



Waring Architects, L.L.C.

4300 S. Carrollton Ave.

New Orleans

Louisiana

70119-6822

(504) 861-1011

Typical Phases of Architectural Services **(Along with Description of Basic Services Provided)**

- I) **Schematic Design:**
(Programming Services, Site Analysis, Regulatory Analysis, Preliminary Design)

- II) **Design Development:**
(Floor Plans, Exterior Elevations, Site Plan, Scope of Work, Preliminary Pricing)

- III) **Contract Documents:**
(Value Engineering and Completed Working Drawings and Specifications)

- IV) **Bid Administration:**
(Assistance with Final Construction Contract Negotiation & Signing)

- V) **Contract Administration:**
(Certification of Pmts., Change Order Admin., Punchlisting, Project Closeout)

By:

Peter A. Waring, Architect, NCARB, M.Arch., MBA
Principal, Waring Architects

Schematic Design:

Programming Services:

Programming Services is the phase in which you come to understand the fundamental nature of the problem/project placed in front of us. Critical to this process⁶ is the understanding that we are working to solve the client's problem from a service standpoint. What that means is: we are **not** working to solve our perception of the client's problem; we are working to solve the client's enlightened understanding of his or her problem. "Enlightened" in this case means we're solving the client's problem as they would solve it themselves if they had the time, the education, the experience, and the insight that we bring to the process.

To do this, we have to immerse ourselves very quickly and effectively into a primary learning process that involves understanding the client's lifestyle, desires, limitations, and perceptions by observing them closely, listening to what they say and do not say, and intuiting that which will bring them the greatest actual and perceived value in the most efficient way.

I call this Peter's modified Golden Rule:

"Do not do unto others as you would have them do unto you, this insults them by making unwarranted assumptions regarding their tastes and desires; rather, do unto others:

As they would have you do unto them."

This step is not the first step but rather a mindset that should continue without stopping throughout the entire design/solution process. "Programming" is the process whereby the designer understands the client's problem from the client's perspective by observing analytically and organizing the situation.

I find that the "Past/Present/Future" Analysis system is helpful in this regard. It works like this:

Past:

It is practically a universal human experience that, at some time in our past, we've occupied, been exposed to, or have seen a building or space that had a specific very individual effect on us. Frequently it was in the house where we grew up, or our grandmother's house, or a friend's house, or wherever. I ask clients to remember a place that made them feel safe and secure, loved, enlightened, impressed, important, and fulfilled.

I point out to them that we, they and I, have the opportunity to elicit and trigger those feelings in the project that we are going to undertake together. I remind the client that they know more

about themselves than I will ever know and that I rely on them to help me in the process of my helping them. Then I ask the client to think about this both now, and in the days and weeks to come in order to bring those insights to my attention and into the project.

Present:

The client's current situation can perhaps best be represented as a machine that has to fulfill certain basic functions day-in and day-out. The designer must work hard to understand the client's day-to-day flows: do they have or do they want to have children?, how many children?, what sex?, how old?, *who* are the children?, what are they interested in?, what do the clients as parents want for their children?, any pets?, *who* are *they*?, relatives?, religion?, who gets up the earliest?, who goes to sleep latest?, do they work out?, what are their hobbies?, how many cars?, what kind?, etc. etc. etc.

This process helps the designer to understand all of the functions that must be addressed & encompassed by the building and the property.

Future:

The one thing of which we can be certain is change. Time passes, trees grow, children grow and move away, we change jobs, we become poor or we make more money, we grow older and thrive or become weak, things wear out, we retire, we change jobs, our dreams are fulfilled in time, we become wiser, tastes change, technology changes, neighborhoods change, these are just a few examples. The wonderful thing about life is that anything is possible. The designer works with the client to understand those things that are most probable and works to create a solution that accommodates and is aware of any anticipatable future developments.

