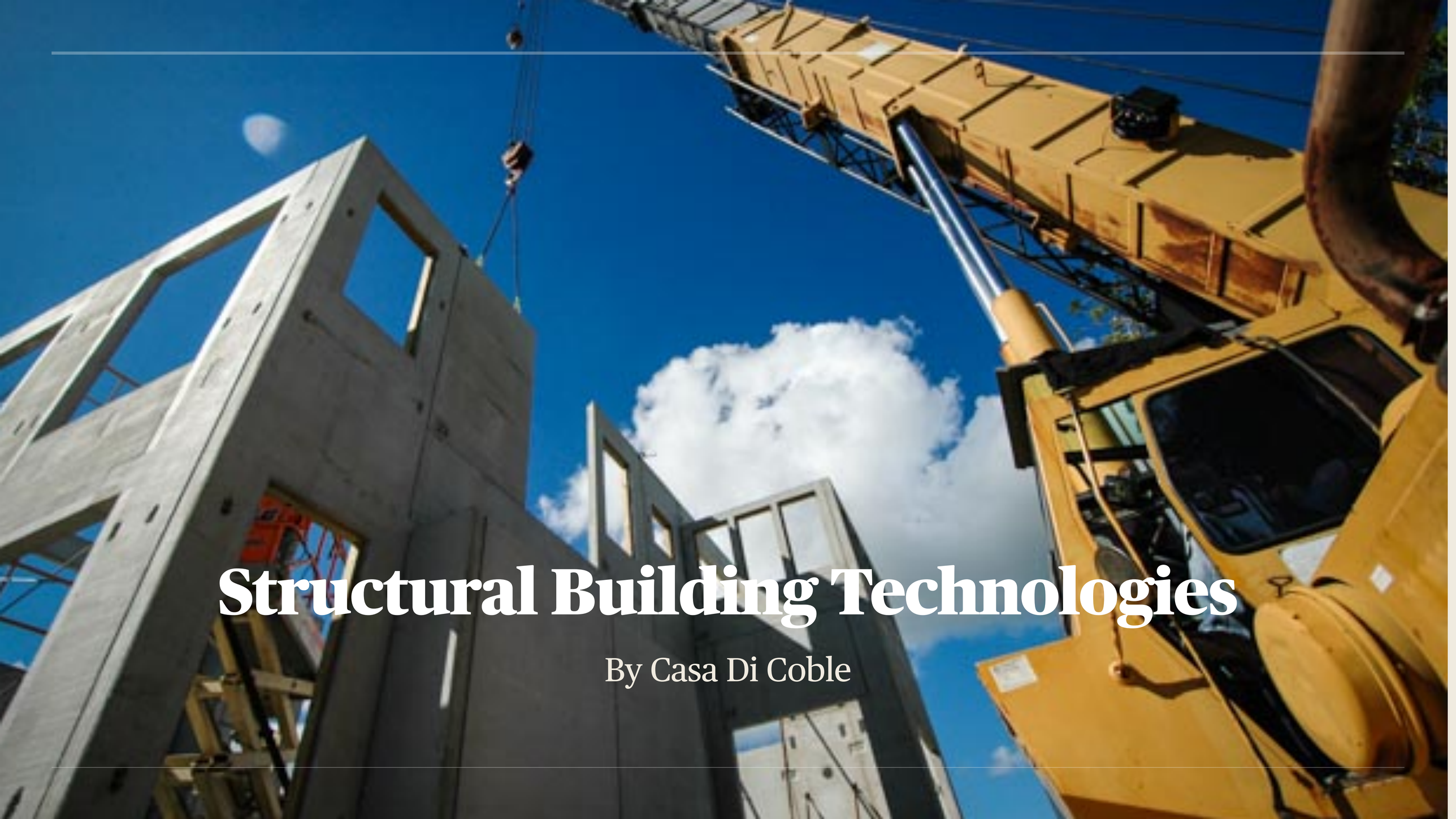
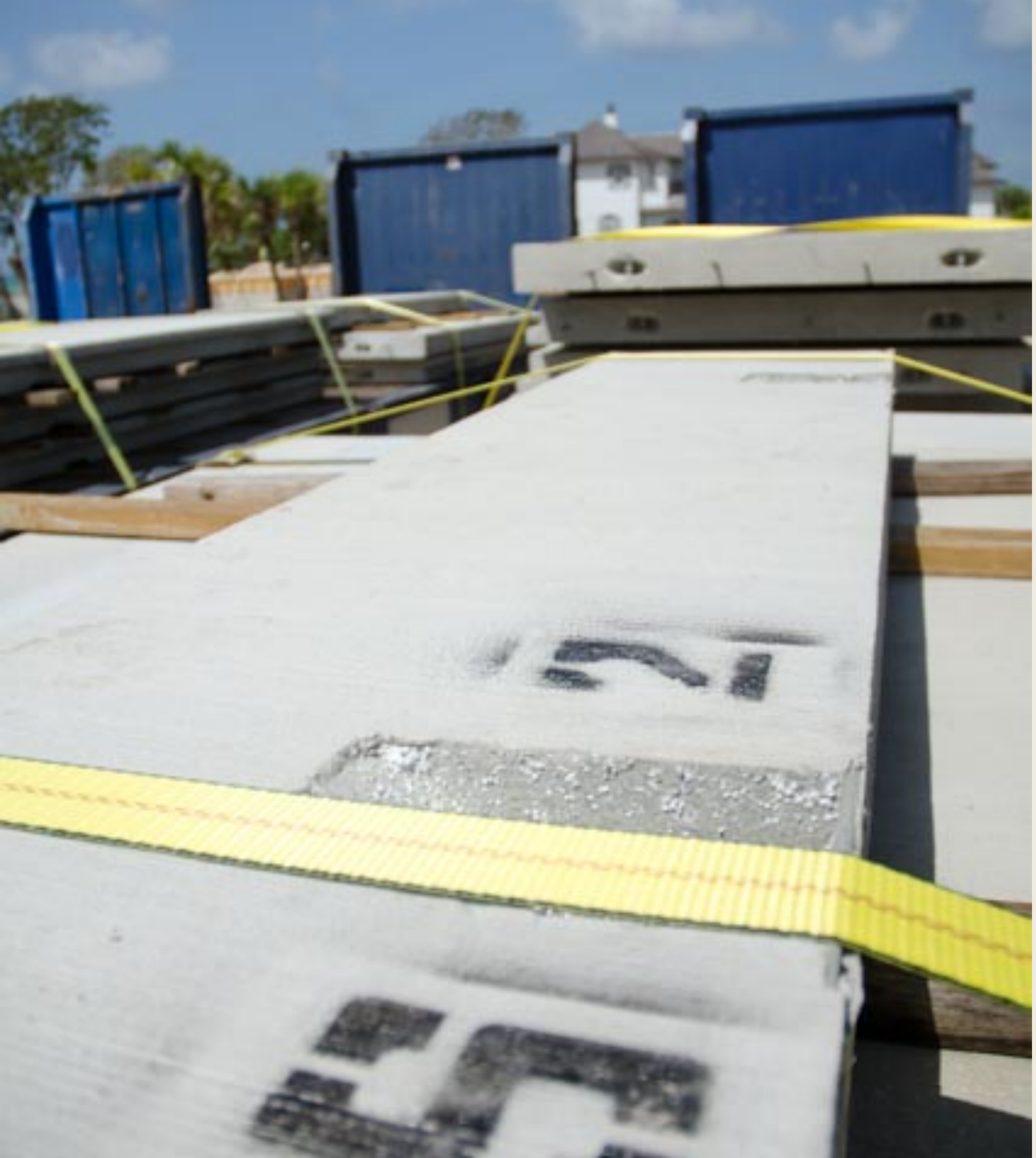


