Product Bundling or Kitting

a new market for builders

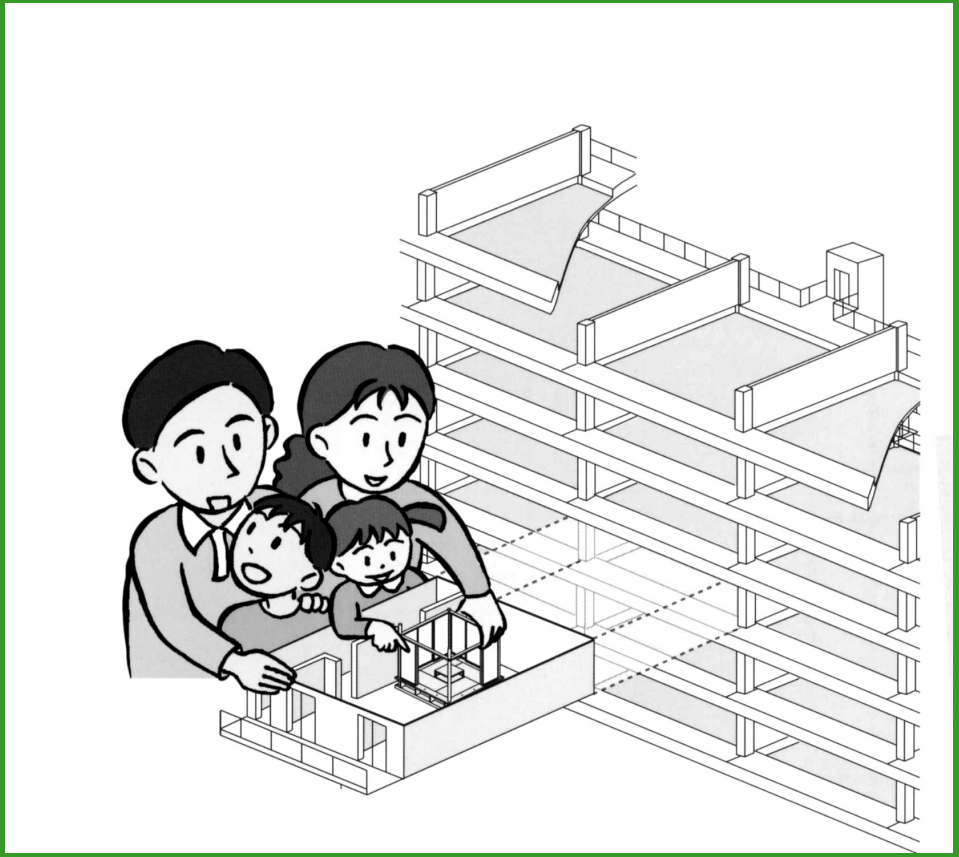
Dr. Stephen Kendall
Director, Building Futures Institute
Ball State University
Muncie, Indiana

I'd like to talk to you about creating a new market:
fitting out empty spaces in existing older buildings.

In these older buildings, we're talking about gutting and setting-up with new vertical shafts and so on in preparation for housing "fit-out" installation.

But we're also talking about fitting out empty dwelling spaces in new buildings prepared for customized interiors

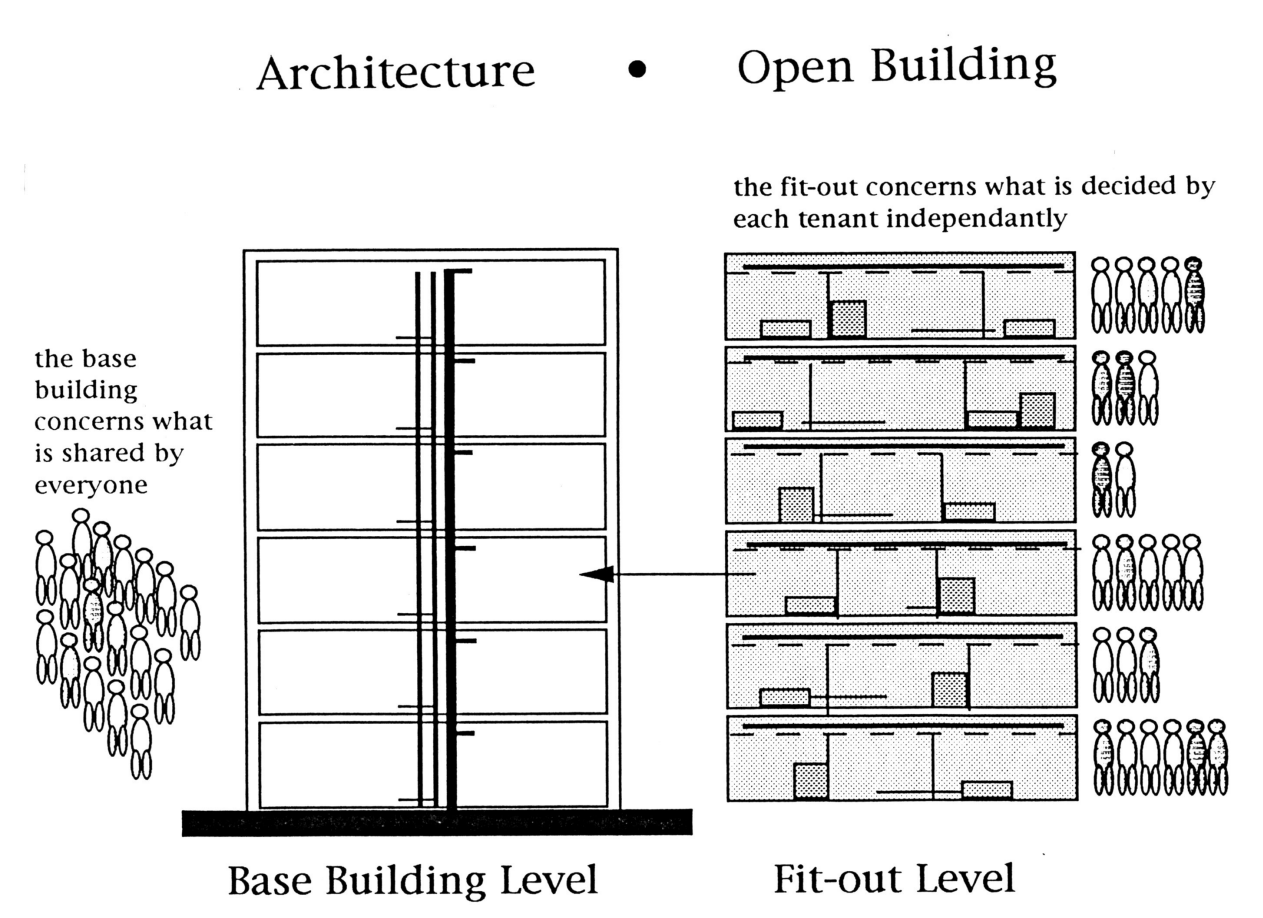
In new buildings too, occupants can decide on the layout and equipment and finishes of their future home with the help of professionals, or the developer can decide what units to install



