

Thalassa Wellness Centre: Translating Asklepion Greek Water-Healing Philosophy into a Climate-Responsive Waterfront Architecture in Bahrain

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The University of Bahrain Undergraduate
Research and Innovation Conference 2026



Abstract

The need for wellness and healing spaces has emerged as a key concern in contemporary architectural practice, particularly in response to physical stress, mental fatigue, and the weakening relationship between humans and their natural environments. Wellness architecture is fundamentally concerned with healing, creating spaces that support physical, psychological, and emotional well-being through carefully designed spatial experiences. This research paper examines the architectural challenge of designing a wellness centre that facilitates healing while operating within a sustainable built environment. While environmental sustainability is an essential requirement of contemporary architecture, this study positions healing as the primary architectural issue, with sustainability addressed as an integrated and supportive aspect. The issue examined in this paper is the relationship between healing-oriented spatial design and environmentally responsive architecture. This investigation is explored through the development of an architectural proposal for the Thalassa Wellness Centre, informed by the Ancient Greek Asklepion healing philosophy, which emphasized harmony between body, mind, nature, and water. The methodology involves developing an understanding of healing environments, formulating an appropriate conceptual framework, and translating this framework into an architectural design. This process includes site analysis, spatial organization, form development, and material selection, alongside the application of climate-responsive strategies such as passive cooling, shaded circulation, natural ventilation, courtyards, and controlled microclimates. These strategies are employed not as isolated technical solutions, but as spatial tools that enhance comfort and reinforce the healing experience. The outcome of this research is a climate-responsive waterfront wellness centre that functions as both a therapeutic retreat and a community-oriented health facility. The project demonstrates how healing-driven architectural concepts can be effectively integrated with sustainable design strategies to create environments that promote physical restoration, mental well-being, and sensory engagement. Ultimately, this research highlights architecture's potential to support holistic healing while responding responsibly to environmental and climatic conditions, offering an approach applicable to similar contexts.

Keywords: Healing Architecture, Wellness Centre Design, Asklepion Philosophy, Climate-Responsive Architecture, Holistic Well-being, Bahrain

I. Introduction

Architecture plays a significant role in shaping human experience, health, and psychological wellbeing. Rapid urbanization and the pressures of contemporary urban life have increased levels of physical stress, mental fatigue, and disconnection from natural environments. As a result, there is a growing need for architectural spaces that support relaxation, recovery, and holistic well-being. Wellness architecture has emerged as an approach that focuses on creating environments that promote healing through spatial quality, environmental comfort, and meaningful connections with nature. These environments aim to improve both physical and psychological health by integrating natural elements, environmental strategies, and user-centered spatial design. Historically, healing environments were closely associated with natural landscapes and water. Ancient Greek Askleion healing sanctuaries combined medical practices with spiritual and environmental experiences, emphasizing harmony between body, mind, and nature. These principles highlight the importance of

II. Literature Review

Healing architecture has been widely explored as an approach that integrates environmental design strategies with spatial experiences that support psychological and physical well-being. Early studies in healthcare environments demonstrated that spatial qualities such as access to daylight, natural views, and ventilation can positively influence patient recovery rates and emotional comfort [1], [7]. These findings contributed to the development of evidence-based design, where architectural decisions are informed by research related to health, behavior, and environmental comfort. Biophilic design theory further emphasizes the importance of integrating natural elements into built environments. The presence of vegetation, water features, natural materials, and organic forms has been shown to reduce stress, enhance cognitive performance, and improve emotional well-being [2], [8]. In wellness architecture, these elements are often used to create restorative environments that support relaxation, meditation, and therapeutic activities [6]. Environmental responsiveness is particularly important in hot climatic regions. Passive design strategies such as courtyards, shaded walkways, controlled openings, and appropriate building orientation can improve thermal comfort while reducing energy

sensory experience, spatial sequence, and environmental comfort in supporting human well-being. In hot climatic regions such as Bahrain, designing wellness environments requires balancing healing-oriented spatial qualities with climate-responsive architectural strategies. Passive cooling methods, natural ventilation, shading systems, and courtyards play a crucial role in achieving thermal comfort while reducing environmental impact. This research investigates how healing architecture principles can be translated into a contemporary waterfront wellness centre through the design proposal of the Thalassa Wellness Centre in Busaiteen, Bahrain. The study explores the relationship between spatial organization, environmental performance, and user well-being, demonstrating how climate-responsive strategies and healing-oriented design can be integrated within a cohesive architectural framework.