To be effective to the client we must have their trust. To obtain and retain the clients trust they must believe that we hold their best interests first and foremost in our thinking. To effectively fulfill our responsibility to our client's interests we must be able to communicate with them, to teach them, and to inspire them with our inspiration of the proposed solution to their problem.

To this end, a great designer must be a great communicator. He or she must be able to ignite the client with excitement and to empower them to visualize a thing of beauty and elegance that does not yet exist: The Answer; The Solution to the Problem; Their Dream Made Manifest. We must all learn to speak and write as clearly as possible and as inspirationally as possible.

To organize the overall situation of the project/problem, the designer also has to study the larger implications of the problem and any proposed solution options:

Site Analysis:

Site analysis is the process of understanding the entire context of the situation. If the project involves a renovation or an addition, then this process starts with the floor plan as it exists being reproduced precisely in cyberspace and quickly studied from the point of view of both systems technology: (foundation, wood destroying insects, roofing, HVAC, electrical, plumbing, insulation, etc. etc.), as well as plan efficiency: (storage, circulation, room sizes and adjacencies, alignment of elements, opportunities, changing family needs, etc. etc.). This immediate understanding of the building then is projected outward onto the immediate property.

Direct observation and a legal Survey give the designer an understanding of the "meets and bounds" of the property and the man-made improvements thereon, including walls, fences driveways, sidewalks, stepping stones, accessory structures, gardens, lawns, pool, adjacency of neighboring structures, any existing zoning and/or property line encroachments, utility accesses, etc. The designer also needs to understand the natural vegetation on and around the property, the various opportunities for views, where the sun and moon rise and set, the flow of the seasons, how the wind blows, how much rain/snow fall on the site, whether the region suffers from hurricanes, tornadoes, floods, termites, blizzards, earthquakes, locusts, crime, or whatever else and the location's relationship to critical services like municipal water, municipal sewage treatment, municipal electricity, cable TV, telephone lines, maybe even shopping, hospitals, schools, churches, the client's office, or laundry services. Finally, preferably through direct observation (or, if necessary, through videos and photographs-) of the area the designer works to understand the context surrounding the project. The point is to come to grips with the context and to understand everything there is to understand about the physical existence of the inanimate elements in the project.

One of the most important aspects of site design is the Documentation of Existing Conditions. This involves the precise field measurements and entry into the computer of built elements on the site in order to create a computerized model of the building (s) on the site. Detailed interior measurements accurate to the nearest one-quarter inch supplemented with information on ceiling heights, windowsill heights, window heights, diagonal measurements of rooms to determine squareness, detailed exterior measurements, eave heights, floor heights above grade, multiple overall measurements for cross-verification, close direct observation, and detailed digital photography all give the designer adequate information to create this computer cyber-model of the building which the client desires to manipulate, whether by renovation or addition. A mistake in this early phase of the project can impact the project continuously and insidiously, finally erupting in a catastrophic disaster during the Bid Administration or Contract Administration Phase.

Regulatory Analysis:

Another critical aspect of the project that has to be understood thoroughly before any solutions can be realistically contemplated has to do with the underlying laws and regulations which any proposed solution has to accommodate. These range from larger, global legal issues down through federal, state, and local regulatory life safety, and zoning requirements. Individual neighborhoods can have individual "Restrictive Covenants" or "Subdivision Requirements" and we all must be familiar with agencies who regulate appearance. In New Orleans these range from the HDLC (The Historic Districts Landmarks Commission) and the VCC (The Vieux Carre' Commission) to informal, individually appointed but nonetheless empowered groups like Neighborhood Associations and Subdivision Architectural Review Committees and their Design Guidelines.

It is important to understand the regulations themselves along with their exemptions, the agencies who enforce them, the individual departments who have authority over specific aspects of permitting, inspection, and enforcement, as well as the personalities and moods of department heads, their administrators, and individual reviewers and inspectors. We need to completely familiarize ourselves with the process and procedure of each of hundreds of regulatory "services".

