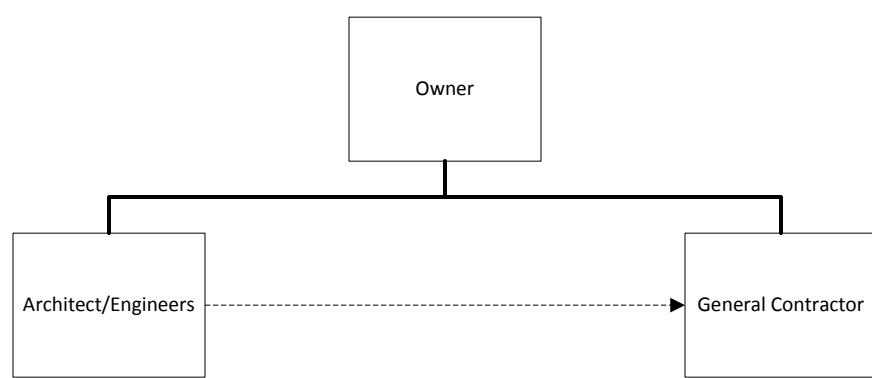


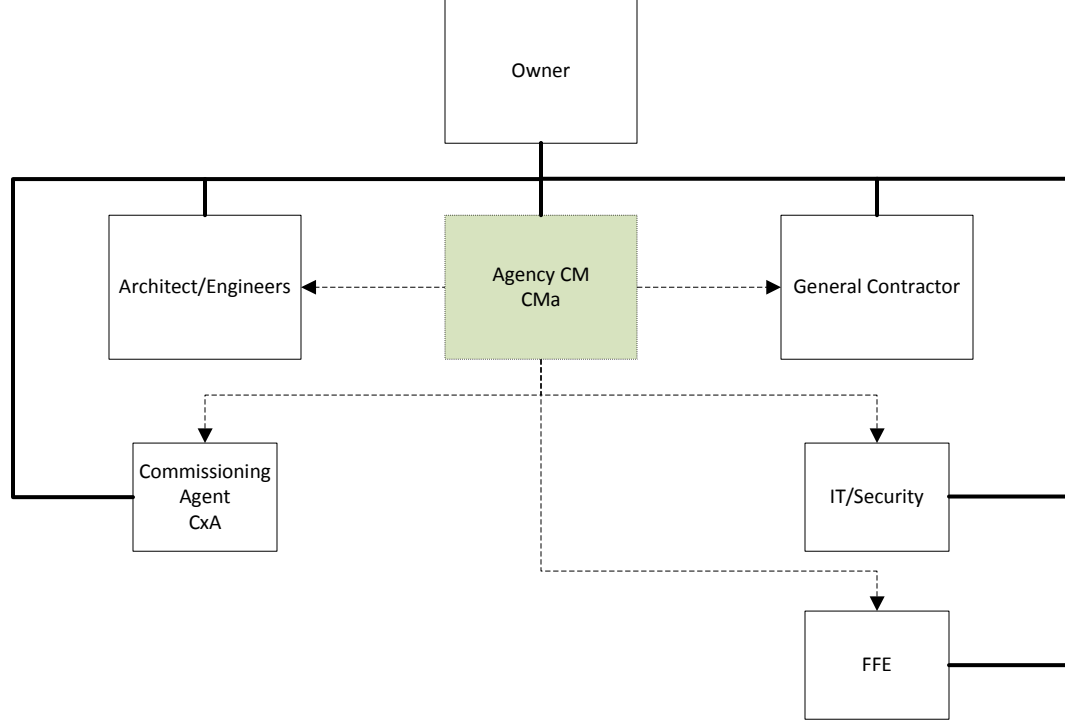
TRADITIONAL DESIGN-BID-BUILD (DBB) DELIVERY



The Owner contracts the Architect for design services and the Architect hires the necessary design-engineering services. The completed design documents are then competitively bid by contractors for construction. The Architect assists the Owner during the bidding phase with selection of a Contractor, and the Owner contracts for construction services with the selected Contractor. During construction the Architect provides construction contract administration services (“CA”) which includes acting on behalf of the Owner as the Owner’s agent in a fiduciary role to protect the Owner’s interest.



