

## CM: the only way to go fast track

The new Johns-Manville World Headquarters, designed by The Architects Collaborative, as winners of a nine-firm competition in 1972, is well into construction on its 10,000-acre site near Denver and is apparently meeting a completion deadline of July 4, 1976. H. O. McElyea, J-M's architectural representative, attributes a substantial portion of the schedule's success to the construction management of Turner Construction Company in their handling of the phased or fast track construction project. Joseph P. Hoskins, TAC's senior associate-in-charge, concurs in crediting Turner with keeping the job on stream. Both McElyea and Hoskins agree that construction management is the logical, if not the only, way to set up a phased construction project.

Hoskins makes the point that the important element in any such combination of professionals and clients is to get the project built the way the client and the architect want it to be. If everyone does his job well, any assembly of professionals will work. The work with Turner, he emphasizes, has been amicable and productive.

In working with a construction manager, Hoskins observes, the construction documents are different from those in a more conventional job to be done by a general contractor. With a CM, the contract documents provide a matrix by which you tell the CM what you want. While the cardinal features of the design are firmly stipulated and sustained, there is opportunity for the construction manager to price alternatives and make suggestions for expediting or saving on the work. Any adjustments to the specifications are negotiated on the spot by agreement of architect and CM.

In the sense of participation close to the construction project, the construction management process is actually a return to normalcy for the architect, Hoskins says. In the days of the master builders, so often referred to nostalgically, architects actively participated in construction on the site until their building was completed. Similarly, with a construction manager, the relationship of the architect to the project is more intimate and in closer control throughout from concept to completion.

Hoskins draws the parallel of the creative process as a continuing participation. If, for example, you do a presentation drawing by rote, it is likely to be a dead thing. If, on the other hand, you put your creativity actively into the drawing, it comes alive and fulfills its purpose. Similarly, by the architect's continuing relationship with his project through the con-

struction manager, his opportunity for creativity carries through as though the elements of the job were continuously on his palette. If the construction manager is equally professional and not in the adversary position that may be characteristic of conventional contractors, the job stays alive.

Mr. McElyea moderated a session at the Producer's Council Annual Conference in October, where Mr. Hoskins expressed some of the above views and Joseph Consigli, J-M's vice-president for facilities planning, and Barry Sibson, contract manager of the Los Angeles office of the Turner Construction Company rounded out descriptions of the roles of various members of the project participants.

Mr. Consigli reviewed selection of the site and development of a detailed program for the building as preamble to the competition. "We selected John Rogers of Rogers, Nagel & Langhart to be architectural advisor working in concert with The Space Design Group and our own facilities planning department." In explaining why J-M went outside for consultation in the program, Mr. Consigli observed that a fresh observation of needs and methods was desirable. He cited the experience of many corporations who have found themselves in inadequate space soon after occupancy because they have not applied the techniques and methods of long-range planning for office space that they themselves have used in the areas of marketing and development.

The owner, the space planners and the architectural advisor performed the research necessary for preparation of the program. This included systematic collection of data based on interviews with key executives and organization profiles of department activities, equipment needs and working relationships. Thus the J-M headquarters was planned from inside outward on a basis of real and projected needs.

Mr. Sibson spoke about the theory and practice of construction management on this job. An extract of his talk follows.

While Turner is a general contracting firm of longstanding, said Mr. Sibson, we have been performing work as a construction manager on a growing number of projects. We are often asked, "How does your job differ as a construction manager from that as a general contractor?" To fully answer this, I think it's necessary to understand what it is we are speaking of when we refer to a construction management contract, a modified construction management contract, and a general construction contract.

Under a pure construction management contract, the construction manager is retained as a professional to provide estimating and scheduling services during the design phase of a project. He also provides the coordination among the various specialty contractors who perform the actual construction work under separate contracts with the owner. He also is required to supervise the work. The construction manager by contract is not permitted to perform any of the construction activities with his own forces. He does not provide a guaranteed maximum price or a guaranteed time of completion.

Under a modified construction management contract, the construction manager again is required to provide estimating and scheduling services during the design period. He is required to construct the project and to perform all of the coordination and supervision of the subcontractors. He generally is permitted to perform portions of the work with his own forces and may be required to provide a guaranteed maximum price and a guarantee of completion. The subcontracts are held by the construction manager and he is fully responsible for the performance of the subcontractors much as a general contractor would be.

Under a general contract, the contractor is, of course, required to construct the building, provide a guaranteed maximum price and a guaranteed date of completion. In most cases, however, this contractor is not hired until the plans and specifications are complete.

Turner's contract for the Johns-Manville World Headquarters Project is what we term a modified construction management agreement. We have been involved with the project throughout the design period; we will have a guaranteed maximum price and we will have full responsibility for the performance of the construction work. Therefore, the major difference between our role in this project and the role of a typical general contractor, is the degree of our participation in the design phase of the project. It was this participation which, as I understand it, was paramount in Johns-Manville's decision to use a construction management approach for the construction of their new headquarters.

*Turner's participation during the design phase was much as Mr. Hoskins has described it, with the additional detail of how the budget was developed and how the guaranteed maximum price will be set at a key point in the process. This will be described in this department next month.*