

Functional Programming and Conceptual Design

Where Innovation is **Created** **Discovered**.....

This discussion will focus on the beginning of a project -- where client, architect and project team are most free to imagine and to dream.... We're free to express our individuality, to tell our story, to hope for a happy ending, to ask for what we like and what we want, and to find out what we really need. This is the place to discover what we're made of, and to challenge stereotypes and pre-conceptions....



Within a project, there are always opportunities, and roads not taken. Understanding these before the project proceeds into more specific (and expensive) phases is the key to avoiding regrets, or back-tracking later. The broader the opportunity for initial exploration, the more important this may become.

Part One -- Programming and the information necessary to design a building....

At the beginning of a project, a client will often hand the architect a piece of paper with a list of rooms or spaces listed on it and expect that the architect will have the information they need to design the building. Sometimes this is the only thought given to programming during the project. When architects discuss programming, they refer to the process of gathering and organizing a larger array of information to guide decision-making toward the client's defined goal. In order for an architect to truly do a responsible job programming a building, they require a client to communicate:

- The Core Values and Principles of the organization
- The Vision of the organization
- How the Core Values and Vision are applied to the Functional Program
- An Assessment of how the existing environment meets and influences programmatic desires, or how others may be meeting programmatic desires in a way that may be applicable to the client's project

It is important to identify Core Values and Principles of the Organization because they are the foundation on which every element of the environment and organizational culture are built. When this is done, the physical setting will support the other environmental elements and provide desired experiences for users.

The Vision statement should describe the ideal way residents and their families will be impacted by the organization. It is a picture of the perfection sought without regard to the potential for fully achieving it or the challenges that may be encountered. It is the dream to design to...



Describing how the Core Values and Principles are applied to a client’s management philosophy, organizational structure, staff roles, relationships & training, operating systems and processes, activity programming, family interactions and the physical setting is critical for the Architect to best design the building. The physical setting should be designed only after all other elements are understood. The physical setting is the most expensive element of the environment, the most difficult to change, and must support the other elements in order for the total environment to maximize effectiveness and efficiency.

The functional program is the “pre-architectural programming” information that tells the architect how to create the architectural program for the building. The time to make a decision about how food will be prepared and served, how laundry will be handled, what size households residents will live in, what staff teams are needed, and so forth, is not when the architect needs that information, but in advance.

Because all these different systems are interrelated and interdependent, the community should have a clear understanding of how they wish the new setting to operate, and the desired experiences they want users to have. Programming frequently includes assessment – a look into a current environment to evaluate it in terms of how it meets and influences programmatic desires.

Some of the information sources required to plan the desired environment are different from those that exist in the current environment. You may need to look outside of the organization to identify, test, and evaluate new ideas, including available literature, site visits, experiments or mock-ups and pilot projects. It is only after this information is communicated that your architect will be informed enough about your organization, residents, staff, and desires to best create an architectural (space) program that will meet your needs.

This architectural (space) program represents an opportunity and an obligation of the architect to do the math.... Variables include operational performas and cash flow analysis – all validated with available market information.



Part Two -- Conceptual Design and the “discovery” of the building....

A building is far more than the architectural program with a roof on it. As a building, it embodies structural, spatial, volumetric and experiential qualities in addition to purely functional ones... The Roman architect and historian Vitruvius stated that the essential elements of architecture are -- Utilitas, Firmitas, and Felicitas – function, structural integrity and delight. The object of design is to integrate all of these essential components in a synergistic way -- to the benefit of each (and the users of the building....).

We will study this subject though the lens of a couple projects....