DBB with AGENCY CM (CMa) or OWNER’S REP



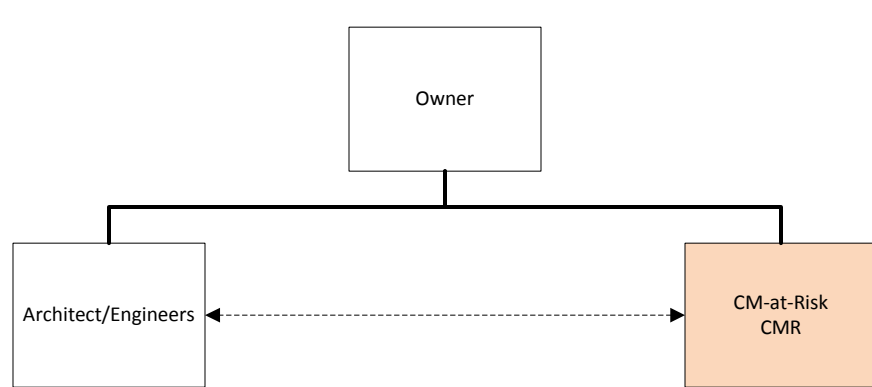
Although understood to be a conflict of interests, the Architect also has an interest in the design for which it is liable. If the Architect knowingly or unknowingly underperforms in its CA role; fails to act on behalf of the Owner; or does not disclose certain information to the Owner in fulfilling its capacity as a fiduciary, the Owner may encounter potential risks for which it is not at fault such as: design omissions and errors; misrepresentation of design-related change orders; overpayment to the Contractor; and/or, faulty or poor construction.

In addition to separately contracting for design and construction services, for various reasons an Owner may also elect to contract with a Construction Manager as Agent (CMA), which is sometimes used synonymously with Owner’s Representative (OR). Either is equated to an extension of the Owner with no conflict of interests as a 3rd-party fiduciary. Depending on how the services are compensated, the CMA (or OR) has no material interest in the design or in the construction. Thus the CMA without bias to the Architect or Contractor advises and assists the Owner in management of the design and construction services while providing a greater technical knowledge and competency than the Owner usually has on staff.

As with the example to the left, multiple contracts are often let by the Owner for other goods and services. All must be well-coordinated and managed to integrate with both the design and construction phases demanding project management oversight. Many Owners cannot afford to dedicate their human resources to the myriad responsibilities of administrating all the various vendor contracts, and therefore, choose to engage outside resources with the CMA to perform these project tasks.

Should the CMA underperform; fail to act; or be unsuccessful in mitigating issues arising from design and/or construction, the Owner as the contracted party must deal with settling disputes and/or the ensuing consequences. Although the CMA is not an insurer against breaches of contracts, nonperformance, or negligence by architects, contractors, and suppliers, any contract claims against the Owner such as, but not limited to, a constructive delay, constructive change, constructive acceleration, deficient documents, or contract termination are still risks the same as in a DBB delivery without a CMA. However, as with any professional skill and experience of the CMA can either help to alleviate or exacerbate these situations should they arise.

