GETTING IT RIGHT EARLY:

BEST PRACTICE FOR THE DESIGN & CONSTRUCTION OF AFFORDABLE HOUSING

PRESENTERS:

- **Rumi Takahashi,** Principal, SMR Architects
- **Katie Randall,** Housing Developer, Mercy Housing NW
- **Joe Grim,** Sr. Project Manager, Walsh Construction
- **Sheri Cansler,** Hillman Consulting

GOALS FOR TODAY

- **Provide best practice recommendations**, and real-world examples, for the design, construction and due diligence processes
- **Describe the Design-Build delivery model** for affordable housing
- **Help you deliver high quality projects**, efficiently and cost-effectively.

We're open to questions as we present.

ESTABLISHING PROJECT GOALS (REALLY) EARLY

- The team (or a champion from the team) should facilitate a process to gather and confirm goals for the project:
    - **Owner programming and other goals** (parking, unit mix, community or commercial space)
    - **Funder-driven priorities or goals** (population, unit types)
    - **Utility incentives or sustainability certifications**
    - **Target budget** – overall budget or cost/unit target?
- …. and maintain focus on delivering on those goals throughout the project

ESTABLISHING PROJECT GOALS (REALLY) EARLY

EXAMPLES WHERE CAPTURING GOALS EARLY LED TO SUCCESSFUL DESIGN RESULT: Mercy Housing's 35P

- The City of Tacoma wanted to incorporate a community-oriented commercial space, but the specific user hasn't been identified yet. The team collaborated on how to incorporate a flexible space into the overall program.

ESTABLISHING PROJECT GOALS (REALLY) EARLY

Example where capturing goals early led to successful design result:

THA's Housing Hilltop

- **Incorporating commitments made to community**, especially around the ground floor, indoor/outdoor community spaces and engaging local artists.
  - **Early selection of local artists** led to incorporating their vision into the whole building rather than a later stage add-on.
- **Incorporating family-sized units** and other amenities to support families

ARTIST CONCEPT by JEREMY GREGORY

My building began based on the concept of Vibration/Ripple Effect. I feel that it is the power of the community digging in
These buildings will have a ripple effect on the community, so my goal was to create a voice for this building that is unique

The gradient of colors represents hope, growth, and fresh new beginnings. From the dark purple base representing wisdo
also represent frustration and is strongly associated with royalty). Transferring up through layers/generations to a growing
environmental awareness, inspire creativity, and even relieve stress). The green will be seen all around, and that's cool be

I also wanted to reference the fact that one of my main goals was to add organic shapes to the building with so many har
even trash receptacles based on the concept.

VIEW E: FROM S L STREET & S 11TH STREET LOOKING SOUTHEAST

VIEW F: FROM S L

HOUSING HILLTOP

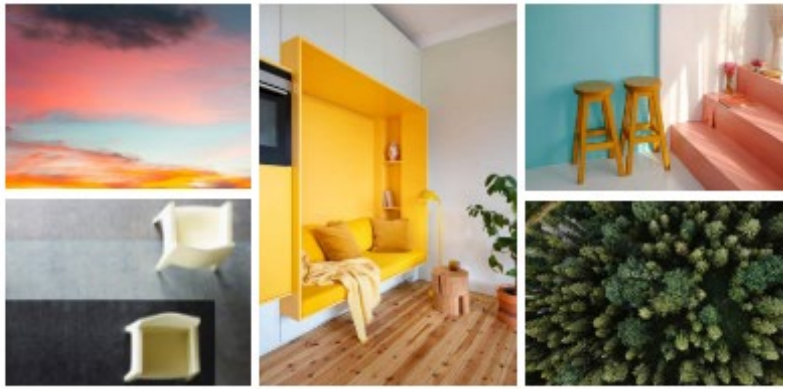
ARTIST CONCEPT by LOURDES JACKSON

The North Building on 11th & L street is particularly sentimental to me in that it is on "L" street in

I took inspiration from my own experiences and travels as an artist/designer, using a color palett
to Miami, Jamaica & Africa. Tacoma is a city that lacks a lot of vibrant color architecturally. Turqu
granted me in these three countries. Orange is an ode to my most recent travel to Africa as well

I wanted to not only give Tacoma something to look at in awe of the color within the summertime
something with Tacoma forever, then it is the happiness these colors have brought to me.

