



Facility Development Challenges in Today's Climate “Post-Covid”

And Architecture's Role in the
Solution

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“To create, one must question everything.”

- Eileen Gray



Facility Development Challenges in Today's Climate – “Post-Covid”

And Architecture's Role in the Solution

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1. Current Challenges with Facility Development

- Land Acquisition/Due Diligence
- Design Schedule/Permitting Delays
- Construction Costs/Material Delays
- Borrowing Costs/Bond Rates
- Labor Market

2. Strategies to Mitigate challenges in the Development Process

- Cost Control
- Schedule Control
- Teamwork | Delivery Model
- Good Design

Big Picture Overview

Average Charter School Project	2+ years ago	Today
Land Costs	X	+15%
Land Due Diligence (ex. Surveys)	30 - 45 days	60(+) days
Design Timelines	3 - 4 months	3 - 5(+) months
Permitting Timelines	45 days	60 - 90 days
Construction Costs	X	+25%
Construction Timelines	10 months	10 - 14 months
Borrowing Costs / Bond Rates	4%	5% +
Labor Costs	X	Increasing Costs



Construction Costs Overview

Construction Costs	2+ years ago	Today	Trending
Lumber	X	+85%	↓
Concrete	X	+12%	↑
Steel	X	+120%	↓
Electrical Gear	X	+50%	↑
Mechanical/HVAC Equipment	X	+100%	↑
Roofing	X	+75%	↑
Gypsum Board	X	+40%	↑



Schedule Challenges

Average Charter School Project Development

Avg Timeline

Land Acquisition Timelines

Varies (6 months)

Find and Evaluate Potential Properties

Negotiate Offer

Perform Due Diligence

Rezoning? Special Exception?

Close



Design & Permitting Timelines

6 – 9 months

Site Planning & Design

Building Design

Site Permitting

Building Permitting



Construction Timelines

10 – 14 months

Pricing Phase

Construction Phase



Total Project Development

Today (average)

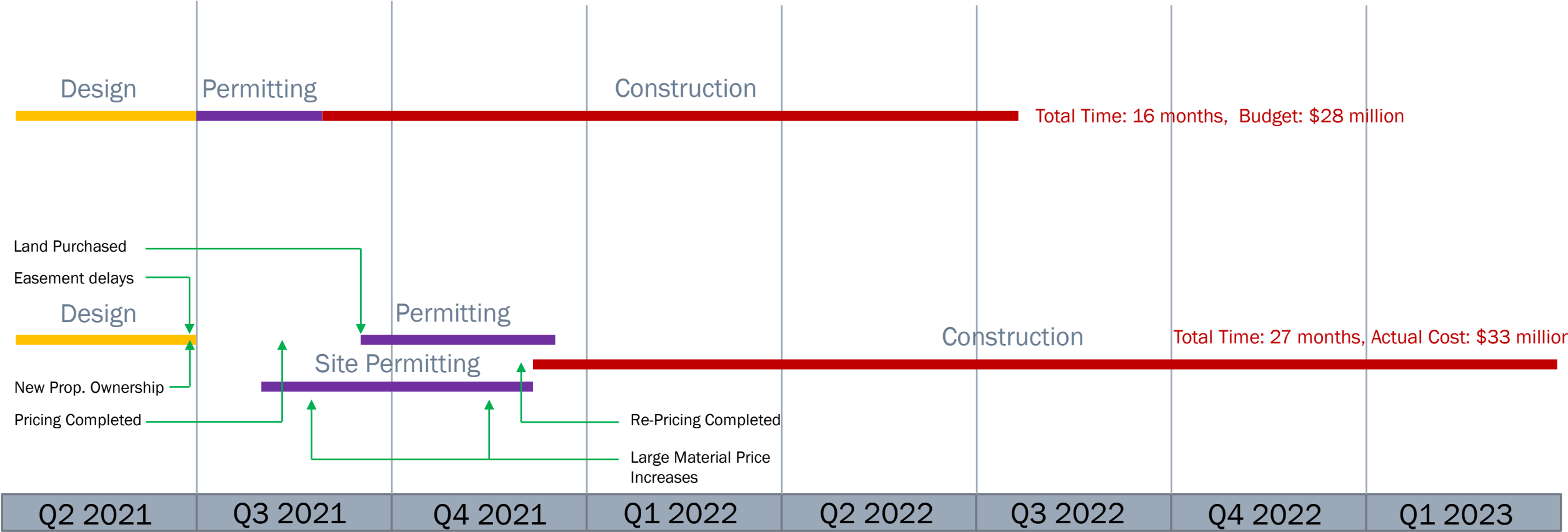
25 months

2+ years ago

20 months



Project 'X' Example



Mitigation Strategies





Understanding the Market

What do we NOT control?

