

**A History of Construction Management
Program Management
and
Development Management**

An Industry and Personal History by

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During World War II there was virtually no construction taking place in America except for construction related to the war effort. In the years immediately after the war, on into the early 1950s, most construction in America was for “catch up” projects such as additions to the local school or hospital, new private houses, repair and expansion of the “wet and dry” civil infrastructure, repair and expansion of all sorts of other facilities and a good many relatively small to modest sized commercial, industrial and governmental projects.

However, by the mid 1950s much larger construction programs were being planned and built throughout America. These included many huge new hospitals, large school building programs, other major public projects such as tunnels, bridges and expressways, larger more modern industrial, business, public and military facilities, and other large projects of all sorts.

By the 1960s there were many larger projects being put out for construction bids and under construction.

Also, the 60s saw very high rates of inflation in the economy ---- the highest seen in America up until then except during war time ---- and the cost of money began to soar in the credit markets. Further, up until that time, there was no separate profession dedicated to the overall management of these huge projects on behalf of the owner.

As a result it was common for these large projects, mostly for public owners, private non-profit institutions and major corporations, to run into both delays in construction and unpredicted high bids as well as significant cost increases to the owner during construction. Also, as a further result, during the 60’s there was the “search for the guilty” as a major topic of discussion and concern among governmental and corporate project owners, architects and engineers.

Since the bearers of the bad news, in the form of unexpectedly high bids or unexpected and large contractor initiated change orders, were the general contractors, many saw the general contractor as the guilty party.

Partially as a result, the idea began to be floated of a professional construction manager, envisioned then as an entity which would replace the general contractor and be fee compensated, though in some cases with time and cost control incentives.

The idea was that the professional construction manager would buy out the project competitively from trade (“sub”) contractors and building product manufacturers. These contracts would be between the owner and the respective trade contractor or supplier with the construction manager designated in those contracts as the owner’s representative. If there needed to be early awards of certain of the trade contracts or long lead procurements before the final design was completed, they would be awarded in a similar fashion.

Meanwhile, in the architectural practice of Heery & Heery, as we began to grow, we encountered resistance to our modern design philosophy.

In the Southeastern U.S. both business and institutional leaders were slower than their counterparts in other parts of the country to abandon traditional architectural design and embrace the modern movement.

However, I was fresh out of Georgia Tech’s architectural program and was a dedicated disciple of the Bauhaus.

In our part of the country, the exception to clients who wanted to stay with traditional architectural design were the executives of manufacturing companies when it came to the design of their manufacturing and assembly plants as well as distribution centers. At the same time, the South was then attracting a lot of the expansion and relocation of industry from the Northeast and upper Midwest. So we began, with some success, to focus on that design services market.

Soon, though, we found our competitors were not so much other architects as they were the design-build contractors who claimed faster delivery and lower costs to the owner.

So we set out to compete with that approach delivering faster designed and built facilities at lower costs without giving up our professional designer and adviser status (much less our Bauhaus ideals). Soon we realized we were delivering not only architectural and engineering services but also “construction management” services. In turn, we built a pretty good regional reputation as good architects who could get the client’s building completed quickly and within smaller budgets.

We began to call what we did “Architectural, Engineering and CM” services. This approach of combining architectural, engineering and construction management services stood us in good stead when we were appointed along with the firm of Finch, Alexander, Barnes, Rothschild and Paschal to design and manage the construction of the new Atlanta and Fulton County Stadium which had to be designed in secret and built within one year as part of the Braves Baseball team’s move from Milwaukee to Atlanta.

No one had built a major league stadium since World War II in much under two years. Yet, at age 36, serving as the Project Manager for what came to be called Heery-Fabrap, I told the mayor of Atlanta, the Chairman of the largest bank in Atlanta and the head of the Atlanta Coca-Cola Bottling company, Arthur Montgomery, who was asked by the Mayor to serve as Chairman of the Atlanta and Fulton Country Recreation Authority, that we could do that.

And we did, in fact, complete the construction and open for the Braves to play their first game in Atlanta 11 months and 3 weeks after we broke ground, and the cost of only \$13 Million was within the original budget and schedule.