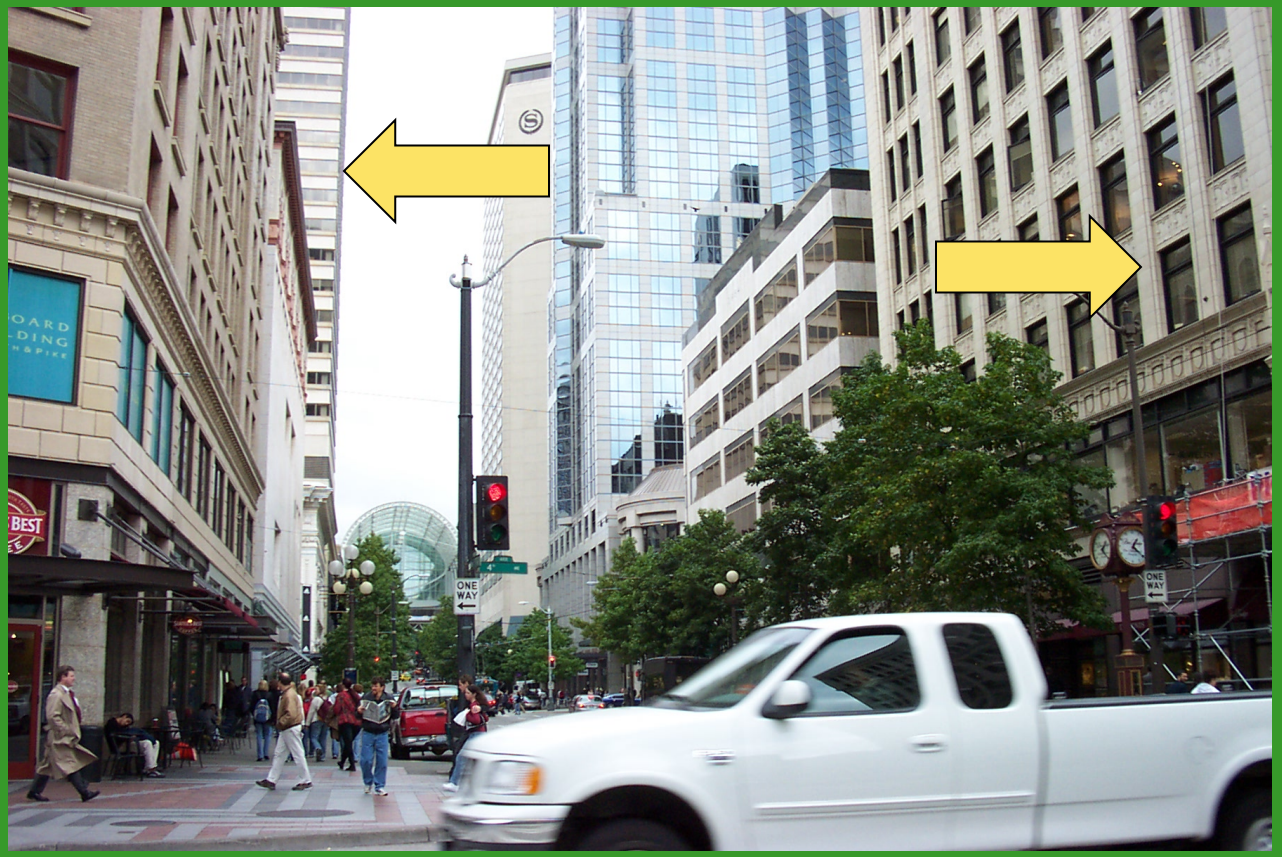
Here some technical terms are useful:

base building and fit-out

These are familiar in the office market, and may become conventional in residential construction in the future



So, the idea of base building and fit-out is useful in both new construction and gut-rehab. This is important because in many urban areas, the market for professional services in rehab is equal to or larger than new construction.

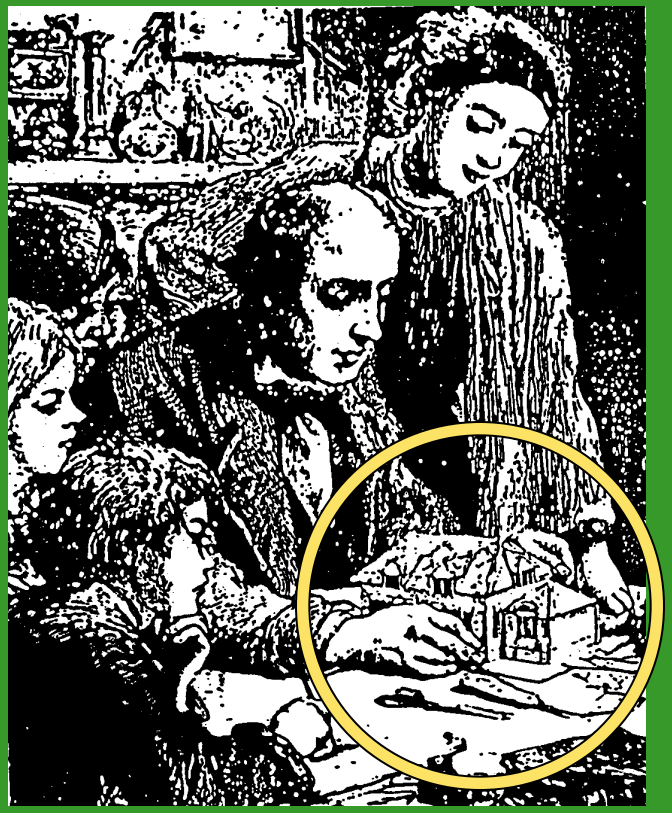


But this idea is also useful in new growth applications, in walk-up and townhouse types of development

Its smart business to keep the individual family in the center of our attention. This has not been easy to do in multi-unit buildings.