Some of these are extremely routine and typical (like Zoning Appeals, State Fire Marshal Appeals, or requests for exemptions from the Board of Building Standards and Appeals) and some of them are rare and obscure (like temporary Mardi Gras balcony supports). Effective designers can help themselves, their organization, and the Client by understanding all of this in the context of the political environment and mood of the community in which they are working or intend to work.

Preliminary Design:

Only when you have a good grip on all of the above are you in a position to begin to develop solutions to the design problem with which you are confronted.

We begin by considering and developing a number of potential solutions only enough to understand as many of their implications as possible. These "implications" must be understood from as many different points of view of practicality as we can think of, ranging from "sticks and stones" technical issues to aesthetic or appearance issues. Finally we can select and recommend either the best of these individual alternatives or the best creative combination of all of them. The design process is not complete until we have arrived at what we believe to be the one best solution and the Client agrees.

"Best" in this sense means the course of action that solves the problem in the most efficient (most simple and fastest), most economical (cheapest *and* most value-building/promoting), most effective (longest lasting and least maintenance intensive), Client-pleasing, and, finally, most enduring and elegant way. In this process, recognize that perfection exists only in Heaven. We must be speedy, efficient *and thorough*.

The key to the Schematic Design process being effectively and efficiently prosecuted is to do all of the above practically simultaneously while still being thorough and responsive and intuitive, or aware of, yet free of preconceived notions. It is ridiculous to think that any of us can do this alone. That is why the effective designer fosters a team approach that includes other staff members, the clients, the contractors, the technical consultants, research, and anything else that can help to give a better perspective to the problem and thereby insight into a better solution to the problem.

Pride keeps us honest and honorable, thorough and effective. Ego is not pride. Ego is perhaps the greatest barrier to effective design there is. Lose yours to be a better designer and to build your pride, effectiveness, professionalism, reputation, and competency.

Design Development:

Floor Plans:

The first tangible product that we create to demonstrate the problem and its solution in its initial manifestation is a packet of drawings called "Design Development Documents" (or "DD Docs" for short). The most important of the tools and representations in this packet is the floor plan (always presented at 1/4" scale); we represent floor plans in two basic forms: the existing conditions floor plan with demolition and the proposed design floor plan showing new construction.

It is absolutely critical that existing conditions floor plans are *perfectly* accurate. This is why the field documentation process for existing conditions is so meticulous and involves diagonal room measurements, careful photography, and multiple overall measurements to allow the drafter to verify and crosscheck for accuracy. We use these for precision design; mis-measurements and errors can be catastrophic. This cannot be overemphasized because an initial error in documenting existing conditions can compound itself across the course of a project and finally manifest during construction in an expensive fiasco for which we alone are legally responsible and financially liable.

The proposed design development floor plans are also absolutely critical since they comprise the most solid, published, and enduring method for us to communicate our initial recommendations to the client. At this early-stage, they can make or break our trust-bond with the client.

Although these documents are hardlined (and ours look better than most other firms' finished working drawings), it is important not to think of them as being final. Their basic function is twofold: first, they are a design tool used to communicate to the client what we're trying to achieve and to allow us all to visualize and creatively develop the problem solution; and second, once they have been finished and have been approved by the client, we use them to accurately express to the contractor/s the basic scope of the

work to enable them to provide us with a realistic preliminary estimate of the cost of the project.

While DD Docs are both accurate and "to scale" they do *not* contain all the information that is required to make them architectural Contract Documents or Working Drawings. They *do* represent enough information to enable the contractor to understand any special structural or technical problems and their proposed solutions and to determine the basic finishes (countertop materials, flooring materials, special ceiling treatments, general level of finish, etc.). We show as much as possible in order to allow the Contractor to accurately estimate a price for the proposed scope of the work.

Design development drawings incorporate other conventions that can make them more understandable to the client. These include but are not limited to the following: room names and dimensions, lines of alignment, representations of furniture, people, planting, and automobiles, etc.

