

Bagels, Shish ka-bobs, Waffles and Salads:

A Menu of Plan Types

Richard Pohlman

Now that we have begun to depart from the Modern Movement, where are we going? Some designers are hanging bits of history on their modern frames, others are scraping away years of use to expose our roots, still others retrofit yesterday's buildings in order to discover form and technologies for tomorrow. With these and other alternatives available it is more important than ever to establish the foundations from which each area of interest can develop its own personal issues. Typology, the study of primary orders for style, function, elevation, and in this case plan, is attempting to provide that foundation so connections can be made between our past and present, and our diverse interests.

As the Modern Movement developed, its members elected to seek an architecture which was "functional, scientific and divorced from stylistic considerations."¹ Designers were encouraged to concentrate on function and technology and through them discover forms which represented the new social and economic order. Concentrating on requirements of function, designers spent the majority of their time searching for unique arrangements of major plan components, leaving little time for the refinement and the development of building character or individual spaces. The assumption that history dealt with style and the belief that style was to be avoided disconnected the designer from the benefits as well as the pitfalls of preceding building solutions.

Prior to the Modern Movement and concurrent with its formative years, the Academic Approach to design, supported by programs such as the Beaux Arts Institute of Design in this country, encouraged designers to examine built masterpieces and use them as the basis for new buildings. An understanding of spatial quality and character was developed by reproducing details from significant buildings. In new projects designers were to produce an overall schematic plan, called the esquisse, in the first 12 to 24 hours after receiving the building program. The esquisse established the primary functional relationships and parti, or architectural approach, for the development of the project. The final project submission was tested against the esquisse for consistency as the initial measure for acceptance of the project. This schematic plan approach did not, however, imply a lack of concern for functional plan arrangement, for the esquisse was not simply the first thoughts of the designer, but rather a shorthand for an idea based on an understanding of its functional and formal precedents.

The criticism of the Academic Approach by Modern Movement architects was true: it was encumbered with elaborate styles which were no longer appropriate. Times had changed; technology and economic conditions demanded different performances of buildings. The Beaux Arts Institute, however, did provide a program which recognized the evolutionary character of build-

ings and their uses. The building designs developed under the auspices of the Institute were extensions of known examples so that organizations, use patterns, and even details were universally understood.

The idea of establishing models upon which to base expectations is not limited to Academic Architects. Our own personal experience requires similar models, both implicit and explicit, in order to function in daily life. Even in ordinary situations, the amount of information available for our brain to process far exceeds its capacity. This information overload is made manageable by comparing new data with an understanding of similar situations which have been encountered in the past. A resultant is that a great deal of information is edited or formed as a model which enables us to perceive current changes or deviations and anticipate problems or pleasures so we can prepare for them. Through successive testing of the new situations, based on the expectations from our past experiences, we develop appropriate new behavioral models for current and future use.

This notion of the personal model, or behavioral type, is the basis for the following plan typology. Behavioral situations occur so frequently that continuous testing occurs and explicit understanding of behavioral types is not necessary. Building opportunities, however, are never as frequent. Through an established

plan typology we can relate our current designs with preceding solutions, utilizing knowledge of successes and failures to improve the quality of our design. Unlike Beaux Arts' use of precedents as constructs to be used in total, by stripping away stylistic trappings we understand the primary organization of functions and spaces and make them useful to our new design. We can also understand how and where functional organization has been reinforced with detail so that we can substitute new details which might serve the same purpose.

In order to be useful typologies must be simple. A few general types which encompass the majority of conditions provide the richest models for individual response to specific conditions. The plan typology focuses on the organization of specific functions within the building rather than on general use, structure or construction. Generally, there are four categories of plans: bagels (central plans), shish ka-bobs (spinal plans), waffles (matrix plans), and salads (cluster plans). These four types have been translated into a menu of foods in order to make them easier to visualize and remember. The types may be used to analyze existing buildings or to organize the ideas in new ones. The plan type may be preselected as the basis for a new design solution or, less restrictively, may be used to clarify or reinforce relationships which become apparent as a design solution evolves.

