06

JALINAN: ENHANCEMENT PROJECT OF RESOURCE CENTRE IN KAED, IIUM THROUGH THE CONCEPT OF INTERCONNECTEDNESS

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ABSTRACT

Resource Centre of the Kulliyyah of Architecture and Environmental Design (KAED) is significant in assisting academic activities and research. However, the KAED Resource Centre confronts challenges due to neglect, which limits its impact on learning and research productivity. The project intends to enhance the Resource Centre's visibility and accessibility, therefore encouraging increased participation among educators as well as students. The goals are to raise awareness of its services, to enhance physical and digital access to resources, and to provide a friendly environment that promotes cooperation and learning. The method consists of a thorough site analysis to evaluate present facilities and user experience, a literature research to find best practices in resource centres design, and precedent studies of similar facilities to develop effective engagement methods. The findings are design solutions, with an emphasis on physical space improvements, improved resource organisation, and the use of technology to enhance user experience. Ultimately, this initiative seeks to make the KAED Resource Centre a more effective and engaging focus for academic and research excellence among the KAED community.

Keywords: *Resource Centre, Enhancement, Digital Access, Connectivity*
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1.0 INTRODUCTION

The KAED Resource Centre at the International Islamic University Malaysia (IIUM) is essential for supporting academic and research endeavors in architecture and related fields, providing a centralised hub for diverse materials that enhance teaching and learning (Mahmud, 2007). However, challenges such as outdated materials, uncomfortable air circulation, and ceiling leaks hinder its effectiveness. This study aims to enhance the centre by addressing these issues and creating a more engaging environment. By implementing strategies that focus on flexible spaces, updated resources, and community collaboration, the resource centre can better align with Sustainable Development Goals 4, 9, and 11, as well as the IIUM Sejahtera Framework, which emphasises on spiritual, intellectual, emotional, and physical well-being.

This project is carried out in conjunction with BAQS 2300 (Integrated Multi-Disciplinary Project) involving students from three departments: Architecture, Applied Arts & Design, and Quantity Surveying. In a duration of 5 weeks in total, each team developed design solutions to enhance the current condition of KAED Resource Centre that enable comfort for students, lecturers and other visitors.

Figure 1: Site - Resource Centre (Source: Author, 2024)

Figure 2: The site plan of KAED Resource Centre
(Source: Authors, 2024)

2.0 METHODOLOGY

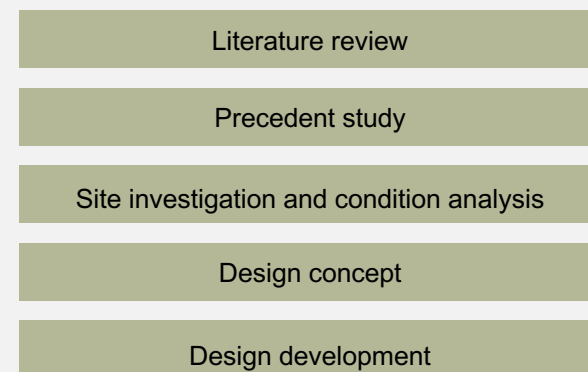Figure 3 illustrates the process undertaken to achieve the design project's objectives.

Literature review

Precedent study

Site investigation and condition analysis

Design concept

Design development

Figure 3: Research methodology chart
(Source: Authors, 2024)

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3.0 LITERATURE REVIEW

Role of resource centres in Malaysia

One of the key roles of resource centres is to increase educational quality by making different learning resources available and accessible. According to Suyitno Muslim et al. (2023), learning resource centres (LRCs) are structured entities inside educational institutions that provide a variety of resources customised to the requirements of educators and students. Furthermore, resource centres help to integrate technology into teaching, which has become increasingly important in the wake of the COVID-19 epidemic. The transition to virtual learning necessitates the availability of a wide range of online resources, and resource centres may play an important role in collecting and distributing these materials. By providing a centralised hub for both physical and digital resources, resource centres assist educators deliver successful instruction and students connect with learning materials more effectively.

