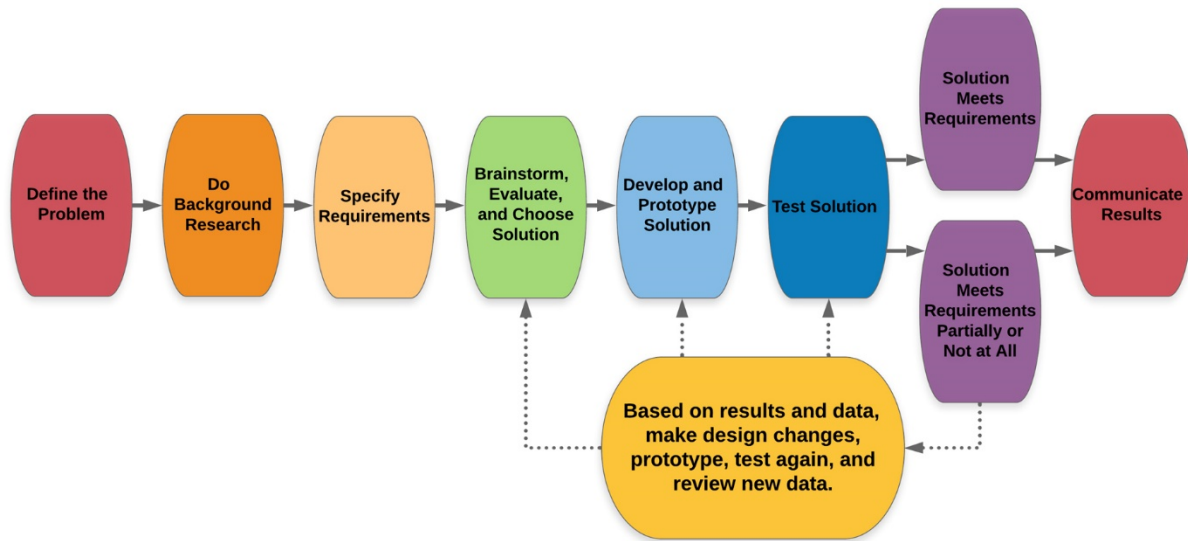Architects may have gotten a little too caught up in the "Phases of Design" (Pre-Design, Schematic, CA, etc.) especially as related to invoicing. We think there's a broader approach that covers all the bases:

And while it'll ruffle a few Architectural feathers – it's called "The Engineering Method," after all – it's a more comprehensive, unbroken, and thus more effective approach to the best possible design answers.

1. Define the Problem

The design process starts with these questions: What is the problem or need, Who has the problem or need, and Why is it important to solve? Even when these questions are partially answered in the initial contact – a client approached and wants to build a church or some apartments or a lab – by backing up a little to provide a more detailed definition we can set the best possible parameters to move forward.

2. Do Background Research

We learn as much as we can about each project and each client before we begin, and we learn from the experiences of others (and our own, since we can always make our design solutions better and better) by following trade information and by a daily R&D process researching the best new – and sometimes very old – materials and methods and ideas, especially when it comes to Sustainability and Resilience.

3. Specify Requirements

Design requirements state the important characteristics that your solution must meet to succeed. Most Architectural firms call this step "Programming," and some clients have a good idea of the aesthetic and functional and budgetary parameters their projects must meet. Others don't: either way, we think the key is to ask the right questions, to fully understand the requirements prior to committing to a solution.

4. Brainstorm, Evaluate, and Choose Solution

At cocktail parties or in meetings with new clients, we're often asked "but how do you begin to choose from the millions of possible solutions out there?" The reality is if the Problem has been Defined, if the Background Research is complete, and the Requirements properly Specified, the "millions" typically reduce to a much smaller subset of good (and great) ideas to be examined, analyzed, and then selected.

5. Develop and Prototype Solution

In manufacturing physical prototypes are common. That's true in Architecture, too, just at a different scale: from the "napkin sketch" (which happens all the time) to physical models and now to digital 3D models, which allow us to zoom in and out and experience a protoype from infinite perspectives and can also can detect potential issues or clashes between proposed building elements and systems in advance.

6. Test Solution

An exceptional design process involves multiple iterations and redesigns – and often recombinations – of a selected final solution. These iterations are generated by what we learned during Prototyping, by what we learned (and have learned to revisit) during Problem Definition and Research, and frequently by changes to the design Requirements made by the client or as a result of regulatory determinations.

7. and 8. Solution Meets Requirements/Meets Requirements Partially or Not at All

These aren't really steps so much as a decision points does the design meet the Specified Requirements, or not. If not then our team proceeds immediately to the next step, the "feedback and revision" loop that can and often does reach all the way back to Brainstorming. In fact that loop is typically in constant play, even for Solutions that clearly will meet the Requirements, to ensure we've thought of everything.

9. Make Design Changes/Prototype/Test/Review

As pictured above, this feedback/revision loop pulls not-quite-there solutions – which occur sometimes because of a change to Requirements, and sometimes because we get a different perspective on the Requirements, an "A-Ha Moment" that can change things for the better – back through Brainstorming, through Evaluation and Development and Testing, until we have the best possible design solution.

10. Communicate Results

This occurs at different milestones in the design process: lenders, review boards, interim approvals and decisions by a client... all communicated via drawings and data and models and images and discussions and whatever it takes for stakeholders to fully understand the design. And it's ultimately communicated in built form to all users, therefore it is imperative as designers to send the right, best possible message.

In the end – before, during, and after every creative process – our work at Innova is a balancing act to find the right mix of the aesthetic and the technical, the beautiful and the functional, the Resilient and the Sustainable, the technical and the fantastic, a rich dialog between Engineering and Architecture. We like to stick with what works, but we also push the envelope daily. New Ideas. Proven Approach.