

# Case Study: Manufacturing Facility

**INTERFACE**  
CONSULTING INTERNATIONAL

*Expert analysis and opinions related to design changes  
and change order requests*



# Dispute

An international materials manufacturer (owner) engaged an engineering contractor to design a new manufacturing facility in the US. Throughout the project, the owner paid the engineering contractor \$3.5 million in accordance with the contractual scope of work performed. During execution of the design, the engineer discussed several changes with the owner and submitted 24 change order requests for the owner's review and approval. The owner approved and paid the first ten change order requests; however, while the owner agreed that the remaining change order requests contained valid changes, the owner required additional documentation to support its approval of the requested \$900,000 for the additional work.

The owner acknowledged that it was pleased with the engineer's performance on the project, particularly the ability to meet the project milestones. Except for the value of the remaining unapproved change order requests, the owner had paid all previous invoices, and the owner was involved in management decisions throughout the design process. As such, both companies wished to engage in negotiation discussions to successfully resolve these change order requests without incurring the cost and time of litigation.

## PROJECT

Engineering design of a new materials manufacturing facility

## CONTRACT

\$3.5MM, Lump Sum Contract

## PRIMARY ISSUES

Design Revisions

Change Order Request Analysis

Cost of Rework Due to Owner Changes

A photograph of a modern industrial facility, likely a manufacturing plant. In the foreground, a large yellow robotic arm is mounted on a white circular base. It is surrounded by other similar robotic arms and complex piping systems. The background shows a high-ceilinged industrial space with various structural elements and equipment.

# Approach

The engineering contractor retained Interface to analyze its outstanding change order requests, which remained unapproved despite multiple negotiations between the engineer and owner. Interface's scope was to analyze the issues contained within the change order requests, assist with supporting documentation, and provide insight during the negotiation process. The change order requests largely were based on the owner's late revisions to the facility's design criteria and the engineering hours required to alter the previously completed design.

## OWNER-REQUESTED DESIGN REVISIONS

Interface provided advisory services to the engineering contractor regarding the outstanding change order requests. A substantial portion of the change order request costs consisted of rework required due to owner-requested changes.

Consistent with the typical design process, this project included 30%, 60%, and 90% design review meetings. The owner approved the design during the 60% review and released the engineer to proceed with final design drawings; however, during the 90% review, the owner requested numerous changes, which required the engineer to perform rework to major aspects of the MEP and architectural floor plans, including increasing the building's footprint by 25%. Interface analyzed the cost impact caused by the timing of the rework and developed a timeline illustrating the engineer's design progress along with the dates of key owner-requested revisions.

# Approach

## OWNER-NECESSITATED SCOPE CHANGES

Additionally, a portion of the change order request costs consisted of additional scope of work not included in the contract value. During contract negotiations, the engineer agreed to price reductions based on the owner's promise to provide certain design details from a previous project, thereby reducing the scope of work to be performed on this project. Interface demonstrated that the engineer incurred the costs it had previously removed from its estimate because the owner never provided those design details.



# Outcome

Interface provided the engineering contractor with updated change order requests containing additional supporting details and documentation to further substantiate the additional costs. Interface demonstrated that certain owner revisions occurred after the engineer had already performed the associated aspect of the design, which resulted in rework to incorporate the changes. While the contract allowed for up to three full design loops, Interface determined that the engineer had in fact completed all three contractually contemplated design iterations prior to the owner requesting the changes that formed the basis of the outstanding change order requests. Therefore, the untimely owner-requested revisions resulted in additional engineering hours not included in the contract amount. Additionally, Interface's experts provided insight and assistance regarding the negotiation process.

After the engineering contractor re-submitted the change order requests to the owner, negotiations favorably resulted in Interface's client securing approximately 90% of the total disputed change order amount and both sides avoiding a costly and time-consuming litigation process.