Figure 4: Learning resource centre (LRC)
(Source: Muslim et al. 2023)

Spatial organisation in resource centres

The design and interior layout of these centres have a substantial influence on user access, engagement, and overall learning experiences. Effective spatial arrangement makes resources more accessible, allowing users to find items quickly and effectively. Klapka et al. (2021) found that well-organised environments increase user happiness by minimising the time spent seeking for resources, resulting in a more effective learning environment. This arrangement frequently entails establishing discrete zones inside the centre for different activities, such as quiet study rooms, collaborative workplaces, and technological hubs, to accommodate varied learning styles and preferences. This can be further related to the spatial organisational patterns of three major urban agglomerations, as mentioned by Xiang et al. (2022), in which this concept influences the way resource centres are distributed, especially through the aspects of accessibility (placement of the library), equity and inclusion among users, and technological integration for better access to digital technologies.
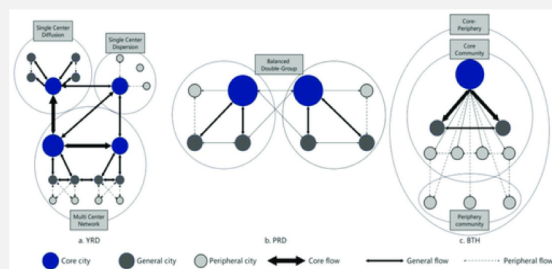

Figure 5: Spatial organisational patterns of three major urban agglomerations
(Source: Xiang, Bowen & Chen, Rushuang & Xu, Gaofeng, 2022)

Connectivity: Connecting People, Ideas, and Spaces

The KAED Resource Centre was developed with the concept of connectivity in mind, with the goal of connecting individuals with ideas and each other via the purpose of the spaces. This approach is consistent with the Islamic idea of community and cooperation, emphasising the value of sharing information and working together to achieve common goals (Rahmat et al., 2023). Ideas can be developed through a variety of activities, including self-study, discussions with others, taking breaks, and appreciating the work of others. By addressing students' interests and requirements, the centre fosters a collaborative, dynamic learning environment.
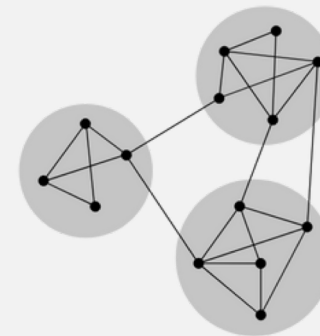

Figure 6: Analogy of connectivity
(Source: Author)

Challenges in Manage the Resource Centre

Funding and financial constraints, as well as rapid technological improvements and altering educational expectations, make it difficult for resource centres to promote educational goals. Muslim et al. (2023) emphasise the need of adequate funding, user awareness, and staff development in ensuring that educational and community requirements are met effectively. Without committed and qualified staff, resource centres may struggle to provide the quality of support that customers demand, resulting in lower user satisfaction and engagement. Furthermore, obsolete management approaches might hamper resource centre efficiency and accessibility. Many centres still use manual record-keeping and traditional cataloging procedures, which are time-consuming and prone to mistakes. Adopting current technology, such as integrated library systems and digital resource management tools, is critical for increasing operational efficiency and user satisfaction (Mosaic, 2021).

Figure 7: KAED Resource Centre
(Source: Author)

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Sustainable development Goals (SGD) 4 : Quality Education

Resource centres are important for achieving Sustainable Development Goal 4 (SDG 4), which seeks to provide inclusive and equitable quality education and encourage lifelong learning opportunities for all. These centres assist overcome educational access gaps by providing a varied range of educational materials, resources, and support services, particularly for underprivileged groups (Ydo et al., 2022). Resource centres help to integrate technology into learning environments, making education more interesting and relevant while meeting the requirements of a variety of learners. They also encourage lifelong learning by providing resources not just to students, but also to educators and community members, establishing a culture of continual learning.

Figure 8: Concept of connectivity in a resource centre
(Source: Authors)

