DOCUMENT RESUME

ED 074 599   EA 004 925

AUTHOR   Heimsath, Clovis B.
TITLE   Systems and the Changing Architectural Practice.
PUB DATE   1 Nov 72
NOTE   11p.; Paper presented at INBEX Annual Meeting (3rd,
               Louisville, Kentucky, October 31-November 2,
               1972.)

EDRS PRICE   MF-$0.65 HC-$3.29
DESCRIPTORS   Architects; Architectural Education; *Architecture;
               *Building Design; Building Innovation; Building
               Plans; *Component Building Systems; *Speeches;
               *Systems Approach
IDENTIFIERS   *Systems Building

ABSTRACT
          The architecture profession needs to employ systems
building design in order to raise the rate of productivity and
performance in construction. Changes have been made in architecture
educational programs that recognize the shift in the role of the
architect from design genius to building production manager. Systems
design has led to changes within the architectural organization,
including a more highly structured organization composed of a team
capable of management decisions and an organization capable of
offering a complete package of services to the client. Also presented
are data indicating that the U.S. Government has made a major shift
toward systems building and that other big builders are following
suit. (Author/DN)

FEB 1ᵒ 1973

ED 074599

INBEX PRESENTATION - Wednesday, 1 November 72, 10:30-12:30

HOW SYSTEMS CONTRIBUTE TO MANAGEMENT PLANNING

FILMED FROM BEST AVAILABLE COPY

Systems and the Changing
Architectural Practice

Clovis B. ᵢᵢᵣ ᵣᵤᵣ AIA
Clovis Heimsath Associates
Houston, Texas

EA 004 923

Systems and the Changing Architectural Practice

Most architects look at systems building from the sidelines.
They take a somewhat jaundiced view of all this talk about
systems for they have seen fashionable ideas come and go before
with little accomplished but talk and public relations. They
remember the big push a few years ago towards modular dimensioning,
heralded as a dramatic step forward in the interface between
building materials, and they remember that the whole movement
ended lamely with a proposal to accept a 4" increment of
dimension as the basic module of size, not a particular
dramatic or meaningful outcome for so much talk and hullabaloo.
They remember the much heralded computer drafting machines
that would make draftsmen obsolete in only a few years. Yet,
on further investigation, architects found that the machines
required as much manual labor as most traditional drafting and
were expensive, complicated to use - in short, not the panacea
they were programmed to be.

Today, there is talk of systems design, and for many this is
just another Madison Avenue term which the average architect follows
as a spectator, wondering why it has so much magic for the big
offices, at the same time seeing little or no application
to his practice in the small office. An architect from such a

small office, after seeing an hour long presentation on systems building turned to me and said, "Well, there's one thing I've learned from this long presentation on systems design - as far as I'm concerned there is far less there than meets the eye."

In this environment of mild skepticism, let me suggest that, with systems, this time there is a difference. This time the architect must become involved for the ground underneath him is changing and he can either jump or be shoved. Let me be more specific. No architect will dispute that the building owner is his client, no architect will dispute that the owner is therefore in the driver's seat when it comes to what can and will be built and for how much. Gentlemen, the reason architects must take notice of systems is simply because our clients, the owners, have taken notice of systems. They really didn't care very much about the 4" dimension of drafting machines, but they have very important reasons for caring about systems. And this interest on the part of owners is not something that will happen - it is something that has happened.

Systems building has not been heralded sufficiently. Perhaps most architects are unaware of the major shift government has made to systems buildings and the impact this shift in buying power will have on industry. And the shift was calculated, gentlemen, and the impact on industry is part of the game plan.

For example, a simple yellow booklet with the name, Federal
Construction Council Technical Report No. 62, put out by the
National Academy of Sciences National Research Council, is a
bombshell of information. Did you know that between 1966 and
1970 the Air Force, Army, GSA, Navy, Veterans Administration,
Postal Service and similar agencies built over 465 buildings
with an area of 24.2 million square feet, at an aggregate cost
of $734,000,000, and all of this construction was suitable for
systems building? It is estimated that between 1971 and 1975
the government will aggregate over a billion dollars in buildings
and this time they will require precoordinated subsystems in
a large part of this building program.

