A Modern Craftsman Revival

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Craft and design are directly related. An environment is not one entity but a collection of individual elements that are perfectly composed into a harmonious work. The designer’s material sensibility should be evident in each individual component, both macro and micro, or he will be alienated from the creative process. To compose the grand symphony he must never abandon intent and write with one calculated phrase after another. A craftsman’s hands should find the opportunity to manipulate all components and ensure harmony to ensure the elements of the space connect with no discord. When the designer and craftsman are one, creativity will be apparent.
ABSTRACT

The modern Craftsman movement is an attempt to break the contemporary mold, that is, a desire to introduce a younger generation to a level of interior detail that has been lost in contemporary construction and material usage. Components such as drywall tend to envelop all contemporary residential surfaces leaving little room for tectonic expression and opportunities for detailing. Further, a modern revival would re-establish the goals of the original movement and ensure the hand was present in the design of the home, as discussed by Winter & Vertikoff, “all versions were meant to counter the excesses of the Victorian period by returning to a preindustrial past when handicrafts displayed personal involvement in the products of a laborer’s work” (31).

A craftsman by definition is very skilled in a particular trade (Merriam-Webster, 2014). Gustav Stickley, a key founder of The American Craftsman architectural movement, describes a Craftsman style home as being rooted in specific principles that define the home itself. He states, “These principles are simplicity, durability, fitness for the life that is to be lived in the house and harmony with its natural surroundings” (Stickley, 11). To accomplish this ideal the movement required craftsman from many disciplines, such as masonry and carpentry, to create hallmarks of this style in each home such as handcrafted stone facades and custom built-in cabinetry that were very functional while also very beautiful. While these elements were typically time consuming and expensive, reviving the concepts in modern application is possible. By reducing waste and manipulating materials quickly and accurately, certain forms of modern technology such as 3D printing, laser cutting, water jet cutting and CNC construction can provide a cost efficient and time saving process of material manipulation.

The original Craftsman movement utilized bungalow kit homes to bring the cost and accessibility of the style to more homeowners, much like what technology could do for a modern Craftsman revival. Beginning in the early 1900s, the popularity of the bungalow grew immensely and they helped fulfill many Americans’ dreams of home ownership and “symbolized for many the best of the good life” (Winter & Vertikoff, 9). The affordability of the kits (some only $900) trade true artistry and architectural acumen, in a way that is very affordable. Evidence of the population’s support, and appreciation for art and craft, is shown in the number of public, insisted, and national museums that have thrived in the area for years.

Introducing concepts of Craftsman kit construction to the interior, as well as modern technology to lessen the cost of handcrafted details, opens the possibility to new methods of modular design in which interior units are configured around structural skeletons and central base points and materials are chosen to provide flexibility to residential units. One example is Dutch design firm Minale-Maeda’s Keystones, a 3D printed connector that holds together any necessary components, like furniture. These keystones were also 3D printed at home and saved time and the need to obtain anything but essential components (website). Another interesting example is Dutch design brand Fraaiheid’s Minimal Waste Table, which is created from one piece of laminated plywood with a CNC milling machine which makes for extremely minimal waste (Williamson, 2013). These examples of automation require a craftsman’s hand and mind to create the concept but introduce a modern approach to reducing waste, time and cost.

Richmond’s Fan District provides an appropriate target demographic for the introduction of residential models that are efficient and economical means of residential development. Within the Fan, 40% of residents are ages 20-34, 37% of residents have a bachelor’s degree, and 32% of households are renting (U.S. Census Bureau, 2012). Sensible materials, local artistry and modern technology form a residential model that is suited for craft patrons and young adults such as the demographic living in the Fan. Evidence of the population’s support and appreciation for art and craft is shown in the number of public, insisted, and national museums that have thrived in the area for years.
A MODERN CRAFTSMAN REVIVAL

This thesis investigates the parallels between contemporary residential life and that of the original craftsman movement. It explores a modern craftsman revival that preserves the use of technology and craft in addition to using new materials and techniques such as 3D printing, laser cutting, and water jet cutting along with eco-friendly materials to create affordable housing while preserving craft and technique.

PERSONAL RELEVANCE

My undergraduate fine arts degree drives an appreciation for craft which escapes commoditization. A recent craft history course deepened my interest further, and brought the idea for the exploration of craft preservation in residential application to light. While affordability and design seemed to be something I thought to always be at odds, I found through researching the American Craftsman movement that they can be one. Many of my friends who are starting their careers have shared concerns about finding well designed, affordable housing. I am interested in exploring how to bridge the gap between these two issues while integrating principles of the Craftsman style.