Resource Centre's User-Centered Design and User Experience

Recent research emphasises the importance of user-centered design (UCD) in improving the user experience at the KAED resource centre. UCD focuses on recognising users' requirements and preferences, ensuring that rooms are designed to successfully support their learning activities. For example, research has shown that settings created with user input result in enhanced happiness and resource utilisation (Interaction Design Foundation, 2021). Furthermore, a Multi-User Centered Design (MCD) framework has been proposed to address the complexities of multi-user interactions in collaborative spaces, which is especially relevant for the KAED Resource Centre's goal of facilitating student group work and discussions (Tandfonline, 2023).
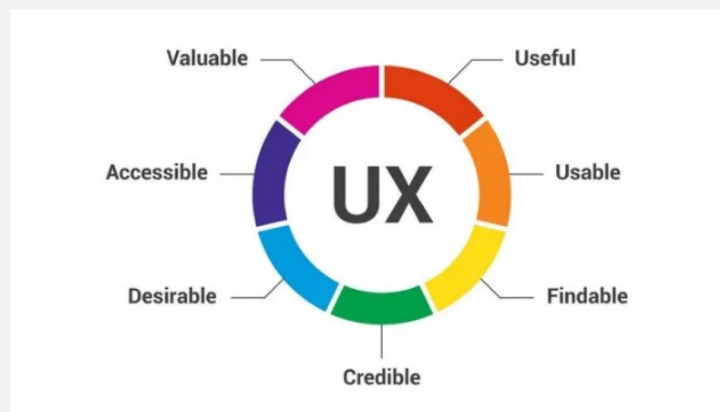

Figure 9: User experience design chart
(Source: Authors)

4.0 PRECEDENT STUDY AND CASE STUDY

Vaughan Civic Centre Resource Library by ZAS Architects + Interiors

The library serves as a vibrant cultural and educational hub, offering an array of resources, services, and flexible spaces for learning, collaboration, and social interaction. The building's design is characterised by its contemporary aesthetic, featuring clean lines, expansive glass facades, and an abundance of natural light. The interior is thoughtfully organised with open-plan areas, quiet study zones, and technology-rich spaces, all designed to foster a dynamic and inclusive environment for the community. Since KAED Resource Centre lacks natural lighting and has an unorganised layout, this concept of natural lighting and a thoughtfully organised interior from this case study should be considered for a more enhanced and sustainable studying environment for all.
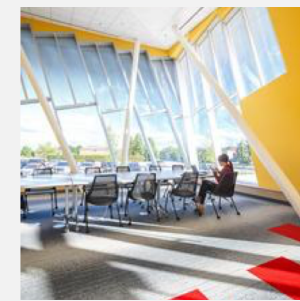

Figure 10

Figure 11

Figure 10 and 11 shows Vaughan Civic centre Resource Library by ZAS Architects + Interiors. (Source: ArchDaily.com)

The Book Seat by Sou Fujimoto

Sou Fujimoto's "Book Seat" is a minimalist design that integrates a chair within a bookshelf. The chair is part of the bookshelf structure, allowing users to be surrounded by their favorite books. This design emphasises the connection between the reader and the books, which includes the presence of special features such as seamless integration of seating and shelving, a minimalist and functional design. Thus, to further create the connecting relationship between the reader and the books, KAED Resource Centre could use such design as an inspiration to replace the current design of the plain bookshelves, equivalent to the design and concept of the "Book Seat".
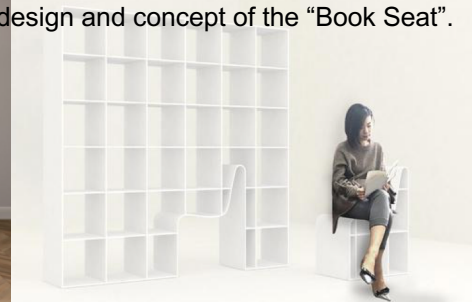

Figure 12

Figure 13

Figure 12 and 13 shows The Book Seat by Sou Fujimoto
(Source: Dezeen.com)

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Bookworm by Atelier 010

Atelier 010 designed a unique piece of furniture called "Bookworm," a free-standing structure that combines a bookshelf with a seating area. The curved form of the bookshelf wraps around the seat, creating a private reading nook. This design emphasises fluidity and the integration of storage with comfortable seating. This design have special features such as, curved form that creates an enclosed, a bookshelves act as both storage and structural support, and the seat is ergonomically integrated into the shelving.