These Design Development floor plans are the precursors and rootstock from which the final Contract Document, or working drawing floor plans evolve.

Exterior Elevations:

Design Development exterior elevations serve the same purpose as the DD floor plans. DD exterior elevations show in one set of drawings at 1/8" scale the existing appearance of the building along with any demolition required and separately, in another set of drawings at 1/4" scale the proposed appearance of the building from the exterior.

Floor plans and elevations have to be developed with an eye to one another. The designer must be certain that views and natural daylighting, doors and windows, and materials and finishes all are incorporated and represented in a way that is consistent, harmonious, and sensible from both the interior and exterior of the building. The Contractor must understand the materials and level of finish; and the Client must understand our design intent from these initial documents.

It goes without saying that floor plans, elevations, site plans, etc. all must be perfectly consistent with one another; what is shown on one is accurate and consistent with what is shown on all. We are, after all, not drawing pictures, we're representing a three-dimensional object solution in a real world environment in *this* space/time continuum.

Site Plan:

The Design Development site plans show the existing property lines, their relationship to the existing building, any accessory structures, existing flatwork (street curb, municipal sidewalk, walkways, drives, patios, pool decks, etc.), the roof plan (with chimneys, crickets, vents, materials, ridge tiles, pitch and slope direction, special flashing, line of footprint below, etc.), address, lot number, plot, and subdivision name all on one drawing.

Another drawing is developed to show the modified footprint of the building/s, their relationship to existing or modified property lines, and the modifications required to the roof and flatwork. Again, we use lines of alignment and representations of automobiles, etc. which should not be represented on the final working drawings but which are included here to clarify our intent and the client's understanding.

Scope of Work:

It should be clear that the purpose of this phase of the work is to define the scope of the work so that the contractor/s will be able to accurately estimate the cost to the client of the work envisioned and proposed. Sometimes drawings or graphic representations cannot adequately represent the scope of repairs required. In these cases we supplement the drawings with written descriptions and site walk-throughs to ensure that the client, the contractor, any subcontractors, and we, the architects, all have a clear understanding of the work. If necessary, at this point we bring in structural engineers or any other required consultants for preliminary consultation.

Communication, which leads to mutually clear understandings, is mandatory throughout the entire professional architectural process. It is the one thing, without which, there can be no success; conversely, with adequate communication any number of obstacles can be successfully surmounted.

When it comes to pricing, remember that the Owner always tends to want to understate the scope of the work in order to reduce the price; the Contractor always tends to want to overstate the price to make more money. It is our job to bring these two different dysfunctional tendencies under control for the good of the project. We do this through effective communication. Our tools include accurate documentation, good filing, accurate and timely correspondence, unwavering availability, a commitment to accountability on the part of *all* parties, clear diplomatic speech, the truth, and common sense.

Preliminary Pricing:

When DD Docs have been reviewed and approved by Quality Control, the Director of Production, by me and then by the Client; when the preliminary pricing Contractor/s have been selected and approved by me and by the Client; only then are the drawings issued to the Contractor/s for preliminary pricing.

A Transmittal is prepared which defines the date, the project name, the number of sets of documents, and a contractor's deadline to turn in the preliminary estimate cost of the defined scope of the work. The reasons for the deadline are numerous and include the following:

- 1) We need to plan for the preliminary pricing meeting with the Client.

- 2) We need to help the Client to maintain a sense of the project moving right along and confidence that we are prosecuting the work diligently.
- 3) The Clients need to have some idea of when this critical cost information will be available to them.
- 4) And finally the Contractor needs to have a deadline to give him a sense of urgency.

It is critical that Contractors price the project exactly as drawn. Suggestions or recommendations can be covered in a separate document, but the base estimates must be "apples to apples" or else they are worthless.

