

Empowering Design through Flexible Personal Space

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An architecture focused on the specific interaction between users and their spaces, while employing a cohesive system of design paired with innovative technology, can personalize the design of architectural spaces. The customizable nature of systems allows the future of architecture to be linked to well-designed spaces that are tailored to the needs, wants, and attainability of almost anyone in the world. Current forces driving architectural and spatial design often fail to bring new and exciting design at a personal level to the majority of users. These forces focus on a large, detached element to satisfy the masses instead of focusing a design on how a single person uses a space. Designing for, and giving power to, individual users is the future of design, something many designers ignore in favor of extravagant forms, progressing technologies, or lowering costs, although none are mutually exclusive.

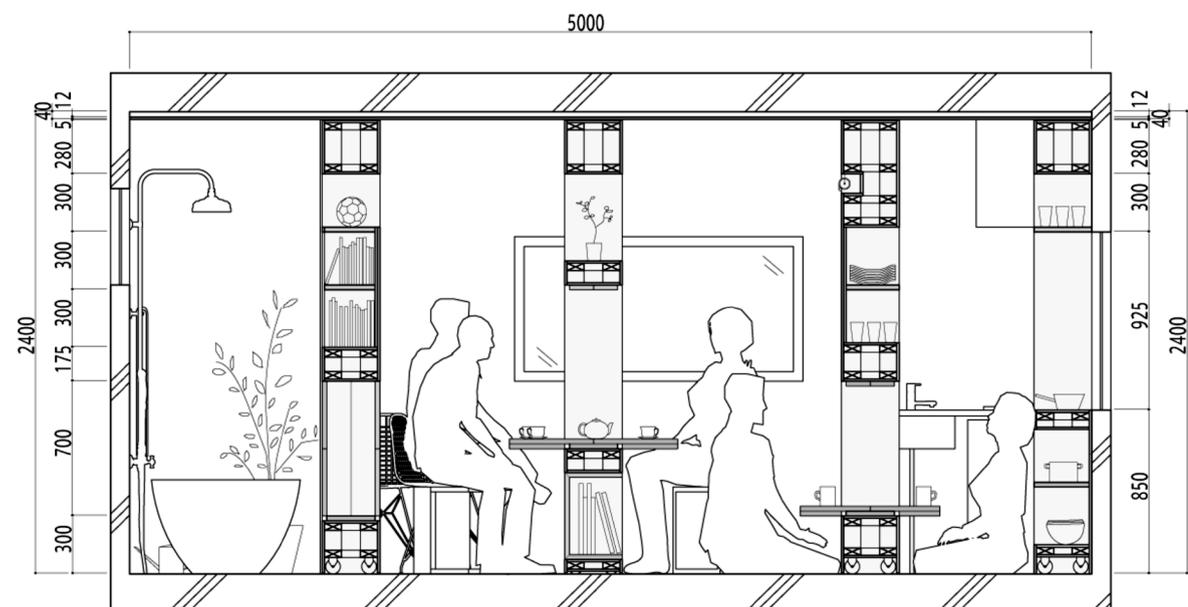
Barcode Room and Dolphin House are conceptual residential projects that emphasize customizable design. Both projects transform intimate and personal space, yet they achieve this in two different systematic ways. Barcode Room transforms space with products users introduce into an existing space, and Dolphin House transforms space with product-like rooms and their components.

Barcode Room is composed of product furniture-walls that freely move from side to side, permitting the resident to create unique spaces to fit a variety of uses. Functional elements,