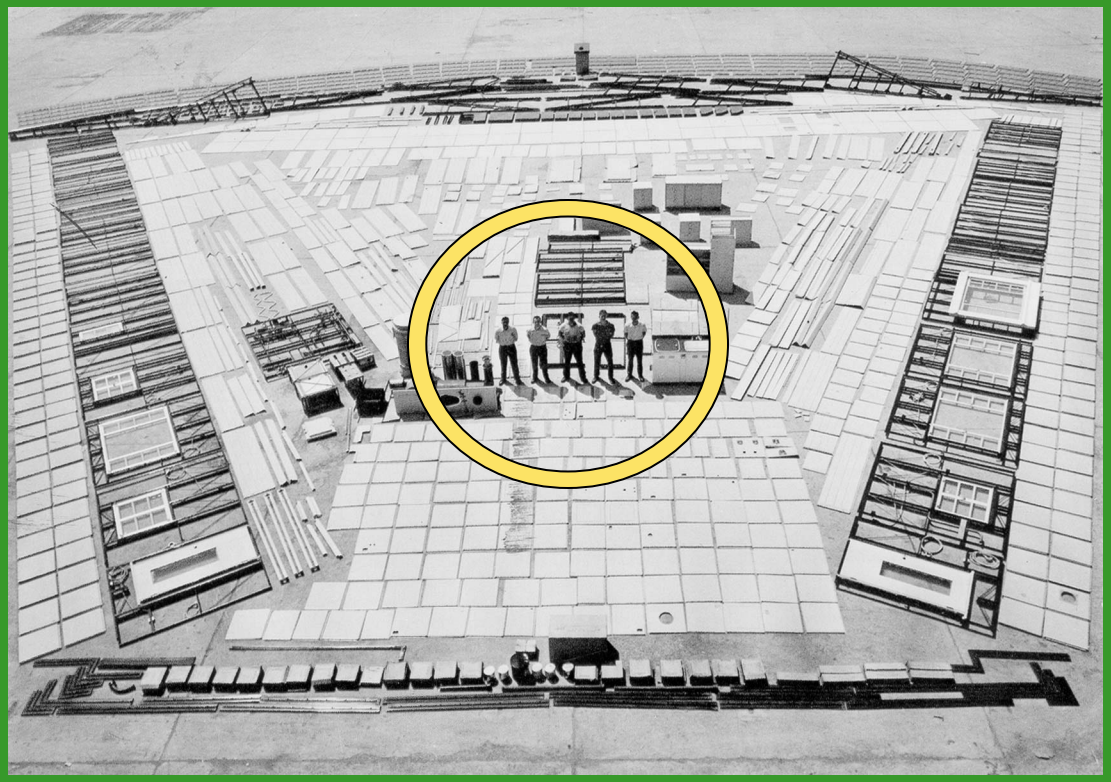
But it's a challenge we can meet if we are well organized.

The key is product bundling or kitting.

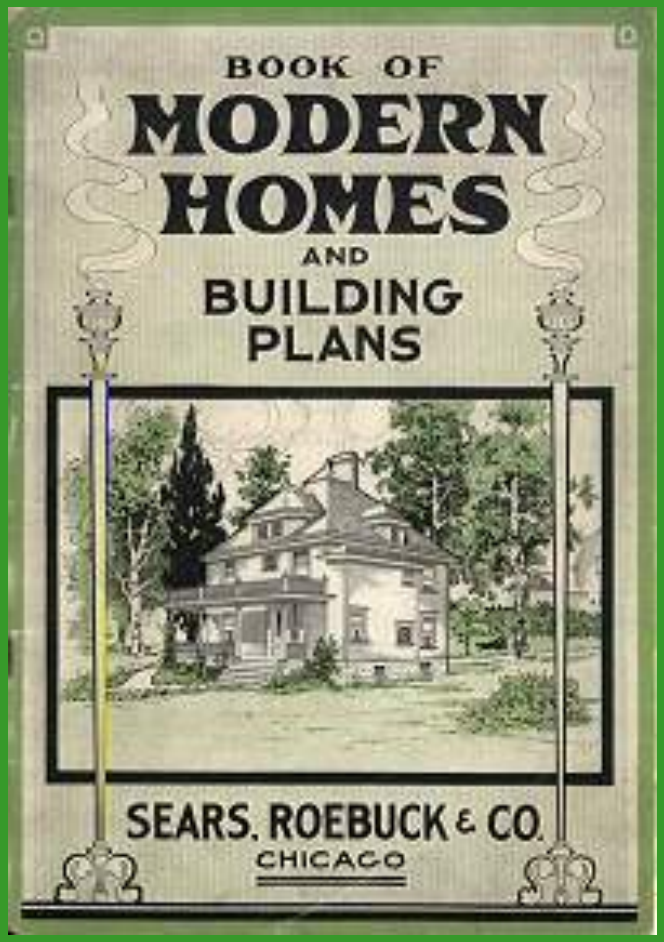


Now for a little bit of history in regard to product bundling or kitting. The idea of integrated packages for building houses has a history of failed attempts.

The Lustron house is one such case. Here, total house kits were delivered with a team of workers for each kit.



One successful example of total house packages are the "mail-order" houses. More than 250,000 were built in the early 20th century, including 75,000 Sears Houses.