This report was prepared for the federal agencies by the
Federal Construction Council in 1970-1971, advocating the
rapid implementation of systems components into government
buildings at all levels.

To paraphrase the report, the need for systems stems from
dissatisfaction with the rate of productivity and the performance
of conventional construction. The cost of conventional construction
has risen at an untenable rate. For example, the Engineering News
Record's Building Cost Index in June 1971 was more than 40%
higher than in June 1967, for an average annual increase of
more than 10% in the four-year period. This is considerably in
excess of the increase in the cost of living for the same period.

What has happened and is happening, gentlemen, is that the
larger building owners, beginning with the federal government,
have sought out systems design as an alternative course, and
the report of the National Research Council bears out these
facts.

The report concludes that there must be new initiatives to gain
adequate productivity and performance in building, that building
with subsystems is the most promising alternative to conventional
construction, and that widespread implementation of systems is
imminently desirable for the government to pursue   but the
report is realistic in acknowledging that there will be many
constraints to the acceptance of subsystems, not the least of
which is a change in the role of the architect who, with
subsystems, has less to do in detail drawing and more to do in
management coordination. The government looks to the open-market
owner/user as the key to breaking the systems log-jamb. The
report looks to the formation of a national owner/user group
to help aggregate markets, to lay the law down to architects
that systems must be used, to be a pressure group in overcoming
code and union resistance - in short, the government, recognizing
that they alone cannot turn around an industry, have looked to
the general marketplace owner/user to join with them in
demanding systems.

This report was published last month; this is the state of the
art, this is the current status report on the field position
of systems. I suggest that architects can stand on the sidelines

if they will but the indications are a powerful new force is

in the field and the quarterback this time is the owner, the

architect's client. From this point on, I'd like to say that

bringing systems into the small office practice is a simple

matter, something like accepting a new material or a new type

of specification. But, my personal experience has been quite

the contrary and, in interpolating from what has happened to

ur firm, I am convinced that systems ill generat a dramatic

irreversible shift in the function of architects and obviously

in the organization of the architect's office.

Let me be personal for a moment, only to make a point. I graduated

from Yale 16 years ago when architects were trained to be

individual geniuses, form givers in the tradition of Mies van

der Rohe, Frank Lloyd Wright and Le Corbusier, three architects

whom I admire tremendously. What does this mean in practical terms?

Well, I had accumulated three degrees - Bachelor of Arts, Bachelor of

Architecture and Masters Degree - yet at no time was it required

that I take a business course. I had had hundreds of hours of

design but no courses in business, economics or even interpersonal

psychology. Yale, at that time, and all other "leaders" in

architectural training, were so certain that architects would

continue to change the world through design alone that they failed

to give even a token course in business and, it must be admitted,

I took my electives in life drawing rather than business

administration, so I was no better than the school.

But architects are living in a new world today and the form giver
of the 19th century is ineffective in the desperate crisis of
too rapid urbanization. Le Corbusier could with design intuition
"invent" bold solutions in the early years of this century and
his ideas would capture the imagination of architects and sweep
the world of des   as the   ernational Style had swept the
world earlier, based on the concepts of Mies van der Rohe and
other moderns. But such intuitive genius is misplaced in the
light of rising building costs, ineffective building techniques,
and poor quality. To admire individual buildings seems
extraneous when the problem is not with the individual building
but with the city as a whole, with the needs of thousands of
people, not the visually elite few.

In ten years I've seen my practice change radically, simply
because I rejected the architect-genious concept (realizing I
was not one) and espoused the new role of the architect as the
building production manager.