- PERMITTING TIMELINES
- MATERIAL LEAD TIMES
- CONSTRUCTION & MATERIAL COSTS
- INTEREST RATES
- While we do not control these, the facility team MUST react to each of these and plan/design your project accordingly



Understanding the Market

What DO we control?

- **PLANNING | DESIGN**
 1. Collaborative design process has become increasingly important to deliver projects
 - Your facility team should be a highly collaborative group consisting of:
 - Finance Team
 - Contractor / Design-Builder
 - Architects
 - Engineers
 - Careful planning, design, and execution will improve quality and control costs
 2. Re-evaluate everything about the planning, design, construction process
 - Everything should be on the table (each project is unique)
 - Obvious things like Structural Systems (Wood, Steel, Concrete)
 - No-so-obvious things like the SIZE of your facility (good design)
 - Prototype Design?
 - Flexibility in the design solution (facility team needs to react quickly to market)
- **BUDGET | SCHEDULE**
 - Set a realistic budget and schedule and continuously track through all phases
 - Solicit multiple bids on each trade and negotiate each bid
 - Order materials early to minimize delays and cost impacts

How do we react to rising costs and instability with materials?

Evaluate all available materials for cost and lead times. The team will need to decide which materials are optimal for a given project. Be willing to use innovative strategies