CONSTRUCTION-MANAGER AT RISK (CMAR) DELIVERY

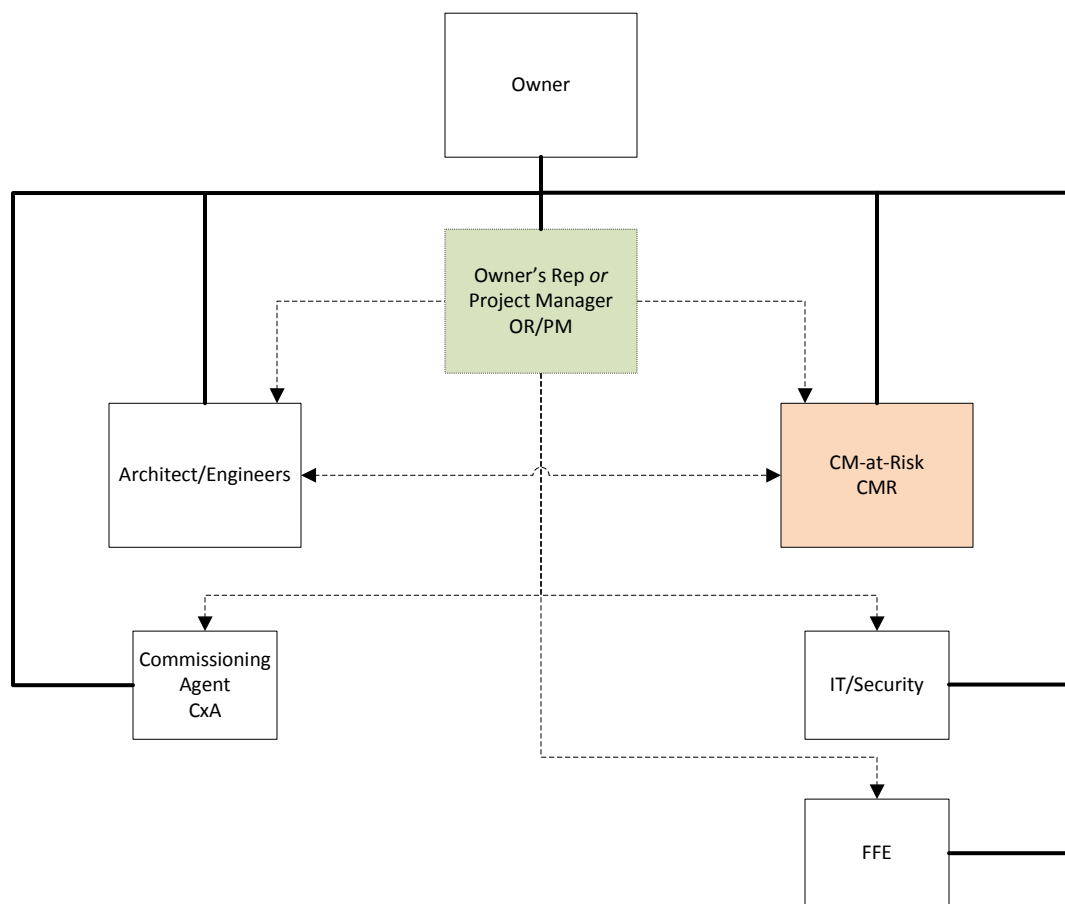


Note the difference between CMAR (project delivery method) and CMR (role). For a CMAR project the Owner engages the Contractor early during the design phase to advise the Owner on constructability of the proposed designs, estimated construction costs, and possible alternative solutions to help improve construction time, costs, and/or quality. The Contractor is considered both a partner and an advocate of the Owner during the design. In a collaborative relationship with both the Architect and the Owner, the Contractor acts as the Owner’s consultant to help inform the Owner’s decisions within the design process as well as to guide the Architect and design team in developing plans for a practicable, cost-effective implementation.

This is somewhat like a DBB in which the Owner hires a Contractor for pre-construction services during the design phase to perform similar consultative and cost-estimating functions. For a CMAR delivery the Owner elects to contract with the Contractor prior to construction and at some point in time during the design the parties are to agree on a Guaranteed Maximum Price (GMP). The Contractor is thus “at-risk” of completing construction for the GMP amount once construction begins. Because the Contractor is also assisting the Owner with managing the design process the same as a CMA in the preceding project delivery example, the Contractor is customarily described as a Construction Manager-At-Risk or CMR.

If the Owner and CMR cannot agree on a GMP, the contract typically accounts for this event with a “kick-out” such that the CMR is compensated for the pre-construction services performed and the Owner seeks bids from other contractors. Bear in mind that GMP does not exclude any change orders during construction as some less familiar with industry practices might be inclined to surmise from “guaranteed maximum price”. Even the most trustworthy CMR may be entitled to change orders because of discovered design deficiencies, delays, differing conditions, etc. during construction. But a less than scrupulous CMR can easily exploit these opportunities and even cleverly set them up during the pre-construction phase while influencing the design. Unless the Owner has a high-level of trust in the CMR, the conflict of interests as both the constructor and the Owner’s advisor impairs the role as a fiduciary.

