PARTICIPATORY DESIGN | PUBLIC PRIVATE PARTNERSHIPS | CROWDFUNDING

CREATIVE FINANCING SOLUTIONS FOR THE MODERN WORLD OF ARCHITECTURE

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PHILOSOPHICAL FRAMEWORK

Ontology: Our world is always changing and the business of architecture needs to be as fluid as the challenges presented. We have long been building with the money of taxpayers or individual private investors with little consideration of the alternatives. There are "new" delivery models being brought to the table in this modern era. This research project looks to discover these alternatives to the traditional deliver models used almost exclusively in this country.

Epistemology: We build with the current delivery models because it works, it's easy and we get paid for it. But unless we are working with an organization, Government agency or individual with the capital to invest in construction it can be difficult. Today it is becoming increasingly difficult to update public infrastructure due to resistance of its tax-base. We use other fund-raising techniques in other sectors, its time to explore them here.

Positivism: There must be a way for us to build community projects and update our failing infrastructure without raising funds through taxes. Upside, we build stronger communities as a side effect.

THEORETICAL FRAMEWORK

The process of an architectural project has long followed the same lineage.
- Site selection
- Financing
- Programming
- Design
- Construction
- Maintenance
- Post-Occupancy Review

One of the biggest differences in Participatory Design, Public Private Partnerships or Crowdfunding is the involvement of the stakeholders and how that affects the deliver model. These types of creative financing for a building project can be service driven, profit driven or simply to find a solution to a complex problem.. Many firms will participate in the 1% movement, vowing to donate 1% of their time to service projects for no profit. The primary goal of this project is to investigate and find that all of these delivery models can prove profitable for a firm so they can increase their participation in these types of projects. Each one of these delivery models can increase a firm's presence in their communities. Community engagement through

Participatory Design, Public Private Partnerships or Crowdfunding, is a great way for a firm to give back, establish a presence and it is great PR. In a changing world, these delivery models will make a greater impression on the design field in the future.

Does success and community acceptance of a project increase when the community members are engaged? Looking at projects of both top-bottom and bottom-top organization does the success change? Rather than telling a community what they are missing can the community itself help a design team understand what typology will benefit the community's needs? Engaging the community in decision making and in the design and construction itself historically shows greater project outcome.

STRATEGIES AND GENERAL METHODOLOGY

In order to define new delivery models it is important to look at the tradition ways of doing business. When looking at the delivery models research will show the stakeholders of the project and where and what their involvement consists of.

Funding is key with these types of projects. I will research different methods of funding Participatory Design, Private Public Partnerships and Crowdfunding projects through grants, tax dollars, corporate donations and fundraising campaigns.

TACTICS AND SPECIFIC RESEARCH METHODS

Investigation of all delivery models will be done in order to compare and contrast. After these models are graphically diagrammed I can begin to understand what roles each stakeholder has in the process.

Case studies will be done to look at completed projects using the P3 model, Participatory Design and Crowdfunded architecture. A look at these projects will help see the strengths of community engagement and outcomes that can be utilized by the profession.

Research of government and private grant history and current availability will help clarify availability and funding for community architecture projects.

EXPECTED RESULTS AND CONCLUSIONS

It is my expectation that my research will conclude that communities will take a greater pride in projects in which they help make decisions and or aid in the construction of that project. I also believe that through proper funding

channels it can is possible to make these projects profitable for a firm. Through this research it is my goal that firms will see that not only can they make a difference in the communities but also with profits they can do more of these projects.

TOOLS AND TECHNIQUES FOR RESEARCH

Visual and data management software will be the most useful in this research project. In addition to presentations, Adobe Photoshop, Illustrator and InDesign will be utilized extensively. Graphically I will compare and contrast the business models of the traditional, as well as the Public Private Partnership, Crowdfunding and Participatory Design.

METHODOLOGY

This research project welcomes a utilization of both quantitative and qualitative research methodologies. Both a collection of data as well as interviews of professionals and others involved in the building delivery process will be needed.

First step in the project is to understand the traditional building delivery process. Today, how are buildings built? This question will be answered through a series of interviews, case studies and significant research. There are a number of "new" ways of doing business that firms are looking at. Public Private Partnerships are not a new idea, but the way that they are being used current day are. Crowd funding is taking the Internet by storm, architecture has used similar ideas in certain sectors, but bring it to government projects can aid weakening infrastructure in this country. Different delivery models and financing options will be crucial for firms to stay viable. Through the economies downturns I feel it more and more important for firms to take an active role in the community building projects near them, and not wait for the work to find them.

One of the best ways to find out more about this experience is to find an Architect that is familiar with the delivery model. I have already spoken with Michael Burns of Michael J. Burns Architects in Moorhead, MN. His firm was the Historical Preservation specialists charged with the task of bringing Renaissance Hall back to life. In addition to talking to architects, it is my responsibility to seek out other players in the process. Lutheran Social Services has played a large role in public housing in the FM area. Gaining insight on their experiences on how a nonprofit can fund a project will help understand the role a firm can take a P3 or Community Architecture Venture.