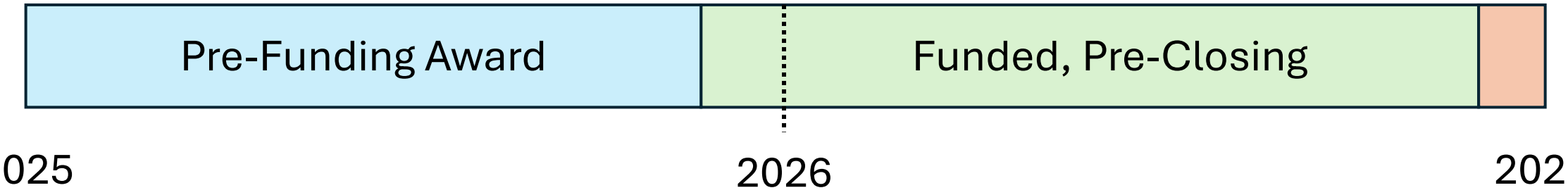
VIEW C: FROM S L STREET & S 10TH STREET LOOKING SOUTHEAST



ORGANIZE THE TEAM
SCOPE, CONTRACTS, AND COSTS

<u>The following needs to be addressed early in preconstruction:</u>

- What work needs to be done on what timeline?
- Which companies need to be involved in managing that work and who is contracted to who?
- How much does the work cost and when will it be billed?

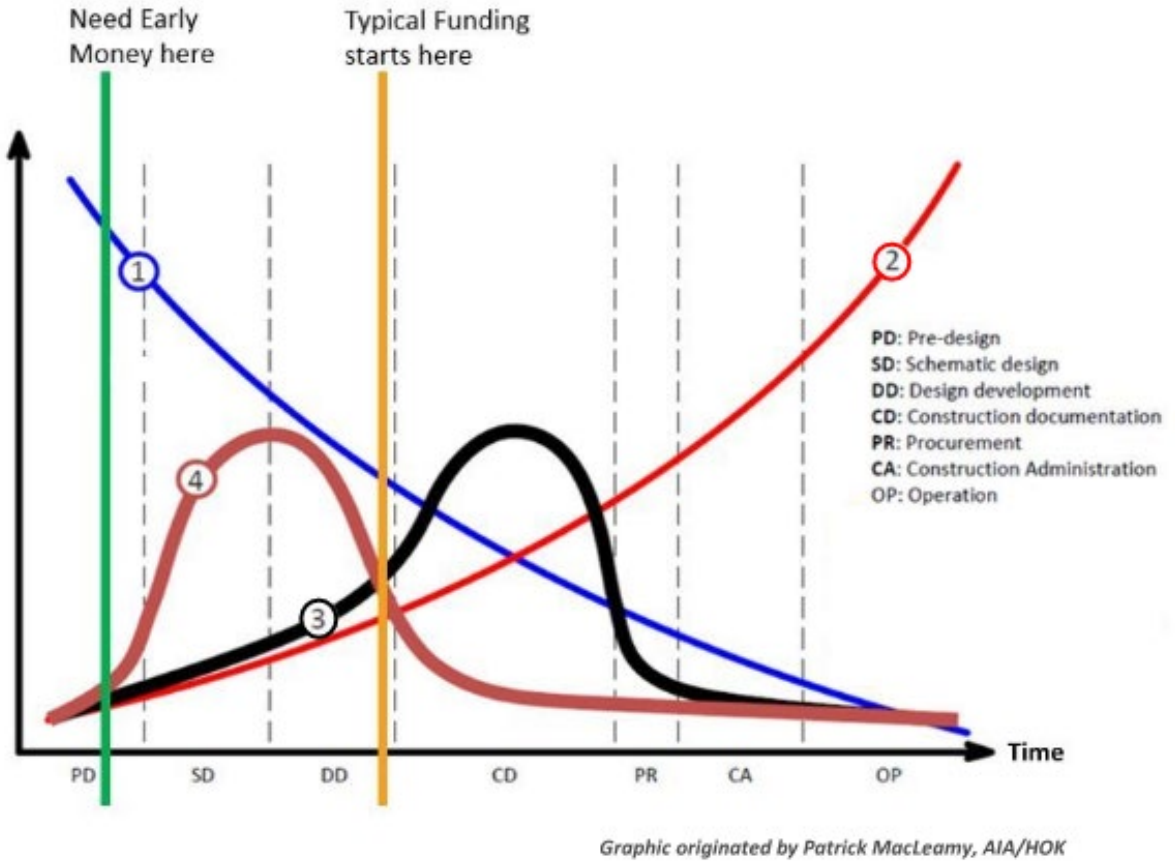


How much design / preconstruction cost do you incur before your project is funded?