CMAR DELIVERY with OWNER’S REP or PROJECT MANAGER



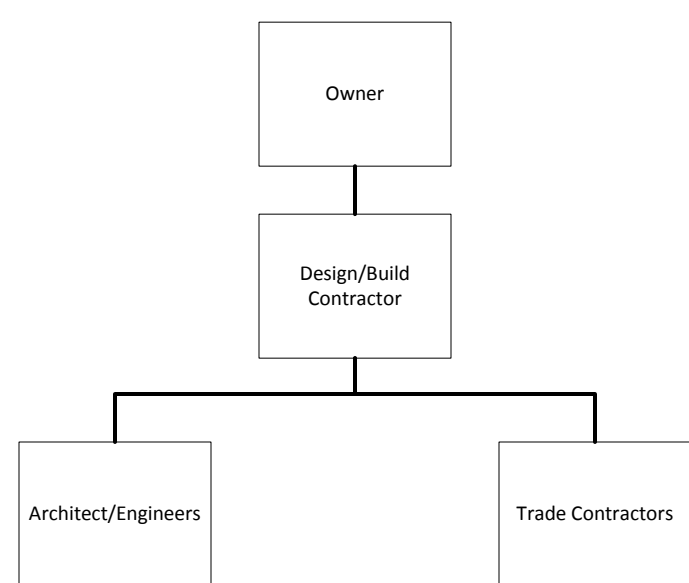
A hybrid project delivery version is the example to the left whereas the 3rd-party fiduciary is contracted by the Owner and referred to as either the Owner’s Rep (OR) or the Project Manager (PM), so as not to be confused with the CMR. There is no conflict of interests for the OR/PM while overseeing the same delivery process as shown above. The Owner can still benefit from the CMR’s pre-construction services and also establish a GMP but with the impartial assistance of the OR/PM for check-and-balance controls.

As with most projects the Owner contracts with multiple vendors and consultants to undertake and perform all of the work, which the CMR would normally not manage as part its services. Of course the CMR closely coordinates and schedules all “Owner-furnished labor and material” as obligated by the construction contract, but the Owner still has to solicit, procure, and administrate the contracts for each vendor and supplier. For most Owners they cannot divert or dedicate staff to these project demands as the day-to-day internal workload of their operations is already taxing. Therefore, retaining a qualified and dedicated OR/PM for the project(s) is the best practice as shown at left.

Further, the OR/PM provides the expertise and experience to protect the Owner’s interests at many levels, but most noticeably in project change management. Many decision-gates and events occur throughout the project-cycle which have the potential to cause a change or to present an opportunity for a change in the scope, schedule, and/or costs – sometimes for the positive, some negative, or even just neutral at times. But evaluating each, analyzing them, and challenging if necessary their legitimacy are almost always within the context of very technical issues and contractual considerations. Most Owners are not equipped with the particular knowledge and understanding to appraise such issues and the projected effects of each, which is why the OR/PM negotiates directly with the parties on behalf of the Owner to preserve or obtain what is in best interest of the Owner.

Just as the CMA is not an insurer against another party’s nonperformance or contract claims against the Owner, the OR/PM too cannot insulate the Owner from such risks but can supportively help to manage and mitigate them depending on the level of involvement and participation allowed as defined by the scope of services.

DESIGN-BUILD (DB) DELIVERY



Another project delivery method is Design-Build (DB), which has been increasingly the choice of government agencies as project Owners in the public building segment of the industry. The DB method essentially transfers the responsibility of design to the Design-Build Contractor (DBC), also as the Design-Builder; and, reduces the project delivery time such that construction of certain portions of the project begin prior to the completion of all designs for the entire project. Compared to the traditional DBB method, this method has certain advantages.

