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Environmental Graphic Design as An Information Media for The Mecca Area Park

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Abstract

The Mecca Park in Pasuruan City is a religious tourism destination with strategic potential but faces the problem of a lack of adequate visual information systems. This study aims to design a comprehensive and effective Environmental Graphic Design (EGD) as an information medium to improve the quality of visual services and tourist experiences. The research method uses a Research and Development (R&D) approach with the Sugiyono model simplified into 7 stages. The research subjects consisted of 10 respondents for the small-scale trial and 82 respondents for the large-scale trial. The design concept developed is "Islamic Heritage & Spiritual Elegance" which is in line with the religious characteristics of the destination. The EGD system includes five main components: directional signs, informational signs, regulatory signs, orientation signs, and identification signs using a black-gold-white color scheme, League Spartan and DM Sans typography, and weather-resistant Aluminum Composite Panel (ACP) material. The results of the validation test by media experts and material experts showed a score of 93% with a "very feasible" category. The trial resulted in a feasibility level of 95% on a small scale and 89.2% on a large scale, both in the "very feasible" category. The implementation of EGD has successfully addressed the visual information issues in accordance with the Regulation of the Indonesian Ministry of Tourism No. 3 of 2018, and has contributed to improving the tourist experience and developing religious tourism destinations based on religious and cultural values.

Keywords: Environmental Graphic Design, Mecca Area Park, Pasuruan City

INTRODUCTION

Pasuruan, located in East Java Province, enjoys a strategic geographical position, approximately 60 kilometers southeast of Surabaya, and serves as a vital connecting route between Surabaya, Banyuwangi, and Bali. The city's existence is inseparable from its long history, which has shaped its unique characteristics as an Islamic religious center. The historical roots of the spread of Islam in Pasuruan can be traced back to the collapse of the Majapahit Empire, when various Islamic kingdoms such as Demak Bintoro, Giri Kedaton, Pajang, and Mataram began to play a significant role in the propagation and spread of Islamic teachings in the region (Santoso, 2023).

This gradual process of Islamization then gave birth to a deeply rooted tradition of Islamic boarding school education, as evidenced by the establishment of various well-known Islamic boarding schools such as Al-Yasini, Ngalah, and the oldest is Sidogiri which has existed since 1745. This strong historical and religious background then gave birth to the nickname "City of Santri" for Pasuruan, an acknowledgment of its important role as a center of Islamic education that is influential not only at the regional level, but also nationally (Sari, 2023).

In the context of contemporary development, Pasuruan's religious and historical heritage has been realized through various religious tourism destinations, one of which is the Mecca Park in Pasuruan City, which offers a tourism concept based on Islamic values. This religious tourism destination has strategic potential to become a major attraction for tourists seeking both spiritual and recreational experiences, thus strengthening Pasuruan's position as a religious tourism destination in East Java.

The development of the global tourism industry shows a growing trend of interest in religious and spiritual tourism. According to data from the World Tourism Organization (UNWTO), religious tourism contributes to approximately 300-330 million international tourist trips annually (Saragih, 2023). In Indonesia, the potential of religious tourism is increasingly receiving serious attention from the government as part of the diversification of national tourism products. This is reflected in various policies and programs for developing religious tourism destinations launched by the Ministry of Tourism and Creative Economy. By increasing local revenue, development programs and maximizing the utilization of tourism resources and potential are believed to be a driving force that makes a real contribution to regional economic progress (Rosanto, 2023).

However, the potential of the Mecca Park as a tourist destination for the spiritual and social development of the Pasuruan community is inversely proportional to the quality of the visual services provided to visitors. Initial observations indicate that the visual information system at the site is still suboptimal, marked by a lack of signage, wayfinding, and interpretive information sufficient to provide a memorable and educational tourist experience.

This condition is not in line with the Regulation of the Indonesian Ministry of Tourism No. 3 of 2018 Article 2 paragraph 1 which states "The Special Physical Allocation Fund for Tourism is used to create convenience, comfort, and safety for tourists in visiting tourism destinations." This inconsistency has the potential to hinder the optimization of the function of religious tourism destinations and can impact the less than satisfactory tourist experience.