More design coordination (more $$) but less risk for future changes

VS

Less design coordination (less $$), but more risk for changes down the road



Graphic originated by Patrick MacLeamy, AIA/HOK

In this figure:

- Line (1) shows the declining ability to impact cost and capabilities of a project over time.
- Line (2) shows the increasing cost of design changes late in a project timeline.
- Line (3) shows the level of effort put forth over time in a traditional design process.
- Line (4) shows the level of effort put forth over time in the preferred design process.

ORGANIZE THE TEAM (cont.)

Consultant	Under Owner (O), Architect (A) or General Contractor (GC)	Required	Optional / sometimes needed
Environmental, Traffic, Market Studies	O		X
Geotech Soils Report	O	X	
Surveyor	O	X	
Structural Engineer	A	X	
Civil Engineer	A	X	
Landscape Designer	A	X	
Building Performance Consultant	O		X
Mechanical Designer	A or GC	X	
Electrical Designer	A or GC	X	
Plumbing Designer	A or GC	X	
Shoring Designer	A or GC	X	

IMPORTANCE OF EARLY SCHEDULING

Set timeframes for:

- **Early information gathering** on building program (unit mix, ground floor, parking, laundry, etc.)
- **Community engagement** process
- **Design milestones.** Clearly understand what goes into 30%, 60%, 90% drawings
- **Pricing process** – understand when pricing will be provided by GC and process (quick ROM or more involved with subcontractor input)
- **Permitting, Design Review, NEPA, utility coordination**
- **Funding application deadlines**

IMPORTANCE OF EARLY SCHEDULING

Outline **critical path timelines** for your funding estimate effort

When is the application due?	**SEPT 15**
Target date to have a revised final construction # to plug into application?	**SEPT 1**
Target date for initial construction #	**AUG 10**
Target date for architect to deliver vetted design & spec to use for 1st estimate:	**JULY 10**
Target date to deliver first draft of conceptual design	**MAY 1**
When should you have your team selected?	**JANUARY 1?**

**Need to go through similar backing-up conversation for every pricing effort, especially final pricing*

WHAT SHOULD BE CONFIRMED IN THE INITIAL CONCEPT DESIGN USED FOR FUNDING?