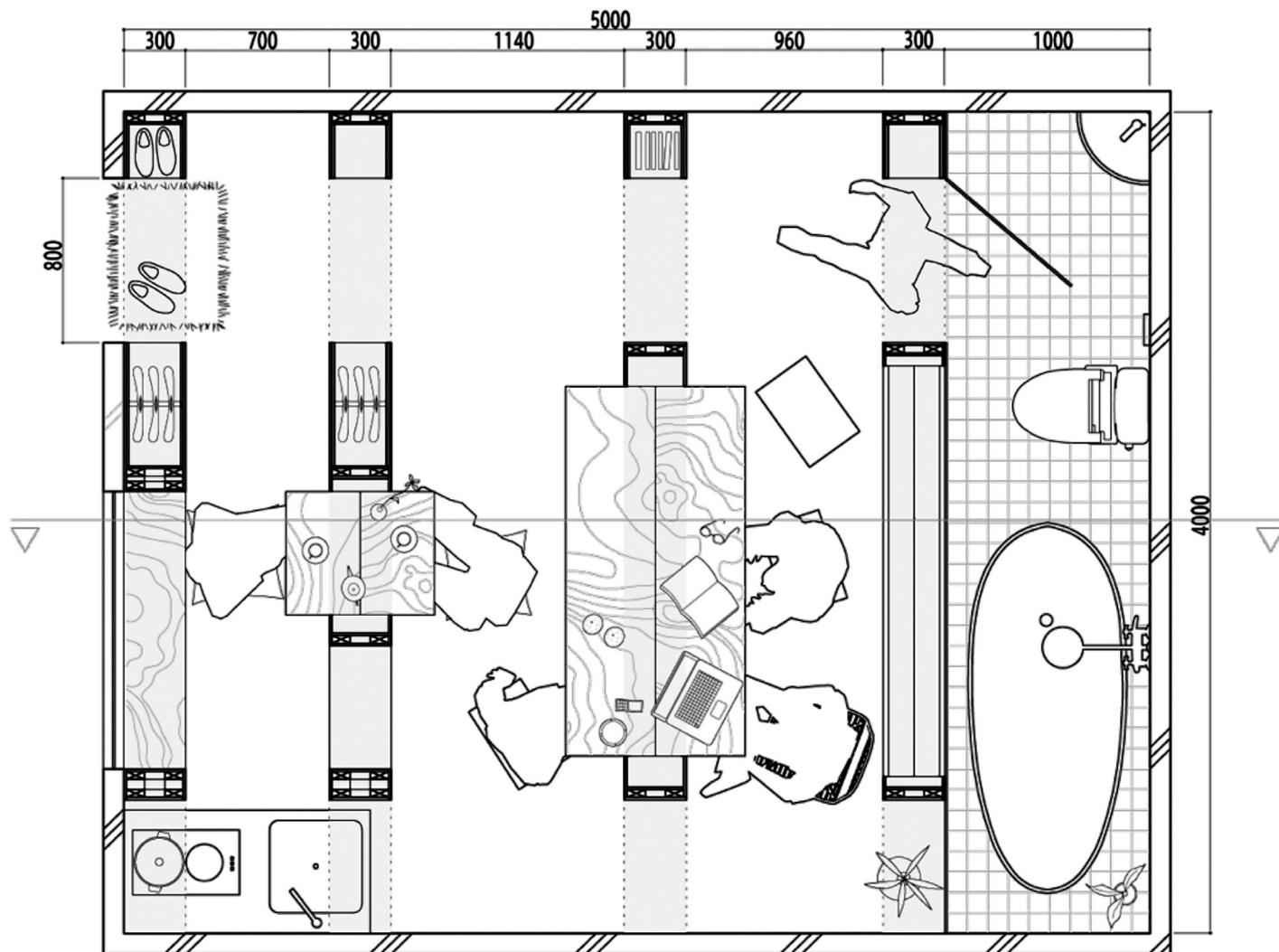
such as storage and furniture, are built into these walls, and these elements are hidden and revealed at different times of day as walls are moved and the elements are unfolded, creating a new interior with each configuration. The tucking away of spaces not in use also allows for a greater floor area available to the inhabitant and their guests. Through the use of the mass-produced furniture-wall or bar, a typical studio space made for a single resident can transform its use, becoming multiple transformable spaces, expanding and contracting when needed, rather than remaining a single room that can be simply arranged. Just as each object in a store has its own unique barcode, each usage of the apartment has its own unique layout.



