Introduction to Theatrical Design: A Process Based Syllabus in Costumes, Scenery, and Lighting*. CRC Press.
4. Arriscado, P., Quesado, H., & Sousa, B. (2019). Employer branding in the digital era attracting and retaining millennials using digital media. In *Communication: Innovation & Quality* (pp. 391-403). Springer, Cham.
5. Caldwell, G. (1979). Findings in Experimental Psychology as Functioning Principles of Theatrical Design.

6. Dean, L. T. (2016, March). Design Theatre: 3D printing virtual performances.
7. Deiorio, V. (2018). *The Art of Theatrical Sound Design: A Practical Guide*. Bloomsbury Publishing.
8. Edwards, A. R. (2005). *The sustainability revolution: Portrait of a paradigm shift*. New Society Publishers.
9. Griffith University Sustainability Plan 2017-2020 available at https://www.griffith.edu.au/__data/assets/pdf_file/0003/945174/EG-approved-Sustainability-Plan-2017-2020.pdf
10. Hassall, L. (2017). Contemporary theatrical landscapes: The legacy of romanticism in two examples of Contemporary Australian gothic Drama. *TEXT: TEXT Journal of Literary and Creative Writing-scriptwriting as creative writing research—Special Issue Romanticism and Writing, Summer*.
11. Hassall, L., & Rowan, S. (2019). Greening Theatre Landscapes: Developing Sustainable Practice Futures in Theatre Graduates. In *University Initiatives in Climate Change Mitigation and Adaptation* (pp. 143-158). Springer, Cham.
12. Kendrick, L. (2017). *Theatre aurality*. Springer.
13. McCarthy, K. F., & Jinnett, K. J. (2001). *A new framework for building participation in the arts*. Rand Corporation.
14. Brunner, P., and Mehler, M. (2013). *Theatre Design and Production Reimagined: Four Principles for a Sustainable Future*. Theatre Design & Technology Vol 49, No.3.
15. Professional association of Canadian theatre. (n.d.). Professional Association of Canadian Theatre. <https://pact.ca/event/sustainable-theatre-getting-started/>
16. Rowan, S. (2015). *Water Wars: Exploring the tensions, challenges and possibilities of applying a sustainability framework to the development and production of a new independent theatre performance*. Unpublished Honours Thesis, School of Education and Professional Studies, Griffith University, Australia, April 2015.
17. Ryerson, J. (2020). *Introduction to Theatrical Design and Production: A Collaborative Journey*.
18. Slingerland, Amy L. "Greening the Greenroom." *Stage Directions* 19.11 (2007): 44-47.
19. *Sustainable Theatre Practices / Theatre & Sustainability*. Sustainabletheatre.org. (2021). Retrieved 23 May 2021, from <https://www.sustainabletheatre.org/narrative/sustainable-theatre-practices>.
20. Wiseman, J. (2016) In Abrahams, G, Johnson, B., & Gellatly, K. (Eds). *ART+CLIMATE=CHANGE*. Melbourne: Melbourne University Press pp. 6-14.
21. Wenger, E. (2011). *Communities of practice: A brief introduction*.