Shortly afterwards, Heery & Heery was engaged by Lockheed to help plan new facility needs for Lockheed obtaining the contract from the U.S. Air Force to design and manufacture of the huge C5A military transport at their Marietta, Georgia plant. The first and “long-lead” project was to be a 300,000 square foot new one story office building to provide the space for the aircraft’s design engineers. To meet the aircraft design and manufacturing schedule the new facility had to be completed within 100 calendar days after Lockheed was awarded the contract and neither final design nor construction could start until Lockheed had the contract for the airplane.

To achieve that we developed a preliminary plan to use a modular pre-engineered industrialized building system referred to as the SCSD system. This was a pre-engineered, pre-fabricated system made up of a 5 foot grid light structural steel frame coordinated with pre-engineered ceiling, HVAC distribution and lighting systems and other components.

SCSD stood for School Construction Systems Development, the brain child of architect Ezra Ehrenkrantz and was developed under a grant from the Ford Foundation through its Educational Facilities Laboratory in New York City headed by a former educator, Dr. Harold Gores.

As our Lockheed project moved along, I got a call from Dr. Gores saying that he and Mr. Ehrenkrantz wanted to come see me, which they did. I thought they were coming to see us to say how happy they were that we were making other uses of their system.

Instead, they came to say that we had bought up all of their system components that they were planning to use on some school projects. They wanted me to look for other alternatives for our Lockheed project. That was not feasible and it would have been unethical in terms of our obligations to our client.

Our procurement procedures on behalf of Lockheed were very strong, and we could not help the Educational Facilities Laboratory with their problem. So the Lockheed project continued on schedule using the SCSD system and was completed on time.

However, shortly afterwards, Dr. Gores called me to ask if we could act as construction management consultants to the Minnesota State College system on 11 projects they needed to undertake on an accelerated basis. The Educational Facilities Laboratory was willing to foot the bill for our services.

Of course we said yes and we did help them make a success of their accelerated projects. That was the first time (1968) that Heery & Heery provided construction program management services for projects for which we were not also the architect.

It was in that period of the mid 1960s that a small company, AMR, which I think stood for Advanced Management Research, and which put on various types of seminars around the country on such subjects as tax shelters, better personnel management procedures, and the like, heard the term "construction management".

The AMR guys found that there was widespread interest in this not-yet-fully-defined area of business and decided to put on seminars on the subject of Construction Management. For a seminar faculty AMR recruited Chuck Thomsen, then head of construction management for CRS and later to become the Chairman/CEO of 3DI, Bob Marshall of Turner Construction Company, Jim O'Brien, the author of the book on the then relatively new, computer based Critical Path Method, Al Dell'Asola, the father of value engineering, Frank Mueller, a construction consultant, Wally Meisen and Bert Berrebe of GSA and several others including myself.

This went on for several years. Also, Louis N. "Vic" Maloof, my close friend and colleague at Heery & Heery, took my place as a faculty member on several occasions.

These were all knowledgeable people from the construction industry, related consulting firms or from the Public Building Service of GSA. I think it is fair to say that we all brought something to the table.

AMR would put on one of these seminars every 6-10 weeks, each time in a different city. The sessions lasted a couple of days. Each of us made a presentation for the paying audience on some aspect of the subject.

The "faculty" usually gathered at the seminar hotel the evening before and swapped ideas and experiences. It was a very interesting time and set of events as well as a learning experience for all of the faculty as well as the seminar attendees.

In our evening sessions preceding the AMR seminars, with the term "Construction Management" referring to the concept of replacing the traditional general contractor with a professional construction

manager, the faculty members traded ideas about how to improve on the approaches and services of this relatively new profession.

However, I began to make the case with my colleagues in AMR's "CM Faculty" that if you are going to successfully deal with the issues of time and cost control that you had to deal with more than the construction process and the builders. You had to deal with the whole construction "program".

I took the position with my colleagues that the term "construction program" referred to pre-design planning, programming, scheduling and budgeting, the whole design process, the construction procurement process, the construction, furnishing/equipping and interfacing with financing and jurisdictional approval processes.

The first reaction by the other members of the AMR faculty was that I was off on a "Mickey Mouse" tangent. Yet, in time, several of the others, including Chuck Thomsen, came around to the idea of Construction Program Management as a wider set of services to better serve the owner and better deal with time and cost control while achieving the desired end product and quality of architecture.