LOCAL RELEVANCE

Fox Elementary is located in Richmond's historic Fan District, a fine art and crafts community. The Fan is home to a number of fine arts and crafts galleries, artist studios, and community facilities, such as the Visual Arts Center of Richmond, that form close relationships with the local population, both professionally and academically. Virginia Commonwealth University, home to the top public arts school in the country according to U.S. News and World Report (U.S. News and World Report, 2012), is only a short bike ride away. The building is also in close proximity to the Virginia Museum of Fine Art, the Virginia Center for Architecture, the Science Museum of Virginia, and the Virginia Historical Society. The building’s location within the educational and creative community allows students to develop a close relationship with the fine art and crafts community.

GLOBAL RELEVANCE

The investigation of the parallels between the facets of contemporary society and the original Craftsman movement may articulate a new template for affordable residential housing. Sensible materials, local artistry and modern technology could combine to create a residential model that is suited for craft patrons, particularly between their late 20s and 40s. Technology of the modern craftsman era can create a globally relevant, advantageous formula for affordable living, by reducing waste and manipulating materials both quickly and accurately, these forms of modern technology provide a cost efficient method of material use. Artistic detailing, motifs, and colors that are often lost within modern residences due to cost, time or skill level required can be adapted and preserved with new technology.
Children leaving Fox Elementary in September 1955 © Richmond Times-Dispatch
William Fox Elementary was built in 1911 and was one of the many buildings in Richmond, Virginia designed by regional architect Charles M. Robinson. The building is located in the heart of the Fan District, and as one of the few remaining schools and one of the only examples of the Arts and Crafts style in the city, it has remained a school and one of the only examples of the style in the city for over 100 years (Robinson, 2014). The Fan area is young (40% of residents are 20-34), highly educated (37% with a bachelor’s degree or higher), and has a thriving rental market (51% of households) (U.S. Census, 2012). The district’s proximity to universities, dining, art and entertainment have also contributed to rising property values in recent years. Re-purposing buildings like Fox Elementary for residential purposes strikes a balance between what residents of the Fan value and what they need.

According to the Richmond Public Schools Survey Report, Fox Elementary showcases the rare instance of the influence of the arts and crafts movement among Richmond’s architecture (Robinson, 2014). The building structure has multiple existing features that are conducive for the creation of residential units, providing a large amount of natural light, green space, and high ceilings. A large atrium and spacious common areas within the existing structure provide an excellent opportunity for public spaces including a lounge, media room, and reception area. The building’s location within the Fan district is ideal, as men and women in their 20s, 30s, and 40s comprise 68.3% of the Fan’s population, according to recent census (U.S. Census, 2012).
PROGRAM
INTERIOR VIEWS

Floor Plan Level 1

Floor Plan Level 2

SEE PAGE 20 FOR LOCATIONS WITHIN FLOOR PLANS © Photos taken by E. Michael Rader
Approximately 1,200 sq ft

- Adequate space for approximately 2 employees and building residents
- Serves as a meeting area between personnel
- Provides an environment for collaborative efforts
- Provides means of communication

Large: 5-10 people

- Condominiums range in size from 140 to 180 sq ft
- Large: 3-4 people
- Small: 1-2 people
- Adequate space for approximately 3 employees and building residents

Large: 1,000-1,500 sq ft

- Large: 4-5 people
- Small: 1-2 people
- Adequate space for approximately 4 employees and building residents

Large: 1,500-2,000 sq ft

- Large: 5-10 people
- Small: 3-4 people
- Adequate space for approximately 5 employees and building residents

Large: 2,000-2,500 sq ft

- Large: 6-7 people
- Small: 3-4 people
- Adequate space for approximately 6 employees and building residents

Large: 2,500-3,000 sq ft

- Large: 7-8 people
- Small: 4-5 people
- Adequate space for approximately 7 employees and building residents

Large: 3,000-3,500 sq ft

- Large: 8-9 people
- Small: 5-6 people
- Adequate space for approximately 8 employees and building residents

Large: 3,500-4,000 sq ft

- Large: 9-10 people
- Small: 6-7 people
- Adequate space for approximately 9 employees and building residents