Heating / Cooling / Venting approach

Laundry

Parking

Utility requirements

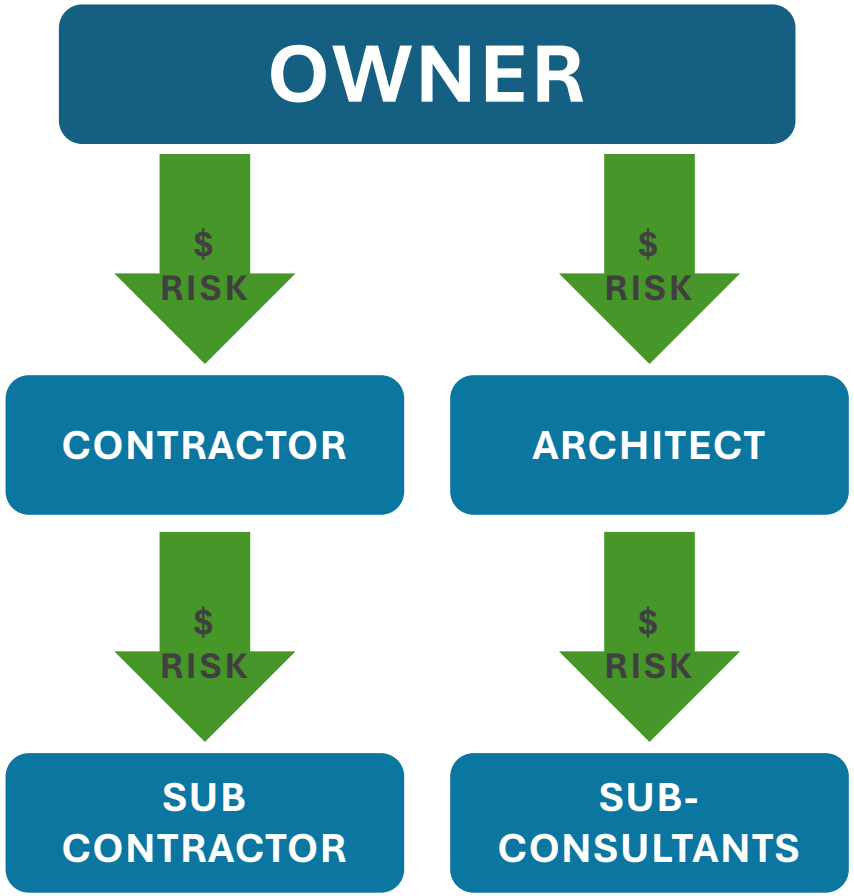
# of stories, framing materials

ORGANIZE THE TEAM – DESIGN BUILD AS AN OPTION

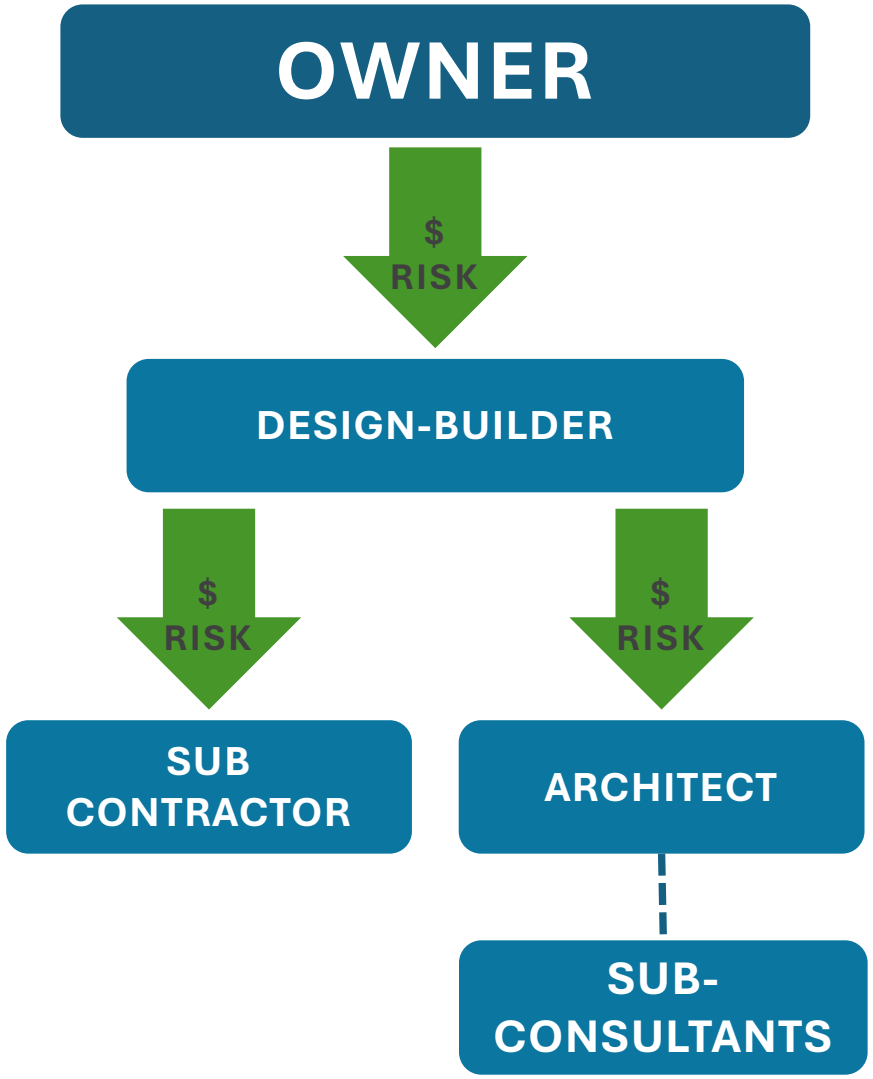
- Traditionally, affordable housing projects have utilized **Design-Bid-Build** approach.

- However, there are benefits to considering a **Design-Build** option.

