

24FT³: Prototype for Compact Living

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CONTEXT

As the Dallas-Fort Worth Metroplex (DFW), the 4th largest and fastest growing metropolitan area in the country¹, continues to grow, its cities compete to attract development and transplants from other states. Hispanic/Latinx population growth accounts for the majority of this in apparent continuity of a phenomenon identified by A.K. Sandoval-Strausz in his book, *Barrio America: How Latino Immigrants Saved the American City*, which argues that growth in Dallas “was so dependent on Hispanic immigrants and their children that without them, Big D would have stagnated or shrunk beginning around 1970.”² In recent years DFW has been able to sustain a vibrant economy with low unemployment rates, higher median household and family income and lower poverty rates compared to Texas and the U.S.³ This growth, however, is putting a strain on housing

that is affordable and within the urban centers of Dallas and Fort Worth and has created a new phenomenon and opportunities which led to this project.

The 24FT3 is one of a series of houses that are part of an experiment on affordable construction. The client is a member of a family that, collectively, decided to buy land on the outskirts of Dallas where multiple acres of land were available in a more affordable market. Many home builders are capitalizing on this trend to build homes for their families and, eventually, to sell. The site of this house is in the city of Terrell in Kaufman County on a rural area scattered with trailer homes, barns, ranches and an increasing number of ranch houses. The county, which is predominantly white, is also experiencing an increase in Hispanic/Latinx population.



Figure 1. 24FT3 Interior view looking up. Photograph by author.