In the years that have passed, Construction Management has taken on several different meanings and services. Today, in addition to referring to the management of construction within a construction company, "CM" can correctly refer to any of the following:

- CM Agency (The original concept of supplanting the general contractor with a fee compensated construction manager.)
- CM as the Owner's Rep during construction often with some design phase consulting.
- CM-at-Risk (Similar to the original concept but with the trade [sub] contracts held by the CM who also gives a guarantee on the total cost, thus effectively becoming a fee compensated general contractor.)
- "CM" as a term used in lieu of "CA" (Contract Administrator) on behalf of the owner.

As Construction Management and Construction Program Management separately evolved, more and more general contractors moved towards Construction Management at risk, while architectural and engineering firms and other consultants moved towards CM as a professional service and towards Construction Program Management, though it was not a rigid split between contractors and consultants.

The first time I heard the term "Program Management" in lieu of the full term of "Construction Program Management", was about 1976. At Heery & Heery (later to become Heery International) we had set up a separate subsidiary to deliver these services, usually with our helping the owner engage a separate firm as the architect/engineers. We named that division, "Heery Associates, Inc. Construction Program Management".

One evening while several of us were delayed on our flights out of the Atlanta airport due to bad weather we started talking about the unwieldiness of that name. I said we just had to think of a shorter name for that division. After some discussion, Vic Maloof, who was heading up the new subsidiary, said, "Why don't we just call it 'Heery Program Management'?" We all immediately endorsed the idea.

That was the first time to my knowledge that the term “Program Management” was used for “Construction Program Management”, and it meant representing the owner and dealing with the whole pre-design, design and construction process in order to advance and protect the interests of the owner. That is the way my colleagues and I still use the term as do many other program management service providers and owners.

The term is also used today to refer to the management on behalf of the owner of multiple construction projects.

To outline the basic duties and services of a Program Management team, the concept in its simplest form is for the team to be seen as a part of the Owner’s organization. In some cases, in fact, this team will be a member of the Owner’s organization so long as the Owner’s organization has the qualified people available in its organization. The Program Management team will be at least two people, often more – in some very large construction programs being an extensive team ---- and will include expert support in both design and construction contract, construction costing and scheduling.

It is very important for the Program Manager to be selected before architects and engineers are engaged. (Sometimes there may be the need to have some preliminary planning carried out by architects and engineers before the program of requirements and budget can be set. However, if that is the case that needs to be under a separate design or planning contract. In some cases it may even be from a different design firm from the one that ends up serving as the project architect and engineers.)

The first task of the Program Manager is to be sure that there is a detailed Program of Requirements (“Program”) --- often a fairly detailed and lengthy document --- and that all stakeholders within the Owner’s organization have signed off on it. Further, there needs to be a Total Project Budget including all hard and soft costs including contingency funds. And there must be a fully understood Master Design and Construction Schedule. Further, these three documents must be fully compatible with one another.

If these documents don’t already exist the Program Manager must be sure they are developed --- very possibly being the one to develop them --- and must be capable of being sure that they are in fact fully compatible with one another.

The next task is that of putting the project Architect and Engineers under contract with the Owner. Typically that is either one firm with all capabilities or an architectural firm with consulting engineers and architect’s cost consultant as subs to the architect.

The Program Manager would then prepare a project-specific Agreement between the Owner and the architect and assist the Owner in its negotiation and execution.

Full design work can then start.

Throughout the project from that point forward the Program Manager acts on behalf of the Owner to be sure all other parties are fulfilling their contracts, the Owner is responded to as needed and in its best interests, and help keep the whole process on schedule and in budget, always representing the best interests of the Owner throughout with technical capabilities for the particular project.

Some outstanding professionals in Heery during those years greatly contributed to the fuller development of Program Management services as have some very well qualified professionals at Brookwood Group in later years. In the early days, at the head of the list was, and is, Vic Maloof, a

graduate of Georgia Tech in both architecture and structural engineering, who joined me in 1960 and had become President of Heery, with my serving as Chairman, by the time we sold the company. Vic rejoined my other colleagues and me several years ago at Brookwood Group and continues to lead in cutting edge developments in program management. Another was the late Dave Kelly, both an Auburn and Georgia Tech alum with degrees in structural engineering. A tough former Marine who was badly wounded during the war in Borneo, Dave was a workaholic who led some of our early large program management assignments, such as a major expansion of the Ochsner Clinic in New Orleans. Others who made significant contributions were Ennis Parker and the late Marvin Powell.

