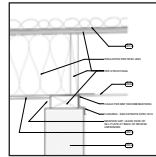


# JLC Architecture



## WORKING WITH AN ARCHITECT

a user guide for navigating the design and construction process



view document online at  
[jlcarchitecture.com/gallery/working-with-an-architect](http://jlcarchitecture.com/gallery/working-with-an-architect)



## “...so, what exactly do you do?”

If you're reading this you probably have some interest in architecture. You may be considering a remodel of your existing home, or perhaps you are contemplating a commercial development opportunity. Conceivably you're generally interested in how the architectural process works. Whatever your situation you probably have some questions. We put this document together in response to questions that we commonly receive regarding what we do and how we get it done. Architecture is a complicated process involving many layers of coordination and decision making. Variables are often interrelated, with one decision affecting numerous other aspects of a project. We believe clear communication is absolutely critical. Hopefully the following pages will provide some clarity regarding the design and construction process.

If you have any further questions or would like to talk about a specific project please don't hesitate to contact us directly.



## Organizing the project

In our office there is no such thing as a “standard project.” The process for designing a new master suite is going to look different than planning a new commercial development. And we do both. That being said, most projects readily break down into the following phases:

1. **Pre-Design** - gathering and organizing information, establishing the project parameters
2. **Schematic Design** - design options are explored, a primary direction is chosen
3. **Design Development** - detail is added to the design, systems are chosen
4. **Construction Documents** - finalizing all aspects of the design for permit and construction
5. **Contractor Selection** - establishing an agreement with a general contractor
6. **Construction Administration** - involvement during the construction process

In some cases, the scope and complexity of a project dictate certain phases be compressed, expanded or even omitted altogether. We rely on years of experience to structure a project according to a client’s individual needs. Before we begin work we will provide a write-up detailing the precise scope of a given phase of work. In this way, each phase has a clear completion point marked by the owner signing off on the work completed to that point and agreeing to continue with the next phase. This provides a clear sense of what we’ve accomplished and where we’re going at any given point within a project.

The following pages describe the above project phases in greater detail, exploring the type of work they typically contain.



# 1. Pre-Design

Pre-design is concerned with gathering information. It's also about organizing that information into a clear and concise format that is easily referenced during future design phases. Sometimes a client knows exactly where they want to go with a project, but in many cases the Pre-design phase helps organize abstract thoughts and ideas into a clear set of parameters for the project. It might be counter-intuitive, but clear constraints on a project often cultivate the best design response.

## Site Selection

You might already have a site selected for your project. If you don't, we can provide analysis of one or more prospective sites to assist in the decision making process. This can be as simple as researching zoning regulations, or it could be much more involved, incorporating a full pre-design phase as part of an overall feasibility study.

## Budget

Defining the budget is critical for a successful project. With a budget in place, reasonable expectations about the size, complexity and quality of the project can be established. We can

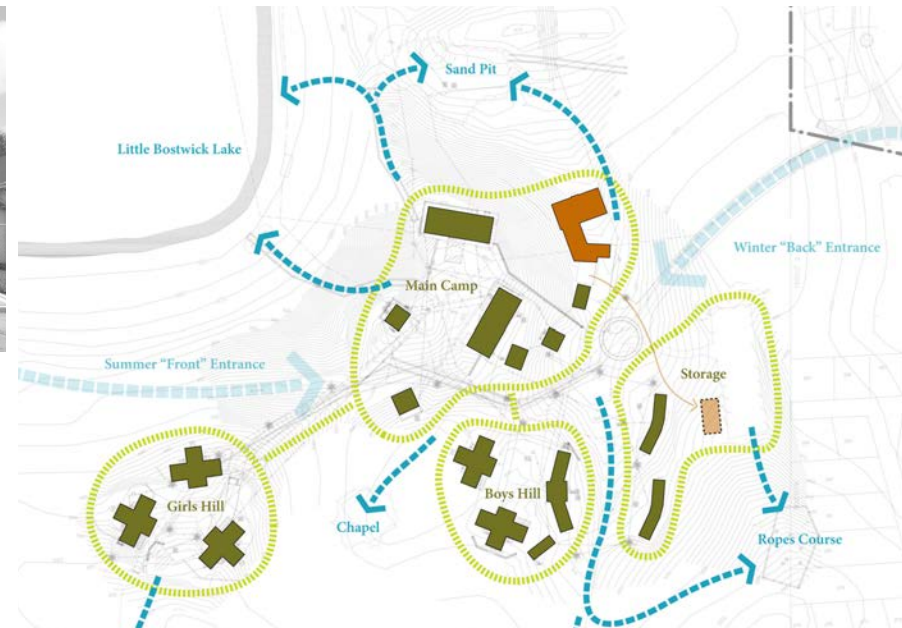
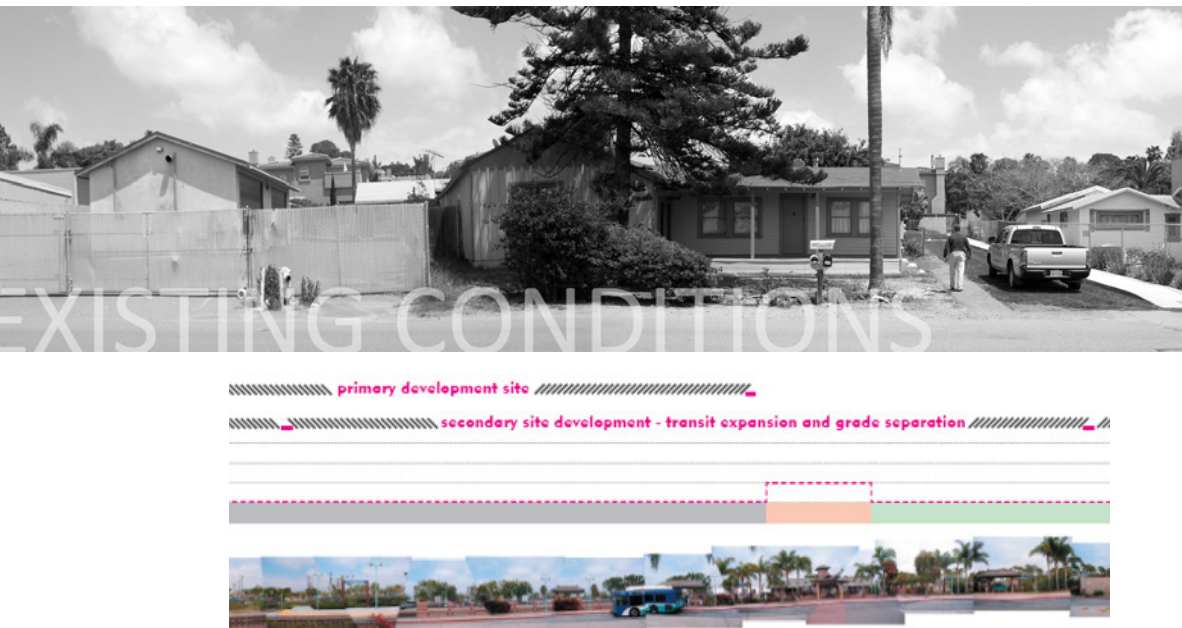
help plan where in the course of a project funds will need to be allocated.

## Timeline

Design, approval and construction all take time. Some projects can move at a more leisurely pace, but for most, meeting established deadlines is integral to the success of the project. We work hard to establish reasonable expectations for the overall project schedule and set goals to keep the project on track. Criteria for adjusting the timeline over the course of the project should also be established since they affect the client, design team and contractor.

## Code Analysis/Zoning Regulations

Regulations governing buildings are complicated. Every project must comply with some combination of building codes, local zoning and county/state/federal regulations. Requirements from homeowner associations and green rating systems further complicate the process. Our professional experience will give a clear picture of the potential pitfalls ahead and increase a project's chances of getting through the process smoothly.



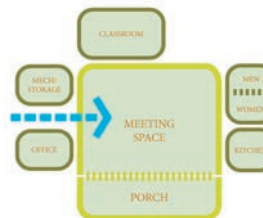
The following bubble diagrams demonstrate how the project needs and desired features could be integrated together. Think of them as the beginning stages in the development of a floor plan. The main piece of information that they communicate is how the different uses within the building could associate with each other. We have explored a number of options, the three main distillations of which are shown here.