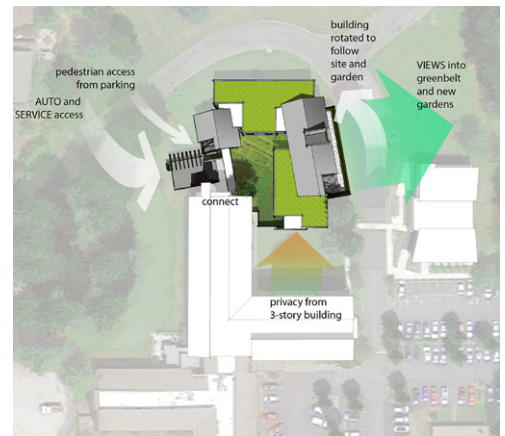
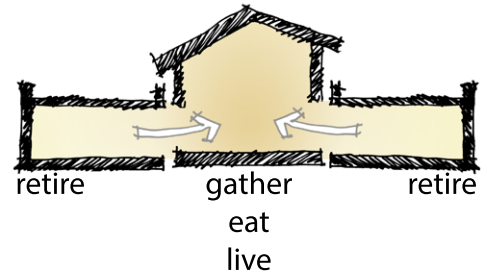
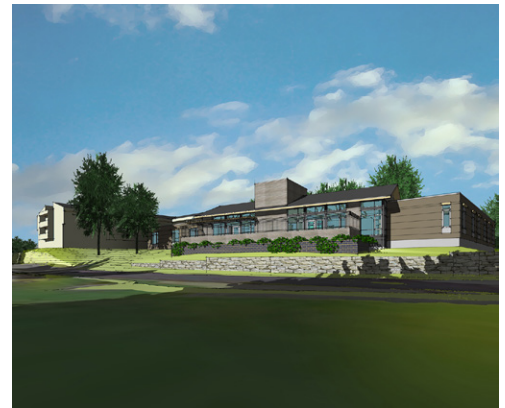
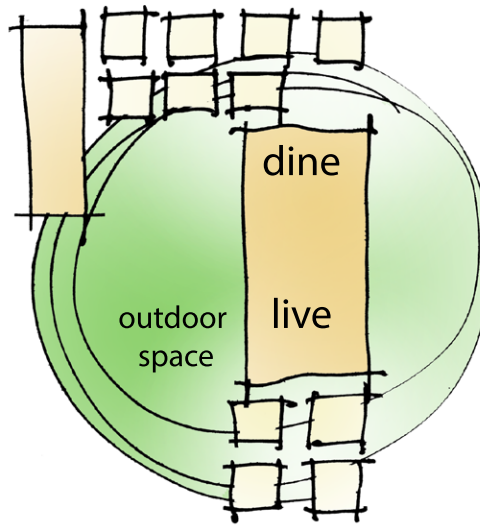
Tacoma Lutheran Memory Care Small House

Initial project discussions included as many of the project team members possible. We worked to sort out desired relationships between indoors and outdoors, between resident spaces, and to imagine which spaces we may celebrate, and which would act in a supporting role....

Architects love diagrams. At this early stage of a project, we diagram relationships between shared living and activity spaces, personal sleeping spaces and outdoor spaces. These help us imagine the organization of spaces independent of site or other program constraints.

At some point, the 'bubble' diagrams begin to zero in on the spatial relationship within the confines of the site.

We believe that if you can still see the diagram in the finished work, more often than not you have a pretty good building. The hard part is not letting the concept get diluted, or covered with so much frosting that it's unrecognizable. When you do this, the building is not only a clear architectural statement, but very 'readable' to its users. This increased readability in this case assists memory care residents with being able to easily landmark and way-find in their residentially scaled home.



Hope Houses

Hope Meadows is an intergenerational community just north of Champaign Illinois, where children are adopted out of the Chicago Foster Care system into families within a more rural setting. The project uses the housing from a de-commissioned Air Force base -- often giving an entire duplex home to a family and their adopted children. Units left over were given to seniors -- those willing to move to this community, to volunteer their time and service to the raising of these children and the support of these families. Each former foster child has an average of 3 "grandparents". As the community has thrived,

the kids have grown, have gone off to school and, in some cases, come back to adopt foster children of their own. The seniors have just gotten older.... Hope Houses were envisioned to offer a place for these elders needing a little more assistance, in the hope that the community can continue to take care of their own.



After a tour of the community with the owner and some of the residents, we discussed the existing patterns -- how the buildings created community and actually performed for the people who live in them. By understanding the pattern language, and by tailoring an "idealized" plan to the existing conditions, we were able to conceptualize the program in some new and interesting ways. With our client, we imagined new buildings in scale with the old. We imagined a park at the heart of the community onto which these new homes, and a new community center, would face....

We came to an understanding of how the community could grow in the future and located the community center parking and service functions off of an adjacent busier street, so less traffic would pass through the community....