LITERATURE REVIEWS

Integrated Project Delivery: A Guide
Published by the AIA in 2007

The purpose of this review is to clearly understand the roles each team member plays in the delivery of a building, from site selection to after the construction is completed and the owner inhabits the building. When looking at the organization of the building process it is important to understand the different approaches of the field. Each of the different organisational approaches go through the steps a little differently. One of the major differences is the involvement of each team member through each step. Looking at the AIA's guide to the Integrated Project Delivery, these steps will be shown clearly when choosing IPD as the project delivery method. This article was chosen for review due to its inclusion of the steps and the involvement of each member of the team.

IPD, or Integrated Project Delivery is a newer process of building delivery. This method optimises the involvement of the team, maximizes efficiency, and is shown to increase project success throughout all phases. This way of doing business can involve many consultants and sub contractors, with this process it is not simply left to the architect, owner and contractor to make the decisions. The assembly of an IPD team forms early, it strives to involve all stakeholders in early in the process. Early involvement of stakeholders allows the experts to contribute openly throughout the process. Another advantage of IPD is the shared amongst the stakeholders rather than one or few entities; all members of the team manage the risk of the project. This process fosters greater collaboration and sharing of ideas and work tasks.

Traditionally, the building delivery process develops much inefficiency. By separating the responsibilities and tasks into separate "silos," things tend to be lost in the shuffle. With an integrated team the success of the project has a direct correlation to the success of their own interests. The IPD creates a more holistic approach to the building delivery. With an IPD goals are set early with all stakeholders.

With an integrated team there are some challenges that can present themselves. When a team is formed early in the project, the likely hood of loosing a team member is greater. In these cases it is important to have clear pathways to an efficient transition planned. Also, as with any team with multiple voices from different professions and schools of thought conflict can surface. It is important that roles are clearly defined and that all stakeholders respect the team's organization. The owner of the project takes on a more substantial role in an IPD than with a traditional delivery. The owner's participation takes a greater role in both design and problem solving issues that may arise during the construction of the project.

The profession has been good at embracing new technologies that have helped the office run more efficiently. More and more firms are beginning to take a look at the way they do business. The delivery methods have long been the same, IPD offers a new way of looking at a project. The profession has had its ups and downs; firms are now seeing the value in taking a closer look at the way they do business. As firms continue to grow and diversify they can also look towards additional ways of doing business.

Why Isn't the U.S. Better at Public-Private Partnerships?

In British Columbia Public Private Partnerships, or P3's, are becoming more and more popular. In particular, these P3 projects are rebuilding their infrastructure. Not only are these projects being completed on time, but also actually ahead of schedule, something the profession is not exactly used to. It is creating a interesting problem, the projects are being completed before operations funding is put into place. They are beginning to monitor and regulate more closely how early a P3 project can begin.

P3's have had far more success abroad, U.S. activity only accounts for 9% of global P3 projects (Rawley; 2013). Finally this country is beginning to see the value in this delivery model. In the D.C. metro there is a recently completed P3 project that would have cost taxpayers billions of dollars but they were able to fund the project largely through private investments. Lack of knowledge and experience is blamed for the lack of P3 projects in the U.S.

Public Private Partnerships offer a creative financing option for governments

and innovative ways of funding projects that typically place a large burned on the tax-payer. There will forever be a challenge getting tax increases in order to pay for projects that the public simply finds little justification no matter the need or reason.

Crowdfunding Architecture
Customized Research Report Prepared For The AIA January 2013

Crowdfunding has taken the world by storm. With the accessibly of the internet anyone can work for finance a project with other peoples money. It is an exciting method to fund any project and it can gain traction and excitement with people that you would never be able to have reached in the past. The world is now your potential investor. Individuals are able to invest in a project with small amounts of capital.

Crowdfunding is newer to Architecture, but is creating a new and exciting way to engage the public with the built environment. This project creates a closer relationship with the Architect and the public that he/she serves. The stories behind the campaign have the ability to reach millions of people, creating buzz and going viral can boost a campaign to instant success and funding. These small contributions have already shown the ability to fund projects of all sizes, from pedestrian bridges to high-rise buildings.

Differentiation from crowdfunding and fundraising requires both social networking, and the ability for the investor to gain something in return. Social networking is the vehicle driving this limitless number of connections. The network begins with family and friends but quickly reaches the family and friends of those connections, and the reach grows exponentially.