Pre-Engineered Metal Building



Steel Frame



Wood Frame



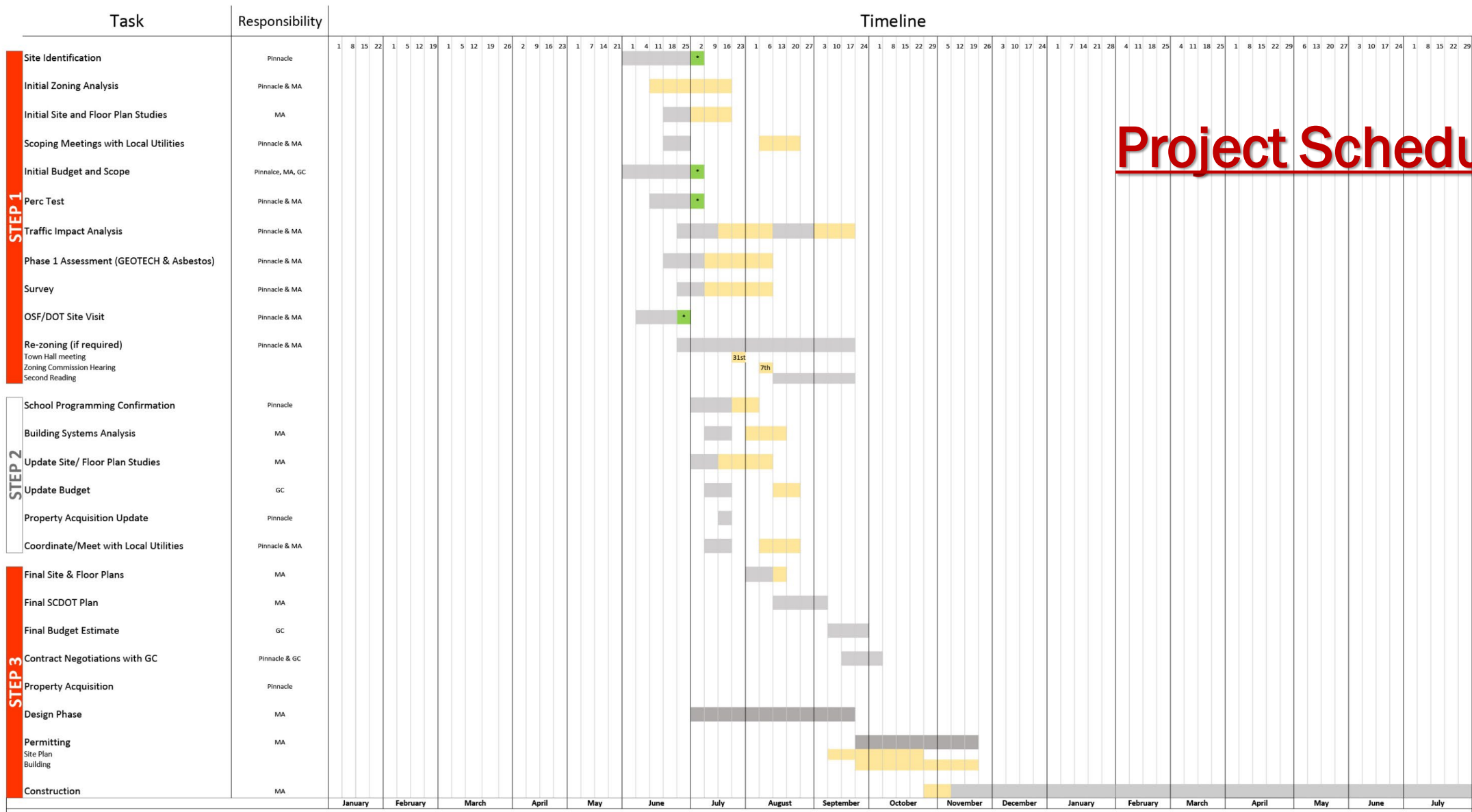
Concrete



An architectural rendering of a modern school building with a multi-story design, featuring large windows and a mix of light and dark exterior panels. The building is surrounded by a large, paved parking lot with several trees, some of which have autumn-colored foliage. The sky is blue with scattered white clouds.

How do we react to longer schedules/uncertainty/complex project?

1. Create a detailed schedule with contingencies
2. Be aware of critical path items
 1. Traffic Study : Coord with Traffic Department : Site Design
 2. Survey : Site Design
 3. Land Contract/Acquisition : Engaging full design team
3. Consider things to speed up construction start
 1. Early foundation package
 2. Order materials early to avoid long lead times
 3. Expedite permit reviews when possible
 4. Select design team members who can meet schedule



Project Schedule



CASE STUDY: MANAGING COSTS & SCHEDULE

The Gathering Place Charter School

Project Information

The Gathering Place Charter School

1. Began design in May 2020 (during the Covid shutdown)
2. 27,000 sqft to house 400 students (*only 68 sqft per student)
3. Construction Costs were rising
4. Material shortages had surfaced
5. Permitting took place virtually (all permit officials working from home)
6. Construction started in October 2020
7. Construction was completed on time in August 2021 (Contractual time was 15 months however +/- 4 months of work was performed prior to contracts)
8. Total Cost \$5.8 million = \$214/sft

Mitigation Strategies

1. Contractor and Architect worked very close together during the planning and design phase. Construction Manager at Risk delivery model
2. Hybrid structural system utilized available materials and utilized lowest cost materials
3. School wanted the natural wood look on the exterior. The design minimized the wood materials (expensive) but didn't eliminate them
4. Materials ordered early and stored to beat price increases. Design process itself had to be designed and organized to produce finalized material selections early.
5. Design team worked closely with school to design an efficient floor plan with high utilization rate which minimized square footage







Good Design = Better Results!





First Floor Plan



Good Design = Better Results!

How can good design mitigate rising construction costs?

1. Understand the utilization rate of your space. Designing for high-utilization and multi-functional spaces reduces your square footage
2. Activate your corridors. Make them commons spaces.
3. Masterplan your facility so you can take advantage of phasing and reduce re-work when it is time to expand
4. Minimize footprint to minimize site costs
5. Use 'cheap' materials in ways that make them look high-end. This requires a creative designer with experience in these types of facilities
6. Don't be afraid to use nice materials, just use them effectively (not en masse).

How does good design reflect post – covid teaching pedagogies?

1. More physical teaching space outdoors. Use covered spaces with fans/heaters.
2. Touchless restrooms
3. Natural Ventilation / Bi-polar ionization incorporated into the HVAC strategy
4. Windows and Overhead doors bring natural light indoors and help with making connections to outdoor learning spaces







The New Normal

1 Project Team

All team members must be engaged early and coordinating throughout the project

Entire team, including the school, must develop a mutual trust because there will be many obstacles and setbacks

2 Material Selections

Understanding a rapidly changing market (what is available?)

Essential to consider hybrid systems of materials

Collaboration between Contractor, Architect and Engineers essential

3 Budget

Minimize expensive materials, don't necessarily eliminate them

Order materials early to avoid price increases

Maximize the utilization rate of your facility

4 Schedule

Reacting quickly to everything happening slower – lead times, permit timelines

Front loading the schedule – requires more work upfront

School must be prepared to make more decisions earlier

“To create, one must question everything.”

Summary

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1. Start design process early! - Good design takes time!

What is early??

18-24 months for the average facility project design and construction
(This does not include site acquisition, due diligence, etc)

Make sure you have a team of design and construction professionals actively working on your project

Remember that every project is different and will face different challenges

2. Identify the project challenges

Stay on top of each hurdle – communicate!

3. Re-evaluate the development process

Don't be afraid to innovate!
Be flexible with your design solution