STRIDEArc Consulting

Case Study: Active Adult Development Project – Pre-Construction Review

Client Type: Developer

Project Focus: Cost Reduction through Value Engineering and Risk Assessment

Project Overview: During a review of development plans for an Active Adult apartment project, a geotechnical report revealed shallow bedrock across the site, which would likely necessitate costly and complicated blasting to complete construction. Given the close proximity to existing residential housing, blasting posed significant safety risks and logistical challenges. I worked closely with the civil engineer and architect to develop an alternative approach that would maintain the project's viability while eliminating the need for blasting and reducing construction costs.

Challenges:

- **Shallow Bedrock Requiring Blasting:** The site's shallow bedrock posed a major obstacle, as blasting would be required to excavate for the original design, which included underground parking.
- **Proximity to Residential Housing:** Blasting near existing homes raised safety, regulatory, and logistical concerns, making it a potentially impractical solution.
- **Podium Structure Costs:** The inclusion of underground parking would have required the building to be upgraded to a podium structure, significantly increasing construction costs.

Solution: After carefully evaluating the site conditions, I proposed two key design changes to eliminate the need for blasting and reduce overall project costs:

1. **Remove Underground Parking:** I recommended replacing the underground parking with surface parking and detached garages. This approach not only avoided the need for extensive excavation but also eliminated the requirement for a costly podium structure to support the building.
2. **Raise the Building Elevation:** By raising the building's elevation by 2 feet, we could place the structure entirely above the bedrock layer, further reducing the need for excavation and eliminating the risk of encountering bedrock during construction.

Execution: The project team adopted my proposed changes, revising the development plans to reflect the new parking layout and adjusted building elevation. Surface and detached garage parking were seamlessly integrated into the site design, meeting the project's functional needs while significantly reducing costs. By eliminating the underground parking and podium structure, the construction process became simpler and more cost-effective. Raising the building's elevation also ensured the development avoided the bedrock, streamlining the construction timeline.

Results: The revised design successfully eliminated the need for blasting, mitigating safety and regulatory concerns related to the site's proximity to residential housing. Additionally, removing the

underground parking and podium structure resulted in substantial cost savings and reduced construction complexity. The project moved forward with a more efficient and cost-effective design, without compromising on functionality or aesthetics.

Key Takeaways:

- **Cost Savings Through Design Innovation:** Removing the underground parking and podium structure significantly reduced construction costs, while raising the building's elevation eliminated the need for blasting.
- **Risk Mitigation:** The redesign eliminated safety risks and logistical challenges associated with blasting near residential areas.
- **Collaborative Problem-Solving:** Close collaboration with the civil engineer and architect enabled a creative solution that addressed both site constraints and cost efficiency, ensuring the project's success.