### NEEDS

- One large space
  - Capacity for 150 in chairs and 200 on the floor (approx. 40' x 55')
  - Wood-burning fireplace
  - Kitchenette integrated into the room or adjacent
- Restrooms to serve 150 efficiently
- Entrance space to serve as mud/coat room with shelves and hooks for lunches and coats
- Large storage closet
- Small office
- Utility/mechanical room
- A large porch area for activities out of the rain (approx. 15'x25').
- One smaller classroom space (approx. 20'x20')

### DESIRES

- Ability to open large windows/doors on warm days so the classroom feels like the outdoors
- Designed to minimize ongoing operational expenses (utilities, repairs, maintenance)
- Design and construction features that serve as models and teaching tools for sustainability and respect for the environment
- A design that coexists well with architectural style of existing buildings in camp





**Site Analysis**

Understanding the nature of a site beyond simple zoning regulations is a key part of our design process. Every site presents advantages and challenges that must be taken into account. Observations about everything from local climate factors to noisy neighbors to views in and out of the site are graphically documented and organized for future reference.

**Programming/Space Associations**

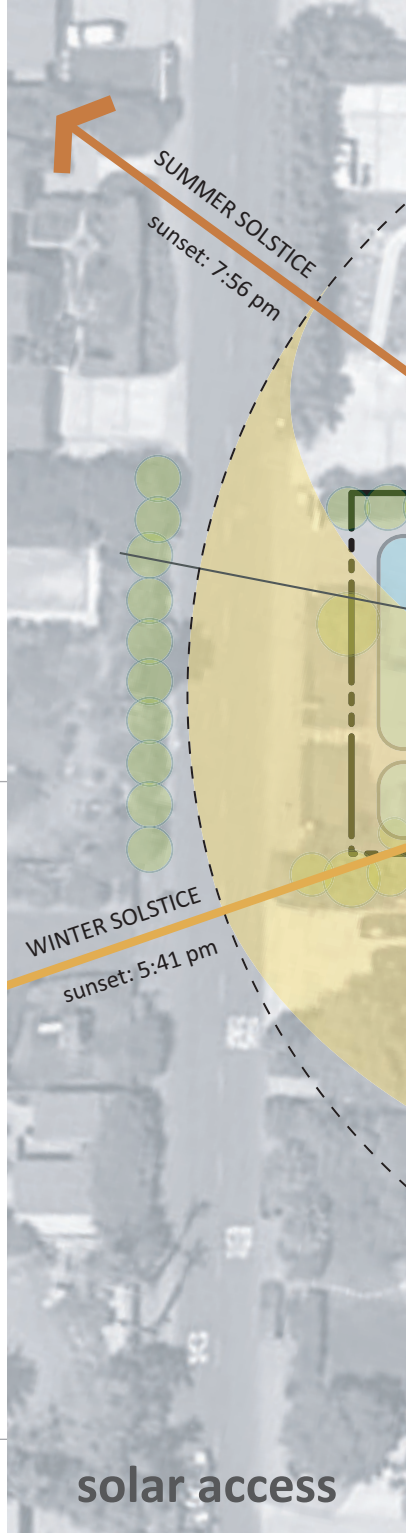
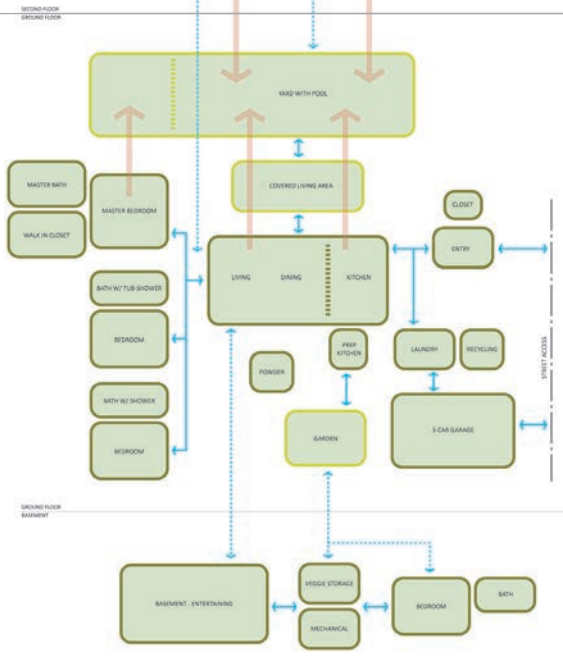
In its simplest form the program is a list of activities the project must accommodate. Our process usually involves expanding this list to contain information about the character of particular

spaces, system requirements, flexibility of use and relationship of spaces to each other and the site. Graphics such as bubble diagrams and flow charts are developed at this point and function as the precursor to a specific architectural design.

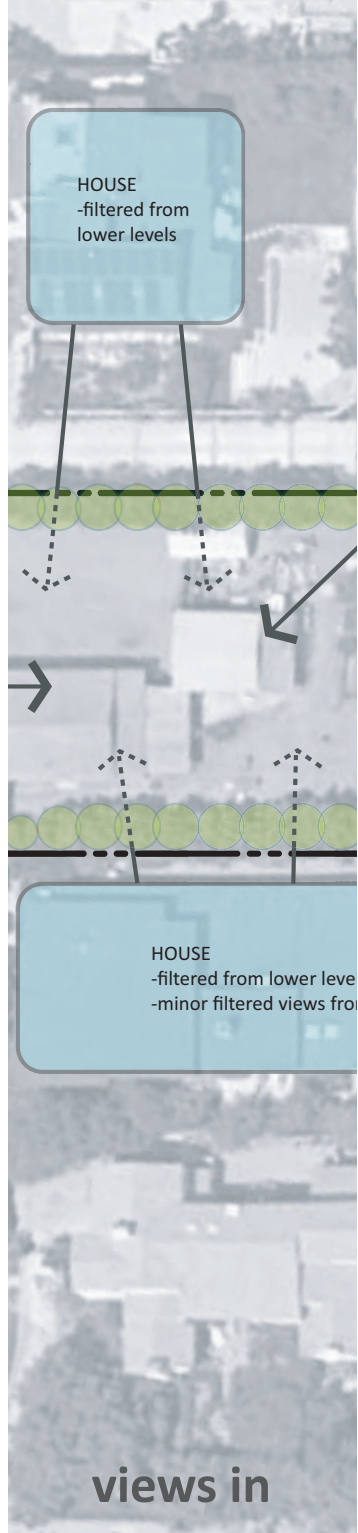
**As-Built**

In cases where the project is modifying or adding to an existing building it is necessary to document the existing conditions. Generation of these documents occurs within the Pre-design or Schematic Design phase, depending on the project. Previously permitted drawings and surveys may be available from the owner or local

municipality. These are often a helpful reference, but in most cases we still go on site to verify measurements and generate a digital model of the existing structure.



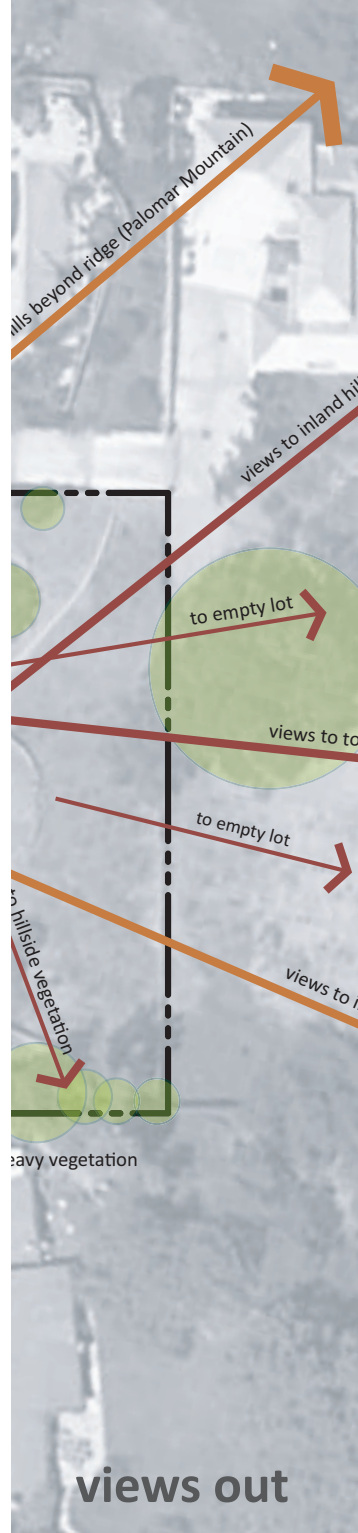
solar access



views in



wind



views out



2. Schematic Design

The Schematic Design phase is where the design process truly begins. All the information gathered in the Pre-design phase informs the process of putting ideas down on paper and into models at a specific scale. This is an exciting phase of work since the project moves rapidly from general ideas to specific forms.

Process

The first step we often take in the design process is to generate a number of preliminary options or variations on a primary option for the client to consider. From there, the design process continues as an iterative pattern (one iteration after another):

design → discuss → design → discuss

Working with multiple options early helps sort out the pros and cons of various proposals. During this process the program is refined and specific relationships are more firmly established. Negotiating between “requirements” and “desires” is often part of

the refinement process as aspects of the program rub up against one another. The end of this process is marked by the selection of a primary design option from which the following phases of work will advance. At this point we’ve defined the overall design concept and an aesthetic direction for the project.