Environmental Graphic Design or commonly abbreviated as EGD is graphic communication about information found in an environment (Calori, 2015). EGD was created to convey information clearly and effectively through a multidisciplinary approach that integrates elements of design, engineering, psychology, communication science, and cultural values (Masnuna, 2021). As an element of the wayfinding concept, signage plays a role in guiding someone in exploring an area by following the directions that have been determined through signs (Tirta Adi Nugraha, 2023).

The primary purpose of EGD is communication, not just decoration. EGD is a design that focuses on functional aspects (Hananto, 2019). The main goal of EGD is to present

information to the audience through a variety of visual objects, so that they can determine which information media they consider most interesting to use (Maulida Hasanah, 2022). Three separate but related aspects that form a sign system (Calori, 2015), including (1) Information content system, or the information content that needs to be displayed in the sign system, (2) Graphic System, or the graphic display of the information displayed in the sign system, (3) Hardware, or the material/medium in which the information is displayed in a sign system. It is hoped that by optimally managing the quantity of data presented, visitors can make effective and targeted choices in a short time.

Proper application of EGD principles can provide a comprehensive solution to improve the quality of visual services at religious tourism destinations. Consistent use of color, logos, typography, and other design elements can strengthen brand identity while providing effective guidance to users (Stephanie Jost, 2024). Through a systematic and research-based design approach, it is hoped that a visual information system can be created that is not only functional but also takes into account the cultural and religious values that are the unique characteristics of the Mecca Regional Park.

This research aims to design a comprehensive and effective Environmental Graphic Design for the Pasuruan City Park. It is hoped that this will enrich the academic literature on the application of EGD principles in the context of tourism based on religious and cultural values, as well as improve the quality of visual services in the Pasuruan City Park. The resulting EGD implementation is expected to enhance the tourist experience, facilitate orientation and navigation, and support the educational function of religious tourism destinations.

METHODS

The research method used is R&D, or Research and Development. R&D is a research method aimed at producing specific products. Through this research method, problems can be solved, allowing researchers to develop and apply more innovative education (Oktapatrioka, 2023). The research model used is the 10-stage R&D model by Sugiyono: 1. Potential and Problems, 2. Data Collection, 3. Product Design, 4. Design Validation, 5. Design Revision, 6. Product Trial, 7. Product Revision, 8. Usage Trial, 9. Product Revision, and 10. Mass Production (Sugiyono, 2019). However, this model is simplified into 7 steps because 3 steps (Usage Trial, Product Revision, and Mass Production) are already included in the product trial and revision stages.

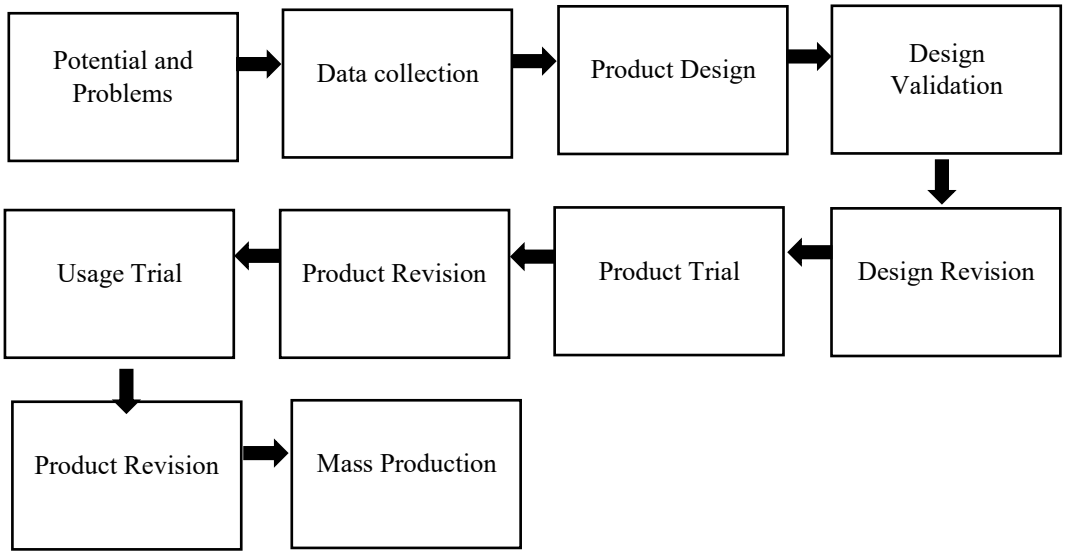


Figure 1. Sugiyono's 10-stage R&D Research Method Chart

The test subjects used in this study were visitors to the Mecca Area Park, totaling 10 people for the small-scale trial and 82 people for the large-scale trial. The trial was conducted using a questionnaire distributed over a week to determine the feasibility and effectiveness of the EGD among visitors. The criteria for the test subjects in this study were visitors to the Mecca Area Park in Pasuruan City aged 17-60 years.