consumption [3], [4]. Transitional spaces between indoor and outdoor environments also strengthen the connection between users and nature while supporting environmental performance [5], [9]. In waterfront environments, prevailing winds and microclimatic conditions can further enhance natural ventilation and environmental comfort, making such locations particularly suitable for wellness and therapeutic facilities [3], [4]. Contemporary architectural research on wellness centres highlights the importance of spatial sequencing, sensory experience, and user-centered design. The arrangement of spaces, transitions between active and quiet areas, and connections between indoor and outdoor environments can significantly influence users' emotional states and overall well-being [5], [6], [10]. Building upon these theoretical perspectives, this research examines how healing-oriented spatial design can be integrated with climate-responsive strategies in Bahrain. Through the design proposal of the Thalassa Wellness Centre, the study explores how principles derived from healing environments, biophilic design, and passive environmental strategies can be synthesized into a cohesive architectural approach that enhances both environmental performance and holistic wellbeing.

III. Methodology and Design Approach

This research adopts a design-based methodological approach that combines theoretical investigation, precedent analysis, and environmental site analysis to explore how healing-oriented spatial principles can be integrated into climate-responsive architecture. The methodology aims to translate conceptual healing philosophies into a practical architectural proposal that responds to both environmental conditions and user well-being. The research methodology is structured into four main stages: conceptual framework development, site analysis, spatial organization, and environmental integration. The conceptual framework of the project is derived from the Ancient Greek Askleion healing philosophy, which emphasizes the relationship between body, mind, nature, and water as essential components of healing environments. This philosophical foundation informed the design intentions of the project, particularly the integration of water elements, natural landscapes, and restorative spatial experiences within the architectural proposal. The second stage focuses on site analysis of the selected waterfront location in Busaiteen, Bahrain. Environmental factors such as solar orientation, prevailing wind directions, and surrounding urban context were examined to inform spatial and environmental design decisions [3], [4]. The analysis

supports the positioning of the building mass to maximize natural ventilation, improve thermal comfort, and reduce solar heat gain. These findings guided the placement of courtyards, shaded circulation spaces, and semi-outdoor transitional areas that enhance both environmental performance and user experience. The third stage involves the development of spatial organization and architectural form. Precedent studies of wellness architecture and healing environments informed the zoning strategy of the project [6], [10]. Organic and curved geometries were explored to reflect the symbolic fluidity of water while allowing natural airflow around the building. Spatial zoning was carefully designed to separate active wellness areas, therapeutic treatment spaces, and quiet meditation zones in order to support relaxation and sensory engagement. The final stage focuses on the integration of climateresponsive environmental strategies. Passive cooling techniques such as natural ventilation, shaded facades, internal courtyards, and controlled daylighting were incorporated into the architectural design, as illustrated in the project visualizations (Figures 1–4). Material selection emphasizes light-colored surfaces and thermally efficient materials that reduce heat absorption and improve building performance. Through the integration of these methodological stages, the research demonstrates how healing-oriented design principles can be translated into climate-responsive wellness architecture suitable for hot coastal climates.

Figure 1. Outdoor massage area.



Figure 2. Waterfront meditation platform visualization.



Figure 3. Floating cafe



Figure 4. Shaded circular smudging area

IV. Project Proposal and Spatial Design

The Thalassa Wellness Centre is proposed as a contemporary waterfront healing environment located in Busaiteen, Bahrain. The project translates conceptual principles derived from Ancient Greek healing philosophy into a spatially and environmentally responsive architectural design. The aim is to create a wellness facility that supports physical relaxation, mental restoration, and sensory engagement through a carefully structured spatial experience. The architectural concept is strongly influenced by the symbolic relationship between water, nature, and healing, which forms the central theme of the design. The waterfront location allows direct visual and climatic connections to the sea, reinforcing the therapeutic atmosphere of the wellness centre. Water therefore becomes both a symbolic and environmental element within the project, shaping spatial experience and strengthening the relationship between users and the surrounding landscape. The building form is developed through curved and organic geometries inspired by the fluidity of water. These forms are not only aesthetic expressions but also contribute to environmental performance by allowing natural airflow to move around and through the building. This approach enhances cross-ventilation and reduces the accumulation of heat within the built form, which is particularly important in Bahrain's hot coastal climate. Spatial