There are three basic types of crowdfunding, donation-based, reward-based and crowdfunding with a return on investment. Donation-based crowdfunding is strongly associated with an emotional connection to the cause or story. For example,

a campaign could be created in order to aid the finance of cancer treatment for a child. The story will immediately hit home, and with the possibility of a small donation as little as a dollar, anyone can now help. Reward-based is the most common. This type tends to look a lot like most of the Kickstarter campaigns most of us are familiar with. Often times these campaigns offer a new product centered on a new business of an individual. With different contribution amounts you would receive an applied value in goods in return for your investment in the business. This is the type of crowdfunding often utilized to fund a museum for instance, often times offering a reward or membership in return. Crowdfunding can be made as an investment. Crowdfunding with financial returns is different in that the investor must carefully consider the return on his/her investment. The reason to invest is different than in the other two models. It is thought of as an investment just as you would invest in the stock market. Currently there is a $1 million limit for these crowdfunding campaigns (Sebastian, Grell; 2013).

Challenges surrounding crowdfunding as listed in the article
  -Opportunity for architects to develop community relation
        ships/promote design services
  -Provides the opportunity for regional/neighborhood improvement projects
  -Apparent and attractive market-driven rewards
  -Pre-sale "Price Points"; the capital formation process is very flexible and easily
        adaptable to different circumstances
  -Architecture is creative by nature, which matches crowdfunding as a creative
        capital formation
  -The right crowd supports the right projects; builds community support
  -Broad visibility
  -Emotional appeal

There are of course some challenges surrounding crowdfunding of anything, and in particular with architecture projects. It is easy to gain attention of people and to create an emotional connection; it is another thing to get people to open their wallets for the cause. Due to the large capital investment required for most architecture projects, these small donation driven models could create an issue surrounding the time it takes to fund a project. There has been some movement to seek larger investors in the form of fund matching.

CASE STUDIES

JAMES F. OYSTER
BILINGUAL ELEMENTARY SCHOOL

DELIVERY MODEL: PUBLIC PRIVATE PARTNERSHIP (P3)
TYPOLOGY: ELEMENTARY EDUCATION
LOCATION: WASHINGTON D.C.
SIZE: 47,000 SQ FT

PROGRAM ELEMENTS
-Accommodate bilingual program
-Administrative spaces
-After school program space
-Computer Lab
-Library
-Gymnasium
-Classrooms
-Community Use
-Exterior Play Areas

Like many cities, Washington D.C. was running short of operating funds to keep the original James F. Oyster Bilingual Elementary School open. In 1993, the building was falling apart and overcrowded. Renovation was not in the budget, and the building was not longer compliant with building codes (NCCP). These problems inspired the community to lead a 9-year initiative. Parents and Community members were at the forefront of this venture. The search for funds for redevelopment resulted in the formation of a Public Private Partnership. The partners involved were the DC Public Schools, the District of Columbia and LOCR, a development company out of Berwyn, PA.

Tax dollars are typically used to fund the construction of schools but in Washington D.C. not one taxpayer dollar was used in the construction of the James F. Oyster Bilingual Elementary School. The project was funded with an 11 million dollar, 35-year tax-exempt bond. LOCR a specialist in Public Private Partnerships was the master developer, financier and construction manager of the project. Simultaneously, adjacent to the school, LOCR built a 31 million dollar apartment building with 10 million dollars equity and 21 million dollars of private institutional construction/permanent loan. The project was unique in that the land the school sat on was in a desirable neighborhood; an under-utilized portion of the site was able to be sold for the construction of high end residential in order to fund part of the project.

PROJECT IMPLICATIONS

Creative funding is a great way to gain entry into new projects, those that otherwise would be impossible. Looking at these options, grants, tax exemptions and private donors will be key to this being a successful community venture. In addition to funding options, engaging the community in the design and construction of as many elements as possible will also keep the costs down. Of course, allowing the community to build parts of the project creates limitations to what materials and construction methods are allowable. There may be other partners that can co-occupy the site in order to help pay for some of the costs incurred.

