Catalog of Construction Case Studies

The Associated General Contractors of America Education and Research Foundation has funded the development of a series of construction case studies that can be used by faculty members in college and university construction education programs and construction contractors in professional education programs. These case studies are intended to supplement primary instructional materials to provide students with opportunities to engage in critical thinking, analysis, and decision-making related to issues associated with the planning and management of construction operations.

These case studies are available for download at no cost on the AGC Book Store website (https://store.agc.org/AGC/Store/StoreLayouts/StoreSearch.aspx?InitialText=1900). Each case study consists of two documents. The first document is the actual case study to be used by students, and the second document contains notes for the case study instructor or facilitator.

1. Allied Constructors: Ethics in Construction

This case study exposes students to situations in construction that require ethical decision-making. It builds upon knowledge acquired through construction management education and practice. In the case study, Allied Constructors has received a contract for the construction of a laboratory building on a university campus. Several ethical dilemmas are presented together with the responses of parties involved, and students are asked to analyze the situations and propose solutions. The individual situations are grouped into four major project phases: (1) preconstruction, (2) subcontract solicitation and award, (3) project execution, and (4) project close-out. Teaching Notes for the instructor are provided to assist in using the case study.

2. Lean Practices in Project Management

This case study is divided into two parts. Section 1 provides a basic introduction to the principles of lean construction, while Section 2 describes a project in which lean construction processes were implemented. If students have a basic understanding of lean construction, users of the case study may wish to skip Section 1. In Section 2 of the case study, J. E. Dunn Construction has a contract for the renovation of three student housing buildings at Pittsburg State University. Situations are presented during preconstruction and project execution. Topics addressed are supplier and subcontractor procurement, just-in-time delivery of materials, off-site prefabrication, pull planning, and analysis of the weekly work plan. Teaching Notes for the instructor are provided to assist in using the case study.

3. Preconstruction Planning: Leading a Collaborative Team

This case study focuses on Oneglia Construction Company's preconstruction management process and project team collaboration. The context for the case study is the renovation of the Naugatuck Valley High School that is occupied throughout the project. The renovation must take place in phases, with part of the building occupied and part a construction zone fully separated from the building users. Representatives from the Owner, Architect, and Construction Manager describe their priorities and perspectives regarding the project. The primary teaching objective is the role of collaboration and the factors that contribute to successful collaboration. A secondary objective is practicing typical preconstruction activities which are performed collaboratively. Teaching Notes for the instructor are provided to assist in using the case study.

4. Subcontractor Management

This case study involves the construction of a major academic building on a university campus. Because of the design of the building envelope, a major subcontractor on the project is the masonry subcontractor. The case study covers subcontractor risk management from prequalification to termination and dispute resolution. It focuses on the masonry subcontractor's failure to perform and the general contractor's actions to address the masonry subcontractor's lack of performance and to mitigate the impact on the project. Topics addressed are: subcontractor prequalification, subcontractor bid evaluation and selection, subcontractor performance, surety bonds, subcontractor payment, and dispute resolution. Teaching Notes for the instructor are provided to assist in using the case study.

5. Leveraging Collaborative Teamwork in Project Delivery

This case study focuses on efforts to form and lead a collaborative team of diverse professionals to ensure successful project outcomes. The context for the case study is the expansion and renovation of a hospital in Las Vegas, NV. Strategies are presented to provide insight into trends that the design and construction industry is adopting to eliminate waste and increase value during construction. A detailed description of the project setup and team development approach is provided. Group exercises are imbedded in the case study to provide opportunities for students to apply the strategies described and reflect on what they learned in the case study. Teaching Notes for the instructor are provided to assist in using the case study.

6. Sustainable Construction

This case study involves the construction of a student center for a major university for which the primary goal was to deliver a highly energy-efficient facility that incorporated innovative technologies. The case study focuses on a project with aggressive goals for Energy Use Intensity, LEED certification, and Net-Zero targets. The timeframe for the case study is during preconstruction after the construction manager has been engaged. Students are exposed to the challenges of optimizing multiple sustainability and cost objectives. The case study includes multiple learning modules enabling instructors to select those most relevant for their instructional settings. Teaching Notes for the instructor are provided to assist in using the case study.

7. Mobile Technology in Construction Project Management

This case study consists of six scenarios related to the use of mobile technology to manage construction operations. The scenarios are based on actual examples of different uses of mobile technology on two different construction projects carried out in two mountain resorts towns (with three scenarios from each project). Each scenario is followed by a set of questions related to that particular scenario. The case study is divided into two project phases where the mobile technology is most frequently used: project execution and project closeout. The ultimate goal of the case study is to develop critical thinking skills related to the use of mobile technology to manage construction operations. Teaching Notes for the instructor are provided to assist in using the case study.