BAGELS

Like the bagel, the central plan is organized around a single important element. That element has clear functional dominance over all other functions and can be quickly understood as the critical element of the plan. Although in the purest case the perimeter is intact, it is possible for the plan type to exist even though the perimeter is incomplete, just as it is possible to understand the bagel as a whole even after it has been partially eaten. The overall envelope configuration can take on virtually any shape as long as a central function is established which controls and dominates the remaining functions.

Plain Bagels

This is the purest representation of the central scheme. The center may be an empty room, courtyard or grand commons around which a series of spaces are clearly arranged. The enclosing device may be a single wall or a collection of secondary spaces which remain directly dependent upon the central location.

Filled Bagels

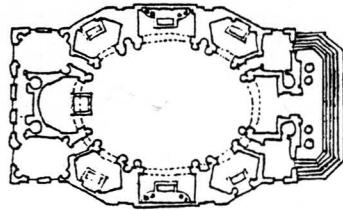
In this variation the central space contains some object. Depending on the size and function of the space being considered, the object might be a shrine, a fountain or even a small building. The most important aspect of the filled bagel is that the meanings of the space and the object are consistent.

Raisin Bagels

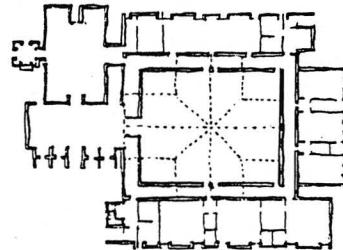
This variation of the type allows the placement of a series of secondary functions in the perimeter around the central space. The secondary spaces may consolidate their own series of dependent spaces, but they all finally refer back to the dominant center.

BAGELS (Central Plans)

Plain

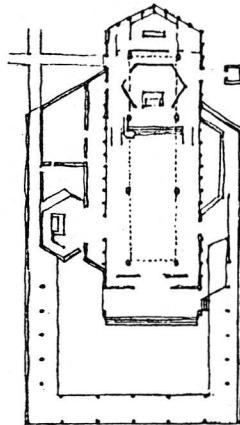


Pensiero Della Chiesa S. Carlo
Francesco Borromini [project] c. 1640

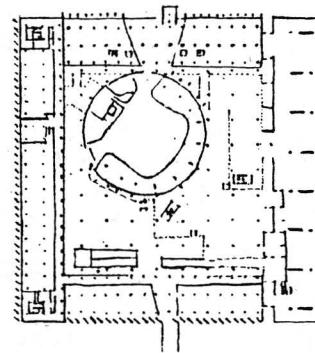


Unitarian Church, Rochester, New York
Louis I. Kahn 1959-62

Filled

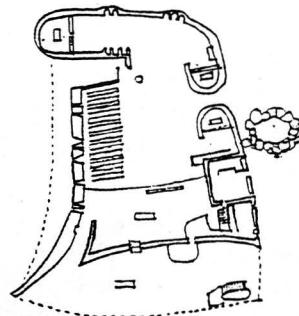


Church of the Madonna dei Poveri,
Milan, Italy 1952-53
Luigi Figini and Gino Pollini

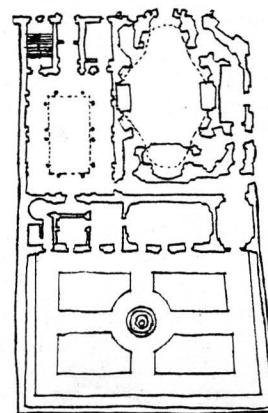


Legislative Assembly Building
Capitol Complex, Chandigarh, India
Le Corbusier 1956

with Raisins



Notre-Dame du Haut, Ronchamp, France
Le Corbusier 1950-54



S. Carlo alle Quattro Fontane, Rome
Francesco Borromini 1638-41

SHISH KA-BOB

Spinal plans have a series of functions connected along a single spine. Like the shish ka-bob, the elements are more important than the connector, or skewer. The spine, however, may be explicitly stated as an element such as a corridor which passes through or adjacent to the spaces, or may be implicitly stated through the alignment of connecting openings between the spaces. The spine may be curved, angular or straight. Radical changes in the spine usually indicate important locations. The elements along the spine may be uniformly arranged or varied to produce rhythms or develop sequences.