Large: 4,000-4,500 sq ft

- Large: 10-11 people
- Small: 7-8 people
- Adequate space for approximately 10 employees and building residents

Approximately 1,800 sq ft

- Adequate space for approximately 3 residents and building residents
- Provides an environment for collaborative efforts
- Provides means of communication

Large: 3-4 people

- Condominiums range in size from 140 to 180 sq ft
- Large: 3-4 people
- Small: 1-2 people
- Adequate space for approximately 3 employees and building residents

Large: 1,000-1,500 sq ft

- Large: 4-5 people
- Small: 1-2 people
- Adequate space for approximately 4 employees and building residents

Large: 1,500-2,000 sq ft

- Large: 5-6 people
- Small: 2-3 people
- Adequate space for approximately 5 employees and building residents

Large: 2,000-2,500 sq ft

- Large: 6-7 people
- Small: 3-4 people
- Adequate space for approximately 6 employees and building residents

Large: 2,500-3,000 sq ft

- Large: 7-8 people
- Small: 4-5 people
- Adequate space for approximately 7 employees and building residents

Large: 3,000-3,500 sq ft

- Large: 8-9 people
- Small: 5-6 people
- Adequate space for approximately 8 employees and building residents

Large: 3,500-4,000 sq ft

- Large: 9-10 people
- Small: 6-7 people
- Adequate space for approximately 9 employees and building residents

Large: 4,000-4,500 sq ft

- Large: 10-11 people
- Small: 7-8 people
- Adequate space for approximately 10 employees and building residents

Approximately 1,200 sq ft

- Adequate space for approximately 2 employees and building residents
- Provides an environment for collaborative efforts
- Provides means of communication

Large: 5-6 people

- Condominiums range in size from 140 to 180 sq ft
- Large: 5-6 people
- Small: 2-3 people
- Adequate space for approximately 5 employees and building residents

Large: 1,000-1,500 sq ft

- Large: 6-7 people
- Small: 3-4 people
- Adequate space for approximately 6 employees and building residents

Large: 1,500-2,000 sq ft

- Large: 7-8 people
- Small: 4-5 people
- Adequate space for approximately 7 employees and building residents

Large: 2,000-2,500 sq ft

- Large: 8-9 people
- Small: 5-6 people
- Adequate space for approximately 8 employees and building residents

Large: 2,500-3,000 sq ft

- Large: 9-10 people
- Small: 6-7 people
- Adequate space for approximately 9 employees and building residents

Large: 3,000-3,500 sq ft

- Large: 10-11 people
- Small: 7-8 people
- Adequate space for approximately 10 employees and building residents

Large: 3,500-4,000 sq ft

- Large: 11-12 people
- Small: 8-9 people
- Adequate space for approximately 11 employees and building residents

Large: 4,000-4,500 sq ft

- Large: 12-13 people
- Small: 9-10 people
- Adequate space for approximately 12 employees and building residents

Approximately 600 sq ft

- Adequate space for approximately 1 employee and building residents
- Provides an environment for collaborative efforts
- Provides means of communication

Large: 1-2 people

- Condominiums range in size from 140 to 180 sq ft
- Large: 1-2 people
- Small: 0-1 people
- Adequate space for approximately 1 employee and building residents

Large: 500-800 sq ft

- Large: 2-3 people
- Small: 0-1 people
- Adequate space for approximately 2 employees and building residents

Large: 800-1,000 sq ft

- Large: 3-4 people
- Small: 1-2 people
- Adequate space for approximately 3 employees and building residents

Large: 1,000-1,200 sq ft

- Large: 4-5 people
- Small: 2-3 people
- Adequate space for approximately 4 employees and building residents

Large: 1,200-1,500 sq ft

- Large: 5-6 people
- Small: 3-4 people
- Adequate space for approximately 5 employees and building residents

Large: 1,500-1,800 sq ft

- Large: 6-7 people
- Small: 4-5 people
- Adequate space for approximately 6 employees and building residents

Large: 1,800-2,000 sq ft

- Large: 7-8 people
- Small: 5-6 people
- Adequate space for approximately 7 employees and building residents

Large: 2,000-2,200 sq ft

- Large: 8-9 people
- Small: 6-7 people
- Adequate space for approximately 8 employees and building residents

Large: 2,200-2,400 sq ft

- Large: 9-10 people
- Small: 7-8 people
- Adequate space for approximately 9 employees and building residents

