UNIVERSITI TEKNOLOGI MARA

PIONEERING EDUCATIONAL PERSPECTIVES

Series 2025

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Muhammad Irfan bin Mokhtar

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Published by:
Academy of Language Studies, Universiti Teknologi MARA
Cawangan Johor, Kampus Pasir Gudang, Jalan Purnama,
Bandar Seri Alam, 81750 Masai, Johor Darul Ta'zim.
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e-ISBN : 978-967-0033-31-0

Published date: 2025

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Preface

Pioneering Educational Perspectives: Series 2025 is a collection of thought-provoking insights and research contributions exploring contemporary educational trends and practices. This eBook presents a diverse range of perspectives on innovative teaching methodologies, digital learning strategies, and transformative approaches in education. Designed to serve as a resource for educators, researchers, and practitioners, it aims to inspire meaningful discussions and advancements in the field. Through carefully curated chapters, this publication offers fresh ideas and practical solutions to enhance learning experiences in an ever-evolving educational landscape.

e-ISBN: 978-967-0033-31-0

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CUBE ARCHITECTURE: MAKER PLACE HAVEN

Syahmirul Haziq Bin Mohd Hamzani, Ar. Erdayu Os'hara Binti Omar, Ts. Kamal Bin Mohd Idris

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ABSTRACT

One Principle of Architecture by Vitruvius 'On Architecture', Consist of Modularity. Modularity is the appropriate agreement of the components of the building itself and the correspondence of the separate parts to the form of the whole scheme based on one of those parts selected as the standard unit. The present basic components of a building blocks are a Brick and connected through a Mortar. Cube Architecture solves primitive problems into a printable and maker-able building. It is designable and can be printed into many colors of the Maker's likings and eases time. It consists of several Cubes and Connectors. Maker Space Haven, as it located at the side of Central Market, really attracts people from various ages especially tourist and school students to stay there overnight at hotel on site and learn the design of Cube Architecture, the potentialities of this new modern, break-through building blocks and construction. As the people of The Book says, "And ease for me my task." (Ta-Ha : 26) really reflects the elements of Cube Architecture.

KEYWORDS: Cube, Architecture, Maker, Space, Modularity.

PROBLEM AND OBJECTIVE



Image 1.2

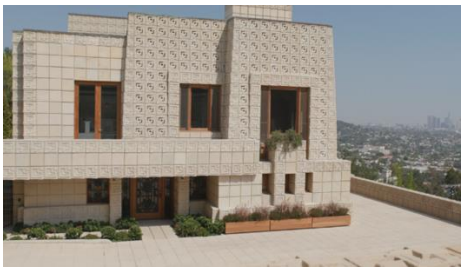


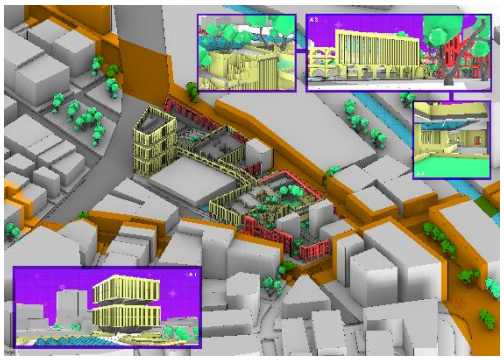
Image 1.3

Looking at Ennis House, in Los Angeles, Unites States by Frank Lloyd Wright, the imitation of making concrete blocks looking like a cube, and internal structure, that had come from various resources and places may rise many intangible questions because it was still a normal type of construction with 16" x 16" x 3.5" (franklloydwright.org) paneled concrete blocks. Thus, what can we did with just a basic cube block that was the best form of construction like the temple in Vitruvius's book, but with modern twist. Here comes the Cube Architecture that solves this basic problem of human innovation with today's technology. The Objective was, 1) To design a modern building with basic blocks of cube and it sustains, 2) Having many types of materials although basic form was enough, 3) Came from the least number of places when building a structure, and 4) To make it an all-age buildable structure, building and a shelter.