We imagined one and two-bedroom apartments linked to the Intergenerational Center, with front porches and common areas where residents could share meals and socialize. The unit plans enable the resident to maintain control over their front door, their visitors and the degree to which others can see and interact with them -- from their beds.... We imagined ways in which the Hope Houses could be at the physical *and* experiential heart of this community and in doing this all, we kept relationships consistent so that the concept could be replicated in other intergenerational communities.

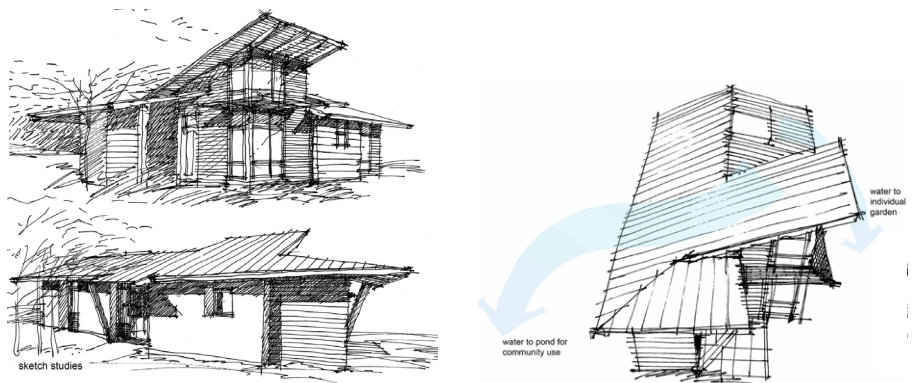


By taking the time to dream a little, and overlay that dream on the fabric of the existing social patterns within the community, we were able to conceptualize a design solution of greater value for the community.

Lopez Community Land Trust Common Ground project

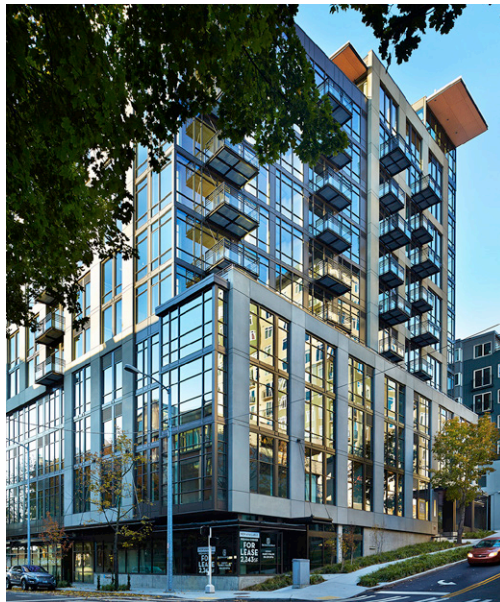
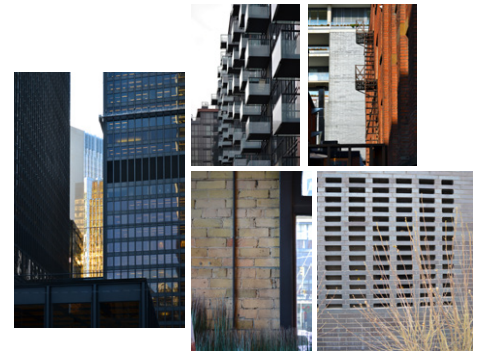
This project of very small affordable homes on Lopez Island had a goal of using no outside water or energy. The owner was also quite concerned about the *image* of these little houses -- that they look warm and inviting, and that they reflect the spirit of community so valuable to the Lopez Community Land Trust.

Here the diagrams begin to describe character, while also illustrating how the roof slope matches angle of winter sun, how the sun "paints" back wall of living spaces in winter, how the roof and trellis provide shade in summer and other physical characteristics of the buildings that get them closer to their environmental goals. In their first year of occupancy, most of these homes returned more energy to the grid than they used.



Today, increasing numbers of projects want to occur in more urban settings....

We spend quite a bit of time discussing how the building is going to BELONG to its community. We do research, and often take a study trip with the project design team. This image research can be extremely important to the eventual definition of the building, and actually saves time by putting the architect, the design team and the owner on the same track before the design work even begins. We never find our building out there, but we find a lot of the pieces it's made of.....



Joseph Arnold Lofts

This market-rate apartment project occupies one-fourth of an already-crowded, steeply-sloping block, and is surrounded by existing condominiums. One street edge is one of Seattle's "green streets", requiring upper-level setbacks. The sloping site essentially has two height limits -- for both upper and lower halves of the site....