Plain Shish ka-bob

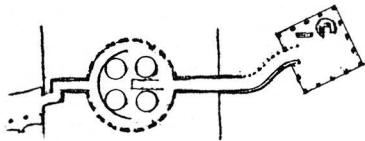
As the purest representation of the spinal scheme, all spaces in this type are approximately equal with little differentiation among them or their relationship to the spine. The location along the spine has little effect on the hierarchy of elements except for those at the ends, or if perceivable, the center of the set.

Shish ka-bob with Mushrooms

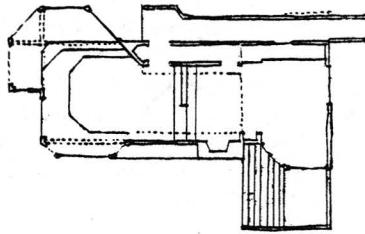
By adding specialized functions along the spine, an important variation to the spinal type is created. The spacing of functions along the spine is no longer regular; relative distances from special functions are important to the organization. This variation frequently features a deformation of the spine at the special functions to reinforce their importance.

SHISH KA-BOBS (Spinal Plans)

Plain

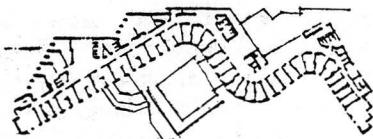


Museum for North Rhine-Westphalia,
Dusseldorf, West Germany 1975
James Stirling and Michael Wilford

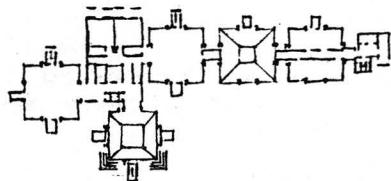


Lawrence House, Sea Ranch, California
MLTW/Moore-Turnbull 1966

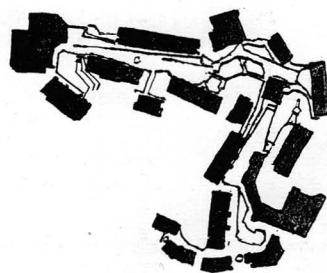
with Mushrooms



Baker House, M.I.T., Cambridge, Mass.
Alvar Aalto 1948



Richards Medical Research Building
Univ. of Penn., Philadelphia 1957-61
Louis I. Kahn



Kresge College, Santa Cruz Campus
University of California 1972-74
MLTW/Moore-Turnbull

WAFFLES

By ordering a series of spines within the same plan the Matrix type is produced. The relationships between spines determine the variations of this type. All varieties, however, have spines which are continuous and describable in simple geometric terms. The elements are relatively uniform in value with slight emphasis given to those at the intersections of spines.

Buttermilk Waffles

This type, although consisting of a large collection of similar elements, has the greatest number of variations. The essential order is of repeated parallel circulation spines with variation provided by the geometric relationship between them. In the simplest form, the circulation spines are parallel to each other resulting in a one directional grid. If a second set of parallel spines is superimposed across the first, a two directional grid is produced. The most common two directional grid is orthogonal with square or rectangular areas produced between spines. The imposition of a third set of parallel spines produces triangular areas and a three-directional grid. The relationship between parallel spines may be varied to produce tartan grids or to make sequences which reinforce important areas such as edges or the center.

Belgian Waffles

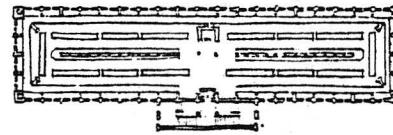
This variation features spines which are concentric about a point or generated radially from that point. The important difference between the radial type and the central type is at the center. In the central scheme a dominant function occupies the center, but in the radial type scheme the circulation is the center or the center is shared by a series of functions which are of equal importance.