Deliverables

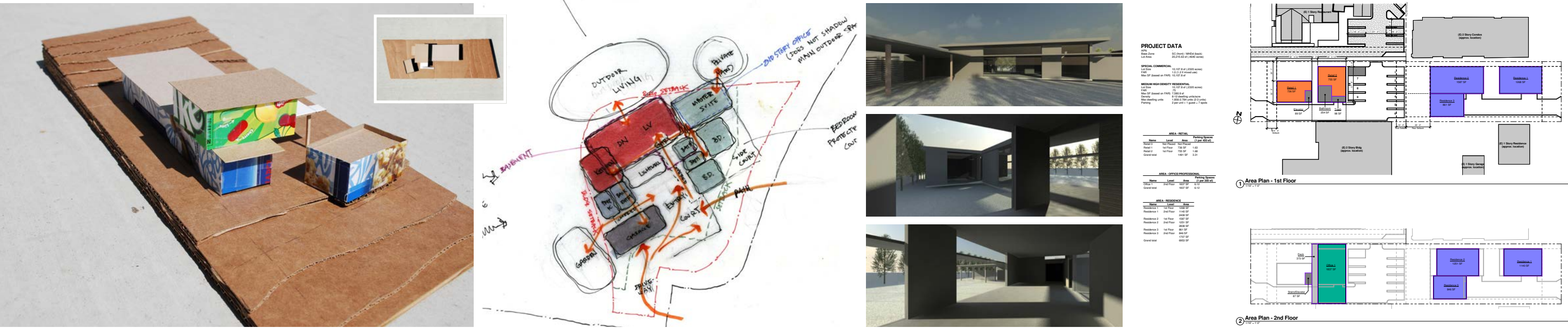
Models:

We work with both physical and digital models. These are particularly helpful in understanding the spatial nature of the project. Physical models are great because you can pick them up – they have a true physical nature. Digital

models are important because you can “walk” through them virtually, experiencing the spaces in a way similar to moving through an actual building. We generate still images or “renderings” from this model as well.

Drawings:

Drawings are the most basic means by which we communicate the design of a project. Specific types of drawings called plans, elevations and sections are what people most often associate with an architect’s work. These documents precisely show information such as where the building is located on the site, relative building heights and the location of rooms.



### 3. Design Development

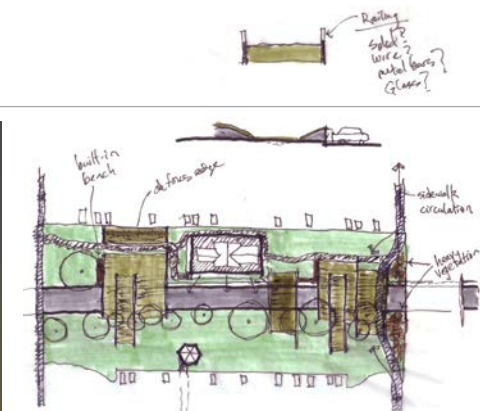
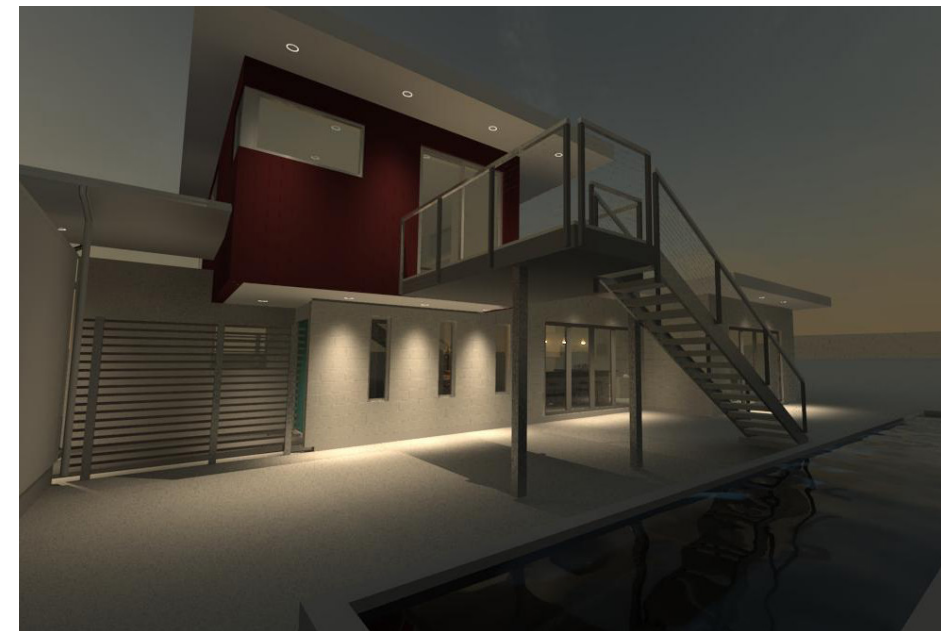
During the Design Development phase the iterative process continues with a focus on refining all aspects of the project. Conceptual ideas from the Schematic Design phase are pushed forward and coordinated in greater detail.

#### Process

Now that the primary design direction has been chosen, the focus shifts to further development of the various parts of the project. Spaces are further refined on a room by room basis including furniture layout and built-in cabinet locations. Materials are selected. Structural systems are chosen. General energy management strategies are fleshed out with specific systems. Window and door locations are finalized and refined to include operation type. Daylighting strategies are integrated with interior and exterior lighting layouts.

As all of these aspects of the project develop it is our responsibility to make sure that every system works together. Consultants are often involved during this stage of the design, providing expertise in their specific areas of work. See the *Consultants* section for more information on cross-disciplinary coordination.

The end of this particular phase is usually one of the toughest to pinpoint with a specific date because the scope of work often overlaps with the following phase: *Construction Documents*.



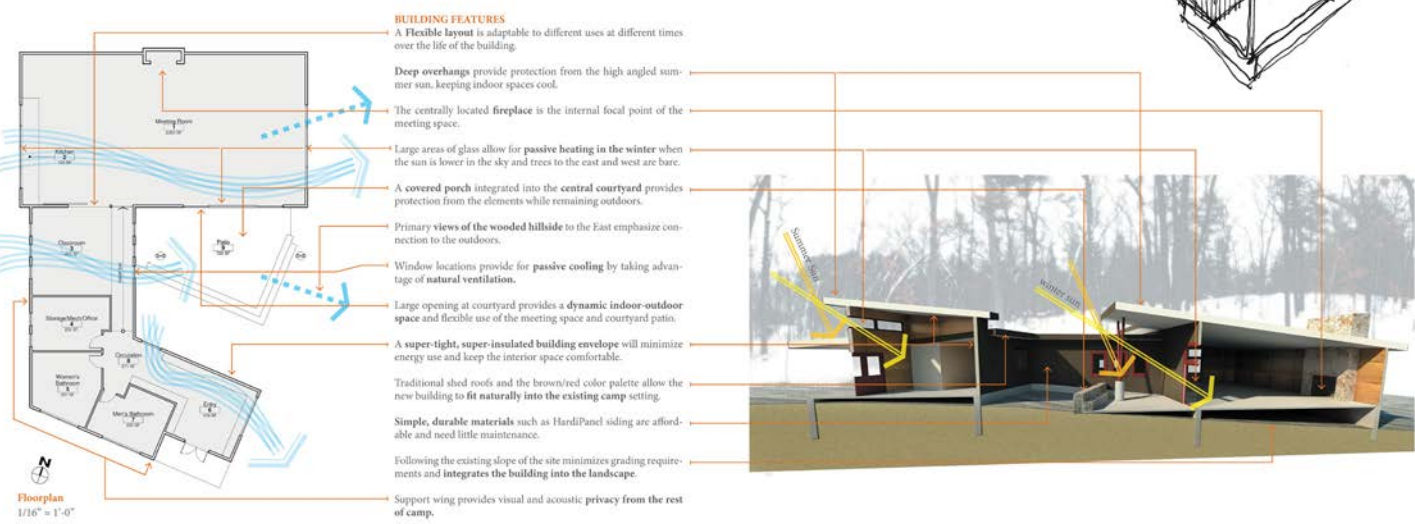
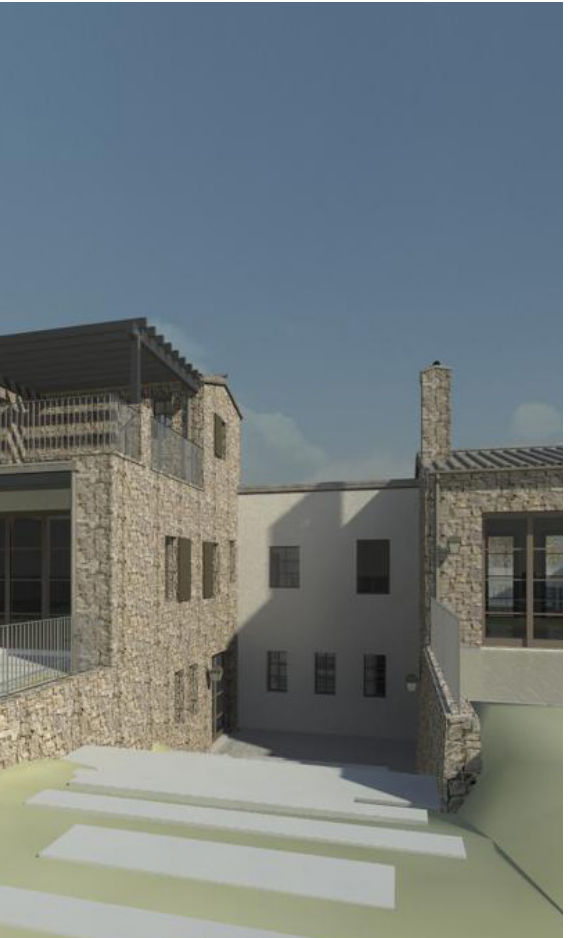
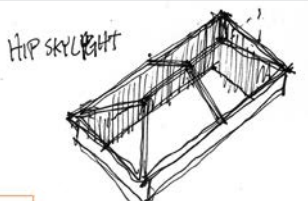
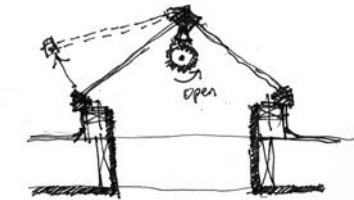