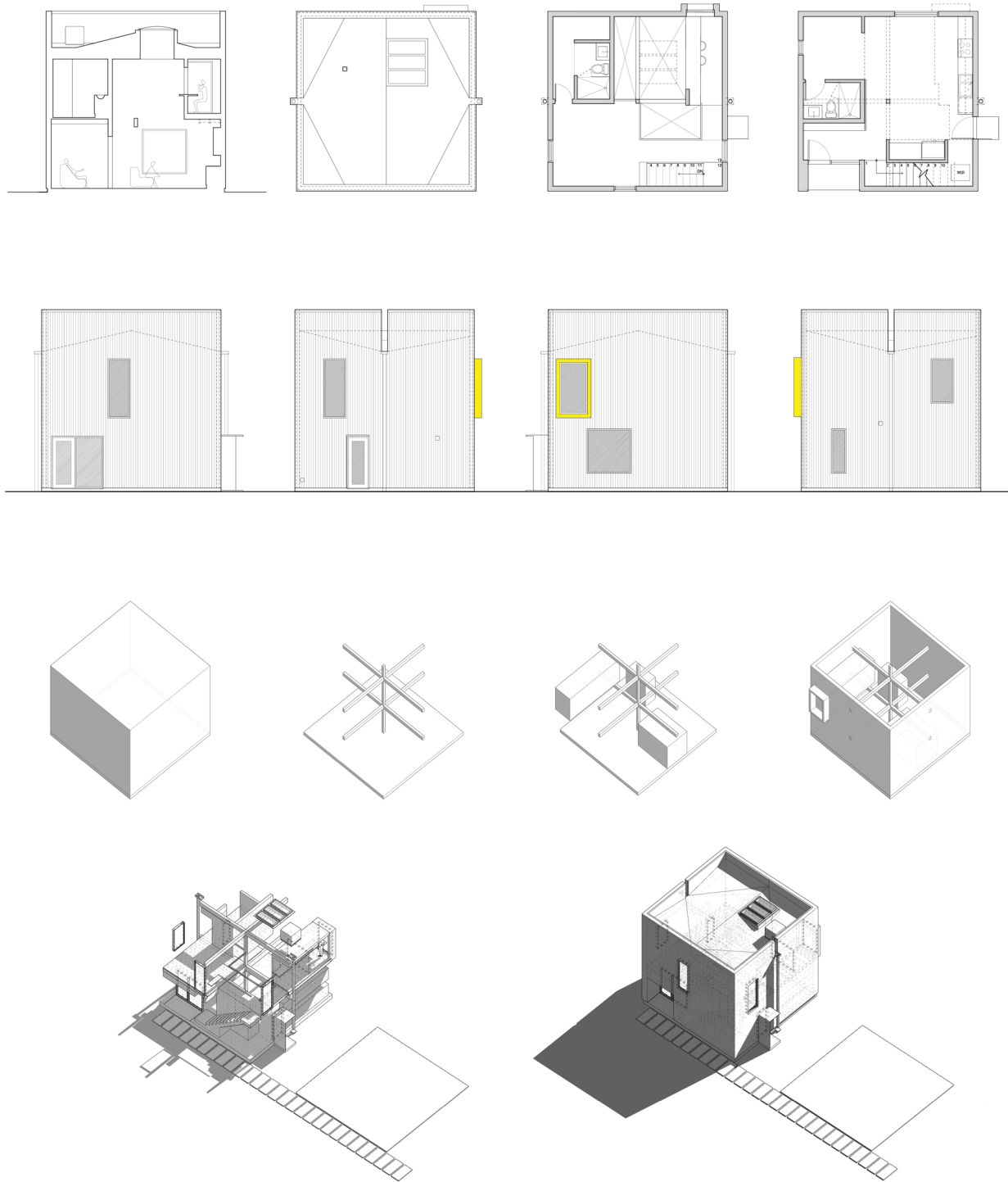


Figure 2. Plans, section, elevations and diagrams. Drawings by author.



Figure 3. Interior view of kitchen, living and dining area. Photograph by Edson Ochoa.

HOUSE

This house is designed for a working-class family of three with the wish to live simply in a small house that could accommodate their daily activities - to live, work and study from home. With a limited budget of \$100,000, we decided to make the house small and compact. It is designed to fit on the footprint of a typical two-car garage of 24 feet by 24 feet. Organizationally, the house is a cube and a version of typical 4-square grid exercises, marked by a post at its center that supports glue-lam beams that support a second floor sleeping area, a small office, a bathroom and closet (figures 1 and 2). By opening the space and allowing these 'boxes' to float within the cube, the inherent problem of small houses is avoided – the feeling of being in a small cluttered space (figure 3). The exterior walls, ceiling, windows, doors and skylights enhance the perception of space as an abstract idea (figure 7) and aim to connect the family with the surrounding context (figure 8). From sunrise to sunset, the living space receives direct and indirect natural light creating different effects during the day and throughout the year (figures 1 and 6) that is used to define the interior space as a dynamic volume in what is a static cube on the outside (figures 4 and 5). Each exterior wall is designed to have two openings, a combination of windows and glass doors that bring light into this space from all four sides and from both the first and second floor.

The 24FT3 has areas instead of rooms. A bedroom can be the second-floor loft space that is supported by two beams (Figures 2 and 6). The other sleeping area can be the space next to the living area on the first floor or it can be the space in the yellow box, which can also be the home office (Figure 6). While this project, in several ways, ignores the order and assembly of rooms as described by Charles Moore, Gerald Allen and Donlyn Lyndon in *The Place of Houses*,⁴ it takes a traditional approach to the order of Machines by placing them in walls, under the stairs, under the bridge, on top of and under the roof and behind the parapet (figures 3 and 10).

PROTOTYPE

The 24FT3 works to connect the members of the family to each other while simultaneously providing separate areas within the house for them to conduct their individual tasks. The house is also a device that aims at connecting the family to its context – the landscape and the sky. As a prototype of spatial organization, it is flexible in allowing for redistribution of the volumes/boxes within the 24FT3. Working as a kit-of-parts (figure 2), it can be arranged and programmed as desired by any future owner and builder. The replicability of the concept may have more immediate impact in large urban cities that look to density as a solution to displacement that results from a growing population and gentrification. The City of Fort Worth



Figure 4. Rear/side view of 24FT3. Photograph by author.



Figure 5. Front facade. Photograph by author.



Figure 6. Second floor. Photograph by Edson Ochoa.