e-ISBN: 978-967-0033-31-0

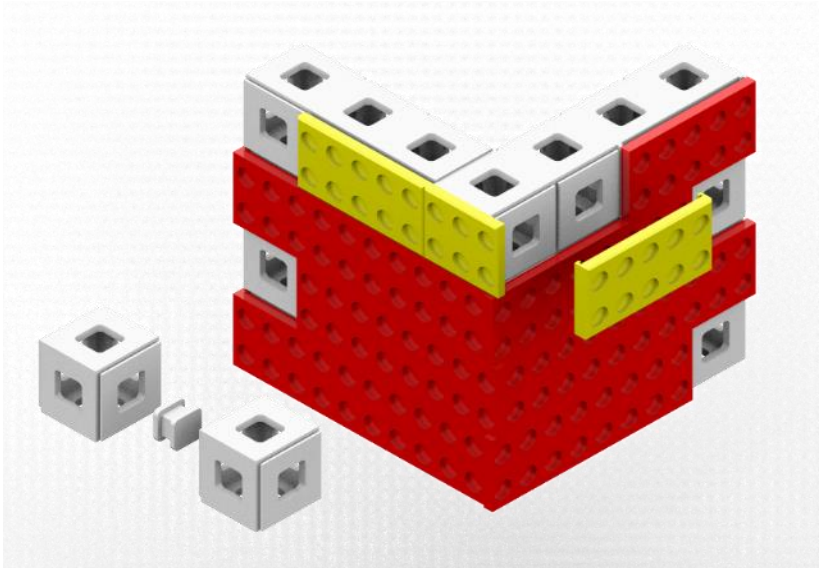
DESIGN DESCRIPTION





Maker Place Haven located at Central Market will be the Cube Architecture's hub of learning using maker technologies. Aside from Makerspace activity, which a place that provides hands-on, creative ways for students to design, experiment, and invent as they engage with a variety of tools and technology (Xavier University Library, 2024). We could use Cube Architecture as the base for making real projects regarding building. We could make a house just with many Cubes out of it. Suitable for School Children, Youth and Adults when using it for making a structure or a house anywhere.

VISUALS



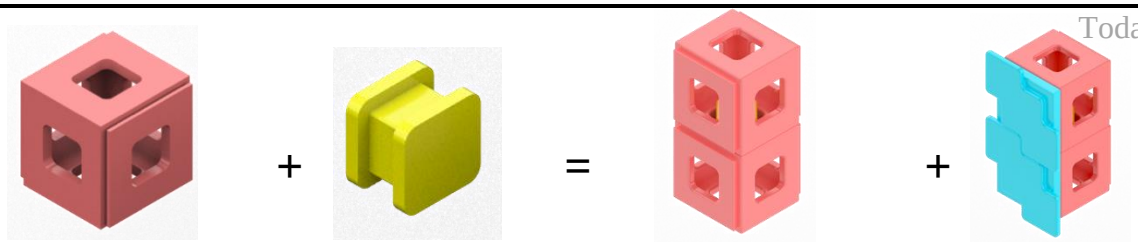
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NOVELTY AND UNIQUENESS

Brick Mortar Brick + Mortar Plaster



Previous.

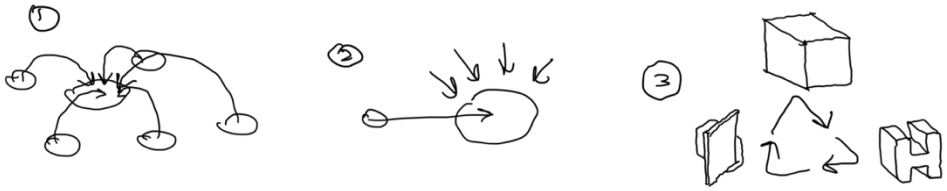


Today.

Cube Connector Cube + Connector Clad

The design of Cube, Connector and Clad was originally designed and printed using Engineering Practices, later, it was being Architecturally widen until to an extent of being a printed wall. The possibility of its materials was Plastic, Powder, Resin, Metal and Timber Routing (SPC). For an early stage, it is better to use PLA Plastic type of 3D Printing to realize the Printing of Architectural Wall Elements in ease. The transition of Basic Masonry into Modern Printable Architectural Elements with less seeking on the places for Materials. It needs design knowledge to make it a reality which must be learnt from an Architectural School.

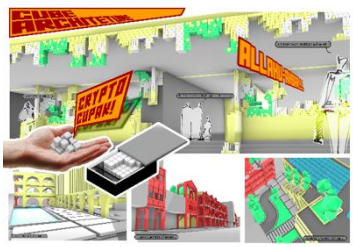
BENEFITS TO MANKIND



All Into One A Place That Caters All. Recyclable.

When it comes to deliverables of materials, it can come from many places. This method turns out to be quite unsatisfactory as it buys times, thus, to be affordable and fast, it can be printed at site with many materials on hand, using printing machines of many typologies and recyclable. On the other side, the ideas of designing could come from many resources and places, a time of walking with the environments and focusing for only one project which happens to only occur at site, and the house could be reused into another form of our own likings.

COMMERCIAL POTENTIAL



e-ISBN: 978-967-0033-31-0

The Technological Singularity (Sam Parks, 2024) used inside the project could be an advantage into conducting a safe and effective construction and architecture. It costs RM 60 per coil of filament and could be printed into 5 Cubes and 5 Connectors, while the cost of the 3D Printer could be reached from RM 1,000 to RM 2,000 (Creality.com), thus the project to run a large house could be calculated accordingly.

CONCLUSION

Having technology that solves all problems of Architectural Singularity means a lot inside the realm of Built Environment. While conducting a production system could raise many solutions of making a construction more centered but lived distributed all over the area of the site in finding ideas. The solution of cubes into a house or building does move our mind into designing such places that they could be turns out a perfect solution on many issues we faced on-site.

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