Structural Building Technologies

By Casa Di Coble

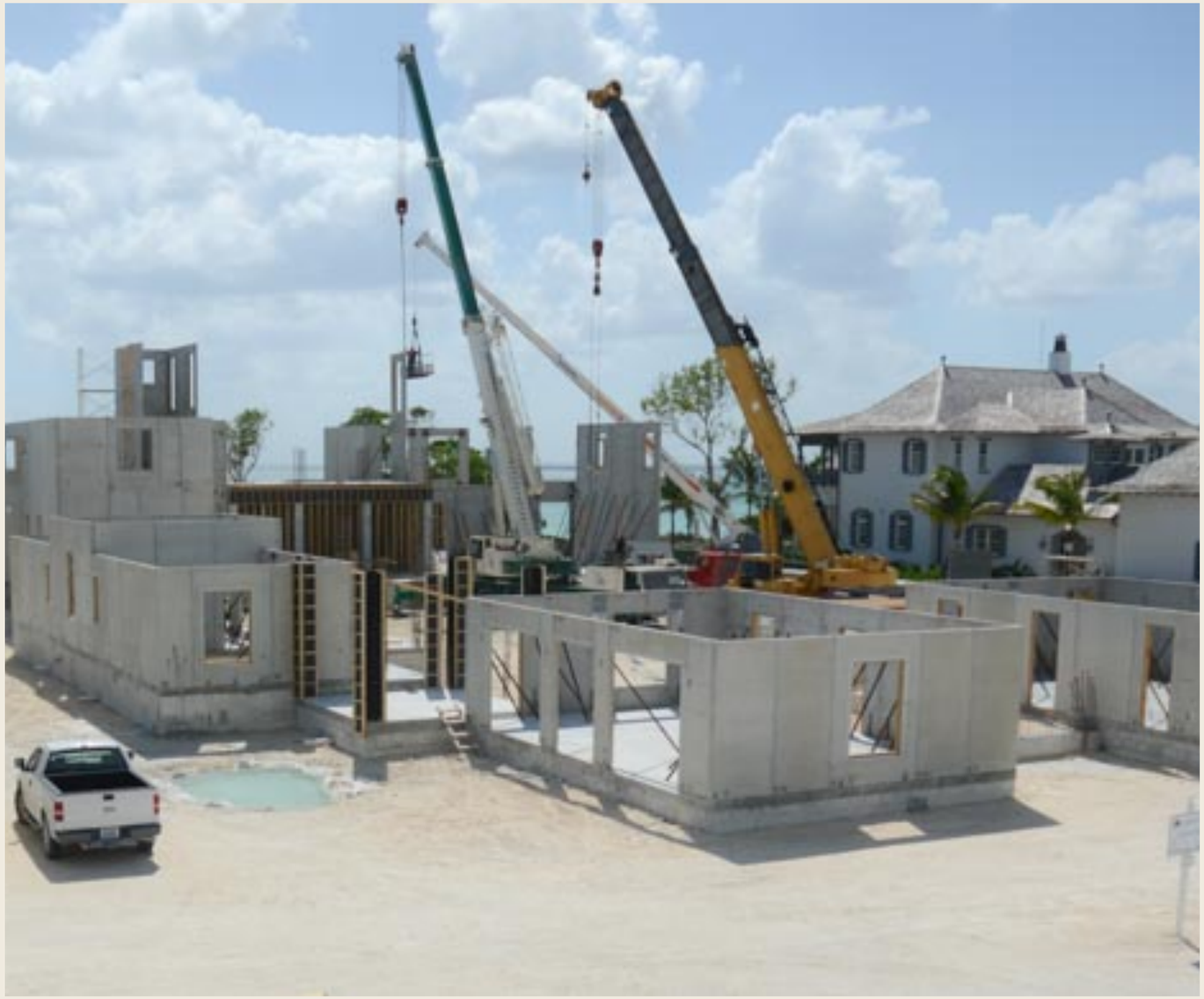


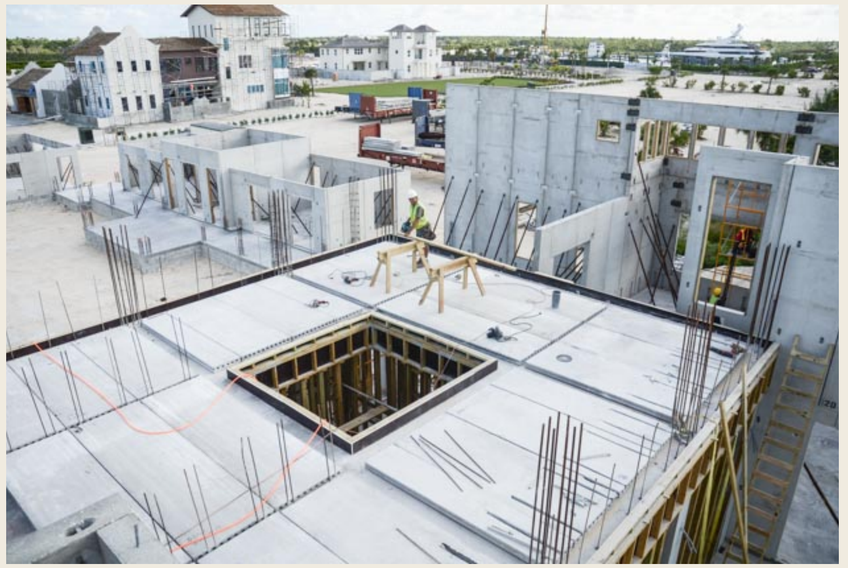
1. Precast Concrete Wall Panels & Hollow core Floor Systems