Figure 7. Interior view looking up. Photograph by Edson Ochoa.

is currently developing a ‘Missing Middle’ zoning that will allow Accessory Dwelling Units across the city, something that is currently illegal in Fort Worth and most cities in the Metroplex. The 24FT3 can be deployed in backyards and small lots in older neighborhoods (figure 9) that have seen underinvestment for generations. It can serve current residents as a tool to generate rental revenue to allow them to remain in their community as property values and taxes continue to increase.

DEMOGRAPHICS

In acknowledging the changing demographics of Texas, DFW and outer rural counties, it is worth noting that this project is the result of a collective effort of people that represents this change. We have concluded that this project is indicative of the increased presence of Latinos in the construction industry. While it is not surprising that a majority of construction workers that builds a house are Latinos, it is unique to have a project of this scale commissioned, designed, and constructed by an all Latinx team – the designer (Author) a Honduran-American immigrant, the owners who are a Mexican immigrant family, and every single worker that came to the site, most of them immigrants from across Mexico and Central America.



Figure 8. Interior view of rear windows. Photograph by author.

ENDNOTES

1. US Census Bureau. (2019, April 18). New Census Bureau Estimates Show Counties in South and West Lead Nation in Population Growth. United States Census Bureau. <https://www.census.gov/newsroom/press-releases/2019/estimates-county-metro.html>
2. A.K. Sandoval-Strausz, *Barrio America: How Latino Immigrants Saved the American City* (New York: Basic Books, 2019), 13.
3. Texas Demographic Center, *Demographic Trends and Projections in Texas and the DFW Metro Area*. Fort Worth, 2019. https://demographics.texas.gov/Resources/Presentations/OSD/2019/2019_12_02_FortWorthHumanRelationsCommission.pdf
4. Charles Moore, Gerald Allen, Donly Lyndon, *The Place of Houses* (New York: Holt, Rinehart and Winston, 1974), 71, 108.

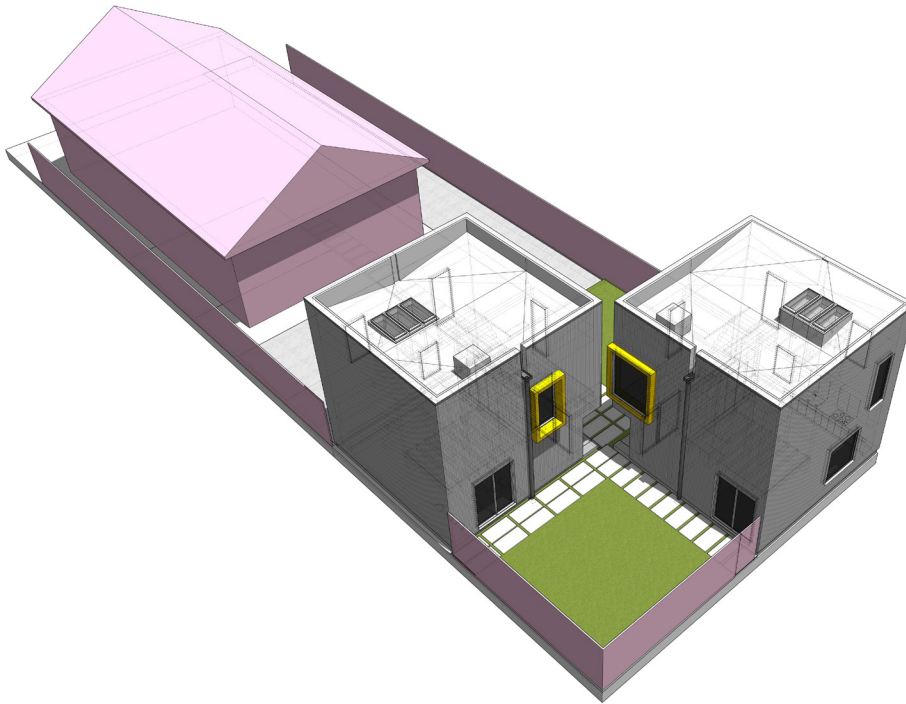


Figure 9. 24FT³ adapted as two Accessory Dwelling Units in the rear 50 FT of a typical 50ft x 150ft residential lot. Drawing by author.



Figure 10. Living, kitchen and dining area. Photograph by Edson Ochoa.