



CHAPTER 05  
DESIGN AND TECHNIFICATION





5.1// DESIGN AND CONCEPT DRIVERS  
PRECEDENTS



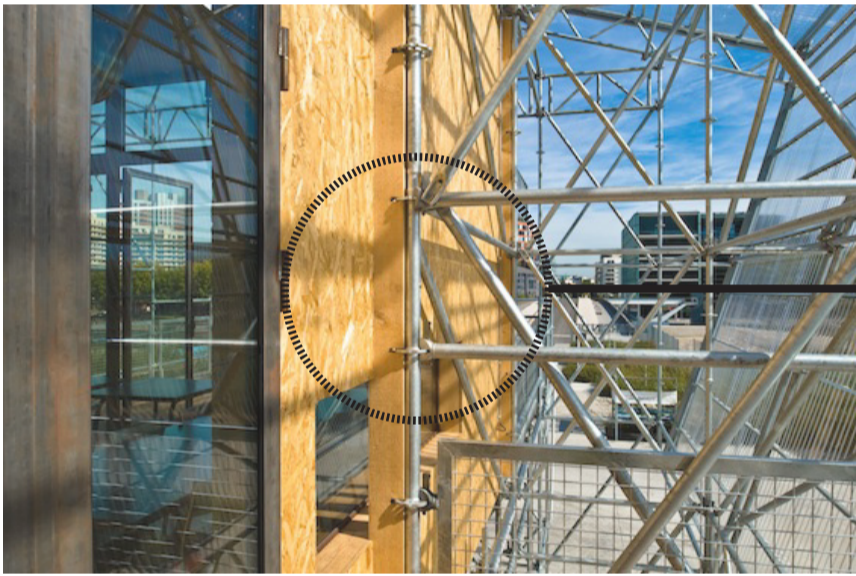
Les Grandes Tables de l'Île is an ephemeral restaurant/bar/open-air café. The project was constructed on the Île Seguin, a site landmarked for a future project by architect Jean Nouvel. The structure served as a haute cuisine venue. (1024 architecture, 2017)

The project is constructed with a hybrid design, incorporating agricultural greenhouse design, timber frame construction, standardized construction scaffolding and shipping containers. The translucent nature of the structure allows for event lighting to accentuate its construction. (1024 architecture, 2017)

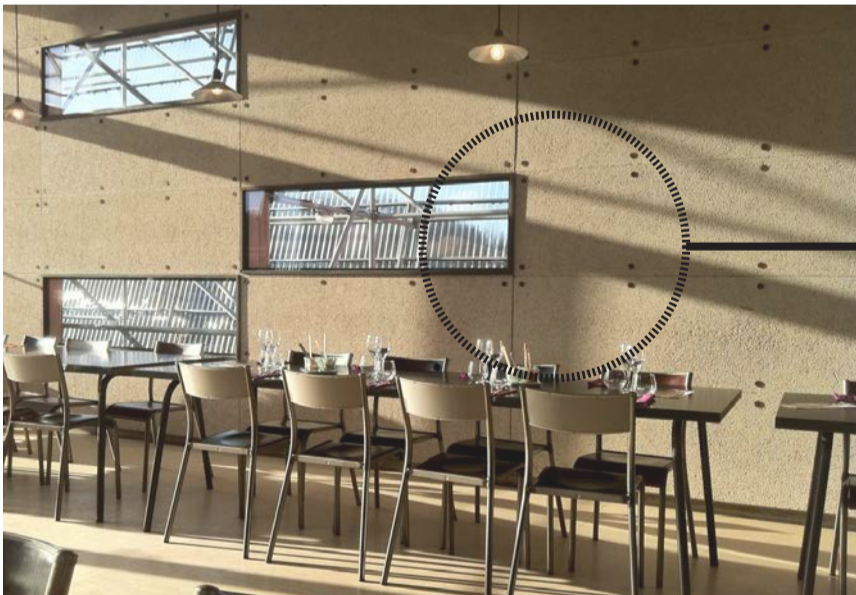
The structure is quoted as being: "An eye-catching iconoclastic assemblage with an area of 300m<sup>2</sup> to accommodate 120 covers and the cuisine of Arnaud Daguin, a chef with stars to his name." (1024 architecture, 2017)