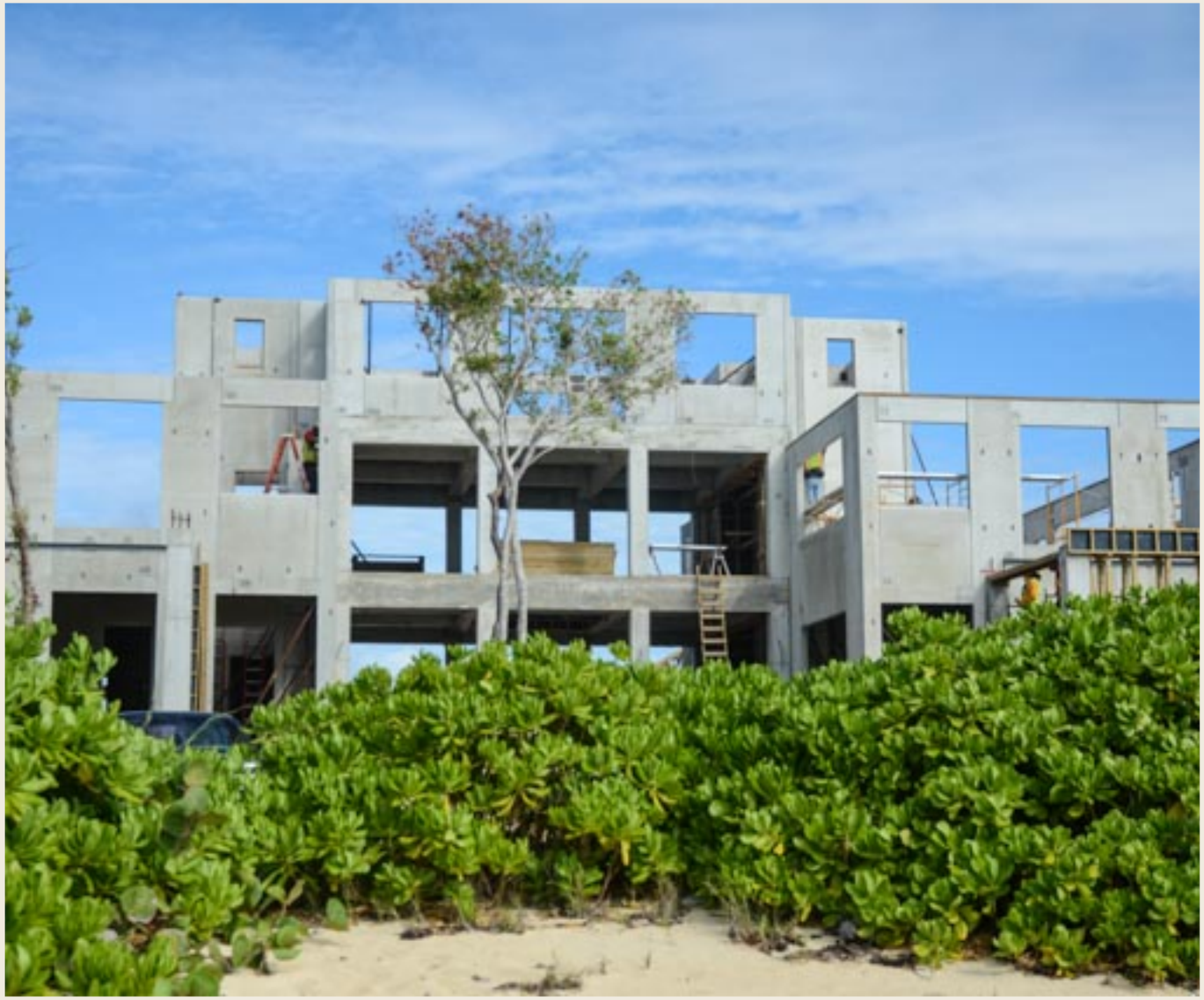
Background

- Precast concrete wall panels are made off site in a controlled production facility with 6000 psi concrete and steel rebar.
- Typical lead times of wall panels are approximately 30-60 days.
- Wall panels are typically 6 inches thick and various heights.
- Wall panels are shipped into the Bahamas on 40 foot flat racks.
- Wall panels are erected on site with a crane, then bolted to the slab and to each other. Some connections may also be welded together.
- Wall panels are hurricane rated.

- Hollow core floor systems are made off site in a controlled production facility.
- Hollow core floors are lightweight, efficient, and strong.
- Hollow core floors are typically 4 inches thick and varying lengths.
- Hollow core floors are shipped into the Bahamas on 40 foot flat racks.
- Hollow core floors are installed on site with a crane, placed on angle iron welded to the wall panels, then a 2” concrete topping is poured on top of them after installation.





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Benefits of Precast Concrete Panels