The data collection methods used were observation, literature review, and questionnaires. Observations and literature reviews were conducted to obtain general information about EGD and religious tourism parks, while questionnaires were used to clarify the observation results and determine the feasibility of the EGD design.

The data analysis used quantitative descriptive analysis techniques to describe the results of the data obtained using numbers. Quantitative data was obtained from the scores of visitors to the Mecca Area Park on the questionnaire provided. This data will later help determine the effectiveness of the EGD. The level of EGD effectiveness will be measured using a Likert scale of 1-5 (very appropriate, appropriate, quite appropriate, not appropriate, very not appropriate).

Table 1. EGD Eligibility Assessment Statement Table (Khoirot, 2015)

Score	Criteria
$0\% \leq X \leq 20\%$	Very unsuitable
$21\% \leq X \leq 40\%$	Not suitable
$41\% \leq X \leq 60\%$	Quite suitable
$61\% \leq X \leq 80\%$	Suitable
$81\% \leq X \leq 100\%$	Very suitable

RESULTS AND DISCUSSION

EGD design is made by determining the design concept, communication materials, visual concept and completion of the EGD design results (Muhammad Ajis, 2021). After the EGD is designed, the results will be tested on visitors to the Mecca Park in Pasuruan City.

1. Design Concept

   The design of the EGD for the Mecca Area Park in Pasuruan City aims to support tourism activities through a sign system. The design is based on the problem explained in the previous chapter, namely that the Mecca Area Park does not provide complete information regarding facilities, regulations, recommendations, and other information that can support a comfortable, easy, and safe tourist experience at the location.

   The chosen concept for the Mecca Regional Park is "Islamic Heritage & Spiritual Elegance," as it contextually aligns with the location's name, which refers to the holy city of Mecca as a public space with religious nuances. This concept aligns with Masnuna's (2021) research, which emphasizes the importance of cultural contextualization in EGD, particularly in religious tourism destinations.

   The decision to adopt a concept referencing the holy city of Mecca as the basis for the design demonstrates an understanding of local identity. This concept was then developed and manifested in EGD media such as signage, pictograms, colors, and materials.

2. Communication Material

   The five-component system developed in this study (directional signs, informational signs, regulatory signs, orientation signs, and identification signs) follows international standards established by the Society for Environmental Graphic Design (SEGD). This classification aligns with the Calori & Vanden-Eynden (2015) framework, which divides signage systems into five main categories to ensure optimal communication function.

3. Visual Concept
   a. Pictogram

A pictogram is a type of diagram that presents data through pictorial representation (Yulitasari, 2019). The pictograms used depict important elements within the park, such as public facilities, warnings, and directions. All icons are designed simply with a two-dimensional visual style and a single gold silhouette on a black background, reinforcing the visual identity and enhancing readability. The use of minimalist and consistent shapes ensures the icons are quickly understood by visitors of all ages.

Figure 2. Mecca Park Pictogram

b. Color

The primary color chosen for the Mecca Park signage project reflects the religious and elegant character of the venue. Gold is associated with spirituality, luxury, and honor in various cultures, particularly in Islamic traditions (Maier, 2014). Black as a background provides a strong grounding effect, while white as an accent color provides balance and a clean impression.

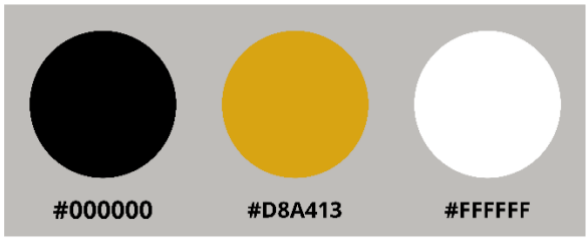


Figure 3. Color elements of Mecca Regional Park

c. Typography

In designing the typographic elements for the signage system in the Mecca Area Park, two main fonts were used: "League Spartan" and "DM Sans." "League Spartan" has a bold, bold, and modern letterform, creating a strong impression and immediately attracting attention. Meanwhile, "DM Sans" was used as a supporting font for additional informational text due to its clean, simple appearance and high readability, both in small and large sizes.

