Variation Orders in Construction Project in Oman: Problems & Remedies

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Abstract

Variations issued during construction are time consuming and costly. Thus, by accepting them as an inevitable part of construction, variations are a major cause of disruption, delay, disputes and sometimes generate significant cost impacts. Yet, no method is available for managing or controlling them. The conventional approach is to include a percentage of the project cost as a contingency in the pre-contract budget for their occurrence. Most contracting preformed in Oman is related to construction-type projects rather than services and supplies contracts. From the past records of these projects, it can be seen that there are major changes that occur during the course of the contract execution. These changes may appear in-terms of scope changes, major variations in quantities, changes in design, delay (extension of time), and unit rate changes. This project assessed variations in construction projects in Oman by investigating: (1) causes of variations; (2) their effects on the project; and (3) identifying the beneficial parties. Tasks included presentation of actual case studies and preparation of a questionnaire. It was determined that there are fourteen main causes of variations in construction projects in Oman and they are: (1) request for additional work or changes due to new findings or other considerations; (2) the owner requests the work to be modified; (3) the scope requirements during the design stage were unclear or not well defined; (4) the owner failed to make decisions at the right time or to review the detailed design because his/her technical staff were busy with other projects; (5) non-availability of field construction site engineers representing the owner; (6) poor communication between relevant governmental units and the owner; (7) non-availability of previously completed project records to address future problems that could arise; (8) failure to provide adequate and clear information in the Tender Documents; (9) natural growth of the project was not anticipated at the design stage; (10) unrealistic design periods; (11) non-availability of engineering licensing for engineers in Oman to maintain the quality of consultancy services; (12) non-availability of overall project planning; (13) unrealistic construction schedule; and (14) the General Conditions for construction are old and do not suit present construction practices.
The effects of variations in constructions projects in Oman were determined to be: (1) delay completion date of the project; (2) cost overruns; (3) contractors incur additional costs due to variations; and (4) claims and disputes. Also, it was determined that all three parties (owner, designer/consultant, and contractor) benefit from issuing variations to the contract.

Recommendations determined from this thesis were a set of remedies/activities to minimize variations in construction projects in Oman and they are: (1) a standard document should be developed to establish the stages/steps from the start of the project till completion and close out; (2) a permanent standard document should be developed to cover all construction regulations and permits required for projects constructed in Oman; (3) a specialized quantity surveyor and a project manager should be assigned to large construction projects; (4) a common learning data base system should be developed and shared among all governmental units; (5) a technical committee should be established to review overall planning, to establish a construction procedure manual, and to follow-up on its implementation; (6) the registration of consulting companies should be reviewed to reflect their technical capabilities; (7) a design engineer should not be allowed to practice in Oman without having a professional license; and (8) the General Conditions should be reviewed and updated.