Deliverables

Models:  
Development of the digital model continues. As detail is added the experience communicated by walkthroughs and renderings becomes richer and more closely reflects the reality of what will actually be built.

Drawings:  
Technical information is added to the drawings in keeping with the design process. Enlarged plans, sections at specific locations and interior elevations may be added to the drawing set in keeping with the nature of the project.

Specifications:  
Specifications are written documents describing the project's materials and systems. Preliminary sections of this document may be assembled during the Design Development phase depending of the type of project.



## 4. Construction Documents

During the Construction Document phase final drawings and specifications are developed which describe the technical nature of the construction in such a way that it can be permitted and built.

## Process

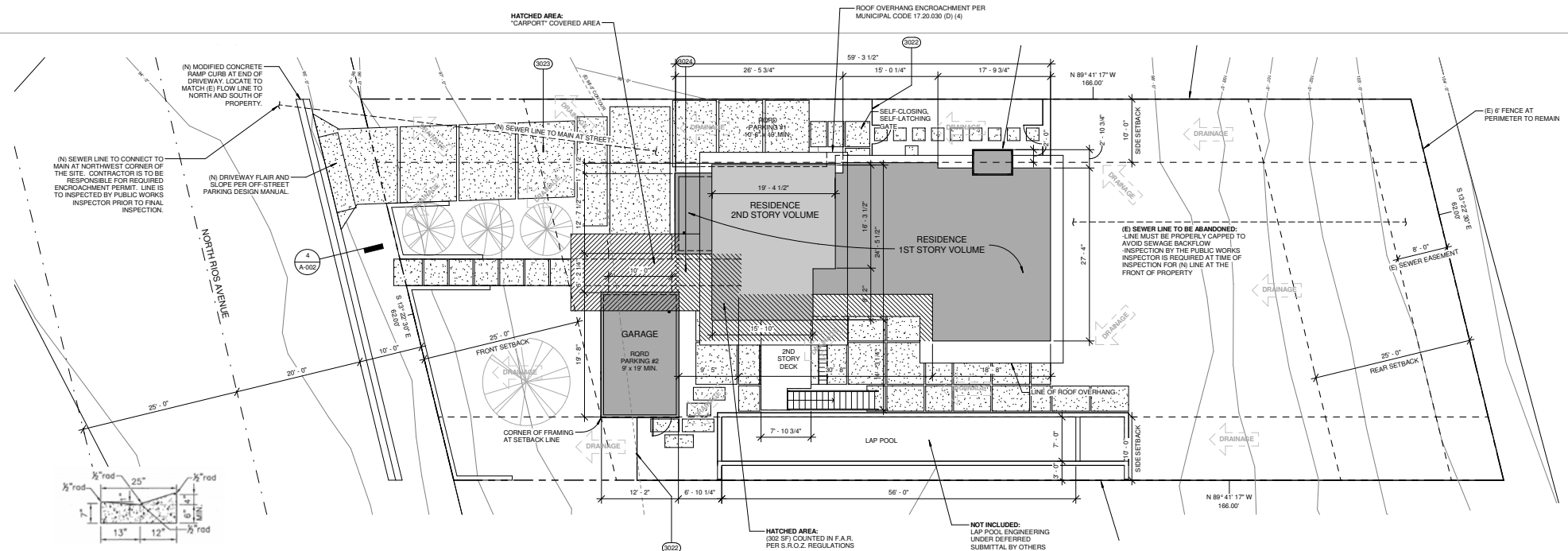
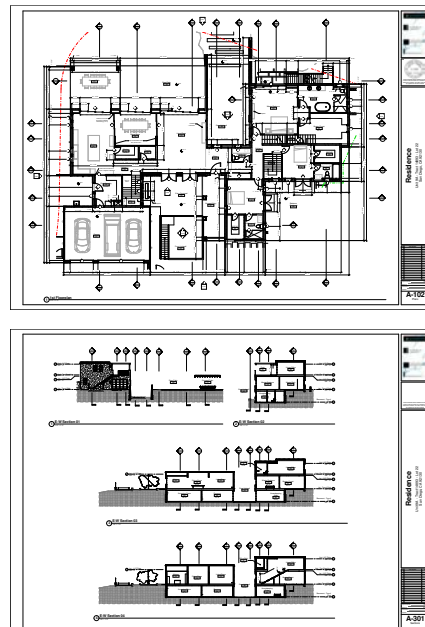
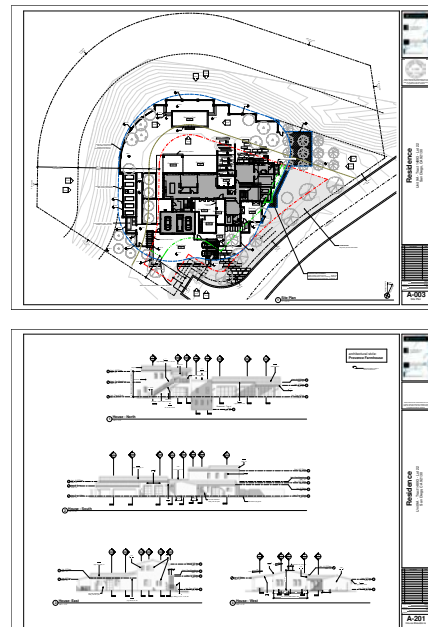
The primary focus of the Construction Document phase is technical in nature. The client is often less involved in the specifics of this process since most of the big-picture design decisions have already been made. We continue to work with the rest of the design team to assemble drawings and specifications that describe the project in great detail. The end of this process is marked by the completion of documents for two primary purposes: permitting and construction.

### Permit Set

There are often multiple agencies which must approve the project before construction can commence. At times, one approval may be contingent on another. The time it takes to navigate this process will vary based on the project's complexity and the nature of applicable regulations. Public review processes can be particularly time-consuming.

The drawings that have been in development throughout all previous

phases of design are now organized in such a way that the project demonstrates compliance with all applicable building codes and local regulations. Permit fees are usually required in association with each agency's review process. Some information, such as furniture layout and interior finishes, may be left out of this set for clarity. Renderings and other visual documentation exported from the model are often critical for clear communication during the approval process.