organization plays a critical role in supporting the therapeutic function of the wellness centre. The project is structured to provide a gradual transition between public and private spaces as well as between active and quiet zones. The ground floor accommodates communal wellness activities such as reception areas, cafés, workshops, and fitness spaces, while the upper level contains more private therapeutic areas including massage rooms, meditation spaces, yoga studios, and hydrotherapy facilities. One of the key spatial strategies identified in the project is the use of courtyards and semi-outdoor transitional spaces. These spaces introduce natural ventilation, filtered daylight, and vegetation into the interior environment while also creating shaded microclimates that improve thermal comfort. The integration of indoor and outdoor environments strengthens users' sensory connection to nature and enhances the restorative experience of the building. The design findings indicate that the integration of environmental strategies with healing-oriented spatial design can significantly enhance the quality of wellness environments in hot climates. Elements such as shaded circulation paths, open courtyards, and semi-outdoor spaces function not only as passive environmental devices but also as spatial tools that support relaxation and psychological well-being. Through this architectural proposal, the Thalassa Wellness Centre demonstrates how conceptual inspiration, spatial planning, and environmental responsiveness can be integrated into a cohesive wellness architecture. The project therefore contributes to the development of climate-responsive healing environments suitable for coastal regions such as Bahrain.

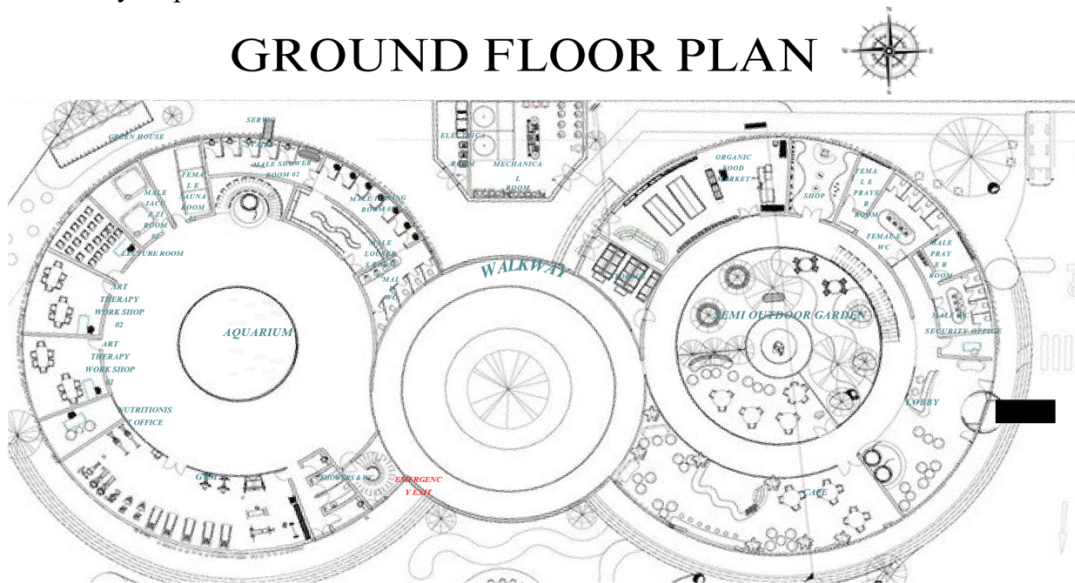


V. Spatial Organization and Program Distribution

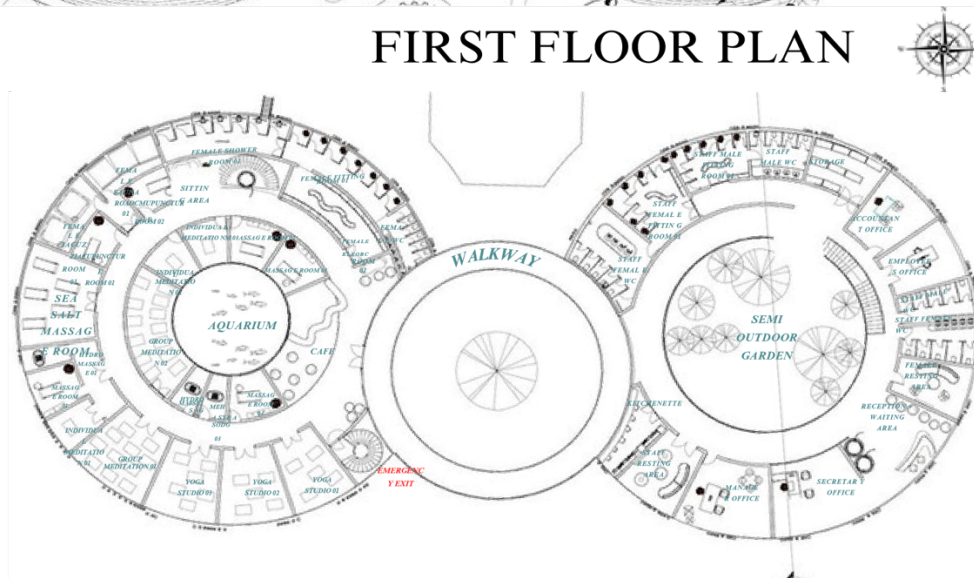
The spatial organization of the Thalassa Wellness Centre is designed to support a gradual transition between different levels of activity and privacy, allowing users to move through a sequence of therapeutic environments that enhance relaxation and well-being. The ground floor accommodates the more public and socially active functions of the wellness centre, including the main reception and waiting area, café, gym facilities, art therapy workshops, lecture rooms, and an organic food market (Figure 5). These functions encourage community engagement and provide accessible wellness activities for visitors. The layout is organized around shaded walkways and semi-outdoor garden spaces, which introduce natural ventilation and daylight into the interior environment [3], [4]. The first floor contains more private and therapeutic spaces such as massage rooms, meditation areas, yoga studios, hydrotherapy spaces, sauna rooms, and jacuzzi facilities (Figure 6). These areas are intentionally separated from the more active