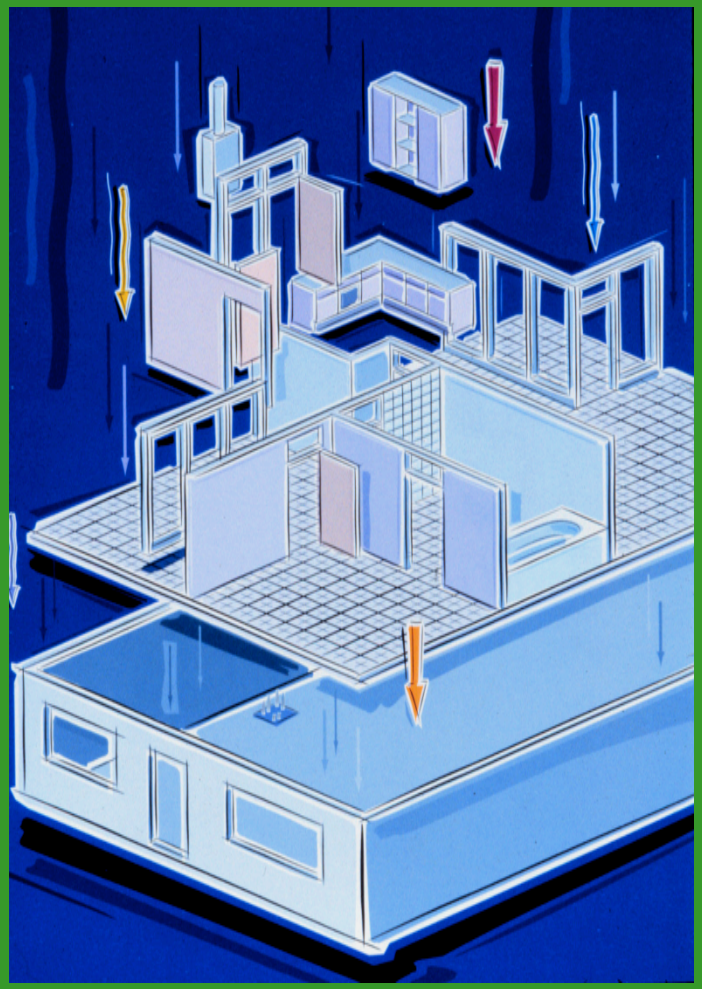
Another successful example is the Techbuilt house of the 1950's - 70's, designed by Carl Koch, and delivered on trucks from fabrication facilities on the east coast, and erected by local carpenters.

My parents built two of these houses, one in Ohio and one in Illinois.

These houses represented good architectural design, quality control, good detailing and used ordinary products and technology. Their innovation was largely in marketing and distribution.

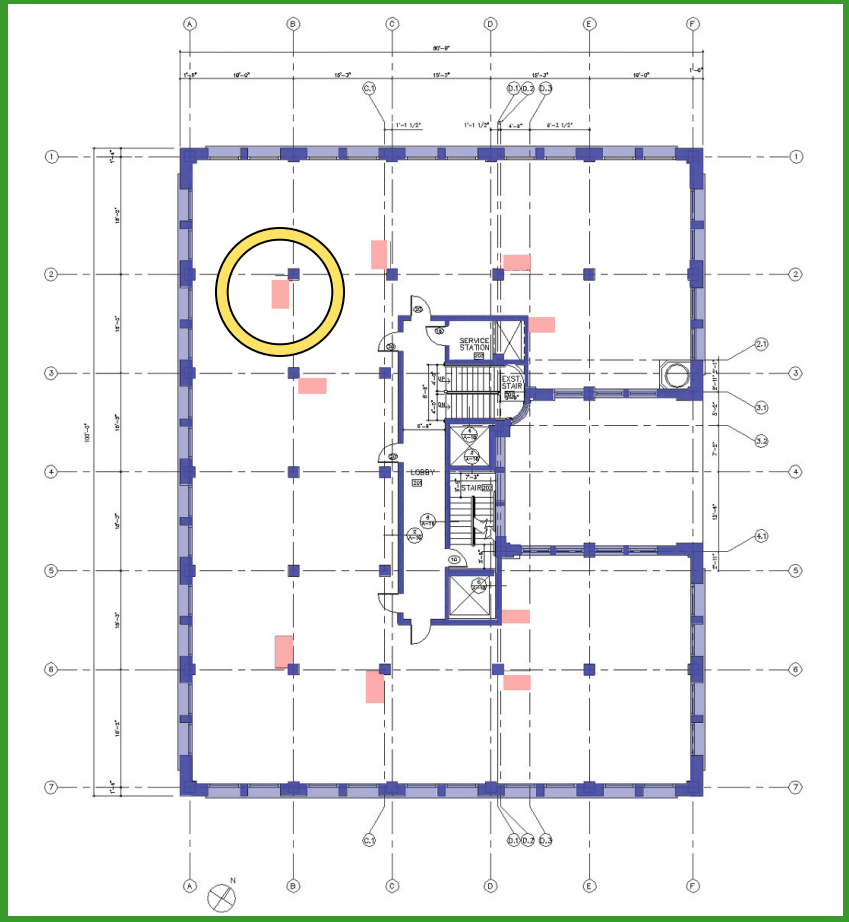
But unlike these examples of whole houses being delivered as packages, I'm talking about