Barcode Room Interior



Barcode Room Section



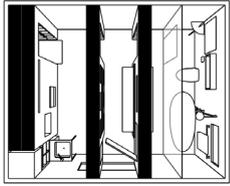
Barcode Room Plan



Barcode Room Double Bedroom



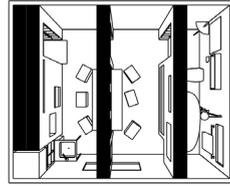
Barcode Room Movie Night



Preparing for Bed



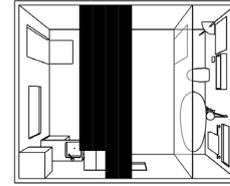
Coffee Break



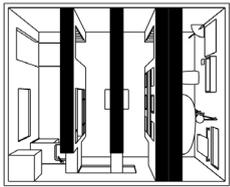
Group Discussion



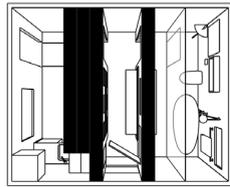
Sleep Over



Double Date



Lunch at Home



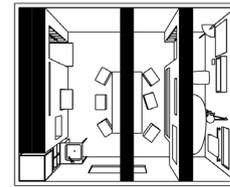
Midnight Snack



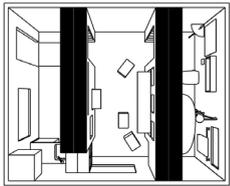
Home Office



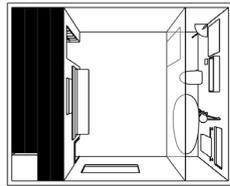
Dinner Party



Drinks with Friends



Cooking Dinner



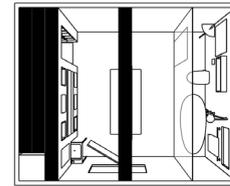
Yoga



Romatic Evening



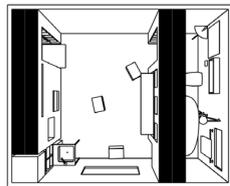
Eating Alone



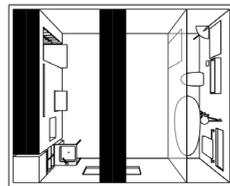
Getting Into Bed



Open Space



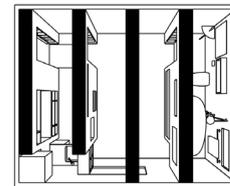
Movie Night



Evening Bath



Cooking Party



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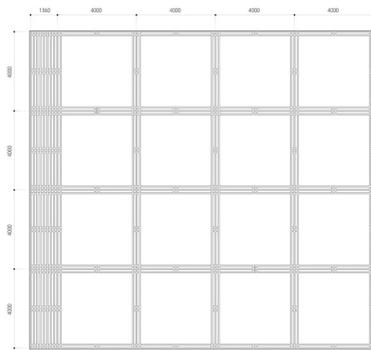
Various Barcodes



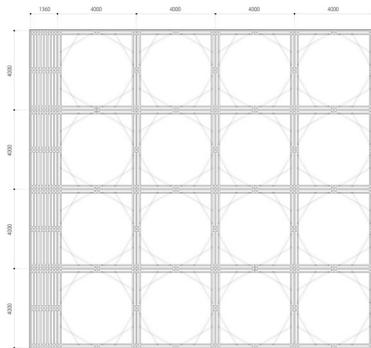
Barcode Room Dining



Barcode Room Single Bedroom



Dolphin House Rail Layout



Dolphin House Rails and Moveable Walls

Dolphin House is a home composed of individual product rooms with slidable hanging units on a double rail system in the ceiling replacing all walled surfaces. Cruciform columns as the structural elements are located at the corner of each room into which the walls can be locked. Fixed furniture within the rooms is restricted by the wall units' radius of curvature as the walls are moved along rails and rotate around room corners. The furniture for each type of room is organized in three different configurations: circle, square, and line. Since floor and wall material can be customized, when multiple rooms are placed adjacent to each other and furniture styles are varied, room size, function, and materiality

can be mixed throughout the house, generating a unique arrangement of rooms that can fit into almost any site condition.

