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Affordable Multifamily Passive Projects II
Or
How to build a very large scale multifamily Passive House building at no extra cost.

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Beach Green Dunes, Rockaways, NY – 101 unit rental building
(formerly known as Beach Green North)
Site energy production
Natural gas fired CHP (cogen) - 10kw
Building envelope
Insulated Concrete Forms (ICFs)

The (almost) perfect wall.
**Insulated Concrete Forms**

- Installed cost (NYC non-union) = +/− $18/sf
  - r-value = 24
- Doesn’t require water or vapor barriers
- Sound Transmission Coefficient = 55
  - 8” ICF fire rating = 4 hours
- Built-in furring system
- Cleaner construction sites
- Strong, solid concrete walls

**Concrete Blocks**

- Installed cost (NYC non-union) = +/− $22/sf
  - R-value = 1
- Requires added water and vapor barriers
- Sound Transmission Coefficient = 47
  - 8” hollow block fire rating = 1 hour
- Requires added studs or furring
- Increased debris removal costs and violations
- Requires added grout/rebar to increase strength
HVAC
Water
NOTES:

ELECTRICIAN TO INSTALL 3" CONDUIT FROM PUMP ROOM TO ROOF TOP MECHANICAL ROOM, WITH (2) 14/2 BLACK WIRES, BOTH COLORED BLACK.

INSTALL (1) HONEYWELL WALK-IN TYPE EXPANSION TANKS IN ROOF TOP MECHANICAL ROOM.

PRESSURE TANKS PRIOR TO CONNECTING ANY PIPING TO TANKS. PIPE CONNECTED TO ONE TANK IS 1/2" NPT CONNECTED TO TWO OR MORE TANKS IS 3".

INSTALL KUNKLE POP SAFETY VALVE IN ROOF TOP MECHANICAL ROOM. PART NUMBER #619899MO6- AMSE VIII ALLOW NO VALVES BETWEEN POP SAFETY VALVE AND TANKS. MOUNT MINIMUM 48" ABOVE FLOOR. PIPE TO DISCHARGE TO WITH 6" OF FLOOR.

INSTALL (2) HONEYWELL PRESSURE SWITCH MODEL L40481102 IN-LINE WITHIN 10 FEET OF TANK IN ROOF TOP MECHANICAL ROOM. WIRE TO MOTOR TO PUMPS.

INSTALL LIQUID FILLED PRESSURE GAUGE, GRANGER PART #23FRS WITHIN 20" OF HONEYWELL PRESSURE SWITCH ON ROOF TOP MECHANICAL ROOM.

ALLOW 18" OF STRAIGHT PIPE BETWEEN PUMPS.
Yellow line – water/sewer cost 2014

Blue line – water/sewer cost 2015

Start of building-wide retrofit of all plumbing fixtures

ROI in less than 8 months.
• 60% reduction in water/sewer use/costs

• 20% reduction in natural gas costs for heating water

• Equipment lifespan prolonged (boilers, pumps, pipes)

• Reduced demand on water consumption saves resources lowering the need to work to increase supply system capacity

• Reduced sewage waste = fewer CSO’s and lessening of pollution of local water bodies
Install two water sub-meters per apartment.

Use of water sub-meters has proven to result in a 25% reduction in water consumption.
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Jamaica, Queens
174 rental apartments
+ 25,000 SF retail/community facility

Fleetwood, NY
249 rental apartments
+12,000 SF retail
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