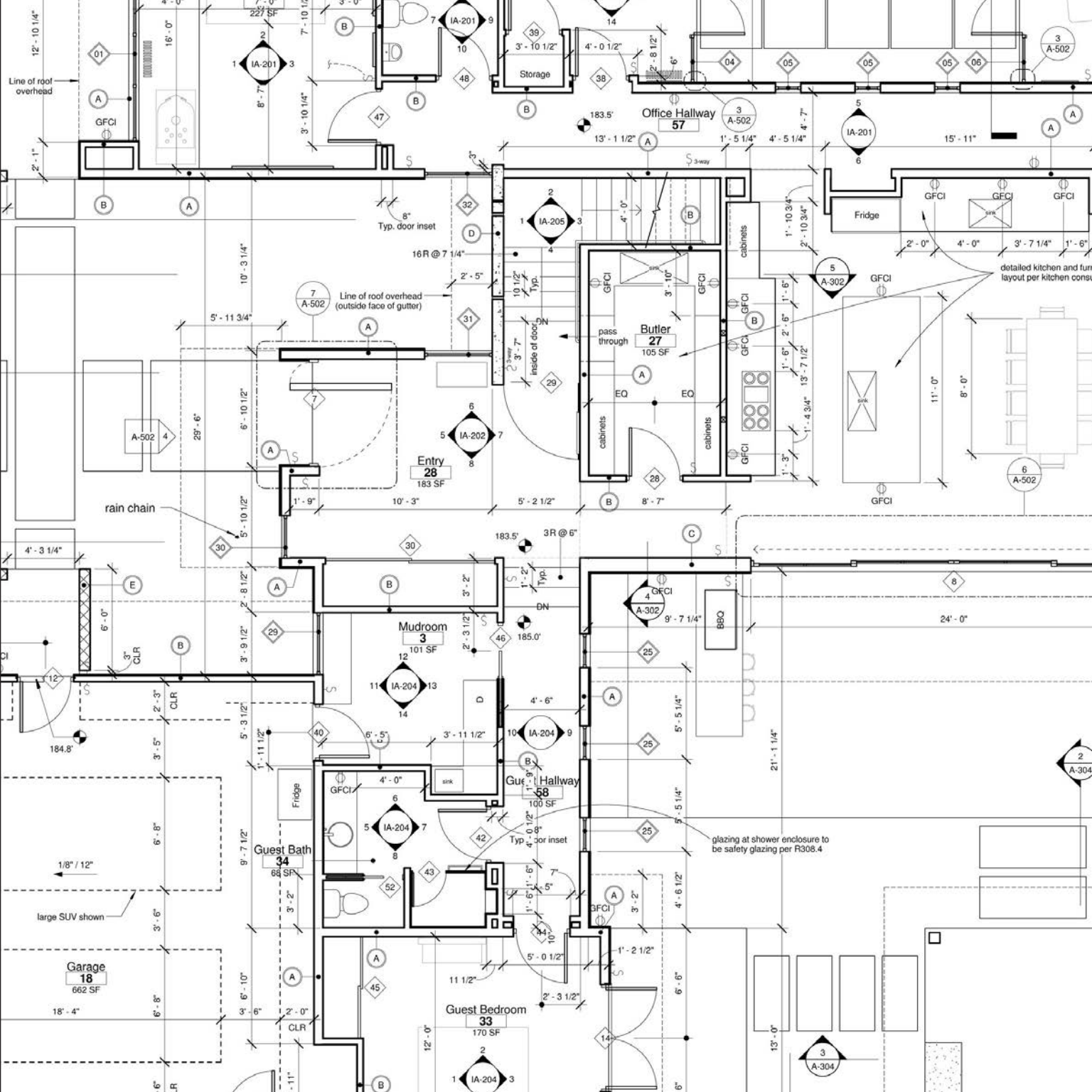


Construction Set

The construction set contains all the information found in the permit set. It also contains additional information that is essential for the construction of the building, but may not be required for permit processing. Because of this, the final details of the construction set can often be completed concurrent with permit processing. The amount of additional information in a construction set as compared to the permit set will vary based on the scope of work.

Design Review Boards

In some locations a special review of a project’s design is required. This is most commonly found in areas where homeowners associations or local planning groups govern aspects of the project’s appearance such as color, materials and architectural style. The individuals on these boards are often not design professionals. In order to clearly communicate to this audience we often generate a specific set of drawings and rendering that clearly address the issues in question.





5. Contractor Selection

Most projects are built under the direction of a general contractor. The goal of this phase of work is to come to a contractual agreement for how the project will be built.

Process

There are numerous ways to get a project built. In most cases a general contractor is involved, but for some small jobs an owner may choose to manage the sub-contractors directly. This is commonly referred to as the “owner-builder” method. For more complex projects a general contractor is typically desired. In this case, there are two main avenues for selecting the general contractor and establishing a contract: bidding and negotiation.

Bidding

The bidding process involves multiple general contractors giving a price to build the project based on an identical

set of plans and specifications. Once bids are received, we can analyze the bids and help the owner select one of the general contractors to do the work. At this point a legal agreement is established between the owner and general contractor.

Negotiation

A negotiation process starts with a single general contractor that the owner has selected. This selection is often based on an existing relationship, rave review or interview process. The owner and general contractor review the project and establish a contract.

The options described above are the two traditional routes that can be taken. Within these two there are many possible variations/combinations that we can assist in considering. The process of selecting a general contractor can occur during any of the previous design phases, but we often recommend involving a general contractor earlier rather than later. In this way, they become a more integral member of the design team, aiding in decisions during the design process – particularly as they relate to time-line and budget.

PROJECT TIMELINE

| DATE (week of)         | 10/16/2010                                      | 10/23/2010   | 10/30/2010                    | 11/6/2010  | 11/13/2010  | 11/20/2010   | 11/27/2010 | 12/4/2010 | 12/11/2010   | 12/18/2010 | 12/25/2010 | 1/1/2011 | 1/8/2011 | 1/15/2011                            | 1/22/2011   | 1/29/2011                          | 2/5/2011 | 2/12/2011                                | 2/19/2011   |                    |
|------------------------|---|--|-------------------------------|--|---|--|------------|-----------|--|------------|------------|----------|----------|--------------------------------------|---|------------------------------------|----------|--|-------------|--------------------|
| BENCHMARK              | project out to bid (DD phase)                   |  | bids due Monday, October 31st | extend bid deadline to Monday, Nov 7th                       | final contractor selection, planning submittal                          |  |            |           | planning review complete                                       |            |            |          |          | council meeting (approval?)          | building dept and Coastal submittal                   |                                    |          | building department and Coastal approval | bldg permit |                    |
| JLC Architecture       | send to potential contractors                   | coordinate w/ civil  |                               | bid analysis support   | submit plans, admin w/ city   | respond to city comments, make revisions as required |            |           | complete construction documents, coordinate w/ all consultants |            |            |          |          | admin w/ city, submit full plan sets | respond to city comments, make revisions as required  |                                    |          | admin w/ city                            |             |                    |
| Client                 |   |  |                               | analyze bid submittals, confirm project budget               | pay fees  | ongoing design process, meetings are required        |            |           |  |            |            |          |          |                                      | pay more fees   | update as needed on permit process |          | even more fees                           |             |                    |
| Coastal Land Solutions | confirm city requirements for our project scope | prepare documents for planning submittal as required                         |                               |  | provide plans for submittal   | respond to city comments, make revisions as required |            |           | complete construction documents                                |            |            |          |          |                                      | respond to city comments, make revisions as required  |                                    |          |  |             |                    |
| Structural Engineer    |   |  |                               |  |   |  |            |           | complete construction documents                                |            |            |          |          |                                      | respond to city comments, make revisions as required  |                                    |          |  |             |                    |
| Energy Consultant      |   |  |                               |  |   |  |            |           | complete construction documents                                |            |            |          |          |                                      | respond to city comments, make revisions as required  |                                    |          |  |             |                    |
| Contractor (TBD)       | provide bid, site visit                         |  |                               | answer any questions, provide clarification on bid submittal | assist in complete construction documents, cost control, detailing, etc |  |            |           |  |            |            |          |          |                                      |   |                                    |          | info for permit, sign forms, etc         |             | begin construction |
| Soils Engineer         | confirm city requirement for remodel            | complete soils report, provide information to structural and civil engineers |                               |  |   |  |            |           |  |            |            |          |          |                                      | respond to city comments, provide support as required |                                    |          |  |             |                    |