INTEGRATED INTERIOR FIT-OUT KITS

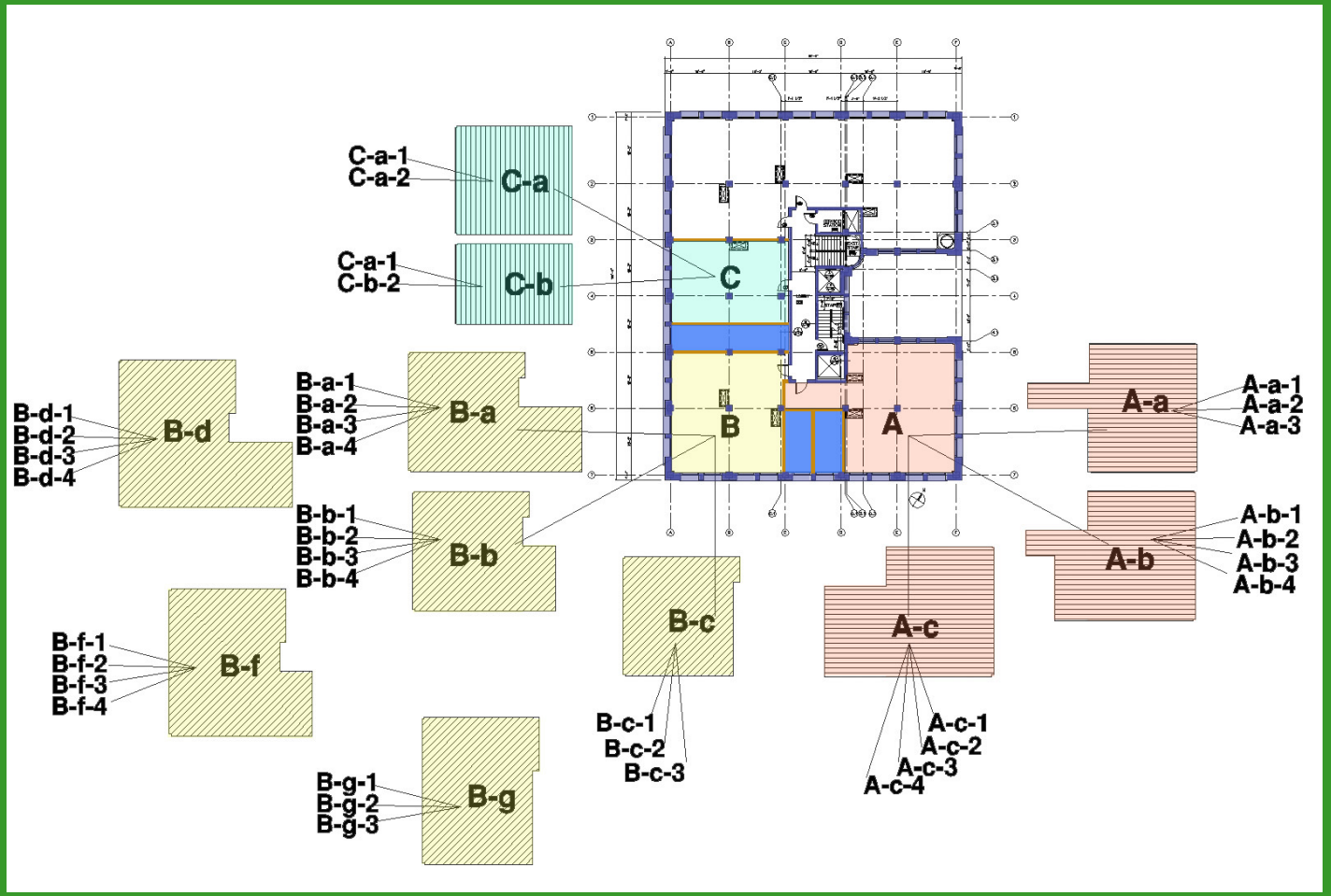


Fit-out packages can be installed in empty spaces in multi-unit buildings such as this one in Detroit. This is the building we are now working on in a detailed case study I'd like to explain briefly.

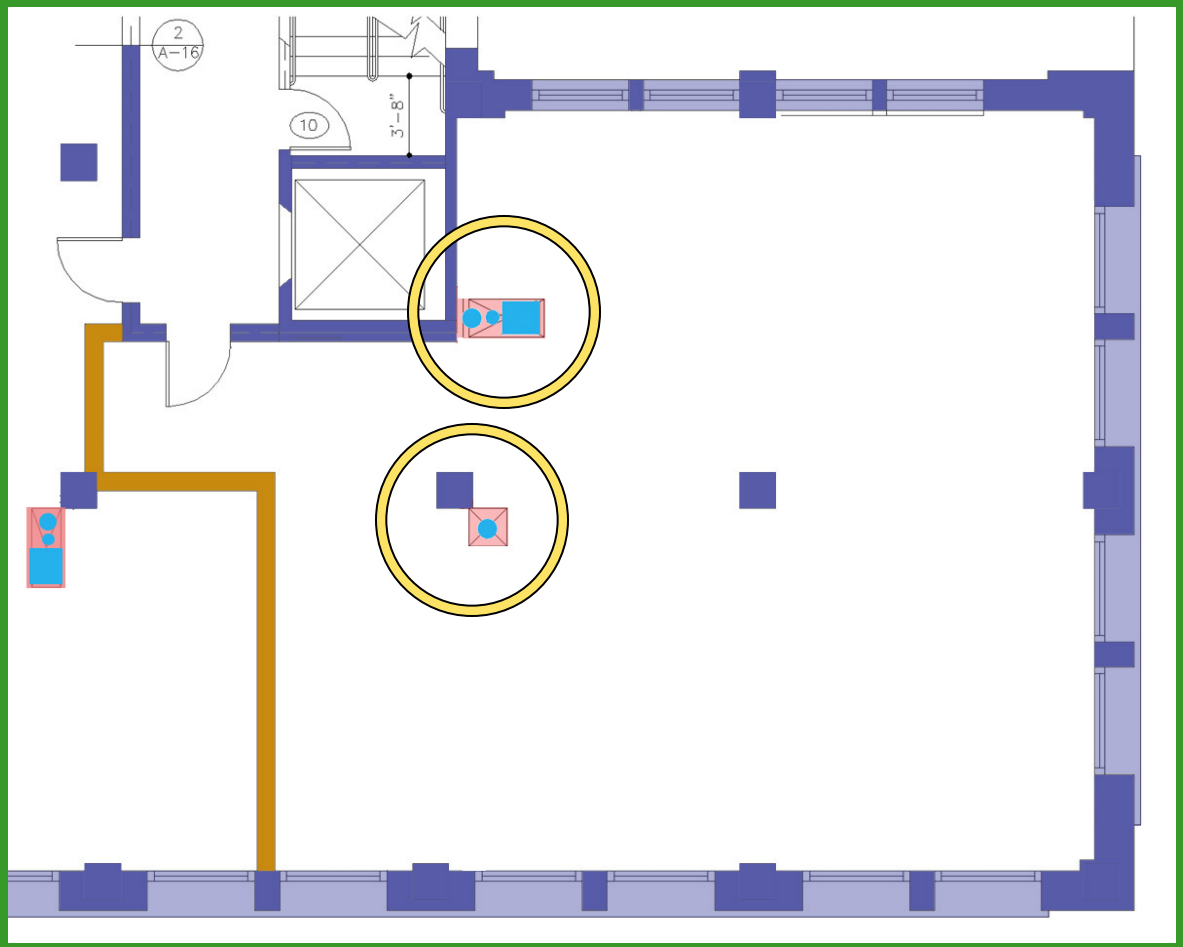
First, the building is “set-up” to accommodate a variety of unit sizes and floor plans. This is chiefly a matter of architectural design. Notice the new mechanical shafts.



