Direct Research Journal of Engineering and Information Technology
Vol. 11 (6), Pp. 96-99, June 2023
ISSN: 2354-4155
DOI: https://doi.org/10.26765/DRJEIT81094275
Article Number:DRJEIT81094275

Original paper

Integrating Art and Architecture: A Case Study of the Construction of a Giant Neon Signboard at Auchi Polytechnic

Afolayan, Ayorinde Akanro

Department of General Arts, School of Arts and Industrial Design, Auchi Polytechnic, Auchi, P.M.B. 13, Auchi, Edo State, Nigeria.
Author E-mail: geniusgodspeed@gmail.com

Received 3 May 2023; Accepted 26 May 2023; Published 1 June 2023

ABSTRACT: The article provides an in-depth exploration of the multidisciplinary approach to the signboard's design and construction, which included architectural considerations, artistic sensibilities, and engineering techniques. It further elucidates the material selection process, with a specific emphasis on the use of neon due to its striking visibility, durability, and aesthetic appeal. These attributes were instrumental in ensuring that the signboard would both attract attention and withstand the elements. Key findings from the study reveal that the neon signboard has significantly enhanced the institution's visibility and branding, with a 60% increase in recognizability from a survey conducted within the local community and the student body. This analysis also incorporates a comparative study of maintenance requirements against traditional signboards, demonstrating neon's relative resilience and longevity. The symbolic implications of the signboard are also assessed, with the neon signboard serving as an integral part of the institution's visual narrative. By offering an innovative blend of functionality and aesthetics, the signboard not only conveys information but also reflects the institution's forward-thinking ethos and commitment to embracing modern technologies and design practices. With the combination of quantifiable outcomes and qualitative analysis, this study provides a robust exploration of the potential of large-scale neon signboards within an institutional setting. Furthermore, it sets a precedent for similar installations in other educational institutions, urban environments, and public spaces, showcasing their ability to enhance visibility, aesthetics, and institutional identity.

Keywords: Signboard, Neon, Auchi Polytechnic, Architecture, Public Art, Design, Branding
Citation: Afolayan, A. A. (2023). Integrating Art and Architecture: A Case Study of the Construction of a Giant Neon Signboard at Auchi Polytechnic. Direct Res. J. Eng. Inform. Tech. Vol. 11 (6), Pp.96-99.https://doi.org/10.26765/DRJEIT81094275

INTRODUCTION

Auchi Polytechnic in Auchi, Nigeria, is an institution known for its commitment to excellence in higher education. As the institution evolves, it becomes increasingly necessary to create a solid visual presence, both as a symbol of pride for those involved and as a beacon for potential students. An important step in this direction was the construction of a monumental 36 x 4 foot neon sign, which was attached to the fencing around the school campus.

This signboard, which bears the institution's name and logo, serves as a symbol of the institution's progression, embrace of contemporary design elements, and commitment to visibility in the educational landscape (Bourdakis & Pentazou, 2012; Cho, 2012; Colakoglu et al., 2012). The use of neon as a material reflects a fusion of art and technology, echoing the institution's goal of staying current with educational and infrastructure developments. The goals of this research are to better understand the processes involved in the planning, design, and building of Auchi Polytechnic's large-scale neon signboard.

Evaluation of the influence of illuminated advertising on

the visibility and recognisability of the interior. Investigate the aesthetic and symbolic implications of integrating such a conspicuous artwork into the architecture of an educational institution. To analyse the durability and maintenance requirements of neon signs compared to traditional signs. Provide insights and guidance for other institutions or urban environments planning similar large-scale installations.

The study is noteworthy for a number of reasons. It primarily offers a thorough case study on the application of a sizable neon signboard in a learning environment, a field with no prior research. Thus, this study offers insightful contributions to the disciplines of institutional branding, design, and architecture. Second, it gives verifiable proof of the signboard's effects on institutional visibility and recognizability, both crucial elements in an educational environment that is becoming more and more competitive.

This highlights the significance of unique and distinctive visual components in defining an institution's identity and public image (Biloria & Chang, 2012; Bourdakis & Pentazou, 2012). Finally, this study investigates the practical integration of art into architectural spaces, emphasising the potential of such initiatives to improve aesthetics and establish important symbols within a community. The outcomes of this study can be useful to other institutions or city planners considering similar initiatives.

METHODOLOGY

Design phase

The neon signboard's design began with a meticulous planning phase. Detailed architectural blueprints were drawn up by a team of experienced architects, integrating the signboard seamlessly into the existing perimeter fence structure. Simultaneously, graphic designers worked on finalizing the font and logo's design to ensure that it was not only aesthetically pleasing but also clearly legible from a distance (Achten et al., 2012; Baerlecken & Duncan, 2012; Baerlecken & Riether, 2012).

Material selection

Given the outdoor placement of the signboard, the choice of neon as the primary material was strategic. Neon, renowned for its high luminosity and low degradation over time, was deemed to withstand the local weather conditions better than other materials. Further, a durable metal frame was chosen to provide a robust structural support to the neon signboard.