The systematic use of components allows users to fully control their spaces by deciding how to combine these parts to create a whole. Rather than piecing spaces together from various individual items at random, consumers choose from cohesive units that, in conjunction with each other, create endless possibilities. In Barcode Room, each furniture-wall is comprised of a combination from a selection of twelve types of components to make a single bar. Users can create various types of bars using different components: one for living,

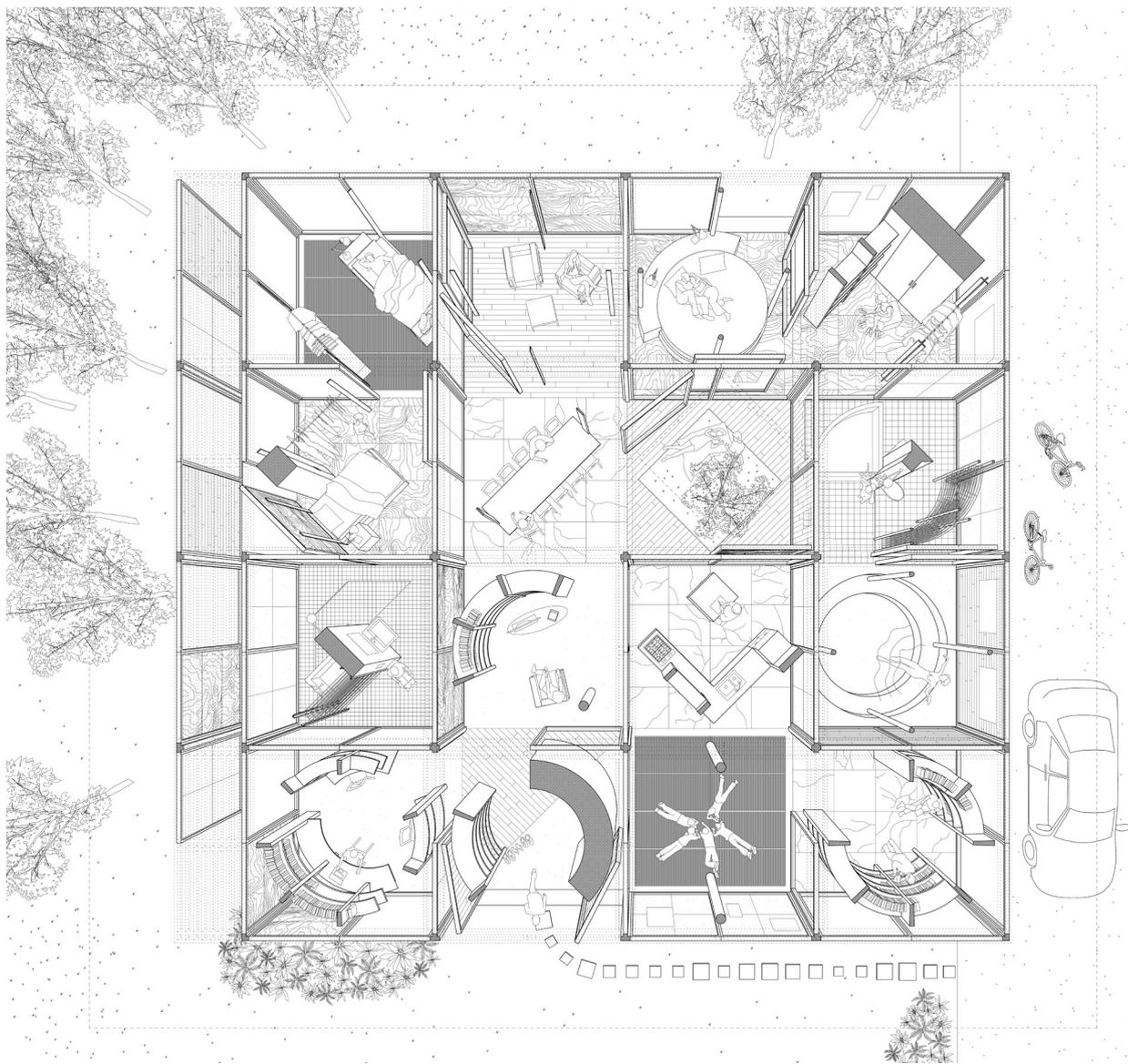
cooking, sleeping, etc. At any time, a bar can be added to enhance the space, removed to simplify the space, or be replaced to change the use entirely. Similarly, the ability to move all of the walls of Dolphin House not only allows a house to change from a fixed system to one that is very fluid, it also allows for a variety of usages from private to public. Just as one changes clothing to match a feeling on any given day, a house that is able to change materiality and level of openness gives birth to a lighthearted living style where usage and appearance is never static.