- Clean, fast and efficient building technology.
- Stronger and more durable than traditional methods.
- Fire resistant.
- Termite resistant.
- Hurricane rated.
- Watertight and energy efficient
- Reduced noise
- Can take advantage of the duty free clause in Bakers Bay and import panels without having to pay duty taxes on them.
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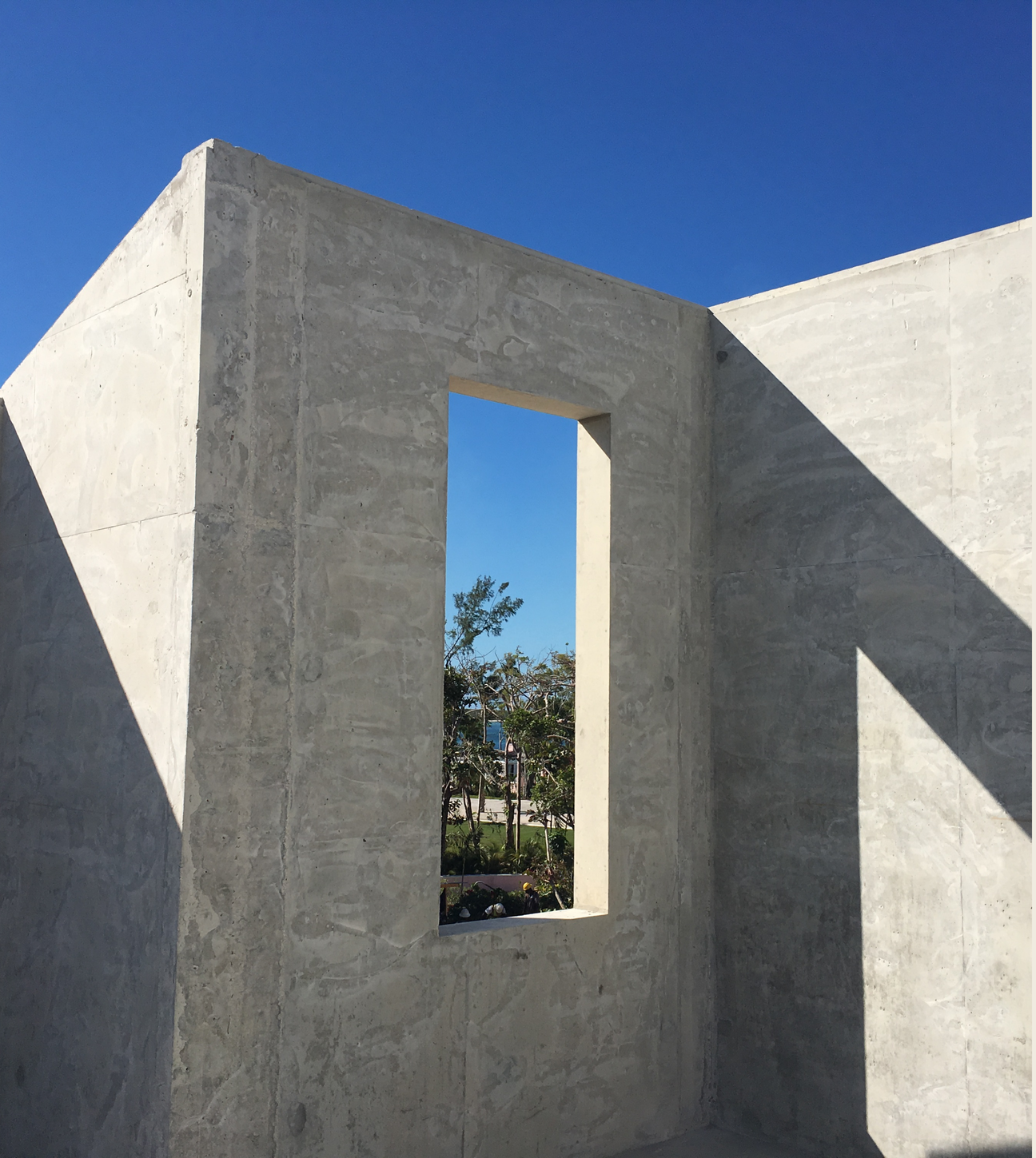
Disadvantages of Precast Concrete Panels

- Not all architecture will lend itself to this type of building methodology.
- Cost can be higher.
- Transportation can be an issue.



2. Cast In Place Concrete

Background

- Cast in place (C.I.P) concrete structures are built from pouring concrete on site into pre built aluminum and plywood form configurations with steel rebar embedded inside the forms.
- The aluminum and plywood forms are built on site and reusable for multiple concrete pours.
- The forms are 100% customizable so any architectural structure can be built with C.I.P. technology.
- The concrete is usually poured using a crane and a 3 yard concrete bucket.
- Once the concrete is poured a special concrete vibrator is used to make sure no voids are left in the forms.
- Once the concrete is cured for 12 hours, the forms can be removed and the process is repeated.
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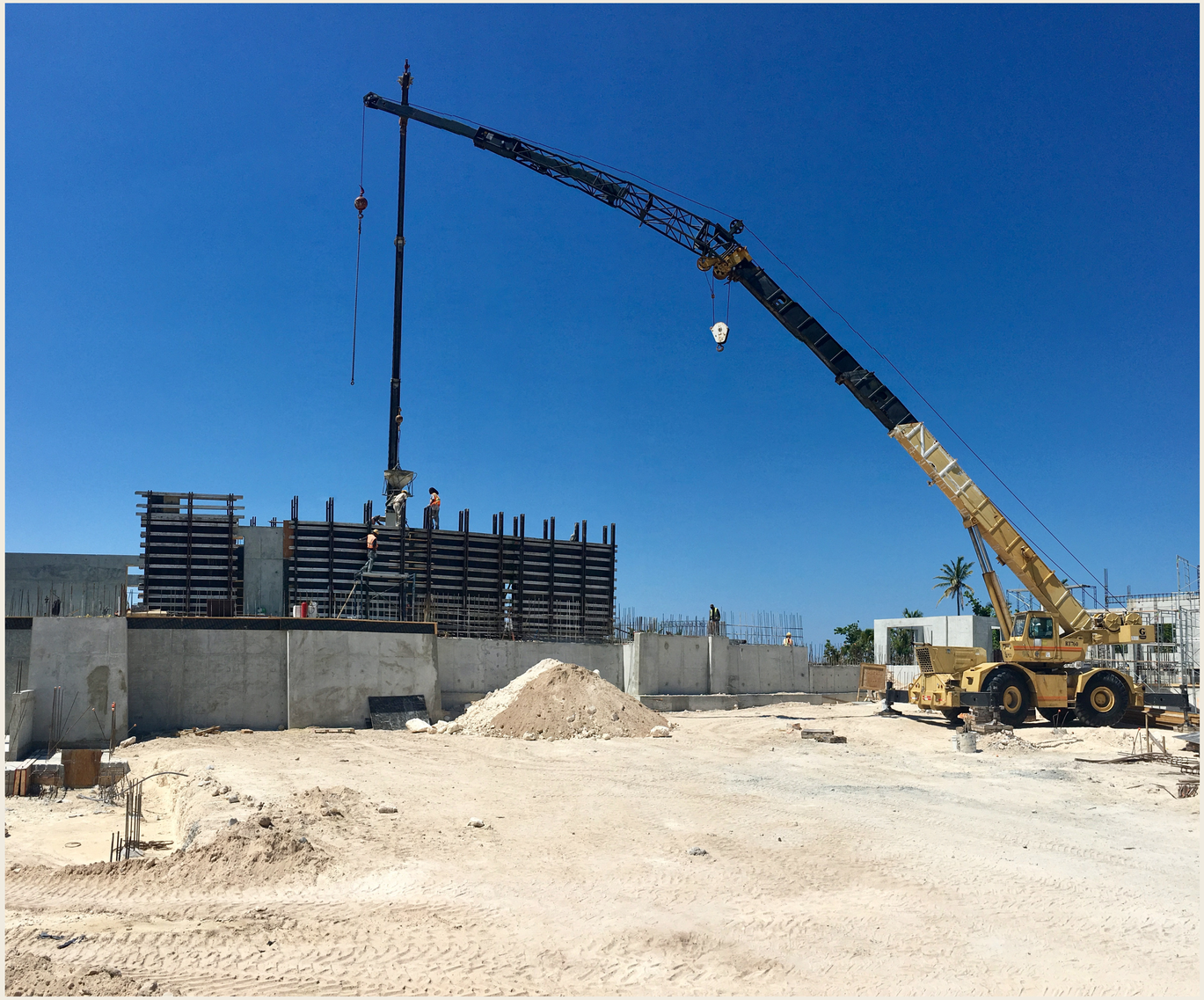