DESIGN-BID-BUILD



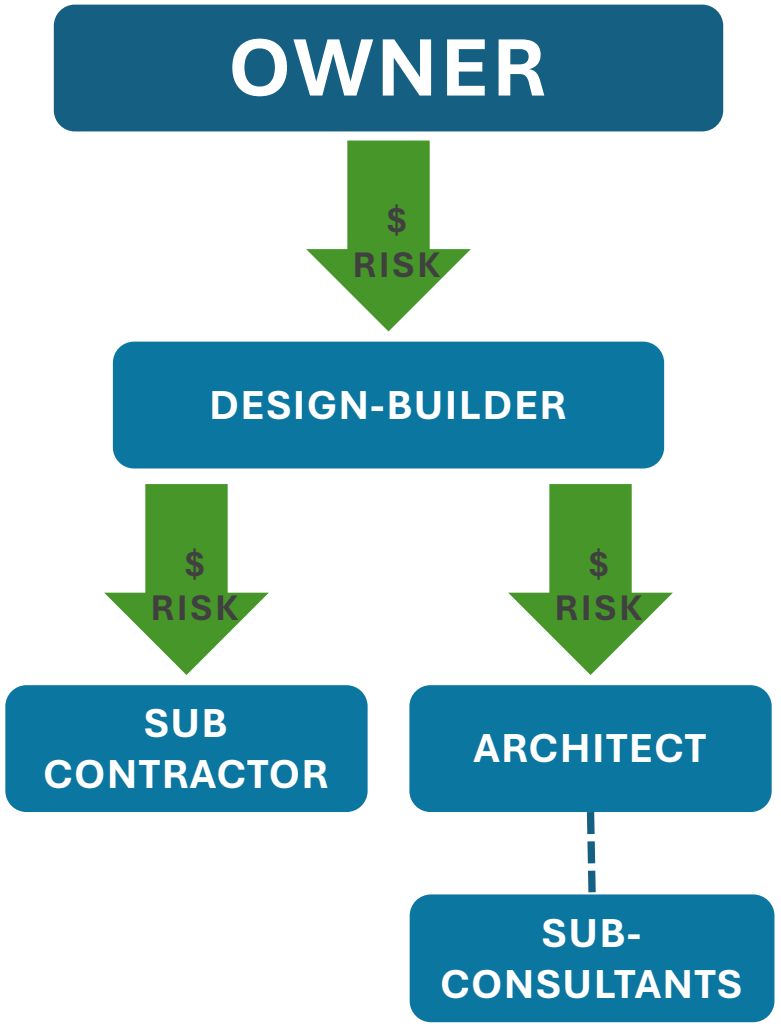
DESIGN-BUILD METHOD



	DESIGN-BID-BUILD	DESIGN-BUILD
WHAT ENTITY DOES OWNER SELECT FIRST?	Architect	Design/Builder (General Contractor)
WHAT'S THE CONTRACT STRUCTURE?	**Separate contracts** with Architect and GC, with GC contract executed close to construction start	**A141 between owner and GC executed at start of design**, and amended to start construction
HOW MUCH COORDINATION DOES OWNER NEED TO DO?	Owner takes key role in coordinating between parties with separate contracts	GC holds most consultant contracts and oversees coordination
IS IT KNOWN / ACCEPTED BY FUNDERS?	**Most common** for developers, investors, and lenders	**Not as common,** may require education of partners

DESIGN-BUILD
PROS / CONS / TRADEOFFS

- Owner goals and commitment to meeting those goals can be embraced by all parties early
- Design-Builder leads all design and subcontractor coordination. Owner has less control & oversight.
- Liability and financial **risk** is transferred from the Owner to the Design-Builder
- Owner can decide how involved to be, but they are not in the middle of the contractor-architect relationship
- Less administration during construction for all parties



DESIGN-BUILD

INTEGRATED DESIGN

- **Real time cost and schedule feedback** for design choices
- Able to **engage subs earlier** to manage escalation
- **Performance vs prescriptive** approach
- Intentional, informed VE efforts, contingency management

More early collaboration in design leads to:

- Fewer design iterations, **less redundancy**
- More complete drawings
  - better bid response
  - smoother closing, final approval process
  - Fewer changes during construction

CON: it becomes challenging to make changes midway through design

DESIGN-BUILD: CONDITIONS FOR SUCCESS

- **The Right Team.** The owner and core project managers/principals committed to this structure. Ideally core parties have a proven track record of working together
- Strong **owner and funder commitment,** where owner is ready and high assurance of funding (more $$ at risk earlier in predevelopment)
- High degree of **trust** and **respect** is key to vetting design options and problem solving. Willing to **commit to owner goals**, **check egos** and **collaborate**