The composition of the various components into different bars of Barcode Room or rooms and walls of Dolphin

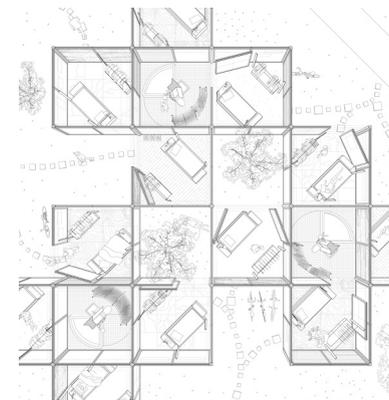
House, their positions, and their impermanence allows the user to create a personalized collection of spaces through ever changing movement. Moreover, while initially considered for residential spaces, these products can be applicable to other building uses. By developing a larger variety of components to be embedded into the furniture-walls or by varying the number and type of product rooms that are combined to form a single structure, spaces such as offices, galleries, various stores, or restaurants and others can all be created by using the same systems. The power of a systematized architecture is that it is not specific to any building type or usage. The system allows for a constant flux of the user's life and needs.



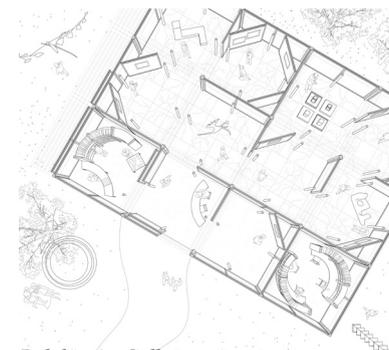
Dolphin House Components



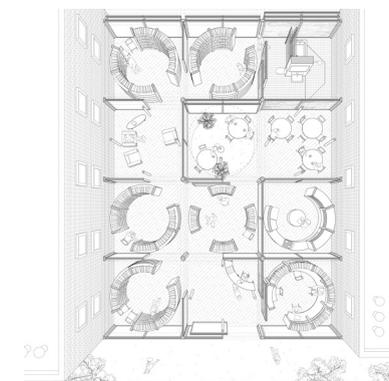
Dolphin House



Dolphin Sharhouse



Dolphin Art Gallery



Dolphin Bookstore and Cafe

Customized Mass Production

In architecture, the architect-client relationship is the driving force of design while mass-production is considered to be the antithesis of a location-centric customized space. A consumer is required to buy a product, whether it is a small trinket, a piece of furniture, or a larger item, in order to create a new atmosphere in the space designed by the architect. In customized mass production, however, the ability to transform the space itself is what allows new environments to arise, all while using

the designer's system and remaining under the guidance of the consumer.

With mass production, effort is made to simplify any intricacies of the object so it may be easily reproduced. While this can at times result in a watered-down design, a skillful use of these mass production methods of individual parts can create innovative products that can be used to truly renovate and customize any space. The inherent qualities of mass production and replication of a single item may seem to quickly dilute a

project's innovation, but through rearrangement and combination of parts, the product can be constantly transformed into something new with each user's desire.