CASE STUDIES
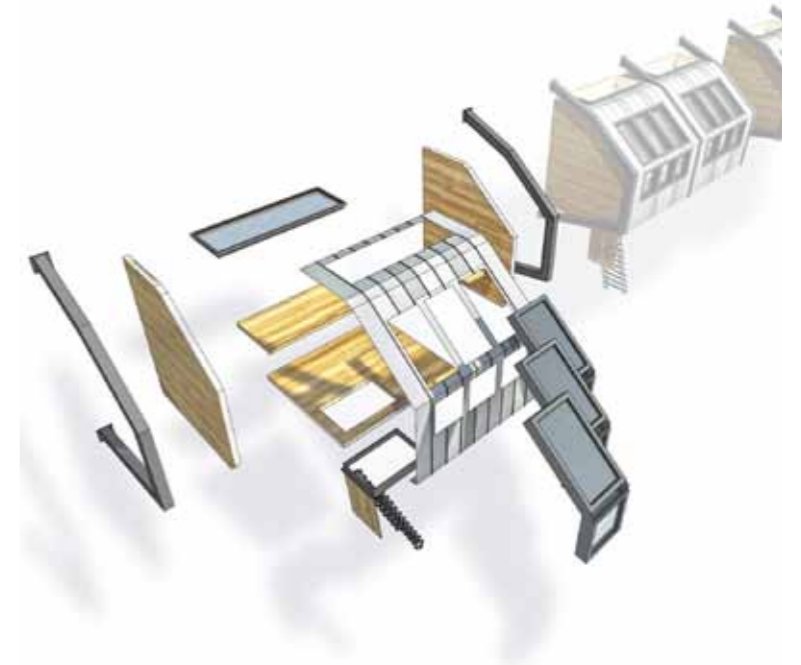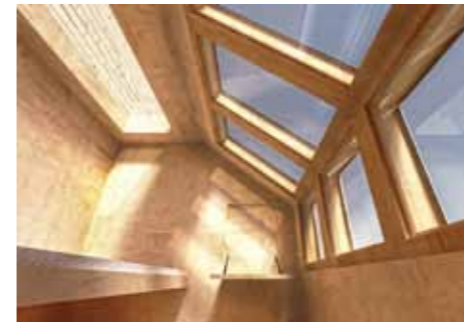
HOMES FOR THE HOMELESS
BY JAMES FURZER

DELIVERY MODEL: CROWDFUNDING
TYPOLOGY: RESIDENTIAL
LOCATION: LONDON
SIZE: <100 SQ FT, 750 PODS PLANNED

PROGRAM ELEMENTS
  -Provide temporary shelter for homeless people in London
  -Wood sleeping platform attached to existing buildings
  -Create a safe-haven

   We have all witnessed the poor quality of living of a homeless person. Walking by, a person typically doesn't understand the extent of it. Furzer explains that "Homeless people are 13 times more likely to be a victim of violent crime than the general public, and are 47 times more likely to be a victim of theft" (Furzer, 2015). Furzer hopes that this project can promote change in the public perception of homes persons.

   This project is a creative alternative to the homeless shelter. The pods are a simple and attractive design made from as many recycled material to keep costs down for maximum impact. The pods would be affixed above street level and access would be gained by ladder in order to not obstruct the path of the sidewalks below. Furzer's goal is to provide these shelters for 750 individuals across the city of London.

   This project is still in the planning and prototyping phases. There are still management and maintenance issues to be decided. Furzer proposes that local shelters maintain the pods going forward. He admits on his Indigogo campaign that there are structural, social and logistical issues still to be sorted out. He is looking for 15,000 GBP to fund a prototype model for further exploration.

   Furzer's campaign, although full funding was not achieved, shows that good can be done with crowdfunding. In the future as this way of funding a project becomes more mainstream it is likely that funding will increase and projects and more projects will be built through individual donors. This concept isn't all that different than member of a museum donating for a remodel, addition or new campus.

CASE STUDIES

DRUK WHITE LOTUS SCHOOL

DELIVERY MODEL: PARTICIPATORY DESIGN
TYPOLOGY: EDUCATION
LOCATION: LADAKH, INDIA
SIZE: 23,5000 SQ FT

PROGRAM ELEMENTS
- Sustainable Systems
- Classrooms
- Dining Hall
- Student Housing
- Homes for Teachers
- Clinic

CASE STUDIES

The Druk White Lotus School is an exceptional example of extremely high quality design built by the community it serves. Due to the remote location that is only accessible during 6 months of the year, precise planning was required and material choices were limited. These constraints allowed the architects to design with local building practices in mind.

Goals for this project included embracing the local rich culture while bringing it into the 21st century. The Drupka Trust, a charity in the UK under the Dalai Lama, funded this project. The deep-rooted tradition and local support demanded thoughtful design considerations.

Sustainable features make this building work. Passive solar heating is used to condition the spaces in the extremely cold winters. Full glazed solar facades allow for solar gain and store them in thermal mass walls. Trombe wall use allows the structures to be heated during the evening and overnight hours. Located in desert water is hard to find, the designers utilized ventilated pit latrines that do not require water and eliminate pest and odor problems. The latrine walls house solar panels that dry the waste for use as fertilizer. Nearly all of the schools electricity needs are met exclusively with PV panels, however due to inclement weather it is not always reliable, diesel generators are used as back up. Water supply in this desert climate comes from the spring's snow melt. Solar pumps are required to bring water to reservoirs.

The Druk White Lotus School should be a case study for all designs. Its response to local culture and use of sustainable systems is world class. As a result, the building has won numerous awards including Best Green Building, Award for 'Inspiring Design – International' from the British Council for School Environments 2009, Design for Asia Grand Award 2009 and many more.

SYNOPSIS OF CASE STUDIES

These case studies all have one thing in common, they were built with nontraditional project funding. Neither Participatory Design, Public Private Partnerships nor Crowdfunding have a set delivery model. However, they tend to follow models that promote engagement the community and/or end user. All three of these projects serve the community that built them.