Figure 14

Figure 15

Figure 14 and 15 shows Bookworm by Atelier 010
(Source: HomeWorldDesign.com)

5.0 SITE ANALYSIS

The KAED Resource Centre was set up to support teaching and learning, and research and publications in the fields of architecture, urban and regional planning, landscape architecture, quantity surveying, applied arts and design, construction management, and others, which includes significant issues concerning the built and natural environments. Located on the third floor of the KAED building, it is near a musolla, offering convenient access for daily prayers. A well-maintained male toilet with modern amenities is also located adjacent to the centre, ensuring easy and comfortable access for students, staff, and visitors.
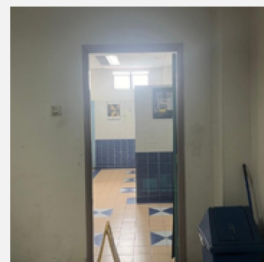

Figure 16

Figure 17

Figure 16 and 17 shows the resource centre and the
facilities around the site. (Source: Authors)

The resource centre consists of a discussion room that offers quiet and collaborative space for group work and meetings, equipped with comfortable seating and ample lighting to facilitate productive discussions. However, the room is left unused and abandoned due to dampness from high humidity level. Adjustments need to be to improve the functionality of the room for better usage in the future.

Figure 18

Figure 19

Figure 18 and 19 shows the available spaces that are
currently unused in the resource centre
(Source: Authors)

Nearby, additional seating areas provide a place for students and visitors to relax or wait comfortably. For convenience, storage units are strategically placed to store materials needed for research or projects, though the space needs to be adjusted. Beside the reception area, the seating is thoughtfully designed to ensure that administrative staff can efficiently manage their tasks while remaining accessible to assist visitors and users, creating a well-organised and user-friendly environment but the space is too open for the staff and users.

Figure 20

Figure 21

Figure 22

Figure 23

Figure 20, 21, 22, and 23 shows the issues and defects at resource centre
(Source: Authors)

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SWOT Analysis

CATEGORIES	DESCRIPTION
Strength (S)	- Strategic location. The KAED RC is located nearby the facilities on the third floor of the faculty. The area is adjacent to the students' studios, restroom and the corridor that leads to the lift.
Weaknesses (W)	- Has not been operated properly for a long time. - Residing outdated resources and physical materials
Opportunity (O)	- Large area to accommodate students and space enhancement - Past works from students such as buildings and landscape models that can be used as appreciation displays.
Threats (T)	- The seldom use of RC may cause some of the students to end up not noticing its existence. - May end up abandoned for real if no further actions are taken.

Table 1: The SWOT analysis table. (Source: Authors)

Site Zoning

Figure 24: The classification of spaces in the resource centre. (Source: Authors)

Figure 25: The circulation of the resource centre. (Source: Authors)

The floor plan delineates two distinct circulation paths: a red path for private/staff areas and a yellow path for public/general access. The red path ensures efficient staff movement by clearly marking areas that are accessible to staff only, such as the 'admin' seating located behind the reception. This separation helps streamline staff operations and maintains privacy in work areas. In contrast, the yellow path is designated for public access, guiding visitors through areas that are open to them, including the shelves area, seating arrangements, and the discussion room.

6.0 DESIGN CONCEPT

Connectivity (Jalinan)

The connectivity concept, inspired by trees, reflects the flow of knowledge in a resource centre, akin to how the internet connects information. Just as a tree's roots, trunk, and branches are interconnected, the design facilitates seamless access to resources, whether physical books or digital information. The organic layout and natural materials symbolise the tree's structure, while the concept of connectivity mirrors the way the internet links data, ensuring that knowledge is accessible, integrated, and continuously growing within the space. The verse in Surah Ibrahim (14:24-25) is often interpreted as a metaphor for knowledge and wisdom. Just like a tree with strong roots and fruitful branches, beneficial knowledge is deeply rooted in truth and continues to grow, spread, and bear good outcomes over time.
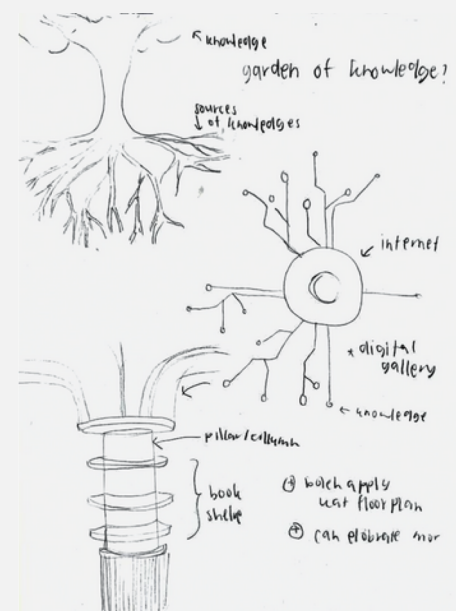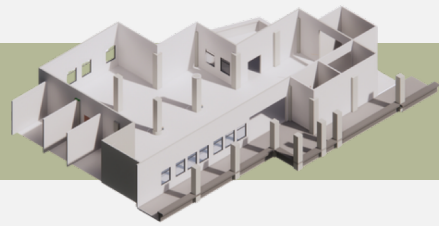