ground floor spaces in order to create a calm and controlled environment that supports relaxation and therapeutic treatments. The spatial zoning strategy reflects one of the key design findings of the research: wellness environments benefit from a clear spatial hierarchy that gradually transitions from active public spaces to quiet therapeutic zones [5], [6]. This sequence helps reduce sensory stimulation and supports psychological relaxation. In addition, the integration of semi-outdoor gardens, courtyards, and shaded circulation paths strengthens the connection between indoor and outdoor environments. These spatial elements contribute to improved microclimatic conditions by allowing natural airflow, filtered daylight, and vegetation to influence the internal environment of the building [2], [3]. Overall, the spatial organization demonstrates how architectural planning can support both functional efficiency and therapeutic spatial experience, reinforcing the concept of healing architecture within a climate-responsive design framework.

GROUND FLOOR PLAN



FIRST FLOOR PLAN



MAIN ENTRANCE

VI. Environmental Strategies and Building Performance

Environmental performance plays a central role in the design of the Thalassa Wellness Centre, particularly due to its location within Bahrain's hot and humid coastal climate. The project integrates passive environmental strategies to improve thermal comfort, reduce energy consumption, and enhance the overall spatial experience of users. Building orientation was carefully considered in response to solar exposure and prevailing wind directions [3], [4]. The building mass is positioned to maximize exposure to cooling sea breezes while minimizing direct solar heat gain on primary occupied spaces. Curved building forms and open circulation paths allow air to move naturally through and around the structure, supporting cross-ventilation and reducing reliance on mechanical cooling systems (Figure 6). Courtyards serve as key environmental devices within the architectural design. These internal open spaces allow daylight and natural ventilation to penetrate deeper into the building while also creating shaded microclimates that improve thermal comfort [3], [4]. Vegetation within these courtyards contributes to localized cooling through evapotranspiration, further

