

OPEN BUILDING and PROJECT DELIVERY: HOW DO THEY RELATE TO EACH OTHER?

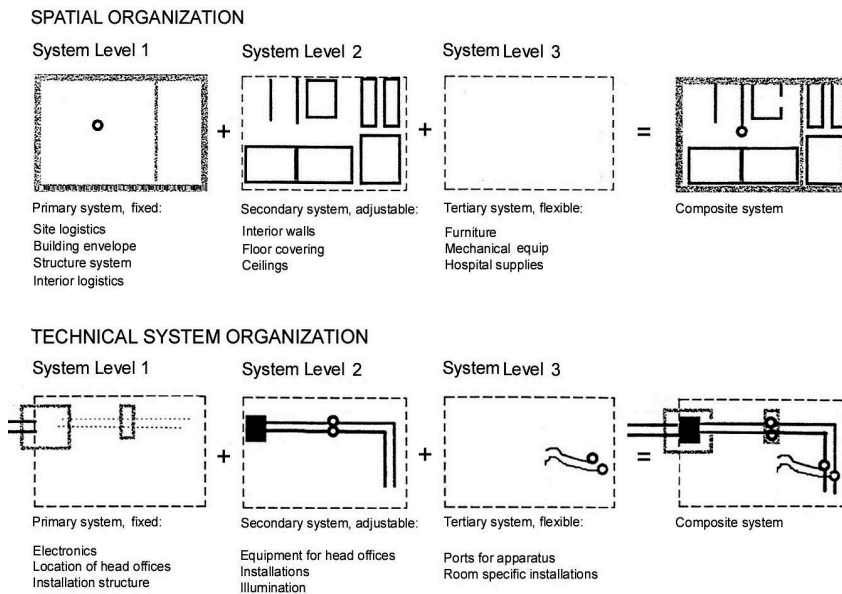
The aim of open building is to assure that what we build is sustainable, that is, retains long-term value and capacity to accommodate change. This is accomplished by understanding a building as a kind of infrastructure. In the design and management of infrastructure projects, we decouple the long-term asset (e.g. the electric generating facility) from the parts of the system expected to last, or needing to be replaced, over a shorter cycle (e.g. the downstream transformers, or the circuit breakers in the building), which are further decoupled from the devices we plug into wall outlets. Open Building makes these distinctions explicit, both technically and in design and management decision-making. Doing so does two things. First, it enables decision-making responsibility for each level of the infrastructure to be distributed effectively, initially if needed (if the project is too big or other factors necessitate distributed control) and, more critically, over time. Second, it assures the infrastructure will retain long-term utility-value because it can accommodate change of demand, and assure that the replacement of technical parts by new higher-performing parts is possible with minimal difficulty.

Open Building is therefore not new, but is now a systemic necessity.

As a matter of principle, an infrastructure system uses the concept of **capacity** in the design of the whole, and in the design of each part of the whole. The higher level offers capacity to the next level for variation and change, and so on. A “level” is not a technical distinction. This is clear when we see that doors, drywall, electrical and network cables and pipes are typically specified on several, if not all levels. A level is therefore what is under the control of a single “party” or “decision-making agent.”

For example, a “base building” offers capacity for varied and changing sizes of occupant spaces, and, within a given occupant space, a variety of floor plans. Further, a “base building” may offer capacity for varied and changing uses (functions). How “much” capacity is “good” is essentially an agreement between the various stakeholders, consultants, considering socio/cultural norms. The implementation of the agreed upon capacity depends on the application of good design methods and smart technical solutions. For example, enabling floor plans and “wet spaces” in a given area to change requires careful consideration of the routing of drainage piping and cabling, such that a change of layout on a given floor does not disturb the space on the floor below.

The number of such levels will vary depending on the size and complexity of the infrastructure. For contemporary buildings, we generally observe three levels: a) the base building or primary system; b) the fit-out or secondary system and c) the equipment and fixtures, or tertiary system. The following diagram is an example:



Source: Canton Bern Office of Properties and Buildings

Project Delivery Methods

How an infrastructure project (i.e. an open building project) is delivered is another thing. There are currently several options. (*From the Primer on Project Delivery, second edition; The American Institute of Architects and the Associated General Contractors of America, 2011*)

Design-Bid-Build (DBB)

This method involves three roles in the project delivery process—owner, architect, and contractor—in traditionally separate contracts. “Traditional” is frequently used to describe the Design-Bid-Build method, which typically involves competitively bid, lump sum construction contracts that are based on complete and prescriptive contract documents prepared by architects. These documents generally include drawings, specifications, and supporting information. The phases of work are usually conducted in linear sequence. The owner contracts with an architect for design, uses the design documents produced by the architect to secure competitive bids from contractors; and, based on an accepted bid, contracts with a contractor for construction of the building.

Design/Build

In the Design-Build approach to project delivery, the owner contracts with a single entity, the design-build entity, for both design and construction. The design-build entity can be led by an architect or a contractor and can consist of any number of people.

Integrated Project Delivery (IPD)

IPD is a method of project delivery distinguished by a contractual arrangement among a minimum of the owner, constructor and design professional that aligns business interests of all parties. IPD motivates collaboration throughout the design and construction process, tying stakeholder success to project success.

Fast-Track

Fast Track is known as a method of implementation where construction and design phases are overlapped to expedite completion of the project. In addition, it is not only an activity that is simply done fast, but more than that, it refers to an overlap on stages of design and/or construction before other stage is done with the purpose to get an earlier project delivery.

How does Open Building implementation relate to these four delivery methods?

Open Building implementation does not prescribe the delivery method. The important thing is that the client (or clients, if the facility changes hands over time) maintains vigilance over the application of the concept of capacity, both initially and during subsequent renovations and adaptive reuses. That is, it makes no sense to design a facility for then current requirements, only to be forced in the future to expend unnecessary resources when first one and then another renovation cycle occurs. It makes sense, in other words, to set-up the real property asset for a sustainable, long life of change.

Finally, Open Building implementation requires that the investor in the asset adopt project delivery and facilities management methods that accomplish two things at minimum.

First, proper methods will enable decision-making for each level to be distributed effectively. That is, it is often beneficial to contract with different planning and design service providers, and different construction agents, for the realization of different levels of the infrastructure. One reason for doing so is that the knowledge and expertise for each level may differ in significant ways. Separating control requires carefully written and managed contracts that clearly delineate contract boundaries and technical interfaces.

Second, good delivery and management methods will assure that the infrastructure project will retain long-term utility-value. This will result from constant vigilance to maintaining the principle of capacity to accommodate change. This change can be expected both in the demand for the use of space, and by the necessity for replacement of technical parts by new higher-performing parts.

Stephen Kendall, PhD (MIT’90)

Infill Systems US LLC
Philadelphia, PA
sk@infillsystems.com

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