Issues may arise during the preliminary pricing phase that require consultation or clarification; market forces that are beyond the control of the Contractor may intervene; minor exploratory demolition can reveal unanticipated problems; any of these can cause the deadline to slip. This is OK; it is a perfect example of the kind of problem that can be easily solved with good communication. It is truly better to clarify these uncertainties earlier rather than later. While owners may become extremely upset to discover problems that may cause the preliminary estimate of the cost of the work to soar and in some cases these discoveries may even demonstrate that the project as a whole is economically unfeasible, nonetheless this is the sole reason for preliminary pricing and all of the effort that goes into it.

Preliminary prices can be telephoned in by the Contractor/s but it is much better to receive them in writing. The Client should be called immediately with the preliminary price and a meeting should be set with the owner, the Contractor/s, the Project Captain, and the Architect to discuss the price and to "value engineer" the project ASAP.

Contract Documents:

Value Engineering:

"Value engineering" is a term used to describe the process of tuning the owner's expectations down to reality. It includes a comprehensive process, actively participated in by the Clients, the Contractor/s, the Architect, sometimes the Engineer, and the designer.

In the early stages of the project, I frequently advise the client to be aware that the price may go over their budget and so they need to maintain a set of informal options and alternatives for aspects of the project that can be performed later, or differently, or with less expensive materials. Sometimes, it is obvious to me early on that the Client wants more than they can afford to pay for at this time. Frequently, although I do my best to talk them down, they do not believe me and are unwilling to take ownership of reality until this stage of the project where my initial misgivings are ratified by Contractor's preliminary estimates.

"Better late than never", however, and only after the Client, the Contractor, and I all agree that the scope of the work is, in fact, economically feasible and we receive direct approval from the client, do we proceed with the next phase of the project. The project captain listens to everything, takes careful notes, coordinates all parties, and, again ***only after direct approval from the owner to proceed (preferably in writing)***, implements the final value engineering changes into the set in the process of developing the final Contract Documents.

Working Drawings and Specifications:

The "Contract Documents" include the drawings (both architectural and engineering), the written Specification, the AIA Owner/Architect Agreement and the AIA Owner/Contractor Contract for Construction, and the Contract Administration Documents developed during construction

Title Sheet:

The Title Sheet of the set of drawings is the first impression that the Contractors, subcontractors, material suppliers, Clients, and regulatory officials get of the official nature of the project. Our title sheets incorporate the usual title block, basic description of the project, square footage information, list of drawings in the set, etc. but we also include a Sun Angle Diagram with a small drawing of the house superimposed upon it that shows the angle of the Sun at any time of the day for any time of the year.

We also clearly express on the Title Sheet as much as possible about the basics about the project very specifically for the regulatory reviewer, the man who issues the permit. If there is no change of use, no change of occupancy, no change of footprint, or no change of exiting characteristics; if this is a residential versus a commercial project; if this is an addition to an existing building versus new construction; it is best to let the reviewer know immediately.

The Set:

If we have done our work carefully and thoroughly throughout the early stages of the project, the rest of the set falls together fairly quickly and easily. Production staff must be meticulous with dimensions and schedules of finishes and fenestration (doors and windows). It is critical that the set is consistent within itself. Windows drawn on exterior elevations MUST correlate to the windows called out in the schedules. Schedule keys drawn in the plan must correlate perfectly to their corresponding doors and windows on the written schedule. The slightest mistakes in these matters can be very expensive.

The set of architectural drawings consists of all the usual elements including floor plans, exterior elevations, site plan, roof plan, interior elevations, special details, finish schedules, door and window schedules. Details of millwork, trim, door and window casing, crown moldings, base moldings all must be called out and are frequently coordinated with the finish schedule. Building sections are drawn to clarify volumetric

spaces and their relationship to one another and at least one (sometimes many) detailed typical wall section shows the construction of the assembly required to enclose and protect the building from the elements. Electrical plans call out the placement of light fixtures, the logical arrangement of the switches that operate them, power outlets, data outlets, cable TV, electrical meter, circuit breaker panels, smoke detectors, doorbell buttons and annunciators, automatic garage door openers, security alarm panels, etc., etc., etc.