The major thing to say about my firm is simply that it is not
mine, but ours. Systems design leads naturally to a partnership
practice, and, in our case, to incorporation so that other
principals can be added in a business-like manner. The individual
design philosophy is still important in the firm, but a team
capable of management decisions is essential and this leads to
a structured organization.

We have a full-time interiors person. Recognizing the need for
total design services we made a decision a year or so ago to
negotiate all our contracts when acceptable to the owner and,
in so doing, have established close relationships with a
residential and commercial contractor. Currently we are
negotiating to become a franchised builder for a pre-engineered
building line with a contractor, which would make us principals
in a contracting firm. We are actively involved in research
and consulting to manufacturers. We try to tie planning,
architecture, interiors and repetitive building design into one
package and to be capable of providing a turnkey service.

As I talk I'm sure you think I am describing a large office -
I'm not. We have grown in the last year, but this is still a
15-man office, not a 200-man office. It is the 15-man office
such as ours that must affirm systems design if it is to have
wide usefulness. A few giant firms dealing with major government
contracts will not bring systems to the grass roots. We use a
systems approach to all our buildings today and every architectural
firm should do the same, I feel. What does this mean in practice?
Well, it means first of all that we are actively aware of the
subsystems products that are on the market and understand why
they were designed the way they were, to fill what slot in the
building process. We have gone to a five-foot grid on all buildings
to be compatible with on-the-shelf subsystem ceilings and structures.
But we have no false illusions about systems - we won't use a
system component unless it is competitive in price. So, in a

couple of jobs, we have used subsystem celings without structure;
in other cases, preengineered structures with standard ceilings
and partitions. The point is, we affirm systems. We feel the
new role of architect as building producer or coordinator is a
more meaningful one than the unique form giver of before. And
yet we require systems to perform in the market place and avidly
hold to a private, non-systems approach to building so we can
always compare.

A number of architects have joined together in forming a national
AIA Systems Committee, formed just this year and already one of
the largest committees in the AIA, with 42 members or some such
for 1973. On the committee are the recognized pioneers in systems
that have been aware of this shift in practice for years. But, as
significant are the many firms like ours that are affirming systems
design because it makes sense to our owner/clients. Our role as a
new AIA committee is to get the word to our membership that systems
are here. They are a new challenge, and they should be affirmed and,
more important, guided in their development. To this end, the AIA
Systems Committee with the Architects in Government Committee will
hold a Systems Conference 12, 13 April, 1973. The architect needs
to direct research and development efforts as never before, for the
architect must be a team member with the manufacturer as well as the
contractor. There is a new impetus for architects being involved
in the beginning of the systems design and then affirming the use
of these larger components once designed.

But a final note of caution; an office must work hard at retraining
itself if it is to be systems oriented. There are some hassels
that must be resolved internally if a subsystems approach to
buildings is to be used widely. It is a retraining job for many
of us: picking up the business course we didn't get in college,
talking to mortgage bankers about their cost packages when we
used to leave it to the client to perform such tasks, looking at
performance specifications to see what they really mean, contacting
manufacturers before they produce a product to input both need
and aggregated market. We have to change not only the image others
have of us, but the image we have of ourselves.

I've brought only one slide to show, not a raft of pretty buildings
photographed in deep shadow like the shots of pretty girls in
Playboy, but a chart I'm proud of. This chart is a direct fall-out
of our involvement in systems. Let me set the stage. We had a
church to design - a pretty non-system program to be sure - and
the budget didn't meet their requirements. Rather than designing
a building and hoping they would come up with more money, or
designing a smaller building and hoping they would live with it,
we took a systems approach which is essentially an analytical
approach. We plotted their needs against daily use. We proved
conclusively their program was overblown and we proved it from a
chart, not a perspective. Gentlemen, this is performing the service
a client needs in this age. We as architects will still be designing
buildings, still be making aesthetic statements, but the project

will start with charts, analysis such as this, so the equation for

building is understood before we begin and design is for the

thousands, not for the few.   Thank you.