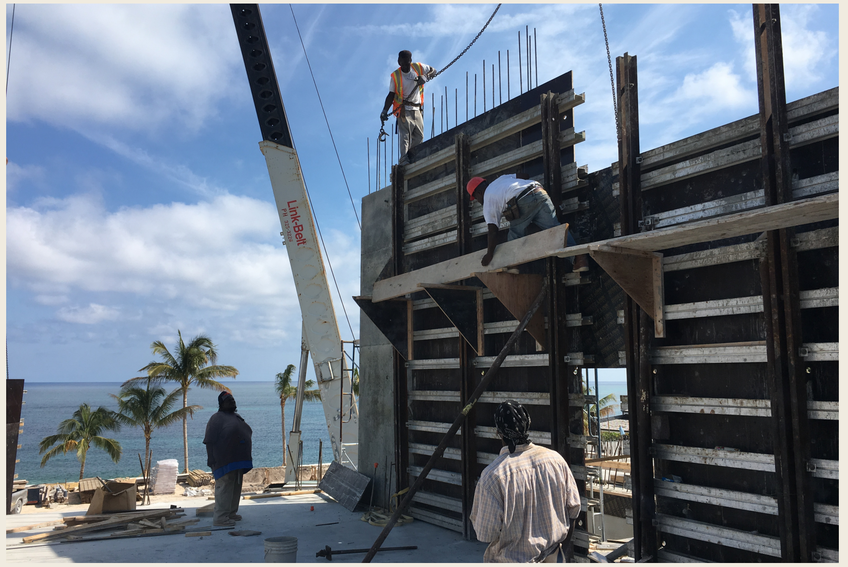
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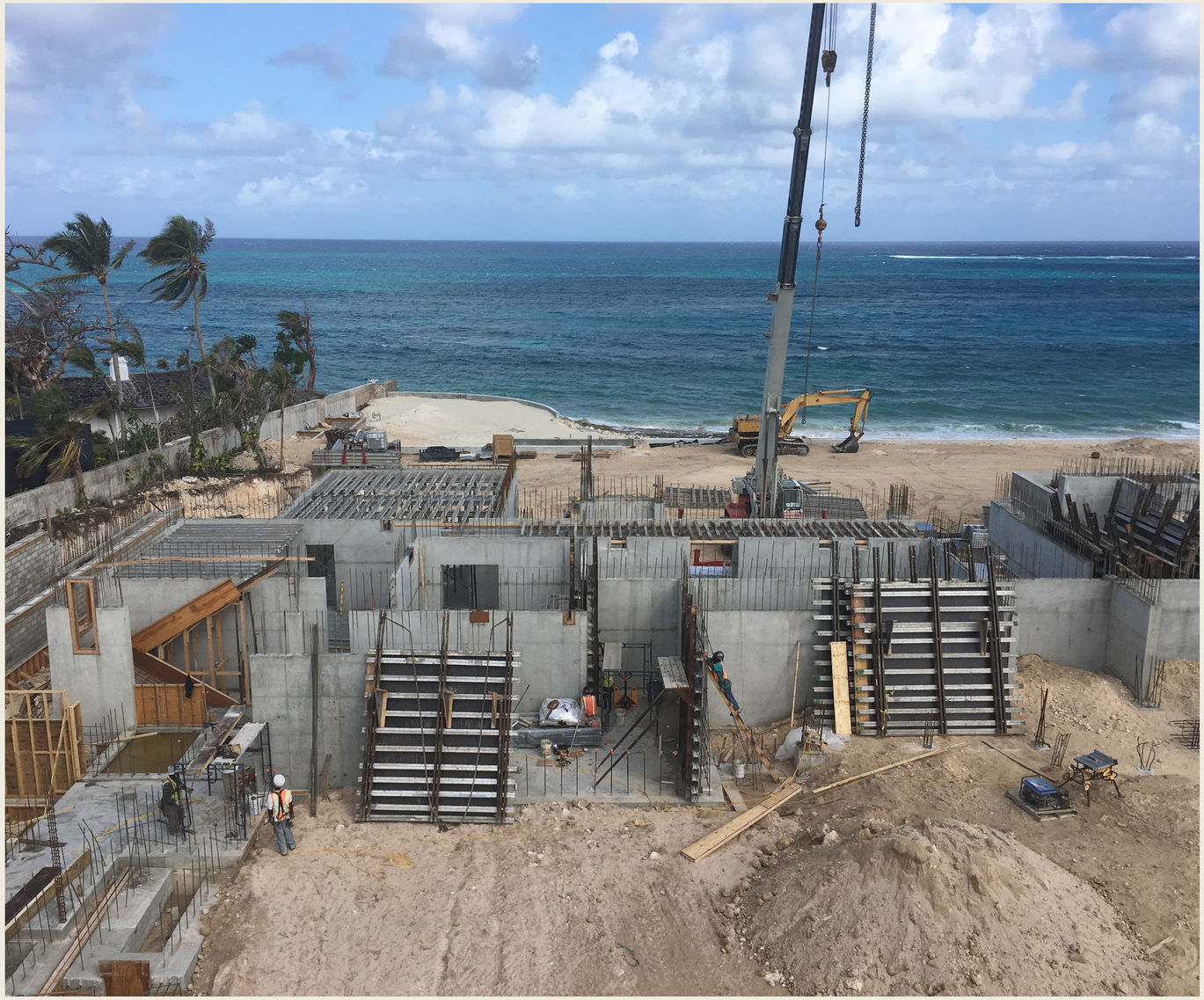