Figure 26   Figure 27

Figure 26 and 27 shows the concept for proposal interior design of resource centre. (Source: Authors)

This concept of "Connectivity" in these student spaces revolves around fostering a collaborative and inspiring environment where ideas can thrive. These spaces are intentionally designed to cater to various activities that support idea generation, such as self-study, group discussions, and moments of rest. Additionally, they allow students to engage with and appreciate the work of others, further fueling creativity. By accommodating diverse interests and needs, the spaces create a dynamic ecosystem that encourages students to connect with ideas and each other, ultimately enhancing their academic and personal growth. The organic structure of the space reflects the natural harmony found in a tree, with areas designed to branch out and connect, symbolising the continuous exchange of knowledge and support within the community.

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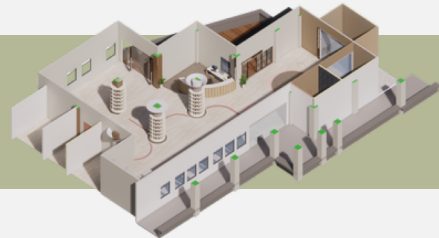
7.0 DESIGN DEVELOPMENT

The process of identifying walls that are needed to be kept or demolished.

Installing selected materials for every space and addition of flooring navigations to visually convey connectivity.

Equipped furniture to selected areas such as administration, discussion rooms and outdoor area.

Further installation of furniture like bookshelf to ceiling, study ports and display racks to add to the enhancement of the areas.

Finalisation of design layout with complete elements and furniture to develop a practical and eye-catching space for all.
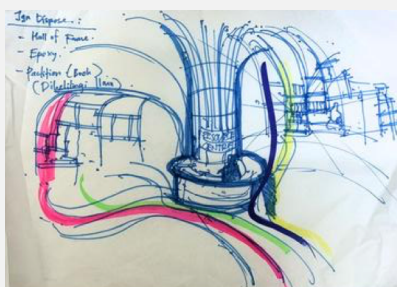
Figure 28: Design development. (Source: Authors)

Figure 29

Figure 30

Figure 29 and 30 shows visualizing flooring concept in 2D and 3D sketch illustration
(Source: Authors)

8.0 DESIGN FINALISATION

The resource centre, *Jalinan*, revolves around the tree-inspired connectivity concept, which symbolises seamless access to knowledge which links physical and digital resources like a tree's interconnected structure. This resource centre functions as a thriving hub for knowledge and ideas, bringing people together in a space built for growth and discovery. The concept of connectivity can be clearly seen through the structures of the furniture and storage, portraying the perfect symbolisation of interconnectedness. Jalinan succeeded in facilitating meaningful connections among students and lecturers.

Figure 31: Entrance of KAED Resource Centre
(Source: Authors)

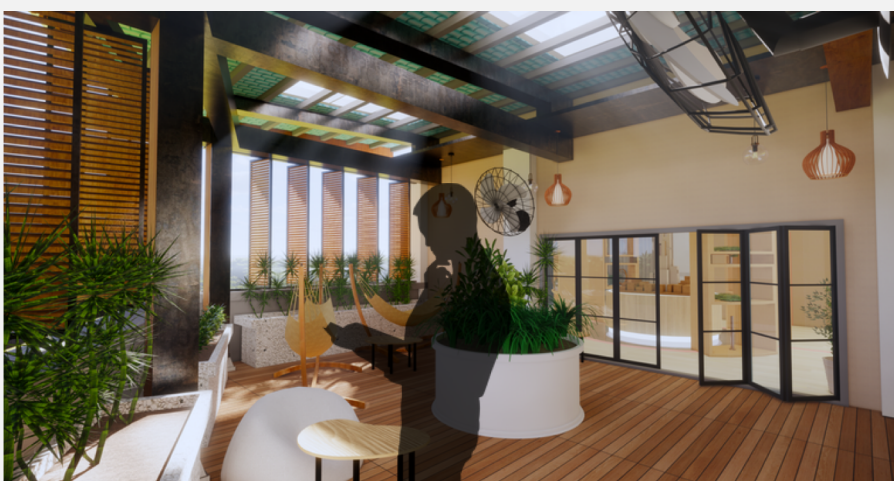Figure 32: Administration area lit up by interior lighting
(Source: Authors)