Large: 2,400-2,600 sq ft

- Large: 10-11 people
- Small: 8-9 people
- Adequate space for approximately 10 employees and building residents

Large: 2,600-2,800 sq ft

- Large: 11-12 people
- Small: 9-10 people
- Adequate space for approximately 11 employees and building residents

Approximately 120 sq ft

- Adequate space for approximately 1 employee
- Provides an environment for collaborative efforts
- Provides means of communication

Large: 0-1 people

- Condominiums range in size from 140 to 180 sq ft
- Large: 0-1 people
- Small: 0-1 people
- Adequate space for approximately 1 employee

Large: 1-2 people

- Large: 1-2 people
- Small: 0-1 people
- Adequate space for approximately 2 employees

Large: 2-3 people

- Large: 2-3 people
- Small: 1-2 people
- Adequate space for approximately 3 employees

Large: 3-4 people

- Large: 3-4 people
- Small: 2-3 people
- Adequate space for approximately 4 employees

Large: 4-5 people

- Large: 4-5 people
- Small: 3-4 people
- Adequate space for approximately 5 employees

Large: 5-6 people

- Large: 5-6 people
- Small: 4-5 people
- Adequate space for approximately 6 employees

Large: 6-7 people

- Large: 6-7 people
- Small: 5-6 people
- Adequate space for approximately 7 employees

Large: 7-8 people

- Large: 7-8 people
- Small: 6-7 people
- Adequate space for approximately 8 employees

Large: 8-9 people

- Large: 8-9 people
- Small: 7-8 people
- Adequate space for approximately 9 employees

Large: 9-10 people

- Large: 9-10 people
- Small: 8-9 people
- Adequate space for approximately 10 employees
PROGRAM / CODE ANALYSIS

BUILDING TYPE: TYPE III-B

REQUIRED FIRE SEPARATIONS:
- Stair Wells: 1 HR
- Elevator Shaft: 1 HR
- Elevator Equipment: 1 HR
- Exterior Walls: 2 HR
- Storage Rooms: 1 HR

OCCUPANCY TYPE: R-2
(Residential Occupancies containing sleeping units or more than two dwelling units where the occupants are primarily permanent in nature.)

OCCUPANT LOAD FOR RESIDENTIAL UNITS: 200 ft² (gross) includes wall thickness

GROSS SQUARE FOOTAGE:
- First Floor: 13,723 ft²
- Second Floor: 13,753 ft²
- TOTAL: 27,476 ft²

NET SQUARE FOOTAGE:
27,476 ft² x 65% (0.65)
TOTAL: 17,866 ft²

ACCESSIBLE SPACES:
- Media Room
- Lounge
- Mail Room

LIVABLE SPACES:
- Residences / Condominiums

GRAPHIC PROGRAM

<table>
<thead>
<tr>
<th>CONDOMINIUMS</th>
<th>LOUNGE</th>
<th>MEDIA ROOM</th>
</tr>
</thead>
</table>

**Floor Plan Level 1**
Scale: 1/32" = 1'
PROGRAM / ADJACENCY 
C R I T E R I A M A T R I X

SPECIAL EQUIPMENT (MARKED "Y") AS FOLLOWS:

MAINTENANCE
cleaning equipment, repair tools, replacement parts

RECEPTION
office phone, desktop computers (2), small storage space, desk / counter area, task chair (2)

STAFF OFFICE
sink (3), 6-8 chairs (formal / informal meetings), trash, file locker, after a phone, file storage, coffee maker, mini fridge / kitchenette, file storage, desktop computers (2)

LOUNGE
Kitchen: sink, fridge, microwave, cabinet storage, dishwasher, task, toaster oven
Dining Area: bar seating, tables and chairs
General: plush, comfortable furniture
Entertainment: televisions, large screen televisions

MEDIA ROOM
Large format scanner, large format printer, bar printer desktop computer (6), digital projector, task chairs

CONDOMINIUMS
Kitchen: sink, fridge, stove, microwave, oven, dishwasher
Bath: sink(s), tub(s), / shower(s)
General: washer / dryer

PROGRAM / ADJACENCY 
C R I T E R I A M A T R I X

MAINTENANCE

RECEPTION

STAFF OFFICE

LOUNGE

MEDIA ROOM

CONDOMINIUMS
PRECEDE NTS
MIDDLETON INN

ARCHITECT: CLARK and MENEFEE
LOCATION: CHARLESTON, SC

HIGHLIGHTS:
Great example of modular configuration. Rooms are tied together using a central spine that provides a fire place to each reflected layout.