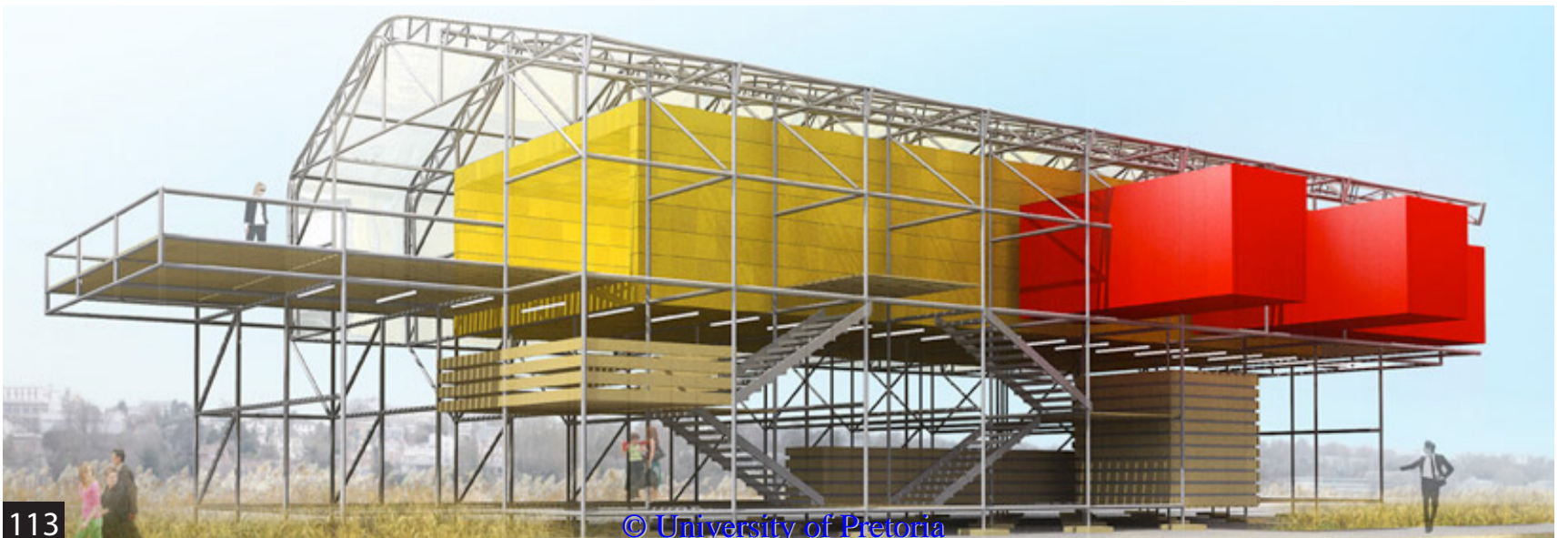
Standardization of materials used, increases ease of construction and lowers construction costs.



Use of standard materials in non-standard ways creates unique construction details.



Interior cladding materials acts as structural tie members. Use of untraditional materials, not usually considered finished products, saves costs.



# PLUGIN TOWER

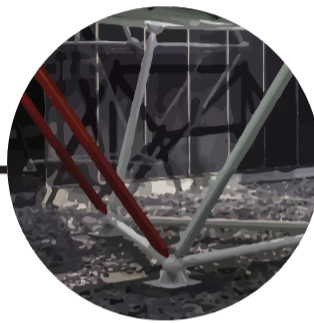
PEOPLE'S ARCHITECTURE OFFICE (PAO)



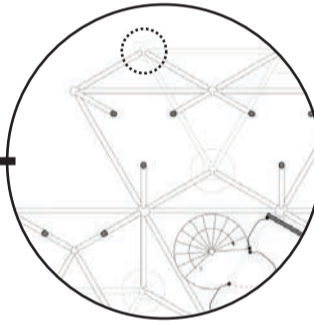
The Plugin Towers were primarily design to circumvent strict planning regulations in Shenzhen, China. This is done through the elimination of foundations. The structures dually are then able to perform in rural areas where casting large foundations may not be possible. The low-cost nature of the structure and ease of assembly makes these structures a system of convenience. (Grozdanic, 2017)



The structural design of the units allows for the attachment of additional units making it a very modular system. The modules which crate internal spaces include insulation, wiring, plumbing, interior and exterior finishes. These prefabricated modules are then slotted into the structural steel tubing system. The easy of assembly means what the structures can be put together by unskilled workers and with only a hex wrench. (Grozdanic, 2017)



Space age frame structure supported by large steel footing, requiring no concrete footing or foundation.



