
entropy

Entropy | Odisea Cultura
Principal Software Engineer – Platform & Architecture
Northwest State Football Stadium – An Entropy Case Study

Northwest State University (“Owner”) contracted with Big Sur Construction (“Big Sur” or “Contractor”) to renovate the school’s football stadium prior to the start of the 2025 season. The contract is a Guaranteed Maximum Price (GMP) in the amount of \$85M. Since Northwest State University is a state school funded by taxpayer dollars, the state requires the using agency (i.e., the school) to award all contracts to the lowest responsive bidders—which in this case was Big Sur. Executives at the company acknowledged the risk in a project like this one but nonetheless agreed to the contract terms, including the low margin (only 3%), and contingency (only 2%).

Big Sur Construction

Big Sur is a regional subsidiary of a national contractor. The national contractor does approximately \$1.2B per year in revenue. Historically, those numbers are primarily driven by the East Coast and Midwest markets. The national contractor acquired Big Sur several years ago to establish a West Coast presence; however, Corporate has been frustrated that its plans to expand have been thwarted by a small number of problem projects. Project selection has been a hot topic in Board meetings recently. But the pushback from local Big Sur execs is that backlogs are down in the region and therefore taking on risky projects is a better alternative to scaling back operations.

Subcontractor Awards

Awarding subcontracts has relatively straightforward, since Big Sur solicited several pre-qualified bids for the major scopes of work ahead of signing the GMP, including the civil structural work and most of the Mechanical, Electrical, and Plumbing (MEP) work. The drywall and finishes, however, have not yet been awarded—at which point Big Sur realizes it hasn’t yet met its “hyper-local” contracting requirements. Last year, the state passed its “hyper-local” businesses initiative requiring 20% of contracts on public projects to be awarded to businesses in the same zip code as the project. In large metropolitan areas, this wouldn’t be an issue typically. However, in this case, since the campus makes up most of the zip code, Big Sur’s options are limited to just a handful of companies. After reviewing the list of bidders for the drywall work, Big Sur decides the choice is easy. Rock Chalk Carpentry, a relatively young, up-and-coming company run by former students, meets all the criteria for hyper-local and their bid is within the budgeted line item in the GMP.

General Note: Entropy prepared this case as a basis for discussion in an educational setting. The project does not exist and all names, entities, etc. are fictional. However, many of the facts and circumstances surrounding the project are based in part on Entropy’s experience having analyzed over 130 problem projects. Please do not copy this document for any other use without explicit permission.

Early Delays On The Project

The project encountered some early challenges including a late demolition permit. Permits were technically the responsibility of the Owner; however, the Owner has taken the position that other factors were at play during the time and therefore refused to grant additional time. Therefore, even though the project is behind schedule, the current contractual date is unchanged from the original contract. The Owner has acknowledged that it is likely to grant a time extension of some amount but stated that it would deal with that at the end of the project.

Weather also impacted the job. Big Sur provided notice in its daily reports for most of the days, but not all. Big Sur's position was that, per the original schedule, the exposed scopes of work would've been enclosed before the rainy season had it not been for the late demolition permit. For that reason, it assumed a detailed accounting of lost days was not necessary since the Owner had already given Big Sur some assurances that additional time would be granted.

Subcontractor Default

Rock Chalk planned to start ramping up manpower per the original contract duration. However, due primarily to delays on other projects, its manpower was stretched thin during this time. Big Sur notified Rock Chalk on multiple occasions that work areas were available and that if manpower wasn't added soon Big Sur would supplement Rock Chalk's crews with additional manpower and backcharge them. This happened over the course of a few months and eventually Big Sur learned through its network that Rock Chalk was at risk of going bankrupt.

Eventually, due to failing to provide adequate manpower on the job, Big Sur issued a termination for default—meaning that Rock Chalk's surety, Western Insurance Co., assumed responsibility for completion of the work and hired a replacement subcontractor. This entire process delayed the project including impacting follow-on scopes of work (e.g., tile and painting).

Owner Design Changes

Another significant issue on the project involved changes by the Owner and its design team. Big Sur agreed with the MEP subcontractors that late design changes affected the schedule but had not received sufficient backup to justify the delays. Big Sur acknowledged the timing of the changes affected the upper concourse levels, but the subcontractors were not able to provide any backup for the alleged delay impacts. There are pictures showing congested areas but no "issues" were noted on the daily reports during that time frame.

In one email reply, the Owner did argue that the design changes did not cause any delay since the critical path was through drywall at the time. The Owner claimed Rock Chalk's default occurred first, and it only elected to make changes because the schedule was already delayed, so the design changes could be implemented without further delaying the schedule. There is some conflicting information on this issue, as Big Sur recalls the Owner mentioning the changes during a site walkthrough, one month before Rock Chalk started having issues.

Other Financial Losses By The Parties

As the project neared completion, Big Sur provided formal notice to the Owner that it and its subs had incurred significant costs to finance completion of the work without receiving change orders for delays. In response, the Owner took a hardline position that it did not owe Big Sur any additional compensation since the Liquidated Damages (\$5,000 per day) and Owner's lost revenues offset any legitimate claims by the contractors. Specifically, the Owner stated that, due to the delays, Northwest State's football team was forced to play its first three home games at a local high school field. The Owner claims to have lost out on a significant amount of revenue because of change in venue.

Available Data And Documentation

Owner-Architect-Contractor (OAC) meeting minutes exist for most weeks and represent the primary source documentation for coordination amongst the parties. Big Sur did keep minutes for meetings it held with its subs. But neither the Owner nor its design team attended those. The Owner held Board meetings periodically and presentations were given regarding design changes as well as overall status updates; however, none of the contractors have seen those presentations. Big Sur was invited to attend those meetings from time to time to provide a brief construction update. But it would usually be asked to leave before the Board discussed design decisions and any commercial issues (e.g., change orders).

Big Sur did issue monthly status reports containing updates regarding progress, design status (e.g., RFI response rate), safety, cost, and schedule data. However, the Owner once opined that the schedule information in the monthly status reports is not reliable after the situation with Rock Chalk arose. Email was the primary mode of communication both externally (i.e., amongst the parties) and internally within each company involved in the project.

There were various software and systems used by the parties on the project. A webcam exists and is accessible to go back in time to see the status of the project at various points in time but it only shows one angle. Procore was the primary project management platform—although for a few subs it was their first time using it.

See Technical Assessment regarding the following:

- Architecture Proposal
- Coding Exercise
- Written Responses