TEAM CULTURE

Working through coordination items early builds **respect, trust** and **camaraderie**. It's both rewarding - and beneficial to the owner - when the **team is invested in the project** and **enjoys working together**

humility **humor** **fun**

DESIGN-BUILD: CONDITIONS FOR SUCCESS

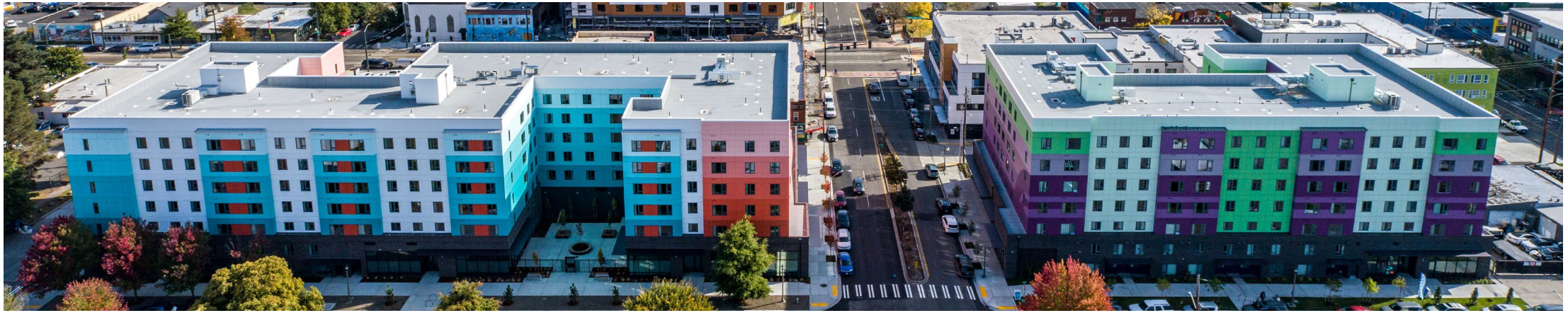
Lender and Investor acceptance

- D/B is less familiar, therefore important to vet this option early with project lenders and investors
- They look for architect and builder capacity and track record to implement D/B

OR....MIDDLE GROUND: DESIGN-BUILD FOR JUST THE MEPF SCOPES

	FULL DESIGN	BASIS OF DESIGN	FULLY DESIGN-BUILD
WHO COMPLETES THE DESIGN?	Fully designed by engineer	Engineer creates basis of design that is executed by sub	Subcontractor
WHEN DO SUBS COME ON BOARD?	During Bid	3-4 months before construction	Start of design
PROS	Can be competitively bid, easier to bring in new partners	Can be competitively bid	Cost-effective systems and up-front coordination with building design
CONS	Uncertainty around whether design is cost-effective	Late in the game redesign often required, more parties requiring design fees	More difficult to bring new partners on board

