

CONSTRUCTION TECHNIQUES IN THE BIBLE

LUKE M. SNELL

Jesus' sermons had many references to construction that were used to illustrate spiritual concepts. These are still understood because the construction concepts he mentioned are as relevant today as they were 2,000 years ago.

Safety on the Construction Site: Luke 13:4

Safety has and will continue to be an issue on all construction sites. Jesus referred to an event in which 18 people died when the Tower of Siloam collapsed. He pointed out these were not bad people just because they were involved with the failure.

When there is a construction accident, we think the people involved did foolish things, took risks, and thus were responsible for their fate. These factors sometimes may be accurate, but not in the majority of cases.

A disturbing statement from the Bureau of Labor Statistics is that 60 percent of construction workplace injuries occur in the first year of employment.

The collapse of the Tower of Siloam.

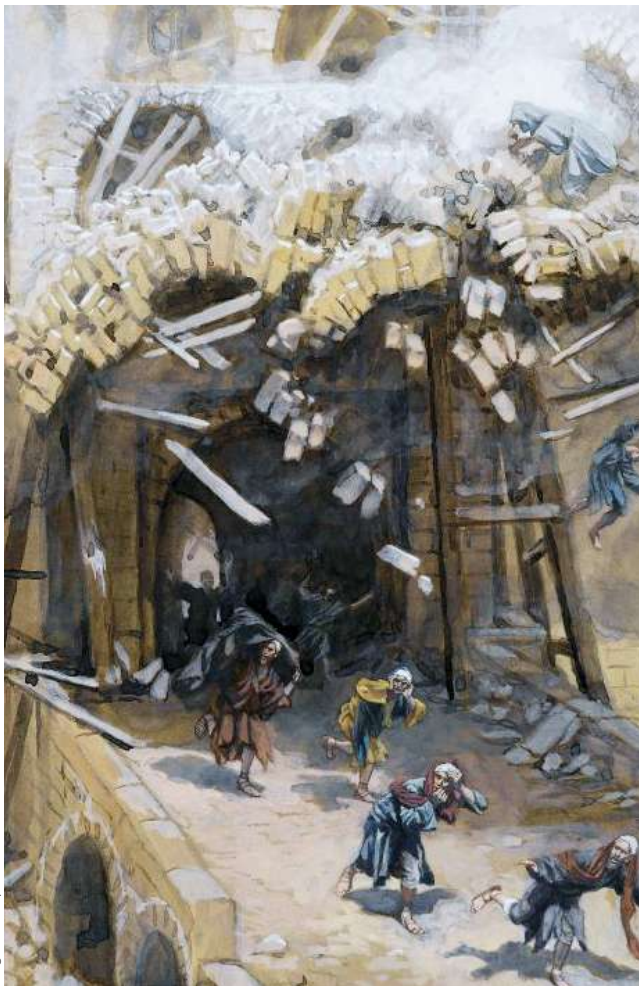


Image courtesy of James Tissot

Thus, we have placed great emphasis on training and safety in "toolbox talks" to improve our job site safety.

When Hoover Dam was built in the early 1930s, safety was secondary to production. As a result, 96 people died on the project, a figure that doesn't include those who perished from heat exhaustion and pneumonia from exhaust fumes in the tunnel construction. When building the Hoover Dam Bypass Bridges from 2004-2010, safety was emphasized. Only one employee died during the work, an impressive safety improvement though one we still can improve.

Estimating Construction Cost: Luke 14: 28-30

This parable by Jesus points out that we must accurately determine the cost of building a project, or we will not be able to complete it. This maxim is excellent advice as, during the 2008 Recession, we saw many projects abandoned because of financial difficulties.

The burden falls on the estimator to accurately determine the cost of the materials, equipment, and labor necessary to build and complete the project. Universities now teach this skill, and computer software is available to help prepare estimators to do a better job at accurately determining the cost.

Even with an accurate estimate, the project can have financial difficulties. I have worked on projects where bedrock was encountered while digging the foundation, soil that had to be removed, unusual weather conditions caused delays, and the required materials were not available. On these projects, the cost increased because of unexpected events.

One of these unexpected events could be the more than 3,000 unmarked cemeteries in southern Illinois, which are typically family burial sites. When a contractor comes across such a burial site, construction is halted. The police must investigate and determine if it is a homicide or a burial site. If it's a burial site, the body must be respectfully reinterred. Similar delays occur if Native American burial sites or artifacts

are uncovered.

A good estimator can anticipate many of the above problems and provide the owner with an accurate estimate of what will be involved to complete the projects. When the forecast is poorly done, there will be conflicts on the job site and cost overruns. These can lead to lawsuits, bankruptcy, and abandonment of the project. Thus, the parable makes as much sense today as it did 2,000 years ago.

Construction Scheduling: Proverbs 21:5

Proverbs is filled with wise sayings that make common sense. The reference states, "The plans of the diligent lead to profit as surely as haste leads to poverty." This concept appears in many similar adages from writers through the ages:

- "Haste makes waste" - Benjamin Franklin,
- "Wisely and slow, they stumble that run fast" - William Shakespeare, and
- "The hurrier I go the behinder I get" - Lewis Carroll.

All of these maxims aim at a fundamental concept in construction: the need to plan the timing of construction activities. Jobsite trailers will likely have posted an elaborate schedule, with a start and end date for each activity. This plan allows the project manager and superintendent to provide the labor and equipment necessary for each day's events.

The schedule also identifies project bottlenecks, when items need to be ordered, and when sub-contractors are required. Most university Construction Management Departments have a class in scheduling, and software packages are also available.

When I taught an Introduction to Construction class, I assigned students a swimming pool project to schedule. This simple project consisted of about 15 items. Most students understood the sequence of events, including earthwork, plumbing, and concrete, that needed to be followed.

There were a few twists to the project. The owner wanted the pool completed by his birthday, and the specified pump required 60 days to be delivered. The students had to determine when to order the pump, which was the bottleneck or critical item on the project. Unless this order was addressed at the start of the project, they could not meet the owner's scheduled birthday pool party.

These three items: safety, estimating, and scheduling are all part of the planning process that is basic to every project. Interestingly, these items are as correct today as they were in Biblical times. ♾