| BID FORMAT              |        | UNIT COST | COST   | ALTERNATE | NOTES |
|-------------------------|--------|-----------|--------|-----------|-------|
| 1. General Construction | 11,200 | 1,400.00  | 15,600 |           |       |
| 2. Foundation           | 1,200  | 1,200.00  | 1,200  |           |       |
| 3. Framing              | 1,200  | 1,200.00  | 1,200  |           |       |
| 4. Roofing              | 1,200  | 1,200.00  | 1,200  |           |       |
| 5. Siding               | 1,200  | 1,200.00  | 1,200  |           |       |
| 6. Windows & Doors      | 1,200  | 1,200.00  | 1,200  |           |       |
| 7. Interior Finishes    | 1,200  | 1,200.00  | 1,200  |           |       |
| 8. Exterior Finishes    | 1,200  | 1,200.00  | 1,200  |           |       |
| 9. Landscaping          | 1,200  | 1,200.00  | 1,200  |           |       |
| 10. Miscellaneous       | 1,200  | 1,200.00  | 1,200  |           |       |
| 11. Total Construction  | 11,200 | 1,400.00  | 15,600 |           |       |
| 12. Foundation          | 1,200  | 1,200.00  | 1,200  |           |       |
| 13. Framing             | 1,200  | 1,200.00  | 1,200  |           |       |
| 14. Roofing             | 1,200  | 1,200.00  | 1,200  |           |       |
| 15. Siding              | 1,200  | 1,200.00  | 1,200  |           |       |
| 16. Windows & Doors     | 1,200  | 1,200.00  | 1,200  |           |       |
| 17. Interior Finishes   | 1,200  | 1,200.00  | 1,200  |           |       |
| 18. Exterior Finishes   | 1,200  | 1,200.00  | 1,200  |           |       |
| 19. Landscaping         | 1,200  | 1,200.00  | 1,200  |           |       |
| 20. Miscellaneous       | 1,200  | 1,200.00  | 1,200  |           |       |
| 21. Total Construction  | 11,200 | 1,400.00  | 15,600 |           |       |
| 22. Foundation          | 1,200  | 1,200.00  | 1,200  |           |       |
| 23. Framing             | 1,200  | 1,200.00  | 1,200  |           |       |
| 24. Roofing             | 1,200  | 1,200.00  | 1,200  |           |       |
| 25. Siding              | 1,200  | 1,200.00  | 1,200  |           |       |
| 26. Windows & Doors     | 1,200  | 1,200.00  | 1,200  |           |       |
| 27. Interior Finishes   | 1,200  | 1,200.00  | 1,200  |           |       |
| 28. Exterior Finishes   | 1,200  | 1,200.00  | 1,200  |           |       |
| 29. Landscaping         | 1,200  | 1,200.00  | 1,200  |           |       |
| 30. Miscellaneous       | 1,200  | 1,200.00  | 1,200  |           |       |
| 31. Total Construction  | 11,200 | 1,400.00  | 15,600 |           |       |
| 32. Foundation          | 1,200  | 1,200.00  | 1,200  |           |       |
| 33. Framing             | 1,200  | 1,200.00  | 1,200  |           |       |
| 34. Roofing             | 1,200  | 1,200.00  | 1,200  |           |       |
| 35. Siding              | 1,200  | 1,200.00  | 1,200  |           |       |
| 36. Windows & Doors     | 1,200  | 1,200.00  | 1,200  |           |       |
| 37. Interior Finishes   | 1,200  | 1,200.00  | 1,200  |           |       |
| 38. Exterior Finishes   | 1,200  | 1,200.00  | 1,200  |           |       |
| 39. Landscaping         | 1,200  | 1,200.00  | 1,200  |           |       |
| 40. Miscellaneous       | 1,200  | 1,200.00  | 1,200  |           |       |
| 41. Total Construction  | 11,200 | 1,400.00  | 15,600 |           |       |
| 42. Foundation          | 1,200  | 1,200.00  | 1,200  |           |       |
| 43. Framing             | 1,200  | 1,200.00  | 1,200  |           |       |
| 44. Roofing             | 1,200  | 1,200.00  | 1,200  |           |       |
| 45. Siding              | 1,200  | 1,200.00  | 1,200  |           |       |
| 46. Windows & Doors     | 1,200  | 1,200.00  | 1,200  |           |       |
| 47. Interior Finishes   | 1,200  | 1,200.00  | 1,200  |           |       |
| 48. Exterior Finishes   | 1,200  | 1,200.00  | 1,200  |           |       |
| 49. Landscaping         | 1,200  | 1,200.00  | 1,200  |           |       |
| 50. Miscellaneous       | 1,200  | 1,200.00  | 1,200  |           |       |
| 51. Total Construction  | 11,200 | 1,400.00  | 15,600 |           |       |
| 52. Foundation          | 1,200  | 1,200.00  | 1,200  |           |       |
| 53. Framing             | 1,200  | 1,200.00  | 1,200  |           |       |
| 54. Roofing             | 1,200  | 1,200.00  | 1,200  |           |       |
| 55. Siding              | 1,200  | 1,200.00  | 1,200  |           |       |
| 56. Windows & Doors     | 1,200  | 1,200.00  | 1,200  |           |       |
| 57. Interior Finishes   | 1,200  | 1,200.00  | 1,200  |           |       |
| 58. Exterior Finishes   | 1,200  | 1,200.00  | 1,200  |           |       |
| 59. Landscaping         | 1,200  | 1,200.00  | 1,200  |           |       |
| 60. Miscellaneous       | 1,200  | 1,200.00  | 1,200  |           |       |
| 61. Total Construction  | 11,200 | 1,400.00  | 15,600 |           |       |
| 62. Foundation          | 1,200  | 1,200.00  | 1,200  |           |       |
| 63. Framing             | 1,200  | 1,200.00  | 1,200  |           |       |
| 64. Roofing             | 1,200  | 1,200.00  | 1,200  |           |       |
| 65. Siding              | 1,200  | 1,200.00  | 1,200  |           |       |
| 66. Windows & Doors     | 1,200  | 1,200.00  | 1,200  |           |       |
| 67. Interior Finishes   | 1,200  | 1,200.00  | 1,200  |           |       |
| 68. Exterior Finishes   | 1,200  | 1,200.00  | 1,200  |           |       |
| 69. Landscaping         | 1,200  | 1,200.00  | 1,200  |           |       |
| 70. Miscellaneous       | 1,200  | 1,200.00  | 1,200  |           |       |
| 71. Total Construction  | 11,200 | 1,400.00  | 15,600 |           |       |
| 72. Foundation          | 1,200  | 1,200.00  | 1,200  |           |       |
| 73. Framing             | 1,200  | 1,200.00  | 1,200  |           |       |
| 74. Roofing             | 1,200  | 1,200.00  | 1,200  |           |       |
| 75. Siding              | 1,200  | 1,200.00  | 1,200  |           |       |
| 76. Windows & Doors     | 1,200  | 1,200.00  | 1,200  |           |       |
| 77. Interior Finishes   | 1,200  | 1,200.00  | 1,200  |           |       |
| 78. Exterior Finishes   | 1,200  | 1,200.00  | 1,200  |           |       |
| 79. Landscaping         | 1,200  | 1,200.00  | 1,200  |           |       |
| 80. Miscellaneous       | 1,200  | 1,200.00  | 1,200  |           |       |
| 81. Total Construction  | 11,200 | 1,400.00  | 15,600 |           |       |
| 82. Foundation          | 1,200  | 1,200.00  | 1,200  |           |       |
| 83. Framing             | 1,200  | 1,200.00  | 1,200  |           |       |
| 84. Roofing             | 1,200  | 1,200.00  | 1,200  |           |       |
| 85. Siding              | 1,200  | 1,200.00  | 1,200  |           |       |
| 86. Windows & Doors     | 1,200  | 1,200.00  | 1,200  |           |       |
| 87. Interior Finishes   | 1,200  | 1,200.00  | 1,200  |           |       |
| 88. Exterior Finishes   | 1,200  | 1,200.00  | 1,200  |           |       |
| 89. Landscaping         | 1,200  | 1,200.00  | 1,200  |           |       |
| 90. Miscellaneous       | 1,200  | 1,200.00  | 1,200  |           |       |
| 91. Total Construction  | 11,200 | 1,400.00  | 15,600 |           |       |
| 92. Foundation          | 1,200  | 1,200.00  | 1,200  |           |       |
| 93. Framing             | 1,200  | 1,200.00  | 1,200  |           |       |
| 94. Roofing             | 1,200  | 1,200.00  | 1,200  |           |       |
| 95. Siding              | 1,200  | 1,200.00  | 1,200  |           |       |
| 96. Windows & Doors     | 1,200  | 1,200.00  | 1,200  |           |       |
| 97. Interior Finishes   | 1,200  | 1,200.00  | 1,200  |           |       |
| 98. Exterior Finishes   | 1,200  | 1,200.00  | 1,200  |           |       |
| 99. Landscaping         | 1,200  | 1,200.00  | 1,200  |           |       |
| 100. Miscellaneous      | 1,200  | 1,200.00  | 1,200  |           |       |
| 101. Total Construction | 11,200 | 1,400.00  | 15,600 |           |       |
| 102. Foundation         | 1,200  | 1,200.00  | 1,200  |           |       |
| 103. Framing            | 1,200  | 1,200.00  | 1,200  |           |       |
| 104. Roofing            | 1,200  | 1,200.00  | 1,200  |           |       |
| 105. Siding             | 1,200  | 1,200.00  | 1,200  |           |       |
| 106. Windows & Doors    | 1,200  | 1,200.00  | 1,200  |           |       |
| 107. Interior Finishes  | 1,200  | 1,200.00  | 1,200  |           |       |
| 108. Exterior Finishes  | 1,200  | 1,200.00  | 1,200  |           |       |
| 109. Landscaping        | 1,200  | 1,200.00  | 1,200  |           |       |
| 110. Miscellaneous      | 1,200  | 1,200.00  | 1,200  |           |       |
| 111. Total Construction | 11,200 | 1,400.00  | 15,600 |           |       |
| 112. Foundation         | 1,200  | 1,200.00  | 1,200  |           |       |
| 113. Framing            | 1,200  | 1,200.00  | 1,200  |           |       |
| 114. Roofing            | 1,200  | 1,200.00  | 1,200  |           |       |
| 115. Siding             | 1,200  | 1,200.00  | 1,200  |           |       |
| 116. Windows & Doors    | 1,200  | 1,200.00  | 1,200  |           |       |
| 117. Interior Finishes  | 1,200  | 1,200.00  | 1,200  |           |       |
| 118. Exterior Finishes  | 1,200  | 1,200.00  | 1,200  |           |       |
| 119. Landscaping        | 1,200  | 1,200.00  | 1,200  |           |       |
| 120. Miscellaneous      | 1,200  | 1,200.00  | 1,200  |           |       |
| 121. Total Construction | 11,200 | 1,400.00  | 15,600 |           |       |
| 122. Foundation         | 1,200  | 1,200.00  | 1,200  |           |       |
| 123. Framing            | 1,200  | 1,200.00  | 1,200  |           |       |
| 124. Roofing            | 1,200  | 1,200.00  | 1,200  |           |       |
| 125. Siding             | 1,200  | 1,200.00  | 1,200  |           |       |
| 126. Windows & Doors    | 1,200  | 1,200.00  | 1,200  |           |       |
| 127. Interior Finishes  | 1,200  | 1,200.00  | 1,200  |           |       |
| 128. Exterior Finishes  | 1,200  | 1,200.00  | 1,200  |           |       |
| 129. Landscaping        | 1,200  | 1,200.00  | 1,200  |           |       |
| 130. Miscellaneous      | 1,200  | 1,200.00  | 1,200  |           |       |
| 131. Total Construction | 11,200 | 1,400.00  | 15,600 |           |       |
| 132. Foundation         | 1,200  | 1,200.00  | 1,200  |           |       |
| 133. Framing            | 1,200  | 1,200.00  | 1,200  |           |       |
| 134. Roofing            | 1,200  | 1,200.00  | 1,200  |           |       |
| 135. Siding             | 1,200  | 1,200.00  | 1,200  |           |       |
| 136. Windows & Doors    | 1,200  | 1,200.00  | 1,200  |           |       |
| 137. Interior Finishes  | 1,200  | 1,200.00  | 1,200  |           |       |
| 138. Exterior Finishes  | 1,200  | 1,200.00  | 1,200  |           |       |
| 139. Landscaping        | 1,200  | 1,200.00  | 1,200  |           |       |
| 140. Miscellaneous      | 1,200  | 1,200.00  | 1,200  |           |       |
| 141. Total Construction | 11,200 | 1,400.00  | 15,600 |           |       |
| 142. Foundation         | 1,200  | 1,200.00  | 1,200  |           |       |
| 143. Framing            | 1,200  | 1,200.00  | 1,200  |           |       |
| 144. Roofing            | 1,200  | 1,200.00  | 1,200  |           |       |
| 145. Siding             | 1,200  | 1,200.00  | 1,200  |           |       |
| 146. Windows & Doors    | 1,200  | 1,200.00  | 1,200  |           |       |
| 147. Interior Finishes  | 1,200  | 1,200.00  | 1,200  |           |       |
| 148. Exterior Finishes  | 1,200  | 1,200.00  | 1,200  |           |       |
| 149. Landscaping        | 1,200  | 1,200.00  | 1,200  |           |       |
| 150. Miscellaneous      | 1,200  | 1,200.00  | 1,200  |           |       |
| 151. Total Construction | 11,200 | 1,400.00  | 15,600 |           |       |
| 152. Foundation         | 1,200  | 1,200.00  | 1,200  |           |       |
| 153. Framing            | 1,200  | 1,200.00  | 1,200  |           |       |
| 154. Roofing            | 1,200  | 1,200.00  | 1,200  |           |       |
| 155. Siding             | 1,200  | 1,200.00  | 1,200  |           |       |
| 156. Windows & Doors    | 1,200  | 1,200.00  | 1,200  |           |       |
| 157. Interior Finishes  | 1,200  | 1,200.00  | 1,200  |           |       |
| 158. Exterior Finishes  | 1,200  | 1,200.00  | 1,200  |           |       |
| 159. Landscaping        | 1,200  | 1,200.00  | 1,200  |           |       |
| 160. Miscellaneous      | 1,200  | 1,200.00  | 1,200  |           |       |
| 161. Total Construction | 11,200 | 1,400.00  | 15,600 |           |       |
| 162. Foundation         | 1,200  | 1,200.00  | 1,200  |           |       |
| 163. Framing            | 1,200  | 1,200.00  | 1,200  |           |       |
| 164. Roofing            | 1,200  | 1,200.00  | 1,200  |           |       |
| 165. Siding             | 1,200  | 1,200.00  | 1,200  |           |       |
| 166. Windows & Doors    | 1,200  | 1,200.00  | 1,200  |           |       |
| 167. Interior Finishes  | 1,200  | 1,200.00  | 1,200  |           |       |
| 168. Exterior Finishes  | 1,200  | 1,200.00  | 1,200  |           |       |
| 169. Landscaping        | 1,200  | 1,200.00  | 1,200  |           |       |
| 170. Miscellaneous      | 1,200  | 1,200.00  | 1,200  |           |       |
| 171. Total Construction | 11,200 | 1,400.00  | 15,600 |           |       |
| 172. Foundation         | 1,200  | 1,200.00  | 1,200  |           |       |
| 173. Framing            | 1,200  | 1,200.00  | 1,200  |           |       |
| 174. Roofing            | 1,200  | 1,200.00  | 1,200  |           |       |
| 175. Siding             | 1,200  | 1,200.00  | 1,200  |           |       |
| 176. Windows & Doors    | 1,200  | 1,200.00  | 1,200  |           |       |