PROJECT EXAMPLE – HOUSING HILLTOP



Owner: Tacoma Housing Authority

Owner's Rep: Brawner Group

Design-Builder: Walsh

Architect: SMR

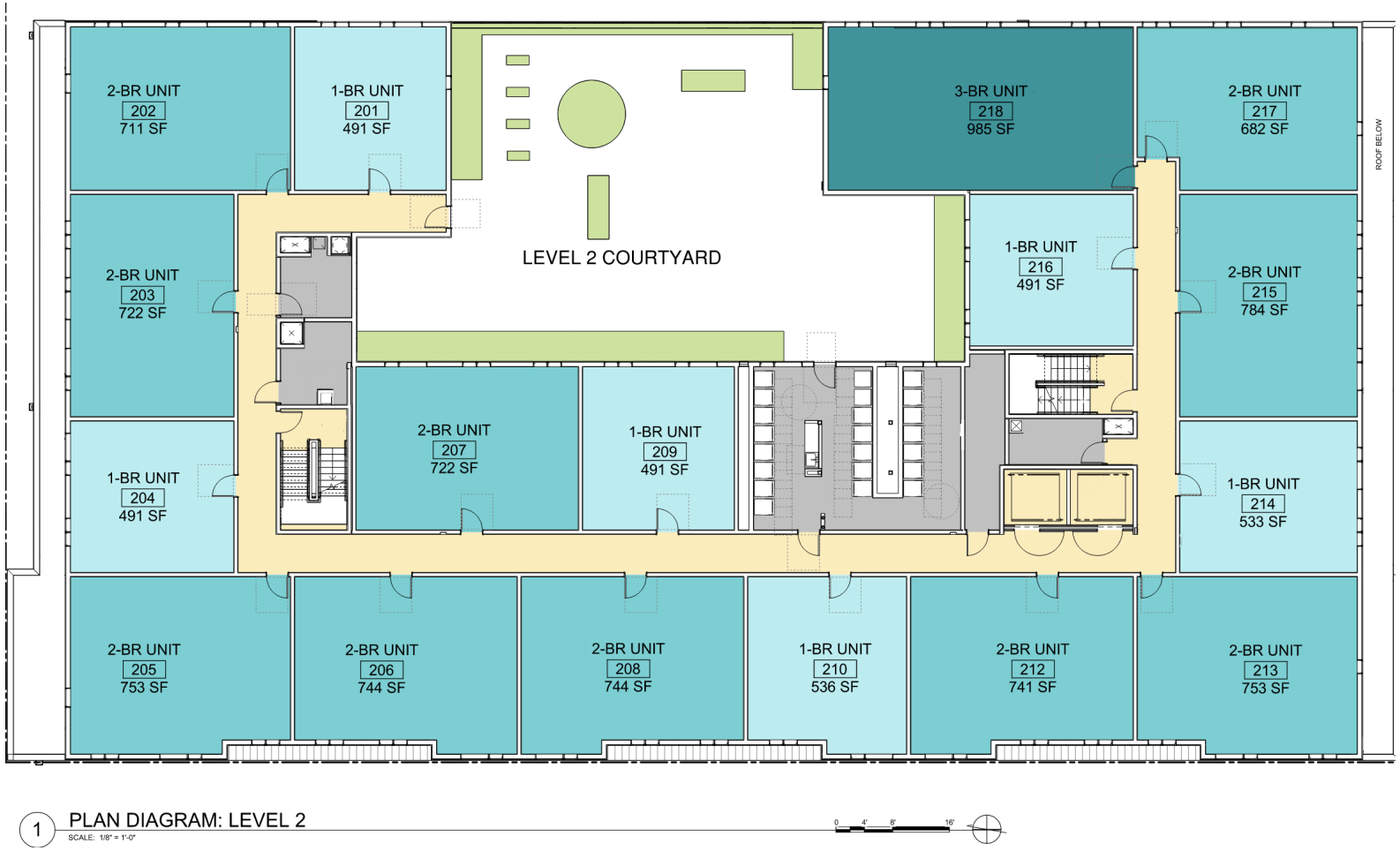
- **OPENED 2024**
- **2 BUILDINGS**
- **231 AFFORDABLE FAMILY UNITS**
- **3 RETAIL SPACES**
- **1 PERFORMING ARTS SHELL**
- **102 STRUCTURED PARKING SPACES**

INTENTIONAL DESIGN PROCESS

Start with the bones – unit design & building layout

CEDC Framework – simple, disciplined unit designs.

Dimensions informed by feedback from trades and material dimensions for ease of installation

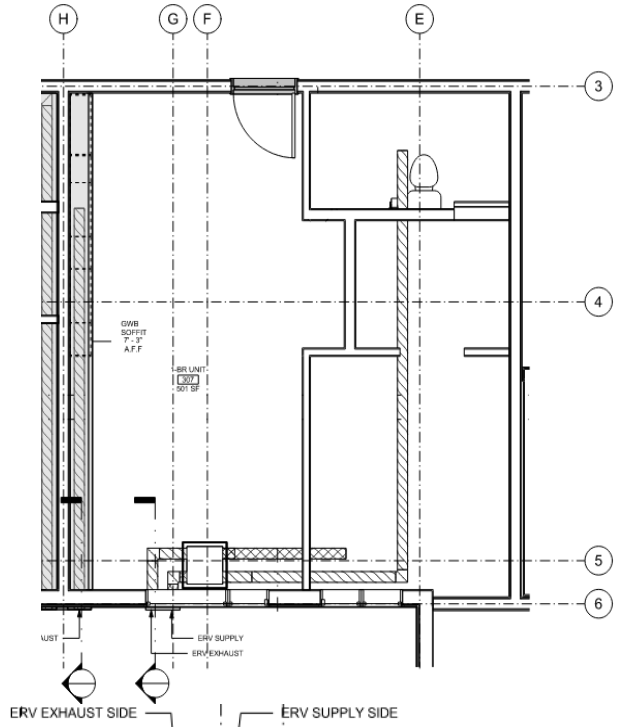


1 PLAN DIAGRAM: LEVEL 2
SCALE: 1/8" = 1'-0"

THEN SYSTEMS

Venting, Plumbing, Electrical, Structural, Roofing, Siding, Foundations.

