CRITICAL PRACTICE IN AN AGE OF COMPLEXITY - AN INTERDISCIPLINARY CRITIQUE OF THE BUILT ENVIRONMENT

• Paper / Proposal Title:
Remanufacturing Architecture: How the Automobile Industrial Solid Waste used in Building Design and Construction

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• Abstract (300 words):
In 2004, Stephen Kieran and James Timberlake of the Philadelphia-based award-winning architectural firm, KieranTimberlake published their book, Refabricating Architecture. The architects argued that after a century of failure, the discipline of architecture could learn something from other manufacturers such as the automobile industry. The book was the result of the inaugural FAIA Latrobe Fellowship that funded a comparative study of the processes utilized by the aerospace, automobile, and shipbuilding industries and those of the building industry. The research was based on critical observation and analysis of the current practice of architecture and construction as well as an investigation of the industrial processes that advanced the efficiency, tolerance, and fabrication methods while the discipline of architecture remained as lacking behind. While the intent of the authors’ work is compelling, the comparison remained unfair to architecture due to the issues of quantity and mass production. Repetitiveness and mass production in architecture have miserably failed in prefabricated housing projects, and therefore the only reasonable opportunity exists in
building components and systems, which architects often utilize based on what the building product market develop, test, and put forth for them to use. The question is why architects are not active in designing building products and only depends on the manufacturing industry for products?

This paper seeks to find poetry in recreating. If not beauty, then aesthetic dimension in trash itself. To find perfection in imperfection itself. The research presented herein focuses on design-driven applications for industrial by-products waste reuse. The aim is to understand the potential and the feasibility of developing building skin systems based on designing out waste. In this paper, an experimental case study and testing research methodology were used. The method involved manufacturing processes observations, descriptions of automotive and building material culture that resulted in speculative design work. The work provides examples of ecosystem knowledge transfer between the automotive and the building industries. The work is a result of a multi-year collaboration applied research project between the academia and industry.

• Author(s) Biography (200 words each):

Ahmed is an assistant professor of architecture at Texas A&M University. He has been teaching and practicing architecture in the United States, Italy, Turkey and Egypt since 1998. Dr. Ali earned his Ph.D. and Masters degrees in Architecture and Design Research from Virginia Tech School of Architecture + Design, a Bachelor degree of Fine Arts in Architecture from Alexandria University and a Scuola Primaria (sezione asilo-elementari) Diploma from Istituto Don Bosco Alessandria, Egitto. Dr. Ali's research and scholarship investigate the relationship between the architecture of waste and the constructive technique, within materials and methods of conventional practice. His work in integrated design and construction mechanics explores the threshold between architecture, structure, and tectonics. He is an active advocate for recourse-based design-build, design for dis-assembly, circular economy, and traditional construction methods.