Another important contributor who has been an all-around highly competent architect and program manager, is Brinton Smith, an architect and experienced program manager who has worked with me for many years, first at Heery International and at Brookwood since its founding. And much additional knowledge and guidance has come from Brookwood principals Bob Bunker and Bill Ray, both having retired from the Corps of Engineers as Major Generals.

Later within Brookwood Group, my eldest son, Shepherd Heery, would swap experiences. At that point in his career, after graduating in architecture from Cornell, practicing for several years and then earning an MBA at the Wharton School and working a number of years as a real estate developer, he had become a true expert in many related areas. In turn, particularly in connection with delivering program management services for projects done by the Bridging method, Shep and I regularly swap experiences. Today he is President and CEO of Brookwood Group.

As early as around 1990, with Shepherd Heery, Laura Heery and myself as principals of the firm, Brookwood began to provide a number of clients with Development Management services.

Today, under Shepherd Heery's leadership, Brookwood defines Development Management as incorporating several or all of the following services: Project visioning and comprehensive management including market research, site search, due diligence, land acquisition, community outreach, entitlements, programming, scheduling, total development cost modeling, financial pro-forma preparation, equity capitalization, debt financing, permitting, public relations, marketing, leasing and/or sale(s), title matters, reporting, legal and insurance plus full design and construction program management.

Development Management services are not something just any design or construction management professional knows how to manage. Probably the only way to learn what really must be provided in the way of DM is to experience actual at-risk development.

Early in the life of Brookwood, Shepherd Heery and I, as individuals, undertook to carry out a major real estate development in the Buckhead area of Atlanta. Development of the project included the full development and sale of units in a very well accepted "New York Co-op" with prices higher than had been seen before then in the condo market in Atlanta.

Brookwood provided full design and development management, with the two principals providing the at-risk equity for the project. The project was 66% sold before ground was broken. Today, The Wakefield continues to set the standard for quality of design and construction as well as services and security in the Atlanta market.

We have also provided Development Management services to clients such as Cal Poly in San Luis Obispo, California as well as for a Georgia Tech facility owned by The University Finance Foundation

in Savannah, Georgia, for a manufacturing plant in Juarez, Mexico for Scientific Atlanta (now Sysco Systems), and the large country headquarters in Tokyo for Aflac.

Prior to joining with the two other partners in Brookwood, Shepherd Heery, had a number of years of experience in commercial real estate development, particularly in the high rise office building market in the San Francisco Bay Area. A few months before his graduation from Wharton School of Business at the University of Pennsylvania he was recruited by the Gerald Hines Company and moved at that time to Hines' San Francisco office. He remained at Hines until his resignation in 1989 when Brookwood was formed.

In 1998 Brookwood sold a specialty branch-back conversion project management group to a national real estate firm and Shep went with that company for two years to see the merger through. He then returned to real estate development in the Bay Area working first with a well know developer and later becoming the SVP for design, construction and project management for Meyers Development.

In 2007, upon the purchase of a major interest in Brookwood by architect-investor Tom Blount, Shepherd joined the Brookwood Board and rejoined the company full time in late 2008, succeeding me as CEO as of the beginning of 2010.

Today, with other professionals experienced in real estate development joining the firm, along with experience in the Atlanta office in the development of The Wakefield, Brookwood is providing Development Management services to a number of clients in both the private and public sector including a project for a major corporate headquarters in the Mission Bay area of San Francisco for salesforce.com

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DEVELOPMENT MANAGEMENT

Project visioning and comprehensive management including market research, site search, due diligence, land acquisition, community outreach, entitlements, programming, scheduling, total development cost modeling, financial pro-forma preparation, equity capitalization, debt financing, permitting, public relations, marketing, leasing and/or sale(s), title matters, reporting, legal and insurance plus full design and construction program management.

PROGRAM MANAGEMENT

The management on behalf of the Owner of a design and construction program, including the determination before design starts of the program of requirements, total project budget and master design and construction schedule; assisting the Owner in the selection of the design team and placing those professionals under a project specific contract with the Owner; monitoring the design process and managing the Owner's review and approvals; construction procurement; the construction, and the close out and documentation on behalf of the Owner.

CM (CONSTRUCTION MANAGEMENT)

The management on behalf of the Owner of construction procurement and construction.