Figure 33: Appreciation corner
(Source: Authors)

Figures 34 and 35: Leisure port for leisure studying (Source: Authors)

Figure 36 and 37 Individual study pod for more focus (Source: Authors)

Figure 38 Outdoor area named 'Ruang Santai'
(Source: Authors)

Figure 39 Private discussion room
(Source: Authors)

Figures 38 to 39 show the perspective views of the resource centre
(Source: Authors)

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9.0 ELEVATION AND SECTION DRAWINGS

Figure 40: Floor plan design
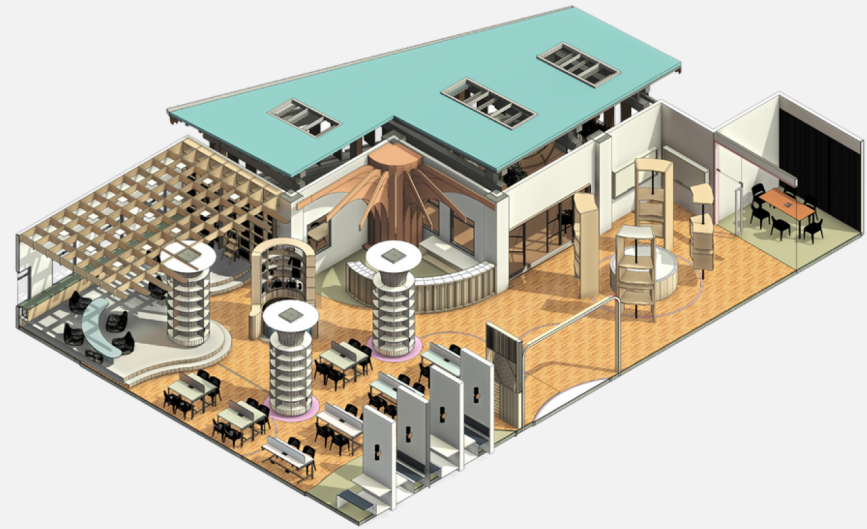(Source: Authors)

Figure 41: Axonometric view
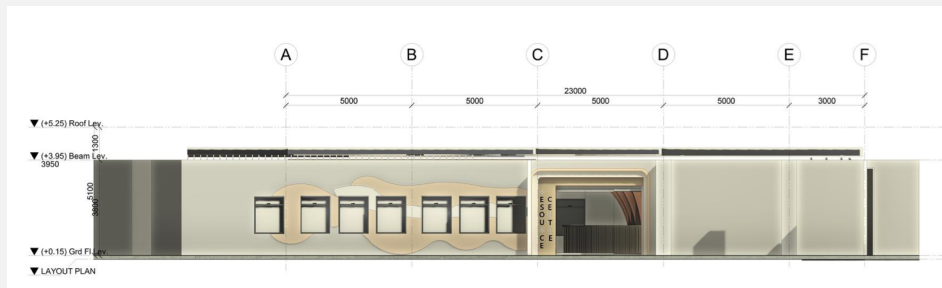(Source: Authors)

Figure 42: Front elevation
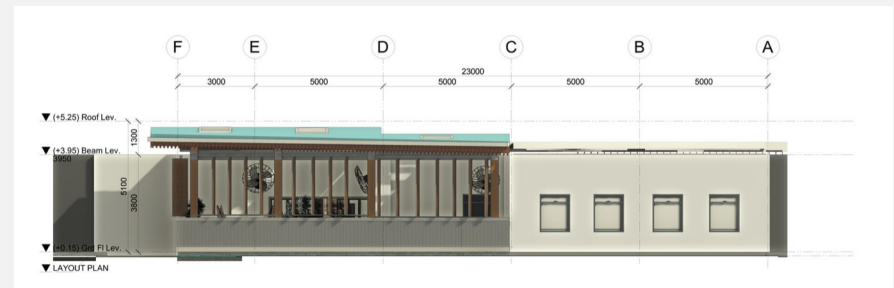(Source: Authors)