RELATIONSHIP:
Small windows on either side of the spine allow for the penetration of natural light while providing viewpoints to either side of the structure. The rooms also incorporate a wooden shutter system that can manipulate natural light.

SOURCE:
Units are mirrored about central axis / spine that house chimney plumes and placement / power for refrigerators.

Units are stacked 3 high against an earth barrier. 2 units are above ground level to right while the bottom units rest on the ground level of the central courtyard to the left.
**Multiple Configurations of Diagoon Houses**

**ARCHITECT:** HERMAN HERTZBERGER  
**LOCATION:** DELFT, THE NETHERLANDS  
**HIGHLIGHTS:** Presented with "an incomplete framework" or "skeleton" that everyone can complete according to his own needs.  
Easily customized for the individual client.  
The design utilizes panelized systems and unit masonry that can be configured in seemingly endless ways.  
Small changes can be made to quickly and affordably change the use of individual spaces within the residences.  
Units can be configured based on the number of occupants and can be reconfigured to accommodate a growing family.  
Central cores serve as the spines of the houses and the center for configurations.  
**RELATIONSHIP:** Ability to customize and reconfigure residences may prove to be important within the modern craftsman era.  
Residences that are easily customized, utilizing prefabrication techniques, draws on the prefabricated nature of many traditional craftsman homes.  
**SOURCES:**  
Row Houses: A Housing Typologie, Volume 2  
By Günter Pfeifer, Günter Pfeifer (architect.), Per Brauneck

© Images provided by A + C Arquitectura
HOMB MODULAR PREFAB (TAFT RESIDENCE)

ARCHITECTS: SKYLAB ARCHITECTS
LOCATION: PORTLAND, OR
AREA: 4,000 ft²
COMPLETION: 2013

HIGHLIGHTS:
- Prefabricated modular units create one cohesive interior based on 100 ft² triangular modules that can be infinitely configured and expanded upon.
- Units can span from an 800 ft² residence to 40,000 ft² mixed-use structures (spanning from residential to commercial).
- Units are arranged in connection geometrically.
- Units are ready to assemble on site.
- Triangular modules add an element of interest within overall geometry of residence.
- Sharp outjuts and different configurations among levels create unique building facades that break conventional flat planes.

RELATIONSHIP:
- Concepts from Skylab prefab units can be implicated in Fox Elementary to create an interior method of joining residential units.

SOURCE:
- skylabarchitects.com
- The Oregonian
Gensler Architects’ Bangkok office draws on inspiration from local craftsmen and utilizes local materials. Traditional Thai screens were constructed using a strong geometric pattern to help divide the space without impeding the penetration of natural light and completely closing off sub-spaces. According to Gensler, most all of the materials were locally sourced. This practice was locally sourced at Gensler and used fabrics from a local silk market. The local culture is reflected in the space.

RELATIONSHIP:
This is a good case study involving the architectural reflection of local culture, craftsmanship, and materials, all of which are extremely important to my thesis. Each decorative element also serves a function and has a practical quality. The space is responsible in its use of local resources. This may serve as a model for the practice of integrating local craft culture into an interior dwelling. The use of screens to divide spaces is something that I am extremely interested in as well.

SOURCE:
Contract Design Magazine

© Images provided by Contract Magazine
MATERIAL + TECHNOLOGY PRECEDENTS
MINIMAL WASTE TABLE

DESIGNER: FRAAIHEID
LOCATION: AMSTERDAM, THE NETHERLANDS
HIGHLIGHTS:
A good example of how CNC technology can help tremendously with reducing woodworking related waste. Here, CNC has provided perfect joinery among furniture pieces with minimal waste of materials.
The table has been cut using a CNC machine from one piece of laminated plywood.

SOURCE:

© Images provided by Fraaheid

3D PRINTED KEYSTONES

DESIGNER: MINALE MAEDA
LOCATION: ROTTERDAM, THE NETHERLANDS
HIGHLIGHTS:
3D printed connectors such as these could play a roll in constructing furniture for the modern craftsman revival. These plastic connectors could drive down the price of various interior components and hardware.