The finish schedule can be expressed in generalized terms such as "wood floors", "ceramic tile", "painted gypsum board", etc. Ultimately, though, the Client's selection of exact finish materials is critical to the project budget and the final effect achieved through all of the designer's hard work. The Architect must also be prepared to help the Client select paint colors both for the exterior and the interior of the building. There are thousands of decisions that must be made concerning everything from light fixtures, hardware, to plumbing fixtures, to cabinetry, to countertop materials, etc., etc.

Frequently, the Client is not initially prepared to make final decisions on materials, lighting and appliance selections, and finishes and so "allowances" are utilized that set a reasonable limit on the cost of the selections. We work with the Client and the Contractor to determine the level of finish desired and set the "allowances" as accurately as we can, bearing in mind the Client's tendency to understate their desires in to keep cost of the project down. The Architect must also be careful to make certain that the Contractor and he set realistic allowances to avoid the tendency to "bait and switch" or to deliberately under play the eventual cost of the project.

The structural engineer prepares drawings that detail and specify the foundation design, the framing elements, and, occasionally, drainage or other site conditions like retaining walls. In order for them to do their job well, they must have a clear understanding of the architectural design and it is critical that we carefully coordinate their work with ours and vice versa.

All of these elements of the set of working drawings have their logical place and order in the set. The Director of Production is responsible for helping the designer to "cartoon" the set at the beginning of this phase of the Architect's work. This order is established by standards of practice, logic, and the nature of the project itself. When well executed, the set is handsome, logical, and easy to understand for the Client; the regulatory officials; the Contractor; the electrical, mechanical, plumbing, framing, and other Subcontractors; the material suppliers; and all the others to utilize it to execute the Project.

The Specification:

In smaller projects the specific selections are usually incorporated into the notes of the drawings themselves. In larger projects, a separate document called the "Specification" is created by the Architect. In still larger projects, the specification can be a huge document that requires the Architect to retain the services of a special consultant.

The Specification does much more than this, however. It dictates the proper and correct application of the materials in the project. It is important for the designer to realize that, while the Contractor retains sole control of the "means, methods, sequences, techniques, and procedures" to execute the project, the Architect should call out clearly any special expectations that he and the Client have of the project. While some Architects (and most lawyers and insurance companies) believe that the Specification should be huge, exhaustively thorough, and painfully extensive and complete (right down to the number of nails required to fasten a piece of plywood sheeting to the framing), it has been my experience that rarely will a Contractor or his subcontractors take the time to read a virtual telephone book of specifications.

The Contractor is required to execute the work "in a good and workmanlike manner". This means that all industry standards for all aspects of the work must be met or exceeded. Regulatory inspectors for each of the major trades evaluate the work prior to allowing the walls to be closed up. All the Architect does not supervise or inspect the work he does certify the contractor's Applications for Payment. This certification requires that he attest to the fact that the Contractor's work has been done, up to the extent specified, in a good and workmanlike manner, and consistent with the content and the intent of the Contract Documents. Finally, it is a rare Client who is willing to pay the Architect to produce a huge, cumbersome, and detailed Specification.

Bid Administration

Phase 4, Bid Administration, is essentially the process whereby the Architect facilitates the Client and a Contractor to arrive at an agreement and to execute the Contract for Construction. There are two basic techniques to do this. The first is called the Competitive Bid and the second is called the Negotiated Contract.

Competitive Bid:

A Competitive Bid is essentially a process whereby the Architect issues a number of sets of the drawings and specifications to each of the number of qualified General Contractors. Each of these is given a specific amount of time to present a proposal to execute the project. At the end of that period each of the bidders will submit to the Architect a proposal that specifies how much money they will charge the Client to do the project and how long it will take them to complete it.