While the ideas of using a single space for multiple purposes, as well as folding various functions inside a wall, are not particularly groundbreaking, Barcode Room is unique because it is an easily replicated and customizable product. The rail and wall system that Dolphin House employs can also be mass produced and

is created by modifying an existing product line by the Kimado Corporation called "dolphin windows." This line of products is unique because they create large open spaces by effortlessly moving wall-sized hanging windows along rails to a storage space. Both systems, either through generation or modification, result in products that can be reproduced in great numbers.

Through mass production, the modification of Dolphin House allows various materials to replace glass while

using the same current rail system. These new materials create differences in transparency and openness that exist between the individual rooms. In the original product, the single rail guiding the product windows from open to closed positions limits the movement of the windows. To overcome this challenge, the rail in Dolphin House has been doubled under each beam, allowing all movable walls to be unlocked and pulled out in either direction and permitting them to travel freely through the space. A wall can be opened temporarily as a door, can trade places with another wall to change a room's materiality, or completely relocated to a storage area to link two or more rooms together for a longer period of time.

Design for Technology or Technology for Design

Barcode Room and Dolphin House, while innovative, do not solely rely on the newest or most exciting technological tools available today; they focus on being designed for and by their inhabitants. While available technology allows for a greater degree of experimentation during the design process, ultimately the products benefit from a simpler technological style. Many times, current design is based around making use of the newest available technology and can become blind to the direct link to users in favor of utilizing specific innovative tools. Just as a structure is not built with the idea of the hammer in mind, it should similarly not be designed solely with the desire of using a 3D printer. The inventiveness

of the tool becomes more important than design, rather than allowing the design to speak for itself. Should the best way to create a useful and user-focused design match a certain tool, only then should that tool be used.

Architecture as Product

Residential design, by its nature, allows architects to inflict prescribed usages on those who live in a given space. The design creates a static backdrop for how a family lives. The dynamic quality of Barcode Room's changeable size and continuity of spaces creates a feeling of connectivity through any room occupied by the bars. Likewise with Dolphin House, importance is placed on the user's choice for the use of the rooms with the designer as a guide. By designing a system in which products are created, the flow from one space to another is not a stage for living, but rather celebrates the choices one makes while moving through personal and intimate spaces.

Barcode Room and Dolphin House's success come from their integration of the large and small scales. The consideration of architecture at a smaller scale more akin to that of product design, while still fitting into the larger scale architecture typically represents, has the ability to place focus on a facet of design that responds directly to those who inhabit spaces. The development of the moving bars and walls allows for a customization of the space at a micro rather than macro level. While the size and usage of the room changes,

components within the walls and the walls themselves can be in flux, allowing users to truly redefine the daily space in which they live, play, and work. Architecture becomes not merely an outcome that has been forced by the designer, technology, or cost, but it is tied to how specific individuals desire to use the space in which they reside. Spatial design becomes flexible—customizable by parts or allowing one to create new spaces through movable pieces.

In these two projects, the system-oriented designs give the consumer and end user a new type of power in the choosing from a catalog of parts and then their allocation in a finite, yet flexible space. By deciding how space is used both before and after inhabiting the space, as well as having the ability to decide to replace the set of bars or hanging walls entirely, the client feels integrated into the space's life. Designing a system for use that allows the flexibility present in Barcode Room and Dolphin House can not only change the way architecture and spatial design is spread, it impacts how users feel about their desired spaces. The system focused method of the architect supplies the client with a new psychological ownership.

This customizable idea of how space is purchased, created, and used allows designed spaces to become both more attainable and affordable. With Barcode Room, previously-owned locations can be entirely changed through the installation of a variety

of units, each with space-affecting functions built in; and with Dolphin House, entirely new spaces can be created on almost any site. Rather than being restricted to a single location, spatial design affords the ability to become transmutable, affecting the spaces and lives of those at all levels of society and customizable to fit each type of desire, need, and budget. Architecture as product revitalizes space, causes designers to consider how their work affects individuals, and can give new ownership of space to individuals around the world.