Waffles with Blueberries

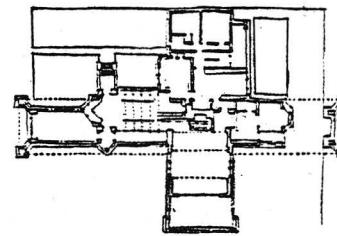
In this variation of the type important functions are scattered throughout the matrix. These functions may consolidate a set of subordinate functions around them but do not

WAFFLES (MATRIX PLANS)

Buttermilk

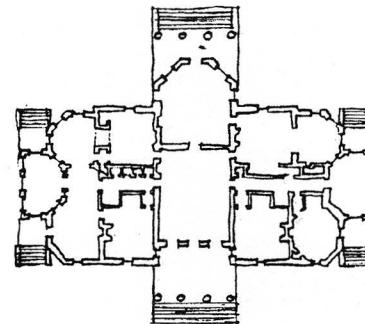


Ste. Genevieve Library, Paris
Henri Labrouste 1843-50

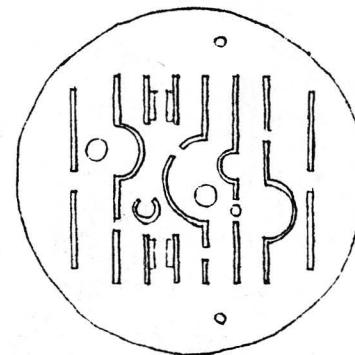


Ward Willetts House, Highland Park, Ill.
Frank Lloyd Wright 1902

with Blueberries

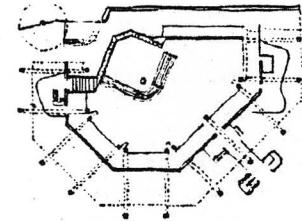


Monticello, Albermarle County, Virginia
Thomas Jefferson 1770-1808

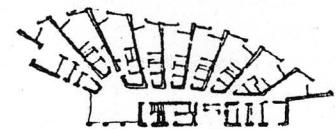


Arnhem Pavilion, The Netherlands
Aldo van Eyck 1966

Belgian

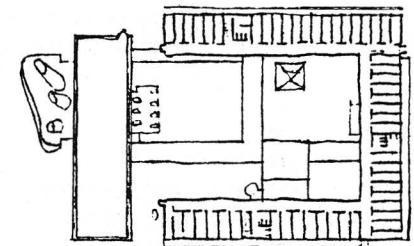


Florey Building
Queen's College, Oxford
James Stirling 1966-71

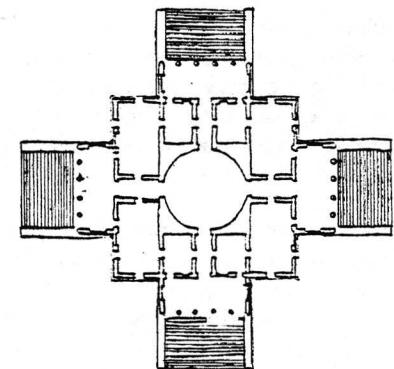


'Neue Vahr' Apartment Building,
Bremen, Germany
Alvar Aalto 1958-62

with Blueberries



Monastery of La Tourette, Evieux, France
Le Corbusier 1957-60



Villa Capra ["Rotunda"], Vicenza
Andrea Palladio 1552-70

have a clear or necessary relationship to other clusters or to a central location or function. They do, however, usually relate to the grid either by being located at an intersection of spines or by filling the void between them.

SALADS

As in a salad, the cluster type is based on a distribution of elements which is neither continuous nor focused around a single function or location. When a geometry is established it may have discontinuous seams, such as in hexagon or octagon-square patterns, or be non-hierarchical in character. In general appearance, this type usually expresses connections between elements but seldom provides a generally perceivable order or sequence.

Fruit Salad

In this type the elements relate to each other in an additive manner. Each function is placed adjacent to those which require proximity until all the functions are accounted for. The spatial order which results is that of a chain with little expression of clarity in the overall plan perimeter.

Molded Salad

In this variation the elements respond directly to a highly controlled perimeter. Their interrelationships are determined in the same additive manner as in the fruit salad and as a result the circulation or some common spaces are highly irregular.

Deluxe Salad

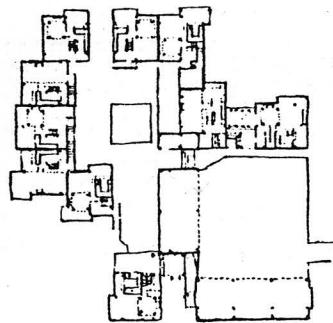
By adding some functions which are clearly more important than others, specialized locations within each of the salad types can be established.