Projects built with these models tend to be more sustainable, accepted and create a better experience for the end user. Community engagement proves to be a strong aspect that is missing in much of the work done today.
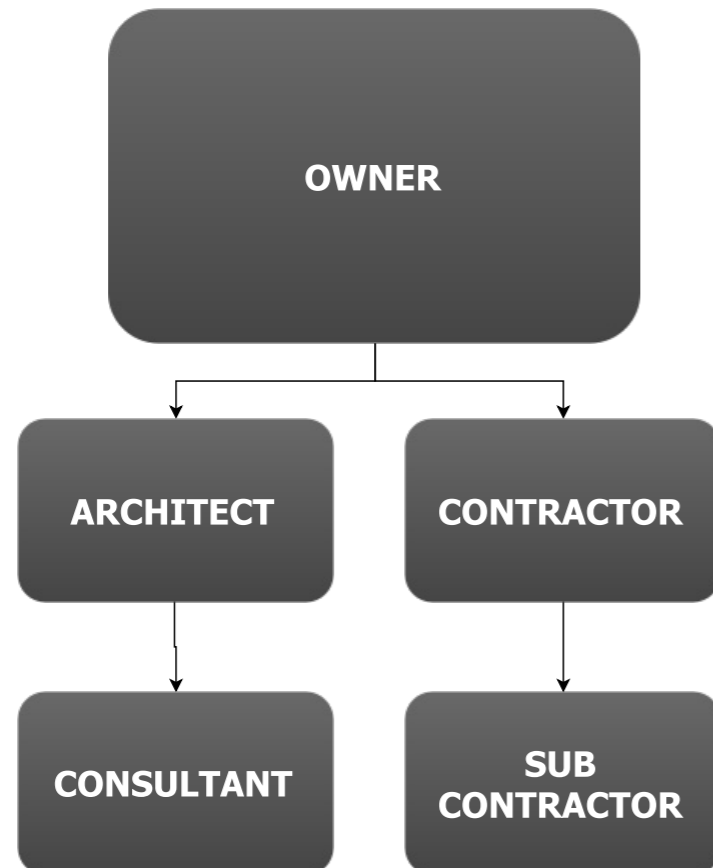
DELIVERY MODELS

Delivery models differ from project because of owner preference or project typology. We have already discussed some of the alternative to the traditional model such as Participatory Design, Public Private Partnerships and Crowdfunding. Exploration of the delivery models will shine a light on where th ese alternatives best align. Much of the difference in these delivery models is who accepts the responsibility and overall risk for the project.