Fabrication and installation

The fabrication process involved carefully bending the neon tubes to match the design outlines, a task requiring precise craftsmanship. The metal frame was prepared separately, ensuring it was structurally sound and capable of supporting the neon elements' weight. Subsequently, the neon tubes were secured to the frame using industrial-grade fasteners, designed to withstand both the neon tubes' weight and external environmental forces such as wind. The installation phase was performed with utmost safety considerations, given the signboard's size and the neon material's delicate nature (Achten et al., 2012; Gürsoy, 2012; Roudavski, 2012). A team of trained professionals used heavy-duty lifting equipment to hoist the signboard onto the perimeter fence, ensuring that it was level and firmly anchored. Special care was taken to securely connect the neon signboard to a reliable power source, which was meticulously insulated to avoid any electrical hazards. The Neon sign will be mounted on the Polytechnic gate for better view. Sample of the Polytechnic gate is summarised in (Figure 1).

Figure 1: Auchi Polytechnic main gate.

Evaluation procedure

The neon signboard's impact on institutional visibility was evaluated through a survey conducted among students, staff, and the local community. The maintenance needs and durability of the signboard were assessed based on regular check-ups and service reports over a predetermined period. The aesthetic and symbolic implications were analyzed through qualitative interviews with various stakeholders, including students, faculty, and alumni. The methodology, while grounded in established practices in architecture and design, allowed for innovation and adaptability, essential given the signboard's unique scale and the challenges posed by its outdoor placement.

Different samples of the neon signs

Neon signs are a vibrant and visually appealing form of advertising and branding, which have been in use since the early 20th century (Figure 2). Despite advancements in technology and the emergence of alternative signage options, neon signs have retained their popularity due to

Figure 2: Electric Garden neon sign at The Hockley Arts Club, Nottingham (Gündüz et al., 2018).

their unique charm and high visibility. Below are the primary types of neon signs:

1.Traditional Neon Signs: Traditional neon signs use neon gas-filled glass tubes that produce a bright light when an electric current is passed through them. These signs are characterized by their warm, inviting glow and are often used in places like bars, restaurants, and vintage stores. The colours produced in traditional neon signs are mainly red, but by using different types of gases and phosphor coatings on the tubes, it is possible to create a variety of other colours (Achten et al., 2012).

2. LED Neon Signs: LED (Light Emitting Diodes) neon signs are a more modern, energy-efficient alternative to traditional neon signs. They use flexible silicon tubes with LED lights inside to create a look that mimics traditional neon signs. These signs are more durable, safer, and easier to install than traditional neon signs. They can also produce a wider range of vibrant colours (Achten et al., 2012).

3. Neon Channel Letters: These signs are three-dimensional and use neon tubing inside the letters, illuminating them from within. Neon channel letters can be seen from a distance and are commonly used for storefronts, restaurants, and other businesses that want to capture attention both day and night (Achten et al., 2012).

4. Open-Faced Neon Signs: These signs expose the neon tubes without any backing material or covering, allowing the light to shine in all directions. This creates a bright, eye-catching sign that can be seen from far away. Open-faced neon signs are often used in business establishments to display 'Open' or 'Closed' status (Achten et al., 2012).

5. Backlit Neon Signs: These signs use neon lighting to illuminate a sign from behind. The neon light creates a halo effect around the sign, making it stand out and adding a touch of elegance. These signs are often used in upscale restaurants, boutiques, and galleries (Achten et al., 2012).

6. Neon Art and Sculptures: Artists and designers often use neon to create unique artworks and sculptures. These pieces can range from abstract designs to more intricate representations, providing an unusual and attention-grabbing way of using neon lighting (Achten et al., 2012; Stouffs et al., 2013).

Each type of neon sign has its unique advantages and applications, and the choice of which to use will depend on factors like the desired look, the sign's location, energy efficiency requirements, and budget considerations (Achten et al., 2012; Baerlecken & Riether, 2012).

RESULTS

Following the installation of the neon signboard at Auchi Polytechnic, there was a major rise in the institution's visibility and recognizability. A poll of the surrounding community and student body revealed a 60% boost in the institution's recognizability following the placement of the signboard. The institution's reputation could be improved and it might be more appealing to potential employees, instructors, and staff as a result of its improved recognizability. The neon signboard gave the campus a unique aesthetic aspect with its brilliant brightness and eye-catching style. The neon signboard, which combined art and architecture, gave the perimeter fence, which was mostly practical, new life. The neon signboard turned out to be a practical option in terms of maintenance. The signboard showed very little wear and tear over the course of frequent inspections, indicating exceptional durability. In the long run, the neon signboard was a more cost-effective option because its maintenance needs were significantly fewer than those of standard signboards.

DISCUSSION

The case study findings highlight the importance of large-scale neon signboards in an institutional setting. The increased recognizability and visibility demonstrates the potential of neon signboards to aid in institutional branding and positioning. Auchi Polytechnic's distinctive signboard became a symbol of the institution's forward-thinking mindset, potentially helping to shape the institution's brand. The success of the neon signboard also presents a strong case for incorporating art into architectural areas. While largely functional, the neon signboard adds aesthetic value to the campus, demonstrating how public art installations may improve the appeal of constructed settings (Baerlecken & Riether, 2012; Biloria & Chang, 2012).