Figure 4. Typography of Mecca Area Park

Sans-serif fonts with bold weights can improve readability at long viewing distances by up to 40% (Tillman, 2007). DM Sans as a secondary font provides clarity for detailed information, in line with the principle of progressive disclosure in information design (W. Lidwell, 2010).

d. Material

The materials used in the Makkah Park Environmental Graphic Design (EGD) system were selected based on functionality and long-term durability. The primary signage medium is 3 mm Aluminum Composite Panel (ACP), which is weather-resistant, lightweight, and easy to install. The surface is coated with outdoor vinyl cutting stickers such as 3M Scotchcal, which are durable and fade-resistant. ACP has a lifespan of up to 15-20 years with minimal maintenance, making it a cost-effective choice for outdoor signage (Association, 2019).

The signage structure is supported by strong, corrosion-resistant, 4-inch Schedule 80 galvanized iron pipe, ensuring stability in open areas. Meanwhile, for indoor information media, exclusive frames are used with content printed on 210 gsm art paper with a matte finish and protected by glass. The frame supports use MDF board, with an Islamic curved patterned frame made of PVC molding coated with gold metallic paint, providing a luxurious appearance and in harmony with the main color theme.

4. Design Results

a. Directional Sign

The directional sign design, which uses an arrow shape with a dominant black color and gold accents, demonstrates the effective application of the principle of contrast. The use of high color contrast can increase legibility by up to 70% at normal viewing distances (Hallbeck, 2011). The black-gold color combination in this context not only provides a strong visual contrast, but also reflects a religious identity that is in accordance with the characteristics of the location.

This signage serves as a directional indicator for key facilities in the park area, such as the entrance, exit, restrooms, motorcycle parking, and car parking. The design uses arrow shapes, predominantly black with gold accents to enhance visibility and readability. Text such as "ENTER," "EXIT," and "TOILET" is accompanied by icons to enhance visual understanding.

Figure 5. "Enter" Direction Sign

Figure 6. "Exit" Direction Sign

Figure 7. "Toilet" Direction Sign

Figure 8. Parking Direction Signs

b. Informational Sign

The implementation of informational signage that includes religious facilities, public facilities, and historical educational boards demonstrates a comprehensive information design approach. Contextually presented information can reduce visitors' cognitive load by up to 45% (Passini, 1992).

Information signs serve as facility markers, directions, and reminders for visitors to the Mecca Area Park. Using a combination of black and gold and shapes synonymous with Islamic nuances, these signs include signs for places of worship (men's and women's prayer rooms, prayer robes), public facilities (motorcycle parking, car parking, culinary center), and educational boards containing historical information.

Figure 9. "Caution" Information Sign

Figure 10. Information Sign "Men's Prayer Place"

Figure 11. Information Sign "Women's Prayer Place"

Figure 12. "Mukenah Place" Information Sign

Figure 13. "Please Fill in" Information Sign

Figure 14. Male and Female Icon Information Sign

Figure 15. "Motorcycle Parking" Information Sign

Figure 16. "Car Parking" Information Sign

Figure 17. "Culinary Center" Information Sign

Figure 18. Historical Information Marker and Origin of Mecca Area Park

c. Regulatory Sign

These warning signs serve as a medium for communicating rules and encouraging visitors to adhere to orderly behavior in tourist areas. With a consistent black-and-gold visual design and communicative icons, these signs include reminders such as removing footwear in sacred areas, conserving water, disposing of trash properly, and prohibiting the bringing of outside food. The presence of these signs supports the creation of a clean, comfortable, and rule-abiding environment.

The combination of text and pictograms can increase comprehension rates by up to 85% compared to text alone (Boersema, 1983). Appeals such as removing footwear in sacred areas and prohibiting the bringing of outside food demonstrate sensitivity to religious values and hygiene practices.

Figure 19. "Sacred Boundary" Regulatory Sign

Figure 20. "Save Water" Regulatory Sign

Figure 21. "Throw Out the Trash" Regulatory Sign

Figure 22. "Do Not Bring Food From Outside" Regulatory Sign

d. Orientation Sign

This Mecca Park Tourism Map serves as the primary visual orientation for visitors, helping them navigate the layout and location of important facilities within the area. The map's design features Islamic architecture, with a distinctive arch at the top. Visual elements such as location icons, access routes, and facility descriptions are clearly displayed for easy navigation. This map is a crucial element in ensuring a comfortable and more focused and informative visiting experience.