DESIGN BUILD DELIVERY MODEL

Design build is when the same organization handles both the design and construction in house. This delivery model offers more collaboration between the stakeholders. Due to the nature of the models organization, both the architect and construction managers are involved in the project early. In this model the design build firm assumes the risk on the entire project.
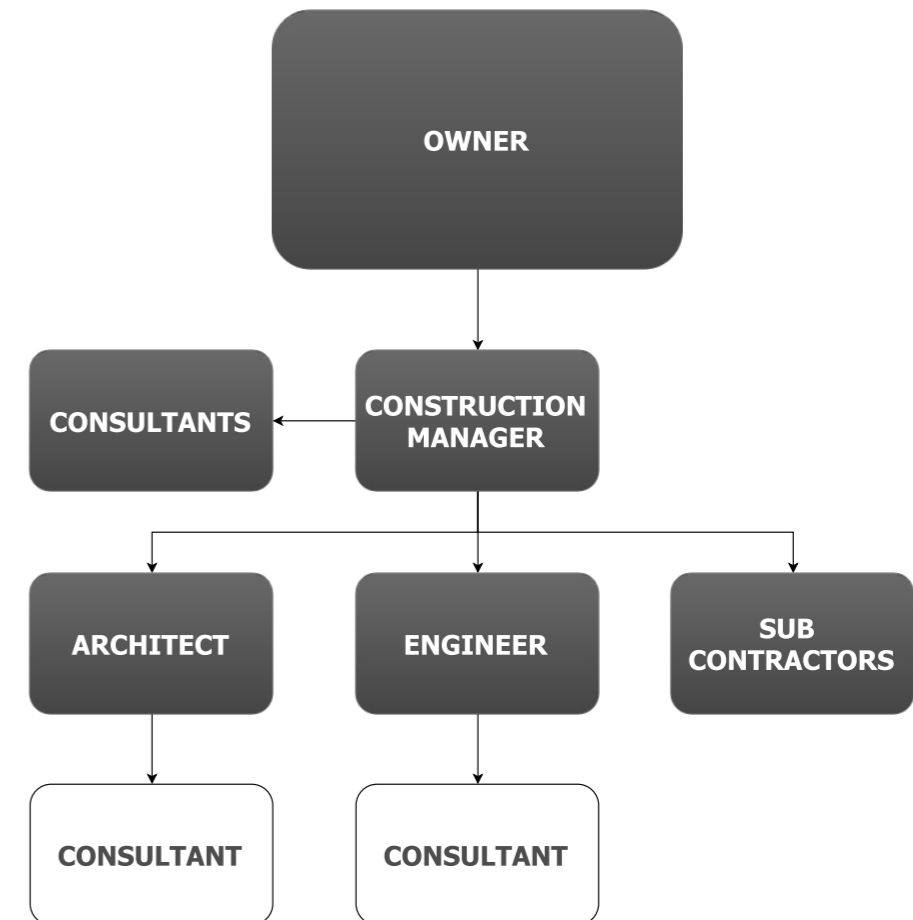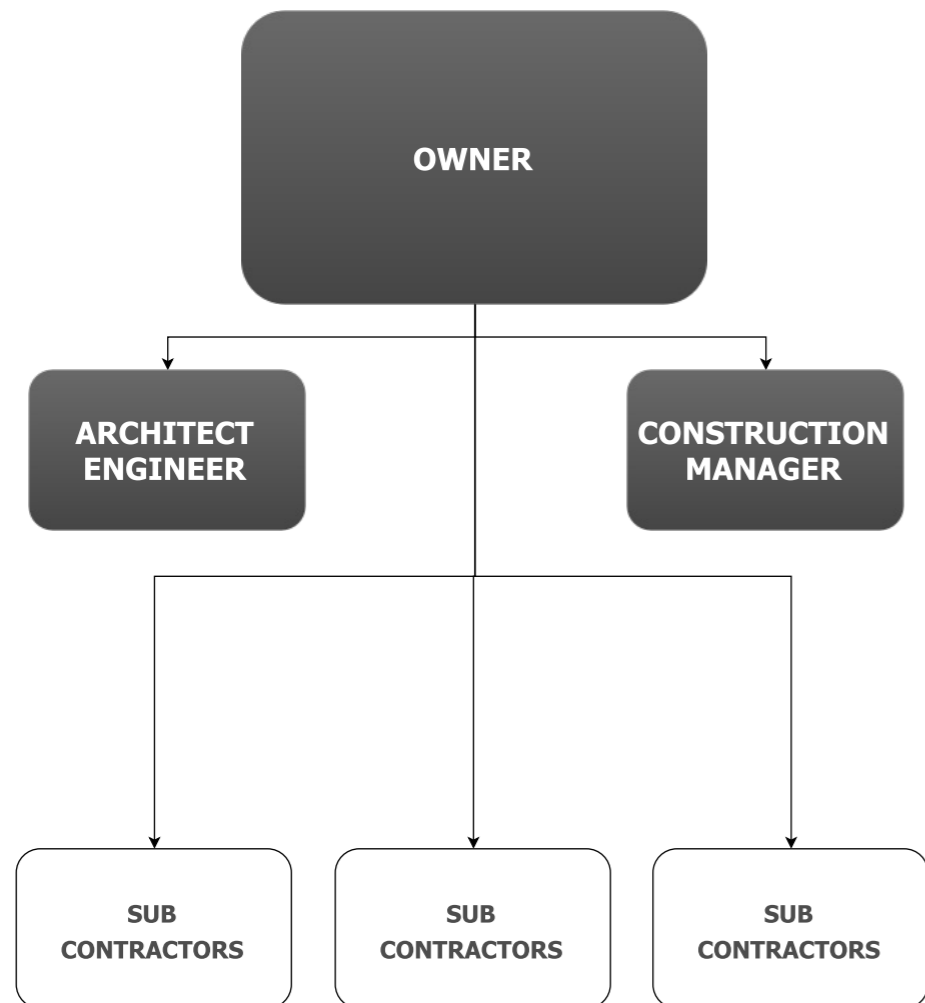
TRADITIONAL DELIVERY MODEL or DESIGN-BID-BUILD