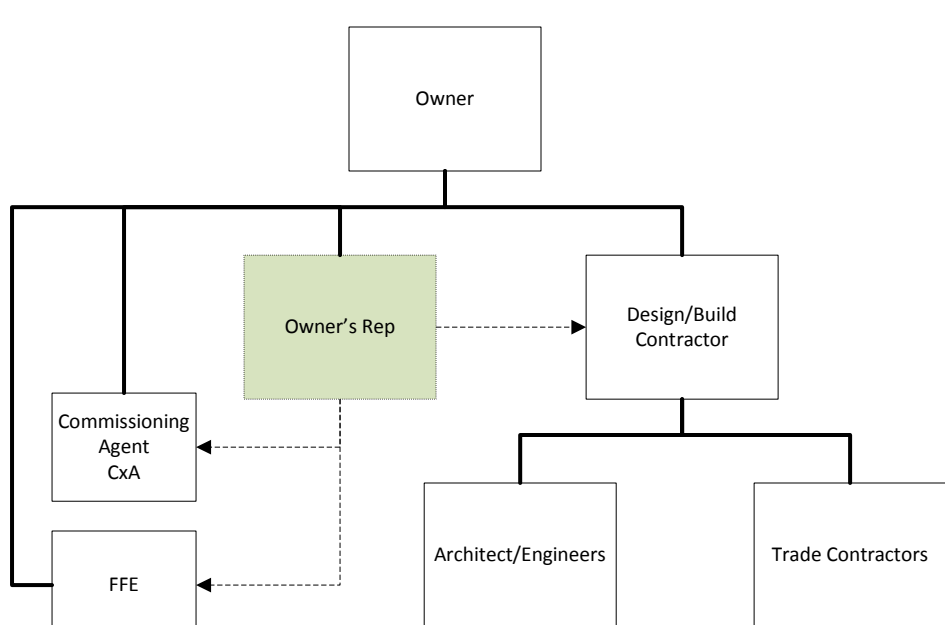
First, the Owner does not bear the risks of deficient design documents, design errors and omissions, and conflicts between the builder and the designer as it would in DBB or CMAR. The DBC contracts with the Architect and Engineers, and is therefore responsible for their performance and the design. This can be appealing to many Owners for avoiding the inherent issues often experienced when the Owner separately contracts the design team and the contractor.

Second, the project schedule is expedited with construction commencing earlier than the final completion of all design documents. This is done by the DBC first designing the primary phases of construction such as the base building (core-and-shell) which include the building structure, basic floor plate layouts, MEP chases and rooms, and long-lead items and equipment. The succeeding construction work such as offices, finishes, lighting fixtures, tenant improvements, etc. are designed and specified in time for allowing selections, ordering, deliver, and installation in coordination with the construction schedule.

The major disadvantages arise from the Owner’s very limited control of the design. At the beginning of a DB project prior to any design work, the DBC and Owner develop the Owner’s Project Requirements (OPR) document which sets forth the criteria for all aspects of the finished building product from systems’ performance requirements to minimum quality standards to aesthetic requirements to equipment maintainability and service life requisites. This is a very-detailed and very technical document because the OPR establishes the basis and the metrics for the entire project. Using the OPR, the DBC develops the designs and is obligated to construct to satisfy the requirements and criteria spelled out by the OPR. The Owner does not participate in the design process to the extent they would in a DBB or CMAR project. Thus, the OPR is most critical to the success of a DB project.

For the Owner to be able to evaluate whether the DBC has actually satisfied the OPR, a team of professionals and consultants are usually employed to review the drawings and specifications, and examine and test the installed work and systems for compliance with the requirements as set forth by the OPR. Ambiguity and holes in the OPR, if not mutually rectified by the Owner and DBC, lead to later disputes over what was constructed and delivered.

DB DELIVERY with CMa or OWNER’S REP



Because the Owner usually does have to retain technical advisors and experts to review the work against the OPR, many Owners elect to hire an Owner’s Rep on a DB project to: 1) ensure the OPR criteria and requirements are both adequately detailed and are measurable, and 2) the constructed and delivered product meet the OPR. The Owner’s Rep is responsible for selecting and managing the team of consultants necessary for the tasks at hand.

For example, a Commissioning Agent (CxA) is frequently part of the team representing the Owner. Establishing the metrics by which each of the building systems (HVAC, electrical, lighting, plumbing, security, etc.) will be tested to demonstrate compliance with the Owner’s stated requirements is an absolutely crucial step during the process of developing the OPR and Basis-of-Design (BoD) documents.

Ordinarily, the OPR makes references to ASTM standards and test methods. Additionally, language is included obligating the DBC to install products and equipment in accordance with the manufacturer’s installation requirements to ensure that warranties to Owner are upheld. A faulty or incorrect installation will immediately void a warranty in most cases. So during construction before certain installations are concealed, the Owner’s Rep will conduct inspections to examine and/or test the work to verify proper installations. Later discovering a deficiency post-construction, especially with concealed work, can be not only costly but also disruptive to operations if found after turn-over. Demanding a callback warranty correction from the DBC can be protracted and difficult, particularly after the customary 1-year callback period expires, which is when problems usually are noticed years after construction.

Further, the Owner’s Rep team advises the Owner on progress payments to the DBC commensurate with the completion of work. This goes hand-in-hand with the progress inspections, and most applicably to final payment once all work is determined to have satisfied the OPR.