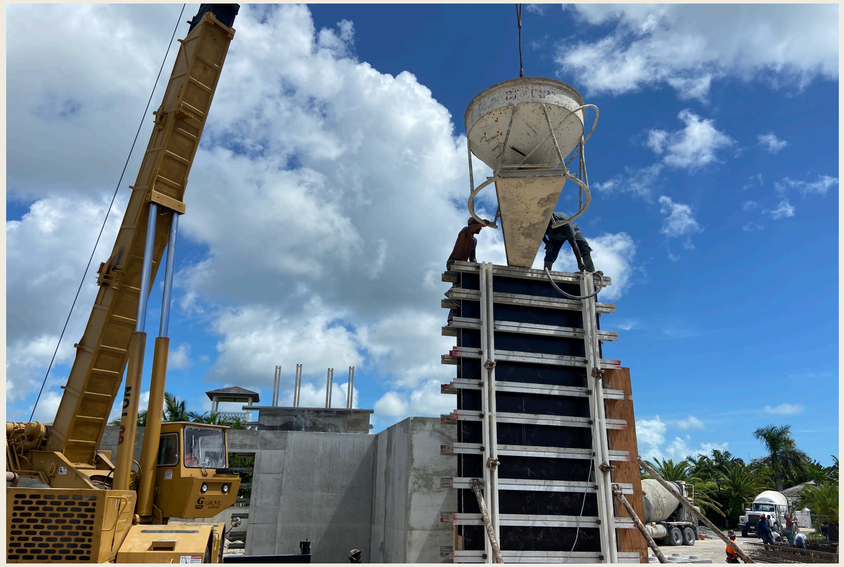

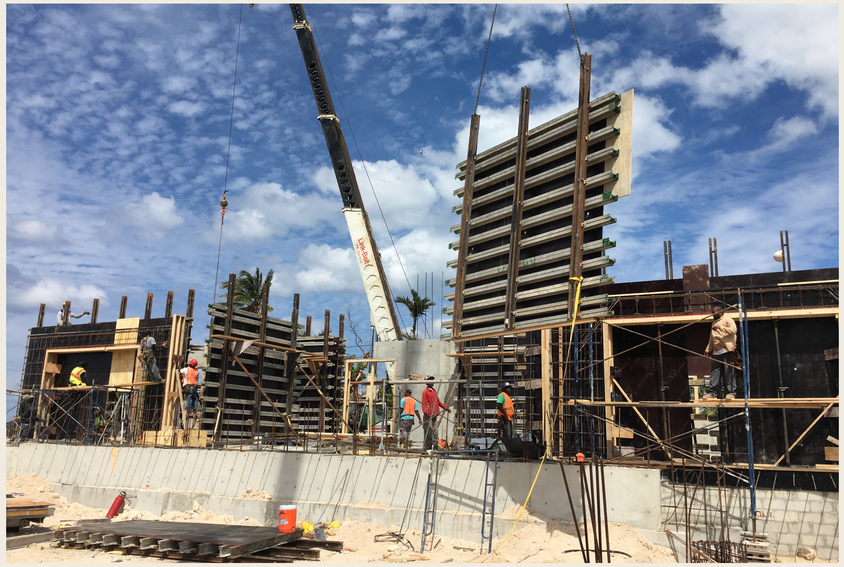

Benefits of C.I.P.

- Fully customizable to support any architectural design.
- Can be fast and efficient with the right crew.
- Because C.I.P. is one monolithic structure, it dramatically increases the strength of the building.
- Hurricane rated.
- Forms can be reused reducing overall cost.
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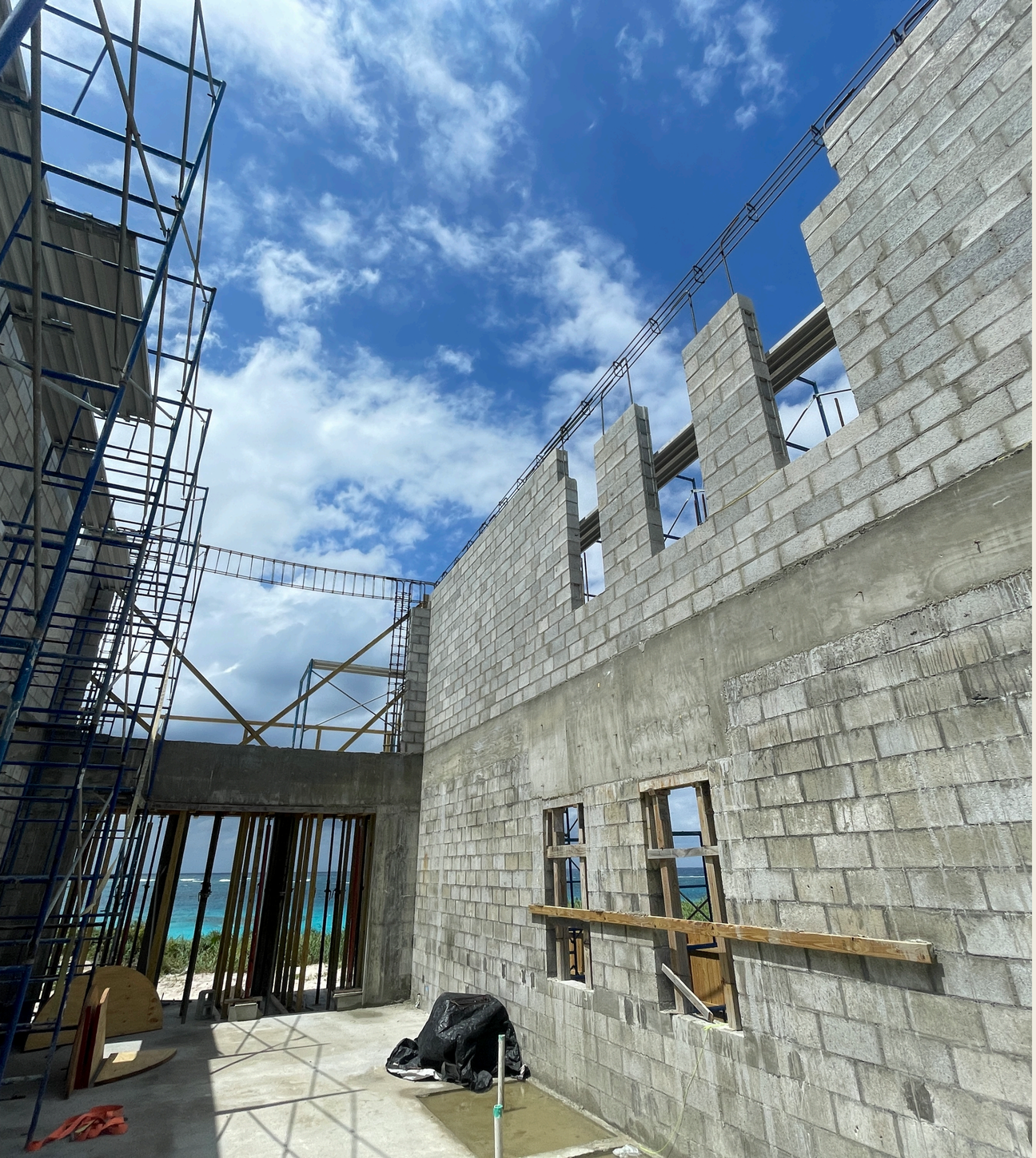
Disadvantages of C.I.P. systems

- Need a steady supply of concrete, can be an issue in Baker's Bay.
- Labor intensive.
- Time intensive.