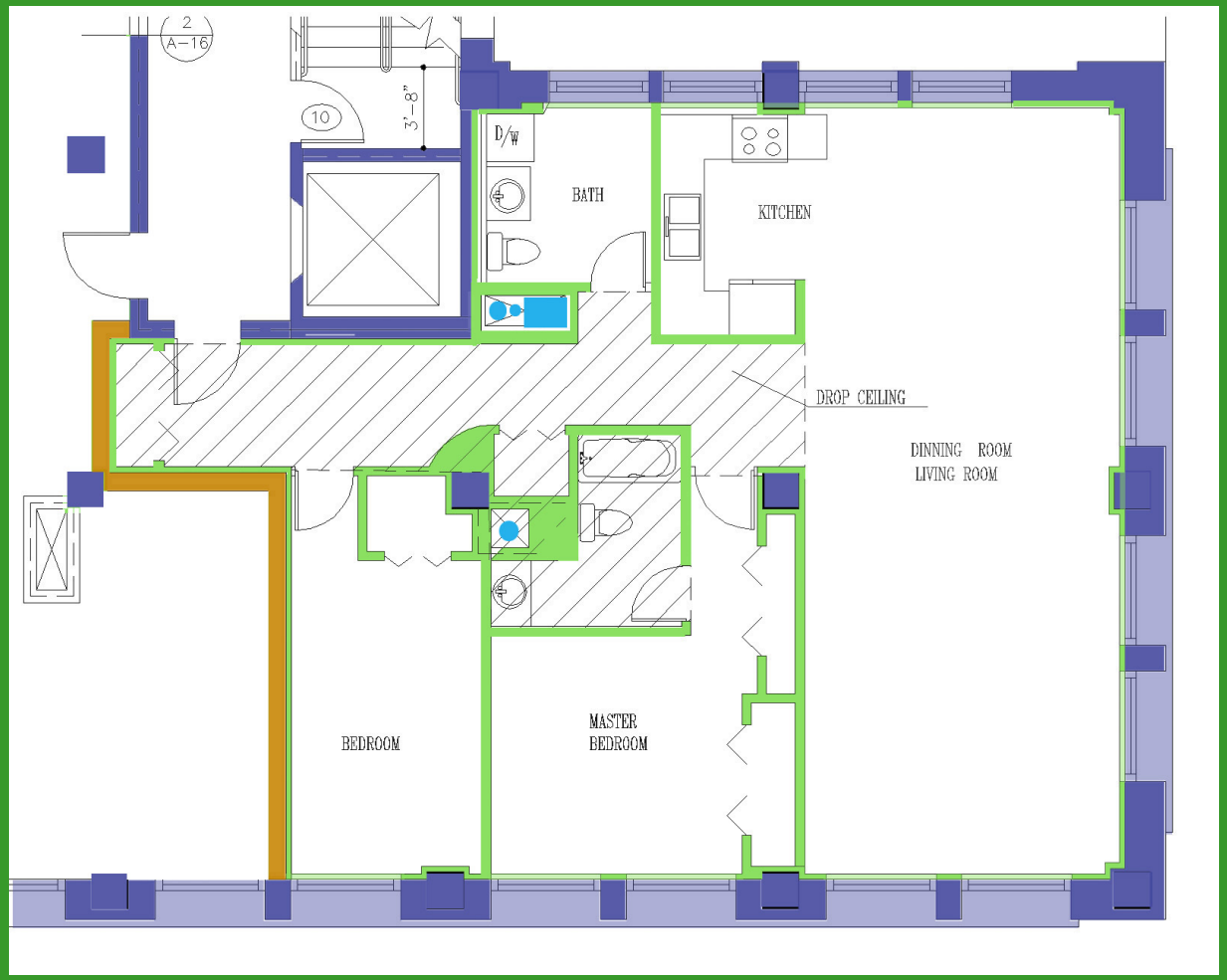
This is not difficult once learned, and results a diagram like this. This shows the developer the choices she can select from. For every unit size we have 3 or 4 unit layout options.