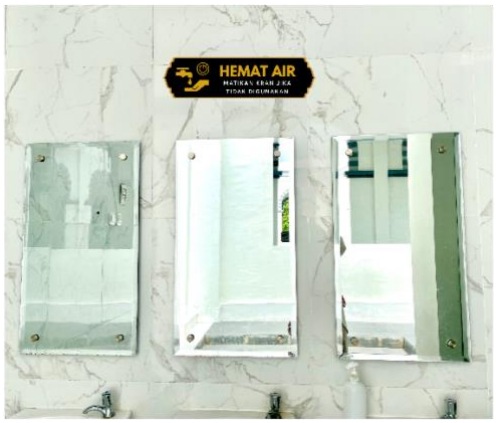
Figure 23. Map of Mecca Area Park

e. Identification Sign

This "Welcome" sign serves as the primary welcoming element, providing a first impression for visitors to the Mecca Park. With its dome-like curve and black-and-gold accents, reflecting an elegant Islamic feel, the sign features the Kaaba icon, a symbol of the area's identity and religious values.

Figure 24. "Welcome" Identification Marker

f. Design Implementation



5. Validation Test Result Data

Before the EGD design was piloted to visitors to Taman Kawan Mecca, a validation test was conducted by media experts and material experts to determine the comic's suitability. The score obtained by the media expert validator was 94% of the total validation instrument of 25 indicator points with a rating scale using a Likert scale of 1-5 (very suitable, suitable, quite suitable, not suitable, very not suitable).

Meanwhile, the validator for the material expert obtained a score of 92% out of a total of 20 indicator points on a 1-5 scale. Therefore, the total score for the validation test by the media expert and material expert was 93%. Based on the EGD feasibility score table, this result falls into the "very feasible" category, allowing the EGD to be immediately tested on visitors to the Mecca Area Park.

6. Trial Result Data

The completed EGD design was tested on a small scale with visitors, then continued with a large-scale trial. The small-scale trial was conducted with 10 visitors to the Mecca Tourism Park in Pasuruan City by understanding the EGD and filling out the provided form. The results of the total percentage score of respondents in the small-scale trial were 95% of the total trial instrument of 10 indicator points with a rating scale of 1-5 (very feasible, feasible, quite feasible, not feasible, very not feasible). Based on the EGD feasibility score table, this result is included in the "very feasible" category so that the EGD can be continued with a large-scale trial of visitors to the Mecca Tourism Park.

A large-scale trial was conducted with 82 visitors who understood the EGD and completed the provided form. The overall percentage of respondents was 89.2%, representing a total of 10 indicators on a 1-5 scale. Based on the feasibility score table, this result falls into the "very feasibility" category.

CONCLUSION

This research successfully designed a comprehensive and effective Environmental Graphic Design (EGD) system for the Mecca Area Park in Pasuruan City by applying the concept of "Islamic Heritage & Spiritual Elegance" which is in harmony with the religious characteristics of the tourist destination. The developed EGD system includes five main components according to the international standards of the Society for Environmental Graphic Design (SEGD), namely directional signs, informational signs, regulatory signs, orientation signs, and identification signs, using visual elements in the form of minimalist pictograms, a black-gold-white color scheme, "League Spartan" and "DM Sans" typography, and weather-resistant Aluminum Composite Panel (ACP) material. The results of the validation test showed a very high level of feasibility with a percentage of 93% from experts, 95% in small-scale trials, and 89.2% in large-scale trials, all of which are in the "very feasible" category.

The implementation of this EGD system makes a significant contribution in addressing the problem of the lack of visual information in the Mecca Regional Park which was previously not in line with the Indonesian Ministry of Tourism Regulation No. 3 of 2018, while simultaneously improving the quality of visual services, facilitating visitor orientation and navigation, and supporting the educational function of religious tourism destinations. This research not only produces practical solutions to improve the tourist experience, but also enriches the academic literature on the application of EGD principles in the context of tourism based on religious and cultural values, so that it can serve as a reference and development model for similar religious tourism destinations in various regions in Indonesia.

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