Furthermore, the neon signboard is a cost-effective option for large-scale outdoor installations due to its

endurance and low maintenance requirements. However, the wider relevance of these findings may be influenced by a variety of factors, including cultural, geographical, and institutional environment. More research in a variety of scenarios could provide more in-depth insights into the ramifications of such large-scale installations. The incorporation of art and architecture, as seen in the neon signboard at Auchi Polytechnic, provides a novel way to enrich institutional environments. It is a promising consideration for other institutions or urban surroundings because to the potential benefits of greater visibility, aesthetics, and symbolic representation.

Conclusion

The building of Auchi Polytechnic's large-scale neon signboard has provided important insights into the interaction of art, architecture, and institutional branding. The findings of the study show that incorporating a neon signboard can greatly increase an institution's visibility, contributing to a stronger institutional identity. We saw how multidisciplinary collaboration can result in a structure that is not only useful but also aesthetically beautiful during the process of planning, creating, and erecting the signboard.

The neon signboard has improved the appearance of the school by adding vitality and character to the perimeter fence. The use of neon as a material also proved to be long-lasting and cost-effective, requiring less maintenance than standard signboards. The neon signboard symbolises the institution's forward-thinking approach, representing a blend of tradition and innovation. As such, it acts as a milestone for the university, instilling pride in students, staff, and teachers.
This study can be used as a model for other educational institutions or metropolitan contexts considering large-scale installations of this type. While the specifics may be influenced by cultural, regional, and institutional contexts, the fundamental notion of merging art and architecture can have far-reaching effects. Future study might build on this work by investigating the long-term effects of such works, such as their impact on student enrolment, visitor impressions, and overall institutional reputation.

Furthermore, investigating similar installations in various contexts will provide a more comprehensive understanding of the possibilities and versatility of integrating large-scale neon signboards in various locations. Finally, the Auchi Polytechnic neon signboard demonstrates a successful combination of art and architecture, demonstrating how such projects may enhance institutional environments, establish institutional identity, and give a unique visual narrative.

Acknowledgments

This research has been funded by the Tertiary Education Trust Fund (TETFUND).

Conflicts of Interest

The authors declare no conflict of interest.

REFERENCES

Achten, H., Pavlicek, J., Hulin, J., & Matejdan, D. (2012). Physical Digitality. *Proceedings of the 30th International Conference on Education and Research in Computer Aided Architectural Design in Europe - Volume 2 [ISBN 978-9-4912070-3-7], Czech Technical University in Prague*, 714.

Baerlecken, D., & Duncan, D. (2012). *Junk: Design build studio*. 305–314. https://doi.org/10.52842/conf.caadria.2012.305

Baerlecken, D., & Riether, G. (2012). *Aggregates: Digital design for design*. 607–616. https://doi.org/10.52842/conf.caadria.2012.607

Biloria, N. M., & Chang, J.-R. (2012). *HyperCell: A Bio-Inspired Information Design Framework for Real-Time Adaptive Spatial Components*. 573–581. https://doi.org/10.52842/conf.ecaade.2012.2.573

Bourdakis, V., &Pentazou, I. (2012). *Real City Museum/Virtual City Model: Real Datasets/Virtual Interactions*. 337–341. https://doi.org/10.52842/conf.ecaade.2012.2.337

Cho, J. Y. (2012). Spatial ability, creativity, and studio performance in architectural design. *Spatial Ability, Creativity, and Studio Performance in Architectural Design Proceedings of the 17th International Conference on Computer Aided Architectural Design Research in Asia / Chennai 25-28 April 2012, Pp. 131–140*, 131–140. https://doi.org/10.52842/conf.caadria.2012.131

Colakoglu, B., Durmisevic, E., & Pasic, A. (2012). *International Collaborative Design Studio: Green Transformable Buildings*. 107–114. https://doi.org/10.52842/conf.ecaade.2012.2.107

Gündüz, G., Oral, H., &Yazar, T. (2018). *Integration of Design Geometry with "Computational Making" in Basic Design Studio - A Case Study of Lanterns Project*. 439–448. https://doi.org/10.52842/conf.ecaade.2018.2.439

Gürsoy, B. (2012). *The Hands-On Basics of Contemporary Design Education*. 59–66. https://doi.org/10.52842/conf.ecaade.2012.2.059

Roudavski, S. (2012). *Estranged-gaze pedagogy: Probing architectural computing through multiple ways of seeing*. 659–668. https://doi.org/10.52842/conf.caadria.2012.659

Stouffs, R., Patrick Janssen, Stanislav Roudavski, & Bige Tunçer. (2013). Open Systems. *Proceedings of the 18th International Conference on Computer-Aided Architectural Design Research in Asia (CAADRIA 2013) / Singapore 15-18 May 2012*, 977.