## 6. Construction Administration

Construction is complicated. During the building process we often remain involved, representing the interests of the owner throughout construction.

### Process

Questions will come up. Even the best set of construction documents will result in some questions. Our involvement in this phase of work varies greatly from project to project. Generally speaking, the more complex the project the more important it will be for us to stay involved. Other factors include how much personal involvement the owner wants to dedicate to the project, their general comfort level with construction and the relationship with the general contractor.

Issues covered under this phase of work would include 1) Assuring that the design intent is preserved 2) Handling Requests for Information (RFIs) and Change Orders 3) Management of Fund Control or other financial control mechanisms.









## Consultants

Consultants bring specific skills that are critical to the success of a project. The more complex the project the more likely it is that additional consultants will be needed.

### Process

Below is a timeline showing where various consultants' involvement typically occurs. Since every project is unique, consultant involvement will vary and not every type of consultant listed below will be necessary on a given project. We have working relationships with professionals in each field and can make recommendations for who to involve based on project needs. The following are the consultant categories that we most frequently involve in our projects and a brief description of the services they provide.

### Surveyor

A surveyor provides us with precise information about the site including the locations of items such as property lines, existing structures, easements and topographic contours.

### Geotechnical Engineer

The most common deliverable from a geotechnical engineer is a soil report. Information in this report is commonly used by civil engineers for managing stormwater and by structural engineers for foundation design.

### Landscape Architect

Plant selection and irrigation design are the two areas of expertise for which we commonly rely on a landscape architect. Hardscape, especially as it most directly relates to the building, is often a collaborative effort.

### Civil Engineer

The civil engineer precisely handles the grading and stormwater management of a site based on our overall design intent. In recent years, greater concern over stormwater management in recent years has increased the importance of this consultant.



Structural Engineer

The technical design of the building’s structural systems is handled by the structural engineer. Calculations are undertaken to ensure the building will not only stand up, but withstand horizontal forces such as wind and earthquakes. Early involvement of a structural engineer is most important in cases where the structural system is more complex and/or integral to the overall design.

MEP Design

MEP is short for “mechanical, electrical and plumbing.” The design of these systems in a larger project is

handled by a licensed engineer. In smaller projects, especially single-family homes, plans are usually not required and the design is handled by the sub-contractor doing the work.