CONNECTORS provide a cheap, quick and efficient means of joinery that can be printed on any 3D printer when construction specs are purchased by the supplier.

SOURCE:

© Images provided by Minale-Maeda
APARTMENT 65

ARCHITECTS: ATELIER PETER EBNER AND FRIENDS

LOCATION: OBEROSTERREICH, AUSTRIA

AREA: 800 ft²

HIGHLIGHTS:
The concept is based on the conservation of the available space within a small residential unit. The concealed furniture creates the illusion of a room within a room. The kitchen can be fully concealed, a dining table swings out of the volume, seating transforms into a bed, and a swing-out partition creates a private office.

The central volume successfully demonstrates its ability to divide a small residential unit under 1,000 ft². The central spine also provides an important degree of flexibility to better maximize the total square footage within the apartment.

Bringing the components of residential life to the center of a small apartment space can maximize the surrounding footprint.

SOURCE:

MODEL APARTMENT

ARCHITECT: SMITH-MILLER & HAWKINSON

LOCATION: NEW YORK, NY

AREA: 1,200 ft²

COMPLETION: 1989

HIGHLIGHTS:
This project exhibits the concept of using a central spine-like mass to delineate space within the confines of a small residential unit. Components of the central spine can be shifted, pivoted, and rotated to serve multiple rooms and spaces within the apartment.

The central volume successfully demonstrates its ability to divide a small residential unit under 1,000 ft². The central spine also provides an important degree of flexibility to better maximize the total square footage within the apartment.

SOURCE:
CHELSEA LOFT

Combining pivoting doors with sliding doors

View into bedroom with pivoting doors at their open position

Natural light penetrates the translucent materials of the doors

Plan of Pivot Doors

Plan of Pivot Doors Detail

Door Section Detail

Pivot Door Hardware


ARCHITECTS: SCOTT MARBLE & KAREN FAIRBANKS

LOCATION: NEW YORK, NY

COMPLETION: 1994

HIGHLIGHTS:
The pivoting door component that is used in the space, exemplifies a successful method of dividing space while allowing the user to adjust the partitions’ transparency. The door panels are constructed using a combination of natural and synthetic materials, each serving a different structural and functional purpose while combining to create an aesthetic whole. Pivoting doors provide an approach to delineating space within a small footprint.

The size and scale of these pivoting doors can be changed to adjust for privacy concerns, need for natural light, and acoustical needs.

© Images provided by Peter Paige, Arch Photo Inc., Eduard Hueber
PRIVATE RESIDENCE WITH 13 CABINETS

ARCHITECTS: WESLEY WEI ARCHITECTS

LOCATION: PHILADELPHIA, PA

COMPLETION: 1995

HIGHLIGHTS:
The project utilizes a number of introduced storage columns to the apartment.

Storage units surround existing columns and service lines and also create new faux columns to enhance the existing structural grid and provide extra storage space.

The inner voids of the columns provide a great收纳 area, all its own. Re-angled to serve stud the majority of columns while the master are composed of wood, aluminum, bronze, acid-etched zinc plate, and glass mirrors.

Storage columns surrounding existing structure and mechanical chases leave room for future adjustments and additions.

“The columns, also functioning as cabinets, visually support the weight of the ceiling while engaging the imagination through the intimate spaces of their cavities” (Oscar, 210).

SOURCE:

© Images provided by Catherine Bogert

AXON of Column Cabinets
Image not to scale

Column doors open to expose interior flesh

Columns in place of existing axis within space

Column doors closed along hallway
The concept of the apartment explores two main architectural systems: the closed system considers the existing space that is traditionally defined by secure walls which dictate volumes and the abstract system that is superimposed on the closed system, defining space without the use of columns, windows, and conventional walls (Oscar 248).

The abstract system is composed of large L-shaped elements that articulate the vertices that create inferred corners and subconsciously divide the interior. The L-shaped elements are constructed using a plywood substructure with a layer of expanded metal nailed to the plywood. Metal edging is embedded within seven outer layers of hand sanded, dyed plaster finish (248).

Elements such as these can be used to divide space within small residential condominiums without the use of generic, drywall partitions.