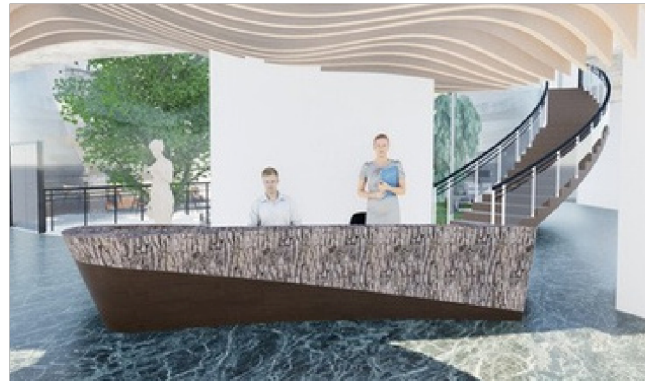
enhancing environmental performance (Figure 7). Material selection also plays an important role in improving building efficiency. Light-colored exterior surfaces reduce solar heat absorption, while insulated roof systems minimize heat transfer into interior spaces. Shaded glazing and carefully positioned openings allow natural daylight while preventing excessive heat gain [3], [4]. Additional strategies such as pergolas, overhangs, and shaded circulation paths help control solar exposure and create comfortable transitional spaces between indoor and outdoor environments (Figure 8). Landscaping around the building perimeter also helps buffer heat and noise from surrounding urban areas while strengthening the connection between users and nature [2], [5]. The findings of this research indicate that the integration of passive environmental strategies within healing-oriented architectural design can significantly enhance both environmental performance and user well-being. By combining natural ventilation, shading systems, courtyards, and landscape integration, the Thalassa Wellness Centre demonstrates how climate-responsive design can support the creation of sustainable and restorative wellness environments in hot coastal climates such as Bahrain (Figure 9).



VII. Discussion

The development of the Thalassa Wellness Centre demonstrates the potential of architecture to act as a mediator between environmental conditions, cultural concepts, and human well-being. By integrating historical healing philosophies with climateresponsive architectural strategies, the project proposes a design approach that emphasizes both environmental performance and experiential quality. One of the key outcomes of this research is the successful translation of abstract philosophical concepts into tangible architectural spaces. The interpretation of the Ancient Greek Asklepeion healing philosophy informed the use of water elements, natural landscapes, and spatial sequencing as fundamental components of the design [5], [10]. These elements create a spatial experience that encourages relaxation, reflection, and psychological restoration, as illustrated in the interior and exterior visualizations of the project (Figures 10–13). The spatial organization of the project further supports therapeutic experiences by establishing a clear transition between active and quiet environments. The zoning strategy separates public wellness activities from more private therapeutic spaces, allowing users to gradually move through a sequence of spaces that reduce sensory stimulation and promote mental calmness [6]. Environmental strategies

also play a crucial role in enhancing the effectiveness of the architectural proposal. Passive cooling techniques such as natural ventilation, shaded courtyards, and semioutdoor circulation spaces not only improve thermal comfort but also contribute to the overall sensory and experiential quality of the environment [3], [4]. The waterfront context of the project further strengthens the relationship between nature and healing. Visual connections to the sea, access to cooling breezes, and the integration of landscaped outdoor areas contribute to the calming atmosphere of the wellness centre while also improving microclimatic conditions (Figure 13). From a broader architectural perspective, the findings of this research suggest that wellness architecture should extend beyond functional planning to address emotional, psychological, and sensory aspects of spatial design. By integrating conceptual inspiration, environmental strategies, and user-centered spatial planning, the Thalassa Wellness Centre provides an example of how healing architecture can be adapted to contemporary climatic and cultural contexts. Overall, the project demonstrates that combining healing philosophy with climate-responsive architectural design can contribute to the creation of sustainable and restorative built environments, particularly in hot coastal regions such as Bahrain.



VIII. Conclusion and Future Recommendations

This research explored the integration of healing-oriented architectural concepts with climate-responsive design strategies through the development of the Thalassa Wellness Centre proposal in Busaiteen, Bahrain. The study examined how architectural design can support physical comfort, psychological well-being, and sensory restoration while responding effectively to the environmental conditions of a hot coastal climate. The findings indicate that the combination of healing philosophy, spatial organization, and passive environmental strategies can significantly enhance the quality of wellness environments. Design elements such as courtyards, shaded circulation spaces, natural ventilation, and strong visual connections to water and landscape contribute to improved thermal comfort and create restorative spatial experiences for users. The study demonstrates

that integrating historical healing concepts with climate-responsive architectural strategies can provide a meaningful framework for the design of wellness environments in hot coastal regions. By translating the Asklepion philosophy into contemporary architectural design, the research highlights how cultural inspiration and environmental performance can be combined to improve user well-being and spatial experience. These findings contribute to architectural research by illustrating how healing-oriented spatial design can support both environmental sustainability and psychological comfort in wellness architecture. The project therefore offers a conceptual design framework that may inform future wellness centres in Bahrain and other Gulf regions facing similar climatic conditions. Future research could further explore the integration of renewable energy systems, environmental simulation tools, and post-occupancy evaluation methods in wellness architecture in order to assess the long-term environmental performance and user experience of healing-oriented architectural environments.

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