The complementary relationship between flexible interior space and multi-purpose furniture

Prof. Wael Raafat Mahmoud Helal

Professor of Environmental Design, at Faculty of Applied Arts, Helwan University, Egypt. wael rafat2@yahoo.com

Dr. Ebtisam Mohamed Khames

Associate professor, at Faculty of Applied Arts, Helwan University, Egypt. dr.ebtesamkh@hotmail.com

Alaa Mostafa abdelfattah

Teaching Assistant, at Faculty of Applied Arts, Badr University BUC, Egypt. Alaa.mustafa.abdelfattah@gmail.com

Abstract:

In light of human needs, societal conflicts, technological developments, finding the relationship between need and function, the emergence of many terms for design, and the emergence of multi-purpose furniture as a new pattern to search for the relationship between it and the design solutions for the interior space, where there are many terms and ideas to develop different design solutions for small spaces and limited space, and these ideas only resulted in solutions from the point of view of their designers for a design solution for a specific space without reaching relationships that can be built upon and developed for the design of those spatial spaces, and from here the idea of research appeared in the existence of an integrated relationship between the fixed items of the spatial space and the variable elements that are represented by the furniture items. Through a specific problem, which is how to reach an internal space that can be developed and not replaced by monitoring the relationship between flexible space and multi-purpose furniture with the aim of defining the flexible space and knowing its main design methods, exposure to multi-purpose furniture, definition, knowledge of its types and analysis of some models that can be used in space solution.

Statement of the Problem: How to reach an internal space that can be developed and not replaced. **Research Objectives**"

Monitoring the relationship between flexible space and multi-purpose furniture to reach design solutions that help save spaces and merge spaces.

Research Significance: The importance of the research lies in highlighting the importance of multi-purpose furniture, with its various design solutions that help the user in solving the spatial space and accessing many activities through its use, due to the population increase and the trend towards access to an internal space that can be developed and not replaced.

Methodology: The research follows the Descriptive analytical method.

Results: 1-The complementary relationship between the items of furniture and the methods of solving the spatial space is nothing but the result of both sides of the equation between the absolute concept and the multi concept of the function and the design of the spatial space. 2- The design of the open plan depends on the noncontact between the vertical and horizontal surfaces, with the installation of the main service places, and the start of dividing the space based on its furnishing items. 3- There are different types of flexible space design based on the design of different spaces, for example the bedroom. The sleeping flat (bed) must be preserved due to its size and different operating methods should be applied to it, whether it is built into the ceiling - the wall - or with another furniture unit. In contrast to the dining space, it is considered a variable factor, so it can be combined with any furniture unit, where it can be extended from the wall or from storage units, or it can be integrated with the office unit.

Keywords:

Flexibility -Multipurpose furniture -Flexible space -Space saving.

References:

- 1. 1-Sara Mendrico Pereira (2016)," SAVING SPACE WITH FURNITURE DESIGN: Focusing on worldwide micro living and the traditional Japanese home as case-studies", Master Thesis, University de Lisboa.
- 2. 2- N. De Temmerman (2014)," Lightweight transformable structures: materialising the synergy between architectural and structural engineering", Mobile and Rapidly Assembled Structures IV.
- 3. 3- Smaroula Tachmatzidou(2019)," Folding furniture: From design to production", master thesis, School of Economics, Business Administration & Legal Studies, International Hellenic University, Greece.
- 4. 4-Anna Yudina(2015)," Furnitecture: Furniture That Transforms Space", Thames & Hudson.
- 5. 5-Junnan Ye, Wenhao Li, Chaoxiang Yang(2021)," Research on Modular Design of Children's Furniture Based on Scene Theory", In: Kurosu, M. (eds) Human-Computer Interaction. Design and User Experience

Case Studies.part3, Springer, Cham.

- 6. DOI
- 7. https://doi.org/10.1007/978-3-030-78468-3 11
- 8. 6- Maryam Gharavi Alkhansari(2018)," Toward a convergent model of flexibility in architecture", Journal of Architecture and Urbanism.
- 9. DOI
- 10. https://doi.org/10.3846/jau.2018.6241
- 11. 7-Tatjana Schneider ,Jeremy Till (2007)," Flexible Housing", Oxford: Architectural Press.
- 12. 8-Deborah Schneiderman(2012)," Inside Prefab: The Ready-made Interior", Princeton Architectural Press.
- 13. 9-Djordje Alfirevic, Sanja Simonovic (2016)," OPEN-PLAN IN HOUSING ARCHITECTURE: ORIGIN, DEVELOPMENT AND DESIGN APPROACHES FOR SPATIAL INTEGRATION", Arhitektura i urbanizam.
- 14. DOI
- 15. https://doi.org/10.5937/a-u0-11551
- 16. 10-David Wallance(2021)," The Future of Modular Architecture", Routledge.
- 17. 11-Geoffrey H. Baker (2011)," The Architecture of James Stirling and His Partners James Gowan and Michael Wilford", Routledge.
- 18. 12-William O. Gardner (2020)," The Metabolist Imagination: Visions of the City in Postwar Japanese Architecture and Science Fiction", University of Minnesota Press.
- 19. 13- Pierijn van der Putt(2018)," Total Furnishing Unit New York (US)", TU Delft OPEN Journals.
- 20. DOI: https://doi.org/10.7480/dash.11.4975
- 21. 14- Milano smart living .Retrieved February. 5, 2023 from
- 22. https://cdn.exiteme.com/exitetogo/www.milanosmartliving.com/userfiles/files/UP.pdf
- 23. 15- https://www.merriam-webster.com/dictionary/module
- 24. 16-Philip Wilkinson (2013)," Schlüsselideen Architektur", Springer Spektrum Heidelberg.
- 25. 17- William O. Gardner (2020)," The Metabolist Imagination: Visions of the City in Postwar Japanese Architecture and Science Fiction", University of Minnesota Press.
- 26. 18-https://drawingmatter.org/dismantled-sketchbook
- 27. 19-https://sabukaru.online/articles/the-promised-tokyo
- 28. 20-https://www.archdaily.com/110745/ad-classics-nakagin-capsule-tower-kisho-kurokawa
- 29. 21-Pierijn van der Putt(2018)," Total Furnishing Unit New York (US)", TU Delft OPEN Journals.

Paper History:

Paper received 6th January 2023, Accepted 11th April 2023, Published 1st of May 2023