The Architect creates a simple matrix generally listing the bidders from the lowest to the highest and presents it to the Client, provides advice and counsel to help the Client to arrive at a selection. Usually the process goes something like this: the owner will reject the highest and lowest bidder and then proceed to the remaining "short list" to discuss and negotiate the best possible deal. It must be stressed that this "best deal" is not necessarily the least expensive; it is the individual that the owner feels will provide the best result for the best value. I usually encourage the owner to also take into account issues like keys of communication and their fundamental comfort with and confidence in the individual they select. Construction is a long and stressful process.

The problem with the competitive bid system is that it is very difficult and expensive for a general contractor to produce a detailed and accurate bid. If the project is not very large and lucrative it may be difficult to find even three or five qualified General contractors who will be willing to go through the considerable effort and expense of the competitive bid for only a 20% to 30% chance of winning the contract. For smaller projects I frequently recommend the Negotiated Contract.

Negotiated Contract:

In the negotiated contract, the Client is already familiar with the Contractor. They have met during the preliminary pricing stage at the end of the Design Development phase of the project. During that time they have had a chance to speak with one another, discuss the relative expenses of different selections and options, and evaluate one another in terms of their tastes, desires, communication abilities, and degree of seriousness.

Frequently this will be enough to set the stage for a good working relationship. In the negotiated contract the Contractor essentially "opens his books" to the Client. It is reasonable for him to take the time to do so because he knows that no matter what, he will end up doing the work as long as the Client continues to trust him throughout this negotiating process. Under this system, the Client typically will pay the Contractor's actual "wholesale" cost for the work plus a factor for profit and a factor for overhead (typically, 15% to 20%). The only thing that remains is for them to determine the terms of their agreement.

Legally, there are three things that are "of the essence" of the Contract for Construction. This means that they cannot be modified wants the Contract has been signed without a specific writing signed by all parties. These are:

- 1) The Scope of the Work: this is represented by the drawings and specifications,
- 2) The Contract Sum: obviously, this is the money, and
- 3) The Contract Term: this is the precise duration of the project

There are an infinite number of ways for two individuals to arrive at an understanding leading to an agreement but, for the purposes of an architectural construction project, I very strongly recommend that the Client or "Owner" utilize a standard AIA Contract form. The best of these, in my opinion, is usually a fixed-cost contract where the basis of payment is a stipulated sum. Essentially this boils down to the following: the Contractor will execute precisely the work indicated by the drawings and specifications. He does not have to do any more nor may he do any less. If he does this, the Owner will pay him a stipulated sum of money. He cannot pay him any less than he agrees in the contract but he does not have to pay him one penny more.

Now comes the good part. The amount of time that it takes to complete the project is clearly a very important part of the Contract. I believe that the Contract Term should be very clearly agreed-upon as being binding by both parties. The Contractor should be

experienced enough to be able to state definitively with a reasonable safety factor how long it will take him or her to complete the work. It is my experience that most of the frustration experienced by the Client comes as a direct result of their perception that the work is not being prosecuted aggressively and/or timely. It is usually better for all concerned if realistic expectations are agreed-upon and set before the work is undertaken.

This brings us to the "demurrage" or "liquidated damages". Essentially these terms can be defined as a monetary penalty expressed in dollars per day for late performance on contract. I usually recommend \$150 per day. The Contractor will frequently counter by adding a month to his expectations of project term. This is more than reasonable and it should be stressed that no one wants to see this particular clause enforced. The Client does not want the Contractor to rush the work and perhaps execute it in a less than perfectly workmanlike manner. I'm sure we would all agree that the best working and business relationships are those in which all parties profit reasonably and none lose.

This does give the Owner, though, reasonable expectations for project duration, confidence that the Contractor will do all he can to bring the project in on-time, and some monetary consolation if the project does run late. If events transpire which are beyond the Contractor's control (including but not limited to changes by the Client), the Client and the Contractor must execute a Change Order that will specify the exact change to the three elements that are of the essence of the contract, the scope, the sum, and the term.