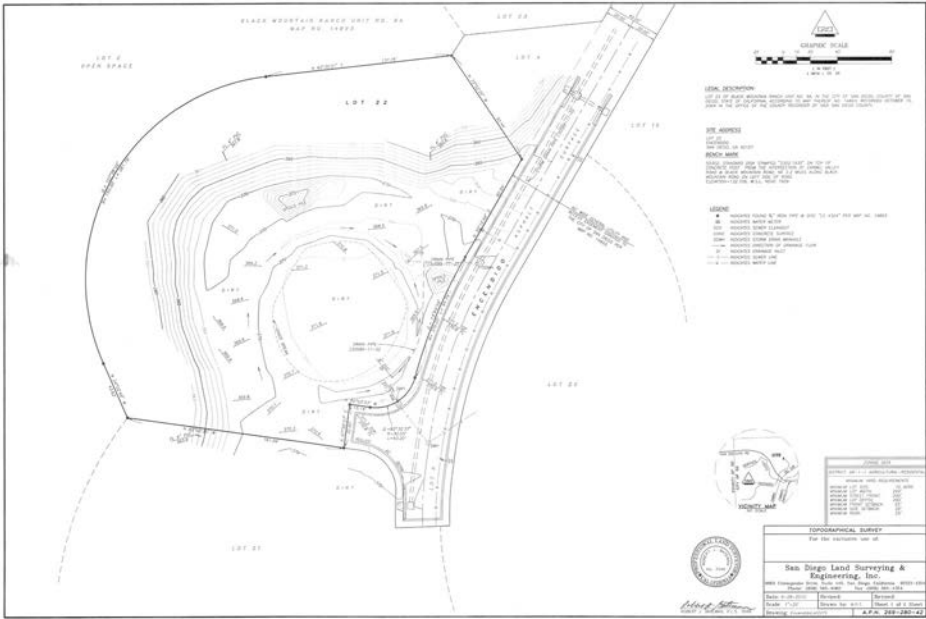
Energy Consultant

Every building needs to demonstrate basic compliance with the energy code. The calculations required by California’s energy code are often referred to as “Title-24.” For some projects, especially those with high energy efficiency requirements, we employ more sophisticated energy modeling. This process helps us to make better decisions about everything from insu-

lation levels to what kind of glass to use to the sizing of mechanical equipment.

Kitchen Consultant

Commercial kitchens are one of the most technical aspects of any project that we design. When designing a restaurant the kitchen consultant provides precise drawings for all aspects of the kitchen layout as well as specifications for all equipment. Coordination between the kitchen consultant and the MEP design is critical as well.



# HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY

|              |             |            |           |
|--------------|-------------|------------|-----------|
| Project Name | Residence   | Date       | 7/19/2011 |
| System Name  | HVAC System | Floor Area | 5,907     |

| ENGINEERING CHECKS                         |  | SYSTEM LOAD                  |  | COOL COOLING PEAK |          | COIL HTG. PEAK |     |          |
|--|--|------------------------------|--|-------------------|----------|----------------|-----|----------|
| Number of Systems                          |  | Total Room Loads             |  | CFM               | Sensible | Latent         | CFM | Sensible |
| Heating System                             |  | Return Vented Lighting       |  |                   |          |                |     |          |
| Output per System                          |  | Return Air Ducts             |  |                   |          |                |     |          |
| Total Output (Btu/h)                       |  | Return Fan                   |  |                   |          |                |     |          |
| Output (Btu/h)                             |  | Ventilation                  |  |                   |          |                |     |          |
| Cooling System                             |  | Supply Fan                   |  |                   |          |                |     |          |
| Output per System                          |  | Supply Air Ducts             |  |                   |          |                |     |          |
| Total Output (Btu/h)                       |  | TOTAL SYSTEM LOAD            |  |                   |          |                |     |          |
| Output (Btu/h)                             |  |                              |  |                   |          |                |     |          |
| Air System                                 |  | HVAC EQUIPMENT SELECTION     |  |                   |          |                |     |          |
| CFM per System                             |  | Radiant Floor                |  |                   |          |                |     |          |
| Airflow (cfm)                              |  | Total Adjusted System Output |  |                   |          |                |     |          |
| Airflow (cfm/ft²)                          |  | Outside Air (cfm)            |  |                   |          |                |     |          |
| Outside Air (%)                            |  | TIME OF SYSTEM PEAK          |  |                   |          |                |     |          |
| Outside Air (cfm/ft²)                      |  | Aug 3 PM                     |  |                   |          |                |     |          |
| Note: values above given at ARI conditions |  | Jan 1 AM                     |  |                   |          |                |     |          |

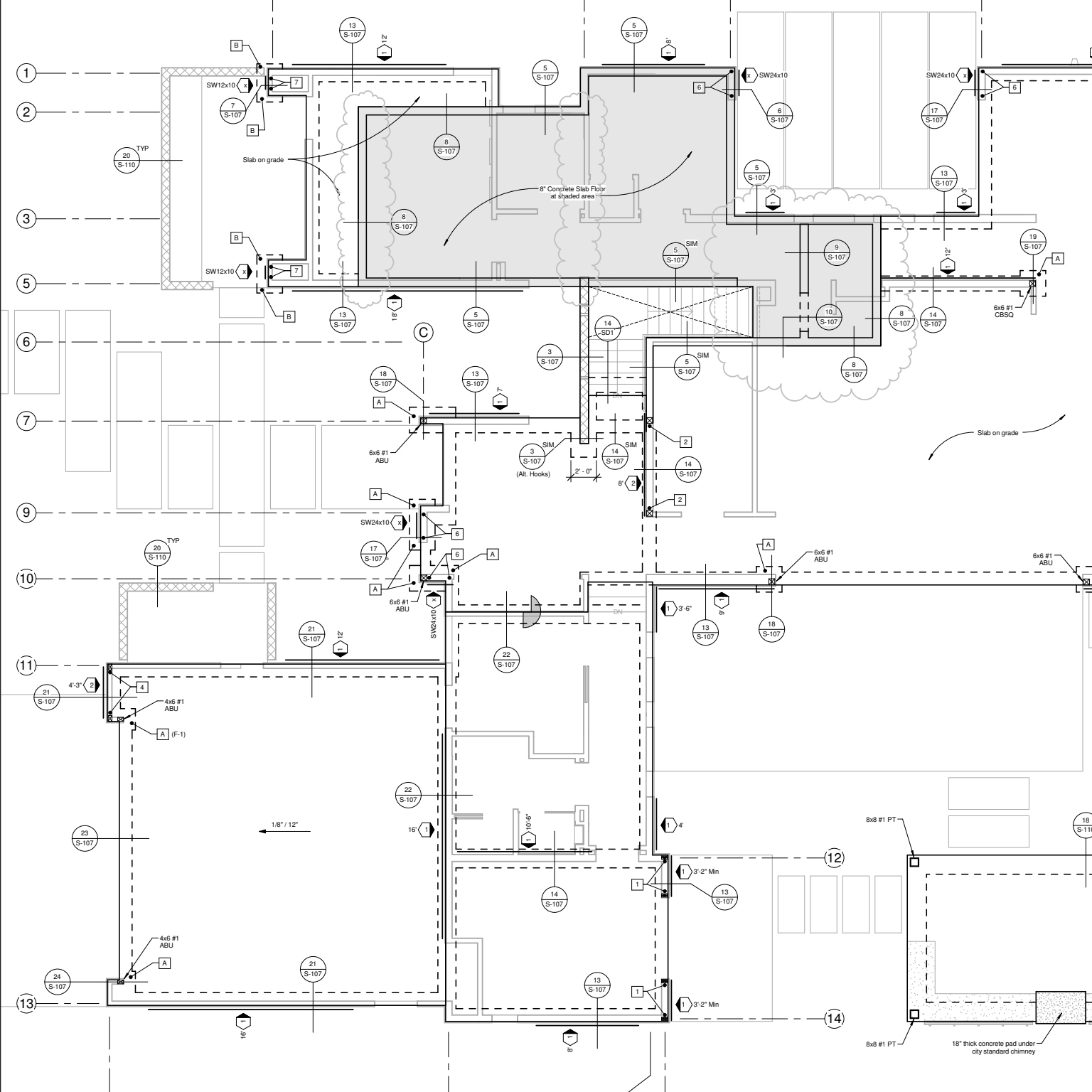
**HEATING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Heating Peak)**

This diagram illustrates the heating process for the HVAC system. It shows the flow of air from outside to the room. The outside air enters at 35°F and 0 cfm. It is then heated by a heating coil, which is shown as a red rectangle. The air then passes through a fan and is distributed to the room. The room air is shown at 70°F and 56/54°F. The heating coil is labeled with a temperature of 105°F. The room is labeled with a temperature of 70°F. The diagram also shows the return air flow from the room back to the heating coil.

**COOLING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Cooling Peak)**

This diagram illustrates the cooling process for the HVAC system. It shows the flow of air from outside to the room. The outside air enters at 79/63°F and 0 cfm. It is then cooled by a cooling coil, which is shown as a blue rectangle. The air then passes through a fan and is distributed to the room. The room air is shown at 78/62°F and 41.0% humidity ratio. The cooling coil is labeled with a temperature of 55/53°F. The room is labeled with a temperature of 78/62°F. The diagram also shows the return air flow from the room back to the cooling coil.

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Hopefully this document has provided some clarity regarding our design and construction process. If you have any further questions or would like to talk about a specific project please don't hesitate to contact us.

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