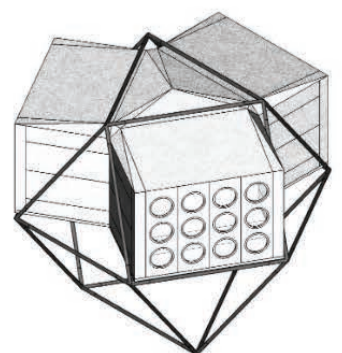
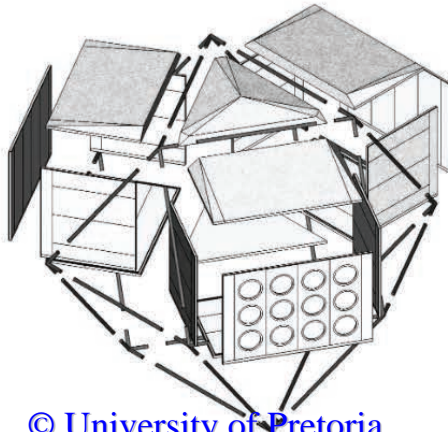
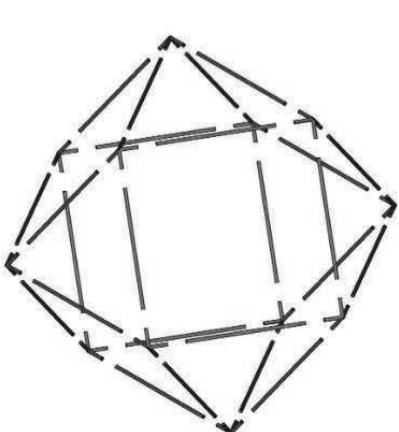
Use of structural system allows for the architecture to be placed onsite with no permanent physical alterations.



The structural system is design with ease of transportation and assembly in mind.



The design of the structures allows for utilization in remote areas, where high tech structures would normally not be possible.





Earth World architects were commissioned by The University of Pretoria to design a structure housing the following programmes: a dining hall, a conference centre, research commons, & 300 living units; with varying scales, ranging from single bedrooms, to family units. (Ewarch.co.za, 2017)

The project is located on the Northern ridge of Strubenskop, Pretoria, South Africa. The design brief required the architects to design a structure which could tie into the existing urban and landscape design of the campus. The structure challenges existing design and construction processes. (Ewarch.co.za, 2017)

The Future Africa Dining Hall serves as significant president for The Game of Diminishing Returns. The hall is constructed out of flat pack, pre-manufactured structural timber portal frames. The structure is designed in segments, which allows it to be easily transferred to the site. Due to the design of the timber segments, the structure could be assembled in a matter of hours and reduced the need for water, shuttering and heavy machinery. (Ewarch.co.za, 2017)



To reduce cost, interiors were designed to be pre-manufactured from the same plywood used in the Dining Hall. This saved significant cost due to the ability to order in bulk and also creates a visual continuity through the project.



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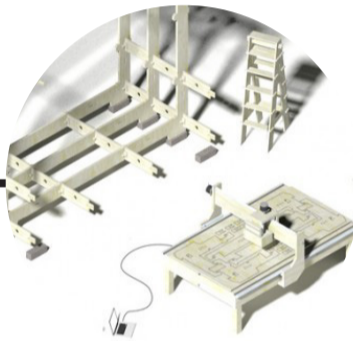
Wikihouse is an open source structure design system, allowing for quick fabrication and assembly of homes. The Wikihouse project is a collaborative effort including; architects, designers, engineers, inventors, manufacturers and builders. Through collaboration the Wikihouse project aims to develop “the best, simplest, most sustainable, high-performance building technologies, which anyone can use and improve.” (WikiHouse, 2017)



The Wikihouse project utilizes rapid manufacturing, through CNC technology, enabling cost effective, fast paced manufacturing and ease of construction. Wiki-house works on a modular design, making the editing of the structures and combining of the structures as effortless as possible. The structures design allows it to be assembled with tools manufactured in the same manner as the plywood panels themselves. The systems can also only be assembled in one way, making it “mistake proof”. (WikiHouse, 2017)



All components are labelled through the CNC process and allows for construction to take place similarly to a Lego set.



Wikihouse allows for the manufacturing of an entire house’s structure with no more than a CNC machine.



Every component designed using the Wikihouse system forms part of an automatically created construction manual, including a step by step guide to constructing the structure.