Every project has a zoning envelope.

Rarely is the zoning envelope the ideal size and shape for a building. The zoning envelope is an urban design based set of constraints based upon the nature and shape of the

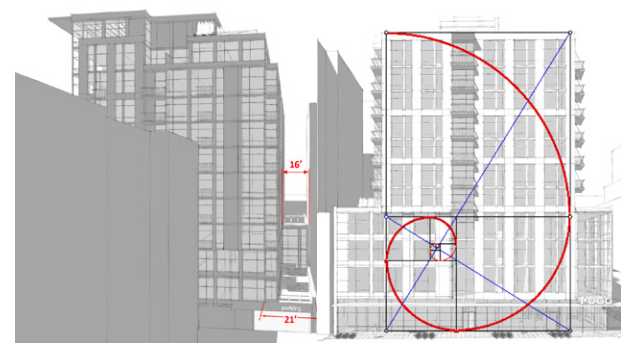
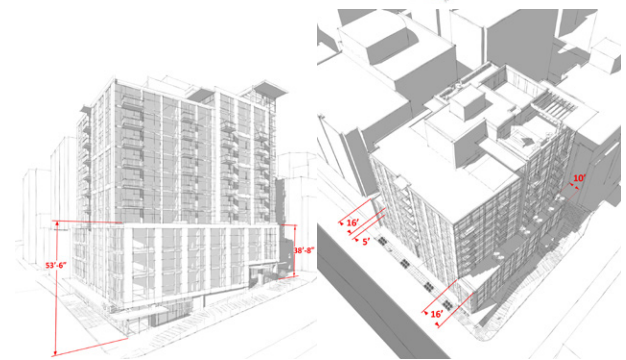
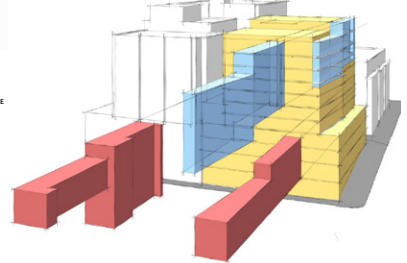
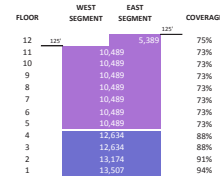
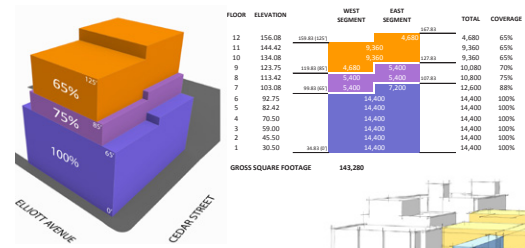
negative space created by buildings, not the buildings themselves.

Within a 12-story building, this particular zoning envelope required at least 8 different floor plates. Fortunately, it is subject to change....

When a jurisdiction offers a Design Review process, this is a golden opportunity to improve the zoning envelope for the benefit of both the project and the City. This often depends on doing a lot of math....

Here the building's base is lowered, resulting in a nicer pedestrian scale and improved views from neighboring properties. The setback relationships to the street and adjoining properties are adjusted, (balanced), to create view and light corridors, while maintaining the (public's) right-of-way view corridor (in this case by splaying the southwest wall of the building).

The resultant is a win for the developer and the neighbors, and a building envelope with fewer floor plate changes, a simpler exterior and better proportions....





We're always proud when one of our projects shows up the City's own website as evidence of how the Design Review process is intended to work -- because it can be a lot of work to get this stuff moved around to the extent that we sometimes do.

It's worth it however....

So what's up at the front end of a project? All of the balls are up in the air -- the trick is getting them to land in a form that reflects clarity of purpose, expresses your goals and values, and honors the residents who will live here.

programming

based on **your** functional program outlining how **YOU** wish to provide services
operational goals and vision

site response (bubble diagram...)

site/campus organization, organizational opportunities/synergies, views, site features,
sun and shading, contextual considerations, connectivity, parking

integration of other specific concerns, identity, values and goals

way-finding, arrival sequence, signage & presence, messaging, other design considerations (figure/ground, daylighting, relationship to the outdoors) or other consultants (landscape, interiors, financial, ...), budget, constructability and financial absolutes