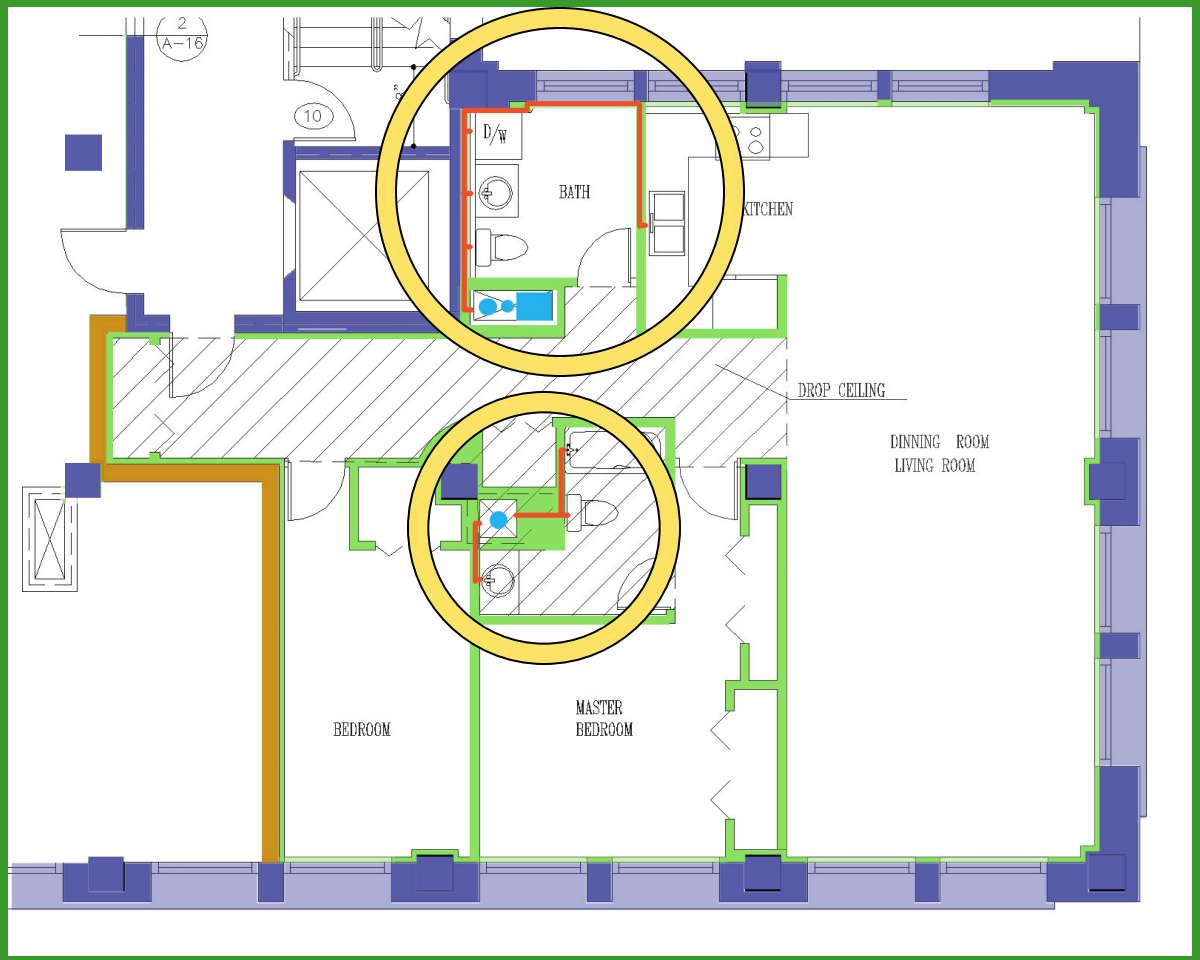
Here is an example of one of the units without any decision about the exact floor plan. The drawing shows the “base building” in blue, and the “demising wall” separating units in yellow. Notice the two vertical plumbing shafts.



Here is one optional floor plan in this space. The parts colored green are the “fit-out” parts. They can be decided independently of other units in the building.

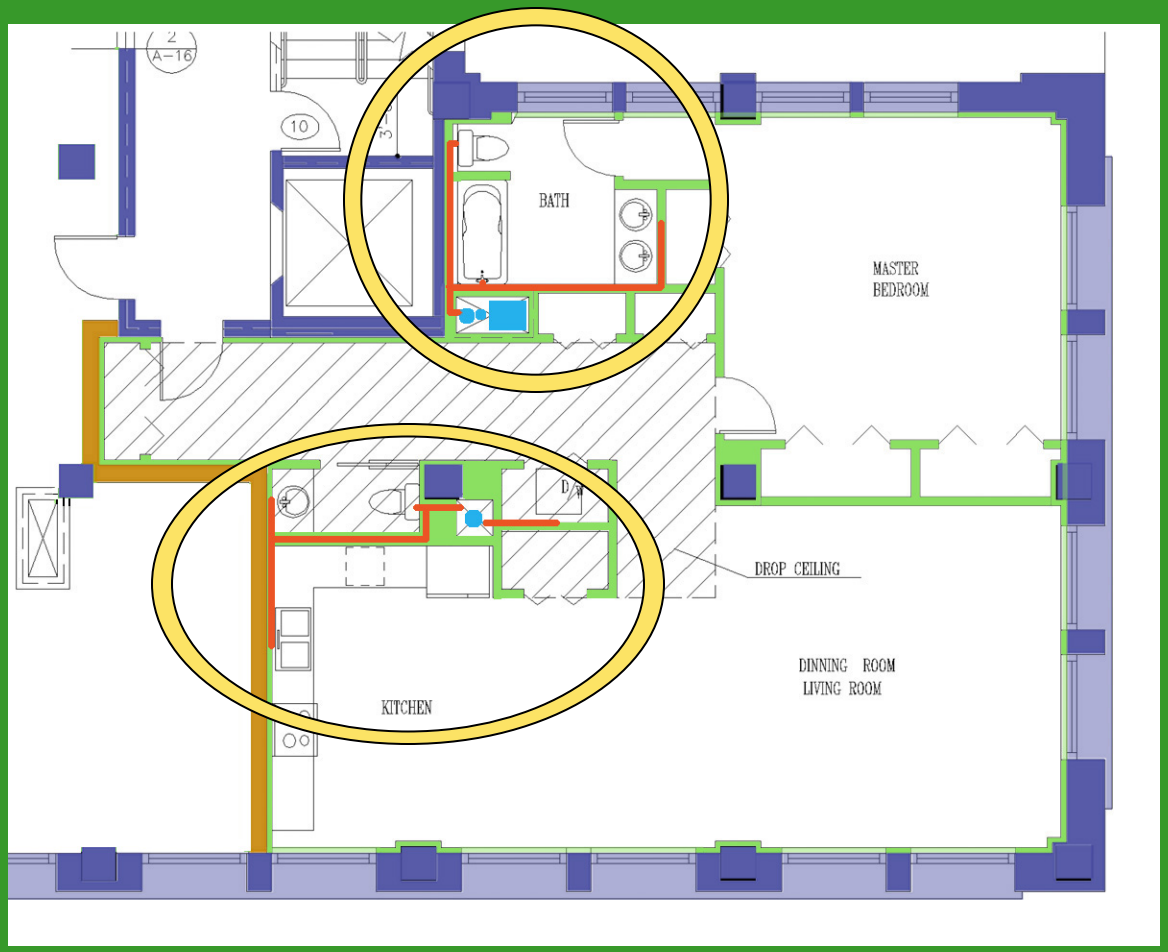


One of the big problems in multi-story residential buildings is the drainage pipes. We made a point of avoiding any vertical penetrations except at the fixed base building shafts. So all horizontal piping stays inside the dwelling unit.