3. CMU Block and Tie-beam Construction.

Background

- Traditional CMU construction is found throughout the Bahamas and is the most common form of building technology.
- Standardized 8”x8”x16” concrete masonry unit (CMU) blocks are stacked on top of each other with cement joints. The blocks are hollow with two holes in each block
- Steel rebar is placed at varying widths and heights inside the block holes for strength.
- Precast or CIP headers are built above window and door openings.
- CIP concrete tie beams and columns are built into the design for strength.
- Typical floors are either wood framed or poured with concrete using wood or metal forms.
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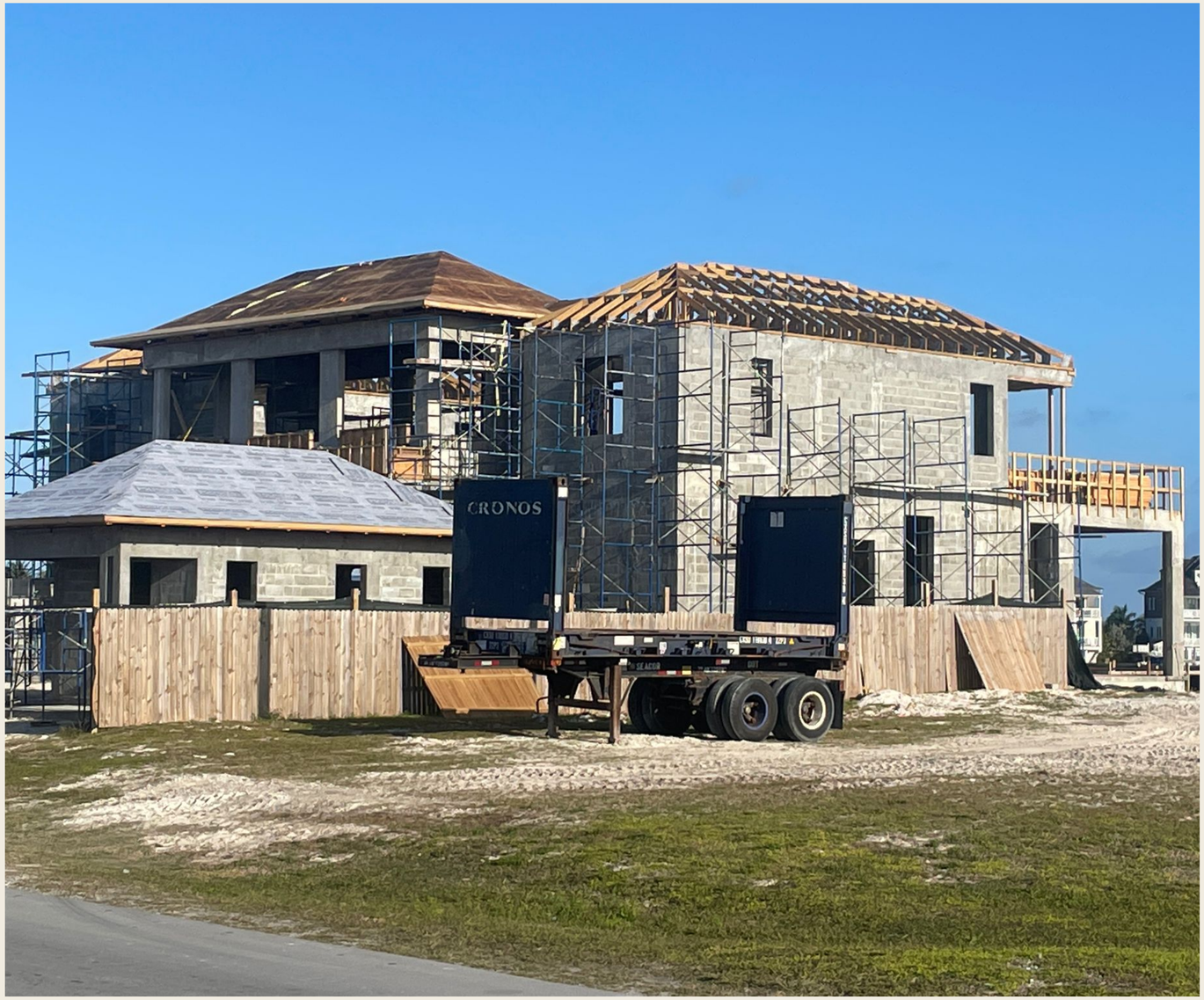
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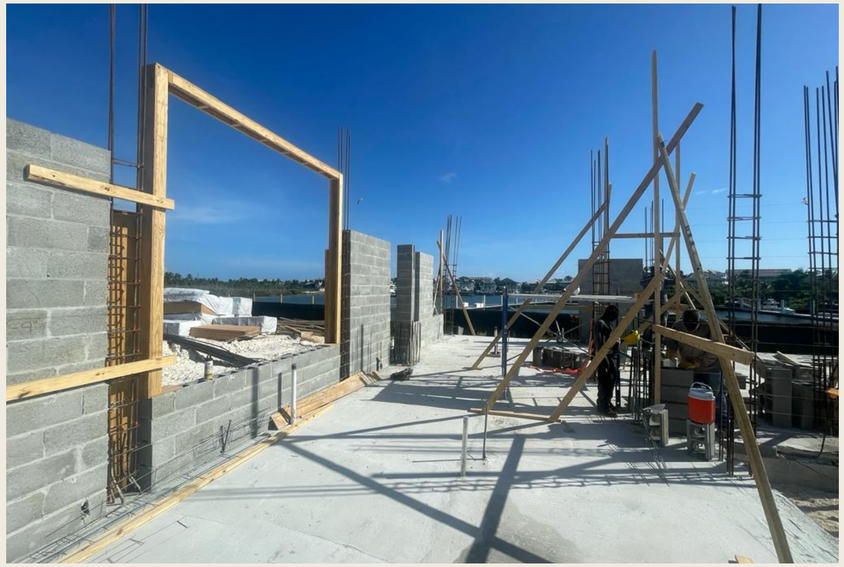