Before I move on, one other term deserves explanation. It is "Retainage". Retainage is a withholding of a percentage of each of the interim payments as the work proceeds and this money is only released when the project is finished. Typically retainage is set at 10% percent and it is the "jelly bean that keeps 'em jumping".

Before retainage is released the Contractor must accomplish the following:

- 1) Complete the "Punchlist" (the final list of small last touchups and repairs to the work);
- 2) present to the Client a notarized Affidavit of Payment of Debts and Claims;
- 3) present to the Client a notarized Affidavit of Release of Lien.

There are two benchmarks of completion of the project. The first is called "Substantial Completion". It is legally described as that time when the project is occupiable for its intended purpose. There may be chips in the paint, there may be small cracks in the moldings, an electrical outlet may not be working reliably or may be installed crooked and need to be straightened, but, nonetheless the project is occupiable. Substantial Completion signals the time when the Contractor is reasonably entitled to 90% of the Contract Sum.

"Final Completion" is, however, just that...100 percent complete. Only then will the Architect certify the release of retainage. In fact, the Architect, in the "Contract Administration" phase of the work certifies every penny of the money that is paid by the Client to the Contractor.

Contract Administration:

Contract Administration is the process whereby the Architect "administers" the Contract for Construction. That is, he or she serves as an administrator. In that role, they ensure that both parties fulfill their obligations under the Contract. When the contractor is ready to get paid, they submit an Application for Payment (a standard AIA document) that details what work they believe they are entitled to be paid for. The Client, the Contractor, and the Architect meet together on the job and walk through it to verify that the Architect is comparable certify the contractor's application for payment. He does so by signing the AFP. This process is repeated until the job is complete and every AFP clearly shows how much work has been done, how much retainage has accumulated, how much work has yet to be done, and how all of this is expressed in terms of dollars.

Likewise, if there is a change to any of the three elements that are "of the essence" of the Contract for Construction. The net change is documented utilizing another standard AIA document, the Change Order. A Change Order only becomes part of the Contract when both parties to the Contract for Construction have signed it and the Architect has signed it as well. All legal documents throughout the course of the project are executed in live triplicate. This ensures that the Client has an original, the Contractor has an original and, in case either (or both) of them lose their original, the Architect has an original.

The Architect also fulfills a very important "adjudicative" role in the project. If it should happen, as it sometimes does, that "two individuals of good will should disagree", it is the Architect's duty to listen to the issues, and render an initial but definitive decision "showing partiality to neither party". Both the Client and the Contractor stipulate to the Architect's judgment in the Contract for Construction.

Generally, when I am called upon in these types of situations, if the answer is not immediately evident, I will consult with legal counselors and professional peers to timely render the decision that I believe the courts would render ultimately if the disagreement were to run its full course. This duty of the Architect, although difficult, can easily be seen as potentially saving both parties a great deal of money, time, and heartache.

Project Completion:

That about sums it up but there is one other thing...the one-year warranty. I usually recommend that my Clients mark their calendars for ten months after the date of the Certificate of Substantial Completion to call me to come back in and do one more punchlist. Inevitably, after the completed work has been through a couple of seasonal temperature and humidity changes, small cracks will open up in the millwork. This is not unusual and the Contractor, at no cost, will come back, fill the cracks, and repaint. After this, generally everything will settle in quite nicely.

But the warranty is not just for cracks in the millwork. It is for everything. EVERYTHING! From the central air-conditioning system to the doorbell, from the kitchen sink disposal to the master bathroom whirlpool tub, from the seals on the double

glazed windows to the heater/vent/light in the ceiling of the bathroom. I find that if it has not broken or failed in a year, generally it won't break.

I hope you have found this document helpful. I developed it as much for the Client as for my own staff. If you have any questions or suggestions, please feel free to bring them to my attention.

Peter A. Waring, Architect, NCARB, M.Arch., MBA
Principal, Waring Architects, LLC