Identify conflicts and solutions to resolve those conflicts without losing sight of performance & cost



HOUSING HILLTOP: PROJECT RESULTS

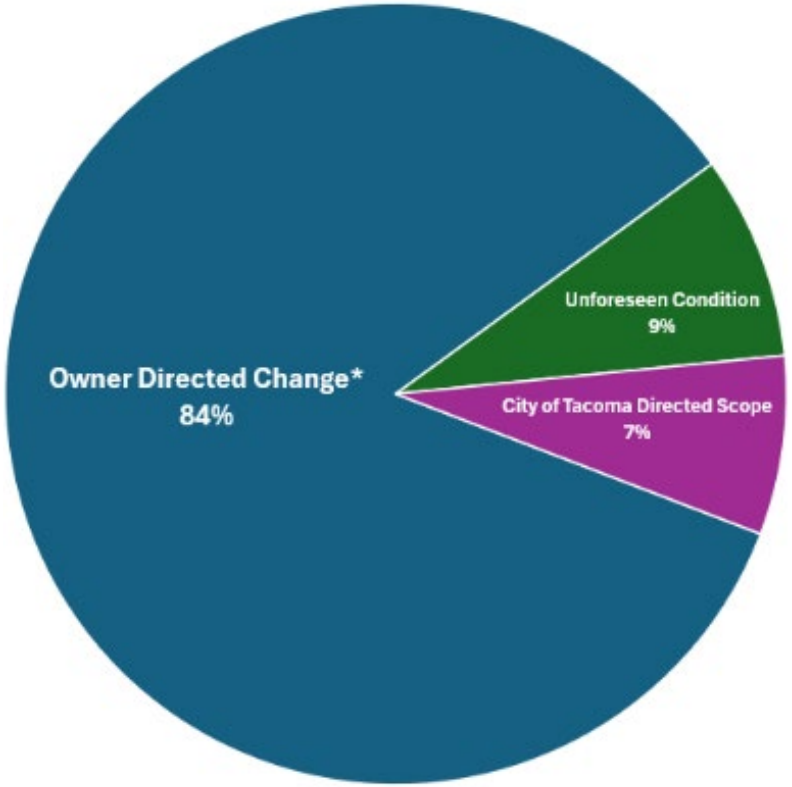
- **Design & permitting completed in 11 months** from selection of SMR
- **Final pricing was less than SD pricing** in volatile 2022 pricing environment
- Completion **8 weeks ahead of schedule**
- Construction admin was more efficient and less expensive than typical process
- **Only 76 RFIs**

VISION

REALIZED

	NORTH PHASE (137 units & 10,000 SF commercial space)	SOUTH PHASE (94 units & 3,000 SF retail space)
Construction Completion	Early December 2024 (4 weeks ahead of schedule)	May 2024 (4 weeks ahead of schedule)
Initial Contract Amount	$41,797,000	$29,447,800
Cost Per Unit	$305,088	$313,275
Cost Per SF	$233	$258

COMPLETE HOUSING HILLTOP PROJECT	
Change Orders (#, amount)	**49 total = $2,698,601**
Owner Driven Change Orders	31 total = $2,271,066
Other (Design, Soils, Unforeseen, and City Requirements)	18 total = $427,535



HOUSING HILLTOP: PROJECT RESULTS

The Qualitative Benefits:

- Committed, supportive team
- Team is less stressed by unexpected design changes
- Subcontractor response, coordination
- Smooth inspections
- Smooth punchlist and turnover

KEY TAKEAWAYS

- Owner should be super clear about their priorities and capacity before the team is selected and project starts
- Spending more money up front reduces cost risk in the long-run, especially for the design of building systems.
- Early selection and alignment of the project team allows the design to proceed more efficiently
- Design Build is an option to create early alignment and can allow the owner to reduce their project oversight burden.
- Teams should focus on collaboration. It can lead to great design solutions and actually enjoying working together.

THANK YOU!

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