SOURCE:
CONCEPT DEVELOPMENT
CONCEPT COLLAGES

INVESTIGATING A CENTRAL SPINE
BUILDING OFF OF A FOCAL POINT OR HUB
CONCEPT STUDIES

INVESTIGATING A CENTRAL SPINE: BUILDING OFF OF A FOCAL POINT OR HUB
CONCEPT MODELS

INVESTIGATING A CENTRAL SPINE:
BUILDING OFF OF A FOCAL POINT OR HUB
CONCEPT MODELS

A STANDARD SPINE IS UTILIZED IN EACH MODEL.

THE GEOMETRIC VOLUMES ACTING ON THESE SPINES MAY VARY ACCORDINGLY.
DESIGN PROCESS
DEVELOPMENT OF MODULARITY

EVOLUTION OF THE SPINE

Residential wings depicted in green

Natural light analysis suggests that chase walls and supply lines are best positioned between the existing series of glass facades.

Individual residential units divided into triangular modules at center points

Units divided into large triangular modules opening into hallways
Modules are bought and sold among residents, contributing to expansion and contraction of individual units.

Given the rectilinear nature of the structure, existing partition walls are used to create central spines. Spines, or central chases (depicted in red), are introduced upon which bathrooms (depicted in green) and kitchen areas are reflected. Main axes depicted in blue, sub axes depicted in green.
Introducing concepts of Craftsman kit construction to the interior, as well as modern technology to lessen the cost of handcrafted details, opens the possibility to new methods of modular design in which interior units are configured around structural skeletons and central base points that provide supply lines to residential units. Standardized modules are introduced to the residential wings to create a reflection about the geometry of the existing classrooms.

Central spines are implemented to allow kitchen and bathroom areas to share a common 8” chase wall while residential units are individually divided. Once individual units are combined as resident’s needs change, spines, along with movable partition walls are utilized to create entirely new environments.

MODULARITY USING A SYSTEM OF SPINES

DIAGNOSTIC FLOOR PLAN
Movable panels attach from a floor grid to a matching coffered ceiling grid that is larger in width and depth.
Skeletal panels are constructed of 1” tubular aluminum and are light enough for one individual to carry and two individuals to set in place vertically.

Panels attach to a floor grid consisting of common 3/4” x 1 1/2” lumber and to a coffered ceiling that brings the panels’ total attachment height to approximately 12’ from grid to coffered ceiling.
PANEL LATCH DETAIL

DETAIL OF MAGNETIC ATTACHMENT OF PANELS TO ALUMINUM FRAME
STAGGERED PANELS CREATE FINGER JOINTS

Panels are shifted on the aluminum frame according to the thickness of cladding that is used. This assures a flush corner when partitions are attached perpendicularly.

CLADDING POSSIBILITIES
The spine, or central chase allows for more drastic movements and customizations within the living unit. The distance that the spine protrudes from the existing wall maintain increments of 3’ to accommodate standard kitchen appliances. From there, storage solutions are fully mobile and can be rearranged as desired. Standard datum lines are established on the kitchen facing wall to assure appropriate counter and clearance heights. Storage above is interchangeable using an attachable grid along the spine’s face. This method of attachment is articulated on the face of the spines to enhance the idea of tectonic expression.
**Project: Assemble Studio**
Architects: Assemble
Location: Northcote, VIC, Australia
The main feature of the space is the ceiling which is inspired by triangular origami folds. The geometric pattern can be repeated infinitely while allowing for adequate sound absorption.

**Work:** Concrete Installation at Malmö Konsthall gallery
Designer: Mike Nelson
This project focuses on large scale, architectural installations such as this geometrical work made of concrete. These precast designs are monumental in presence and form.

**Product:** Adjustable Wall Mounted Storage System
Designer: Kerf Design - Seattle, Washington
System uses only plywood and plastic laminate to create a storage system that can be infinitely configured.

**Project: Prefab Cottage**
Architect: Michael Fitzhugh
Described as a "Modular, Modern Prefab Structure" this home uses unique concealed storage, predominately under the flooring.

**Product:** Modular Wall Covering System
Manufacturer: Granorte
This concept could easily be adapted to use on floors as well. The visual presence of depth within the floors can add another layer of geometry to the space.
3/4” Interchangeable floor panels are comprised of a 1/4” synthetic rubber base, 1/2” foam spacer, and a 1/4” top layer that can take on a number of finishes and materials.
In addition to reviving Craftsman-era principles, this design also allows for unique flexibility in providing aging-in-place design solutions. Through the use of spines and movable partitions, residents have the opportunity to expand and contract their living spaces while also having customizable material finishes.