This delivery model breaks the process into three steps, design, bid and finally build. Design-Bid-Build offers the least amount of collaboration be tween stakeholders. Contractional relationships between owner, architect and construction company are completely individual.
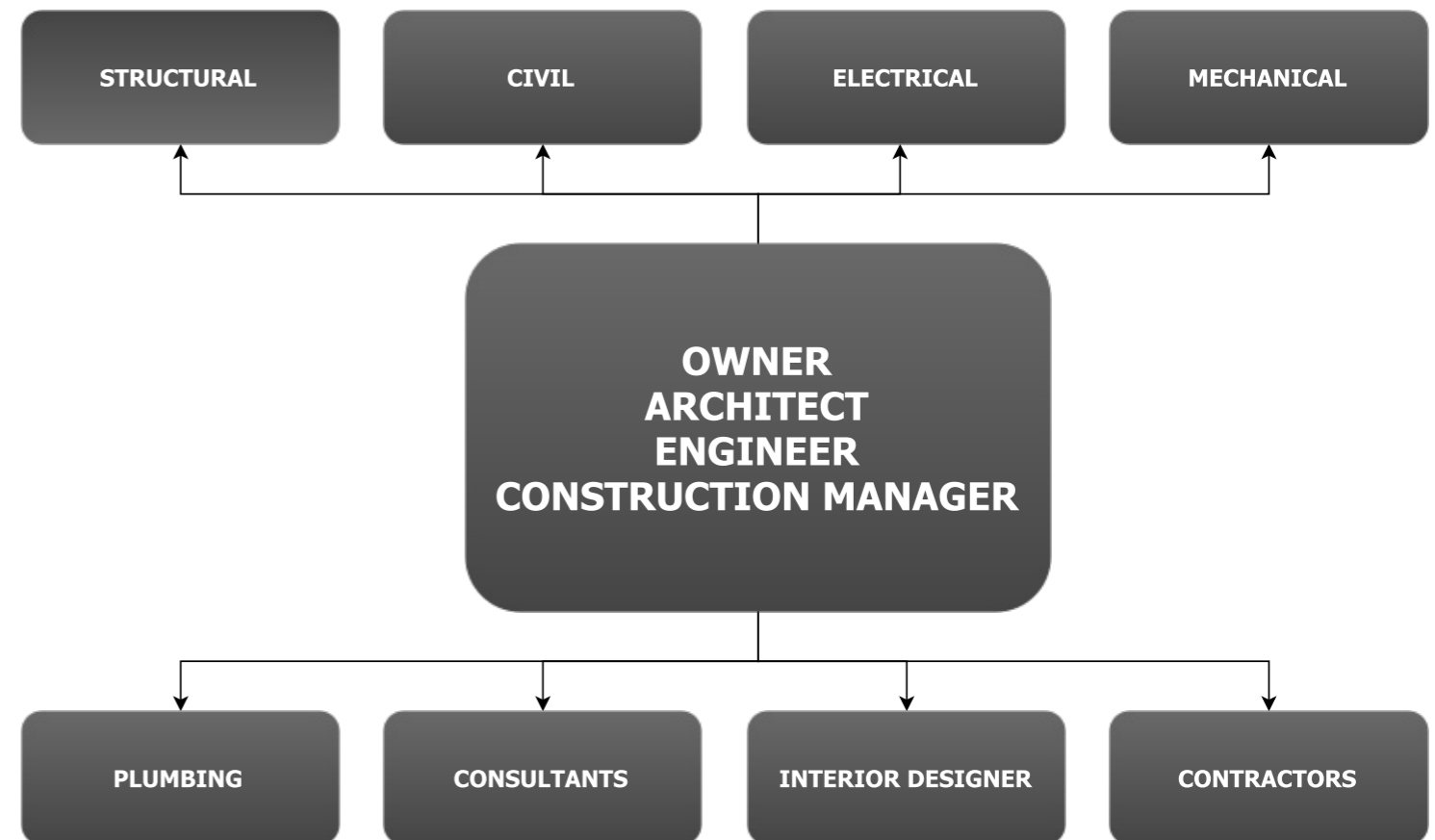
DELIVERY MODELS

CONSTRUCTION MANAGEMENT

In this model the construction management organization is a third party. The company is typically paid a fixed fee. Contracts with the architect, engineer construction managers and trade contractors are all separate. Due to the fixed fees budgeting must be precise early in the process.

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                    OWNER

    ARCHITECT              CONSTRUCTION
    ENGINEER                 MANAGER

    SUB           SUB           SUB
 CONTRACTORS   CONTRACTORS   CONTRACTORS
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INTEGRATED PROJECT DELIVERY (IPD)