Here is another variation in the same space. We have worked out several more and there are other variations possible.

Here is the drainage piping for that unit, shown in red.



That should give a sense of the architectural design issues and how to make each dwelling unit as independent as possible.

This gives the developer tremendous decision flexibility.

It offers buyer choice in the case of a condominium.

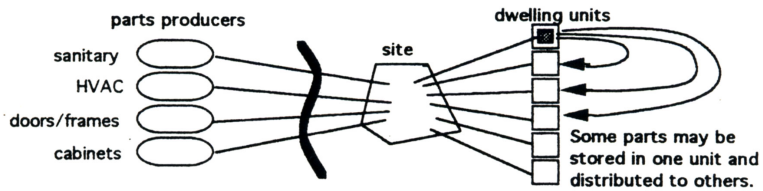
It also makes later alterations easier, thus making the building more sustainable over a long period.

It also offers a basis for product bundling or kitting of everything needed to fit-out an empty space JIT.

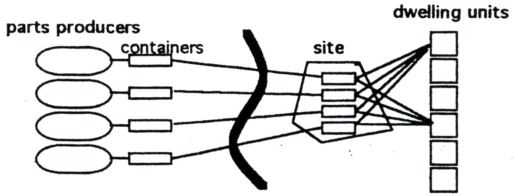
The basis idea of product bundling or kitting looks like this compared to a conventional delivery process.

Comparing Logistics Strategies:

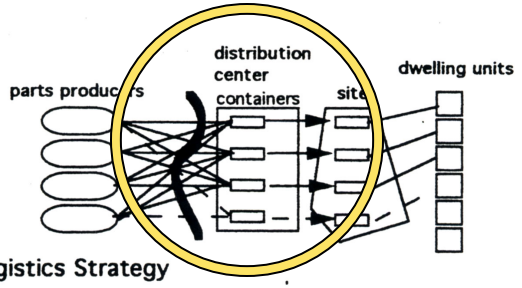
Traditional vs. Fit-Out



The Traditional Supply and Logistics Chain



Intermediate Strategy



New Logistics Strategy

(source: Matura Netherlands BV)

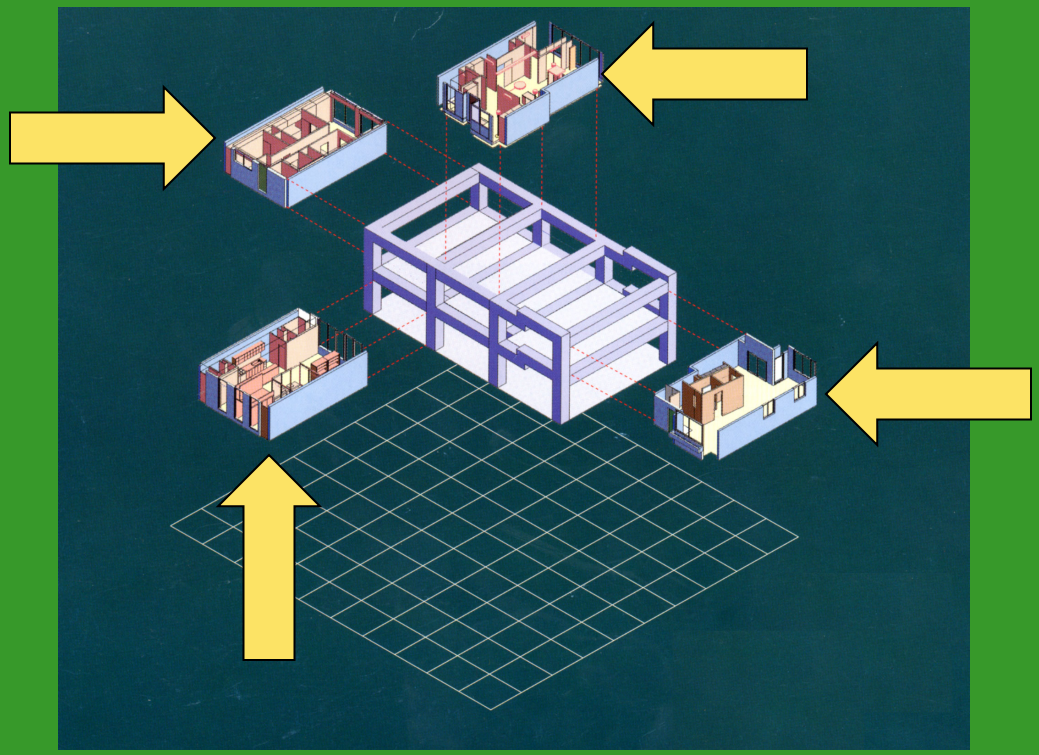
Here is what an off-site kitting and distribution center might look like. In addition to racks and bins, there will be jigging tables, cut off and other work areas.

Everything needed to fit-out a dwelling unit is loaded into a couple of containers, in reverse order of their installation, and delivered to the site. All parts are small enough to go into the building elevator and the unit's front door.

This is good advertising!

So that's the idea: PRODUCT BUNDLING OR KITTING.

We should try to organize our businesses and our production processes to offer each household the opportunity to invest as much or as little as they like, suiting their individual preferences exactly, or offering the developer maximum decision flexibility.



First, we have to think about "accommodation capacity" rather than fixed floor plans.

We have to ask the architects to design buildings that can be out-fitted in a variety of floor plans, matching real household variety rather than arbitrary statistics.

We have to do all the work in an individual dwelling space without bothering other units, beside, above or below;

We have to learn to organize "fit-out" packages, using advanced IT software, to deliver customized variety to the market.

I think we can do it. There is a large market waiting.

To learn more about this idea, please visit our website at

www.bsu.edu/cap/bfi

Thank you!