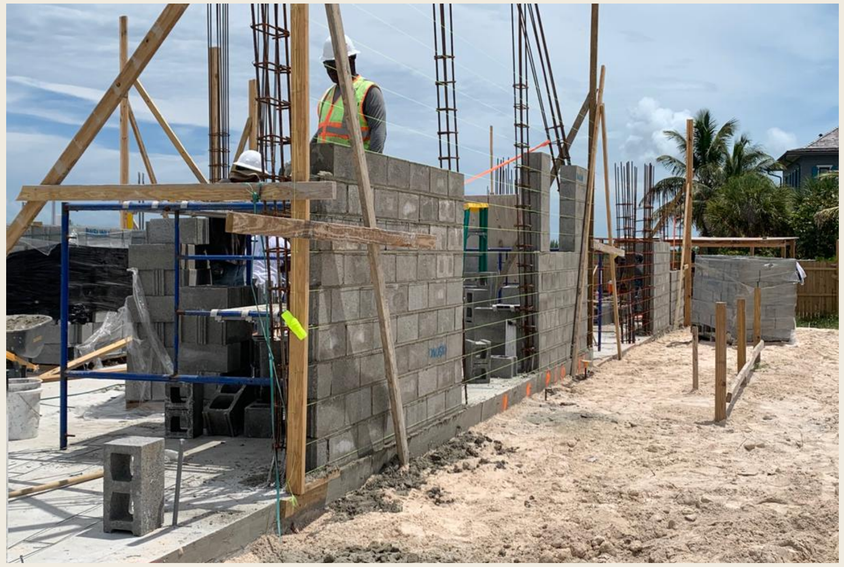

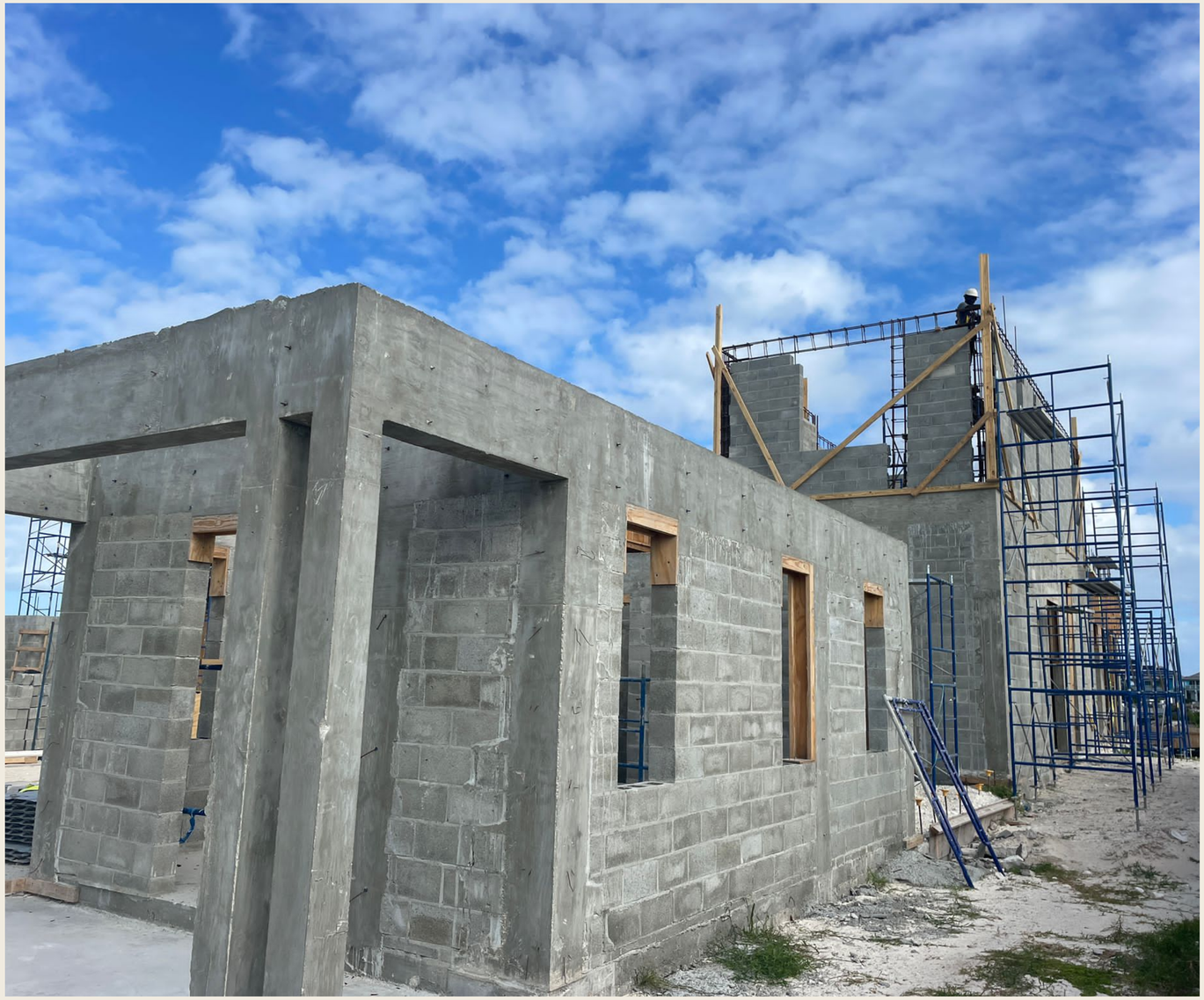

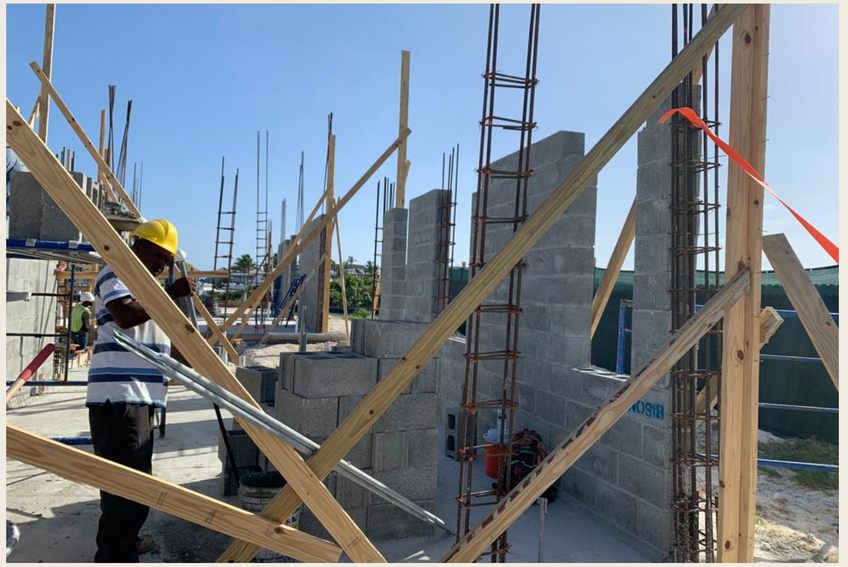

Benefits of CMU construction

- Cost effective
- Can build most architectural designs.
- Labor is easier to find.
- Widely accepted technology.

Disadvantages of CMU construction

- Slow and messy.
- Not as strong or accurate as pre cast or C.I.P.