The Integrated Project Delivery model offers the most collaboration of any of the models we have looked at thus far. Owners, architects, engineers, contractors, construction managers and consultants become involved early in the process in order to work together in a cohesive manner. The IPD delivery model distributes the risk of the project amongst many stakeholders. Below the diagram shows an example of stakeholders involved in the process.
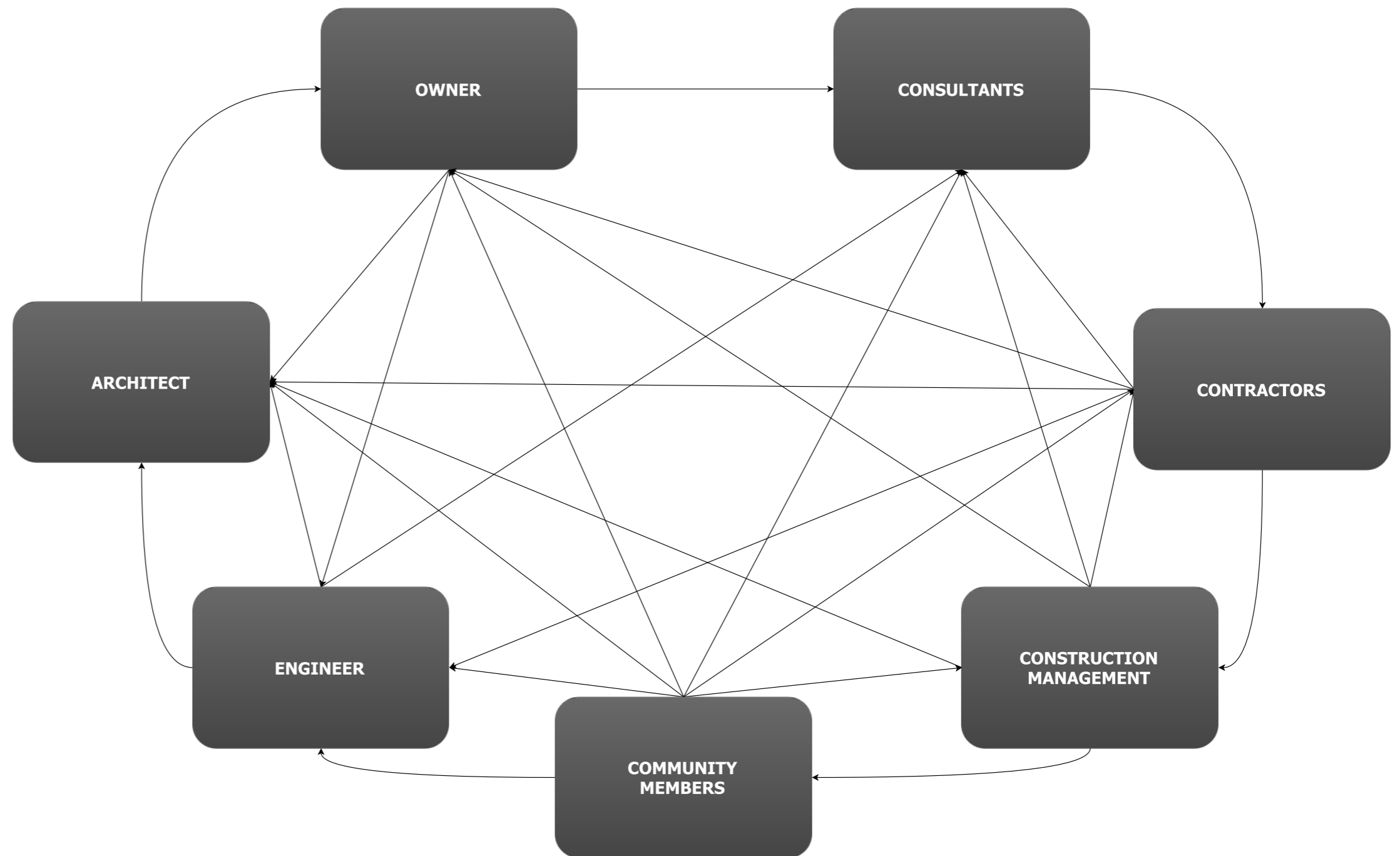
```
  STRUCTURAL     CIVIL     ELECTRICAL     MECHANICAL

                OWNER
              ARCHITECT
              ENGINEER
          CONSTRUCTION MANAGER

  PLUMBING    CONSULTANTS   INTERIOR DESIGNER   CONTRACTORS
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DELIVERY MODELS

HYBRID DELIVERY MODEL

The Hybrid Delivery Model values the input of all stakeholders from the beginning. This Hybrid model isn't a large departure from the Integrated Project Delivery model except for one component, this model incorporates community engagement.

It is clear to see after research into the alternative funding options such as Participatory Design, Public Private Partnerships and Crowdfunding, that the Hybrid model fits best. Community engagement is key to the success of anyone of these models.

Inviting as many stakeholders as early in the process as possible is key to success in designing for the public sector. After all, how can we design for the people if we don't know the people we are designing for.

OWNER

CONSULTANTS

ARCHITECT

CONTRACTORS

ENGINEER

CONSTRUCTION MANAGEMENT

COMMUNITY MEMBERS

This project is important for both the profession and for community development. When building slows, firms need to survive. Seeking projects with alternative funding options is a way to ride out the storm. Rather than waiting for clients to come to them, a firm can actively seek out projects using Crowdfunding, Participatory Design or a Public Private Partnership to stay viable. Crowdfunding has become a popular source of funding all sorts of projects and goals, it will have an increasing impact on the world of Architecture. With a diminishing tax base, creative funding of projects with any combination of crowdfunding, P3's and Participatory Design will be required.

The history of community redevelopment projects has seen many failures. Many times these failures are due to a lack of community engagement with the project. Involving the end-users in the planning, designing and construction of a project will increase the success of the project. All of these funding options allow the firm to get out into the community and engage with the public. Involvement is as much about staying profitable as it is about helping the community around the firm.

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