Figure 43: Rear elevation
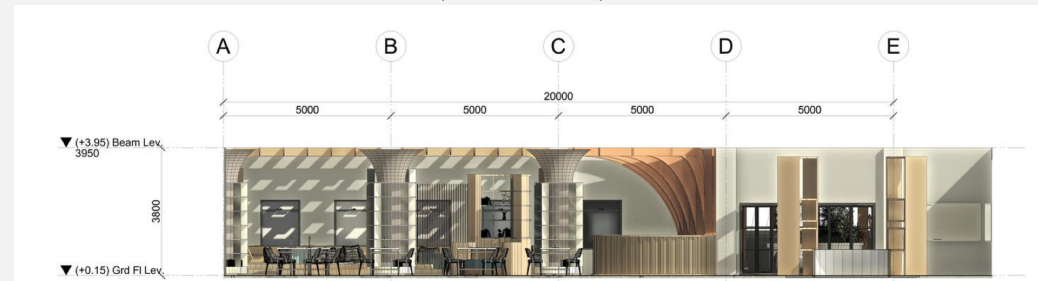(Source: Authors)

Figure 44: Section A-A
(Source: Authors)

Figure 45: Section B-B
(Source: Authors)

Figure 41 to 46 shows the rendered drawings for Resource Centre
(Source: Authors)

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CONCLUSION

This paper has presented the outcome of the study on the enhancement of KAED Resource Centre. By resolving its existing faults, this interior design project has transformed the centre, turning it from a contemporary, lifeless place into one that reflects a sense of connectivity. The project has developed a setting that encourages participation and connection by incorporating open, collaborative areas and updating the materials and aesthetics. This remodeling revitalises an area that was previously thought to be unappealing while also improving the centre's practicality. Despite the project's success in enhancing the resource centre, limitations such as time constraint and minor delays due to technical issues highlight opportunities for improvements such as time management and a better technical system in the future. As a result, the resource centre has been updated to be both aesthetically pleasing and completely functional to accommodate its users' changing needs.

ACKNOWLEDGEMENT

This project has been a transformative experience for the members of Group 2, Impiana Corp. The group is eager to apply the insights the team has gained, and the relationships built in future projects, aiming to achieve outstanding results. Authors extend sincere appreciation to the lecturers of BAQS 2300 Integrated Multi-Disciplinary Project, 2024, at the Kulliyyah of Architecture and Environmental Design (KAED), IIUM, and to all other contributing parties and institutions for their significant role in making this project a success.

Essentially, the outcome of this project has been presented elsewhere by the team in the form of infographic poster and design model, and won two (2) Awards in the Exhibition of BAQS2300 Multi-Disciplinary Project session 2023/2024, as shown follows:
1. Award of People's Choice
2. Award of Dean's Choice

Lecturers
1. Mohd Fairullazi Ayob
2. Sufian Hamat
3. Arita Hanim Awang
4. Azrin Mohd Din
5. Raja Intan Suhaylah
6. Sharifah Tahirah Syed Kamarulzaman
7. Nur Affah Mohyin
8. Fadzidah Abdullah
9. Nur Ulfah Awatif Umairah Alias
10. Roziha Che Haron
11. Julaila Abdul Rahman

	Students	MATRIC NO.
1	Hana Humaira Noor Hashim	2212692
2	Siti Maisarah Mohamad	2113520
3	Muhammad Zahirul Haziq Md Zuki	2217121
4	Balqis Alkira Asrak	2210234
5	Ahmad Pauzan Ansari Jasman	2214777
6	Muhammad Irrman Irffan Mohd Ayub	2019269
7	Arif Fahmi Hamidi	2217075
8	Isma Muhammad Akid Ismarizal	2219109
9	Fatimah Azra' Abdul Manan	2217220
10	'Imran Al-munir Yasir	2214259
11	Nur Aisyah Mohd Isa	2218362
12	Amzar Raziq Rosli	2116405
13	Muhammad Izzul Hanif Mohd Norddin	2210945
14	Amirah Adlina Muhamad Salehuddin	2110284
15	Nur Jannah Najihah Saleem	2117334
16	Ain Shahidah Mohd Arif	2110146
17	Dayang Nurul Izzah Abang Adrus	2113234
18	Nur Liyana Mahbub Ahmad	2115620
19	Aida Mohd Shaharuddin	2117310
20	Muhamad Zaki Maslan	2110295
21	Nur Syazwani Sulaiman	2116718
22	Nur Rafeatulmillah Ahmad Fauzi	2116230
23	Mirsha Nurathiqa Mirnawan	2019532

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