CONCLUSION

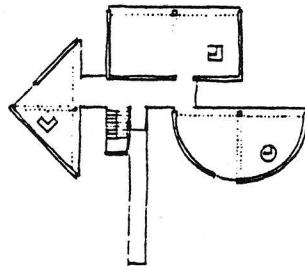
There are plans which do not fit neatly into this typology; other plans exhibit characteristics of more than one of the described types. It is also possible to superimpose several types in order to separate or articulate internal relationships. In fact, the same plan may assume different

SALADS (Cluster Plans)

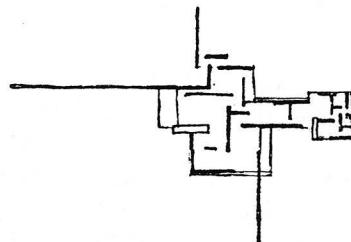
Fruit Salad



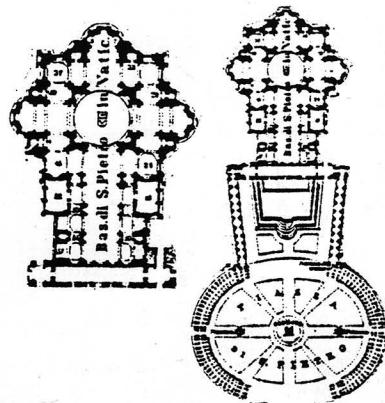
Condominium, Sea Ranch, California
MLTW 1966



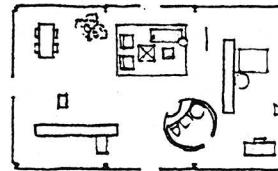
One-Half House [project] 1966
John Hejduk



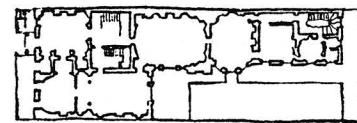
Country House in Brick [project] 1923
Mies van der Rohe



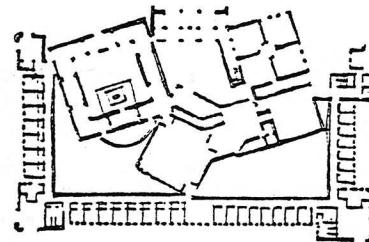
Molded Salad



Glass House, New Canaan, Connecticut
Philip Johnson 1947-49

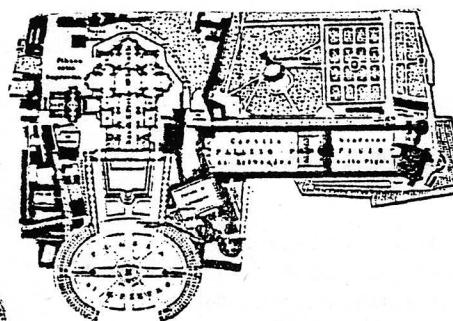


Lord Derby's House, London 1977
Robert Adam



Convent, Dominican Sisters, Medina, Penn.
Louis I. Kahn (project) 1965-68

Deluxe Salad



Church of St. Peter and The Vatican,
Rome

type characteristics depending on the level of detail at which it is examined. For example, St. Peters, in Rome, can be seen as a filled bagel when we consider the building alone. With its forecourt, it becomes a shish-ka-bob with mushrooms; with the adjacent structures it becomes a deluxe fruit salad.

These variations and others can be recognized but need to be examined as elaborations of this menu. If we continue to expand the menu to include specialized circumstances we will quickly arrive at the point where each plan is considered independently and the opportunity for connections through the plan typology will be lost.

The historic evolution of an idea made unique by the enthusiasm and spontaneity of new insights is enhanced by an understanding of the common aspects of both the old and new. This Menu of Plan Types provides one of the tools for analyzing and understanding those common aspects of building organizations. An individual designer can use it to clarify and enrich design solutions, and in doing so discover a rewarding source of personal expression.

NOTES

1. Reyner, Banham, *Theory and Design in the First Machine Age*, Praeger, New York, 1967, p. 14.

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