



Building High Performance Homes Quickly and Cost Effectively



15 Nov 2017

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Building High Performance Homes Quickly and Cost Effectively

- Specifications and processes to hit High Performance targets
- Line by line cost details
- Off the shelf materials and detailed assemblies
- Cost/benefit trade off for increasing energy efficiency



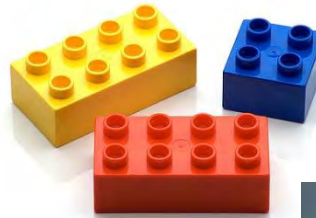
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Building High Performance Homes Quickly and Cost Effectively

- About BrightLeaf Homes
- Plans/Specifications
- Budget/Finance
- Building Materials
- Schedule
- Do Everything Better
- Discussion/Questions



TOYOTA



That's us!
↓

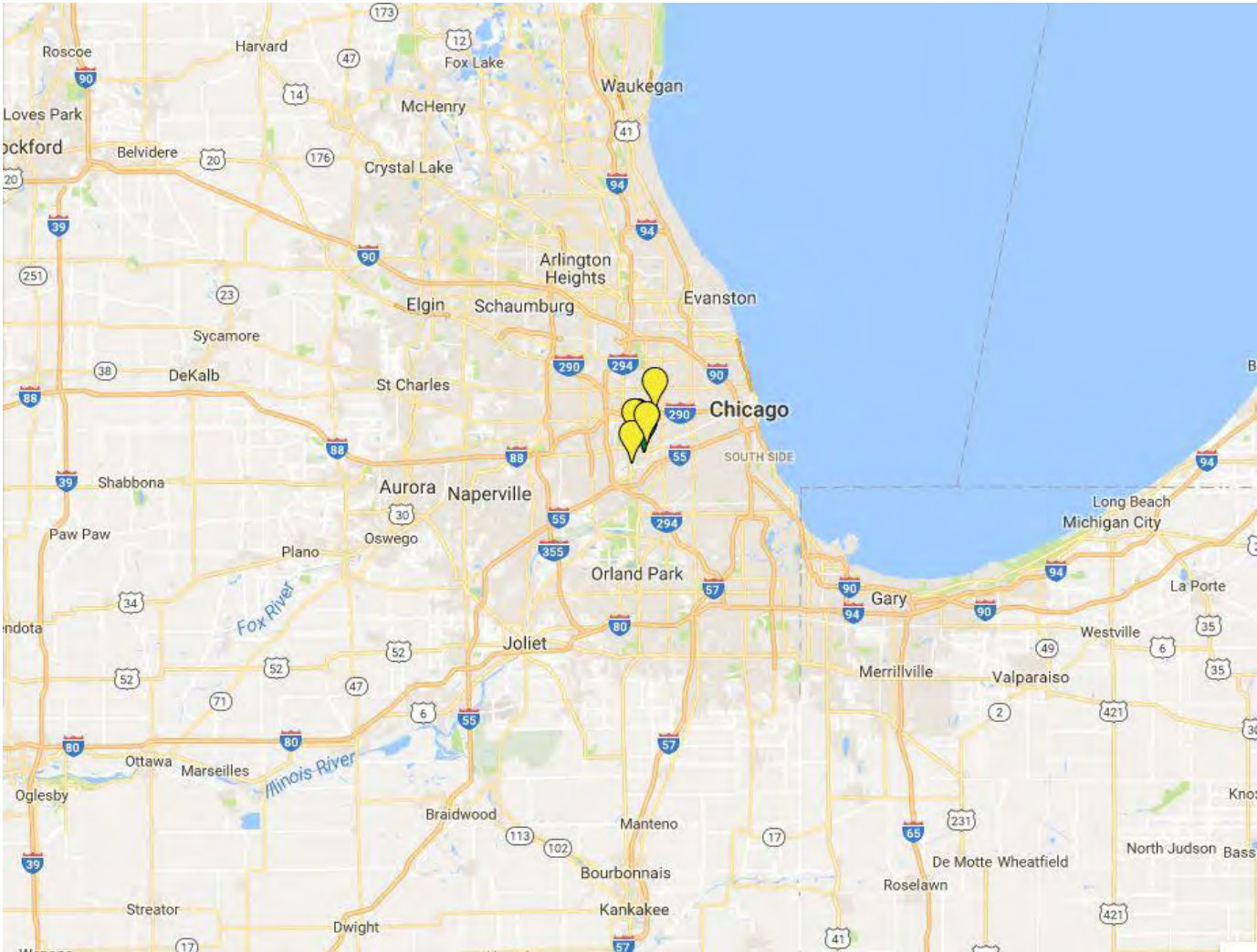


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About BrightLeaf



That's us!
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About BrightLeaf



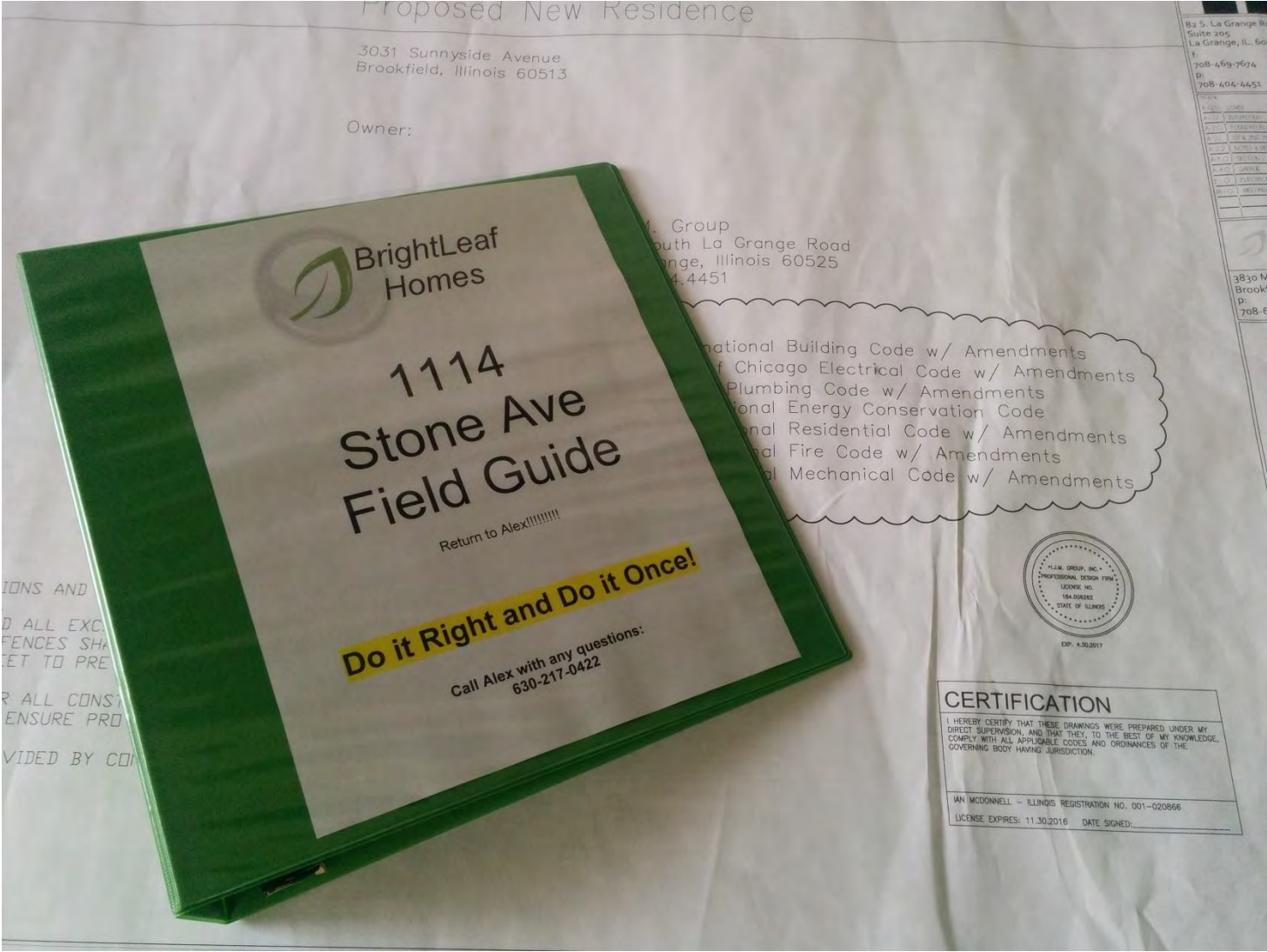
That's us!



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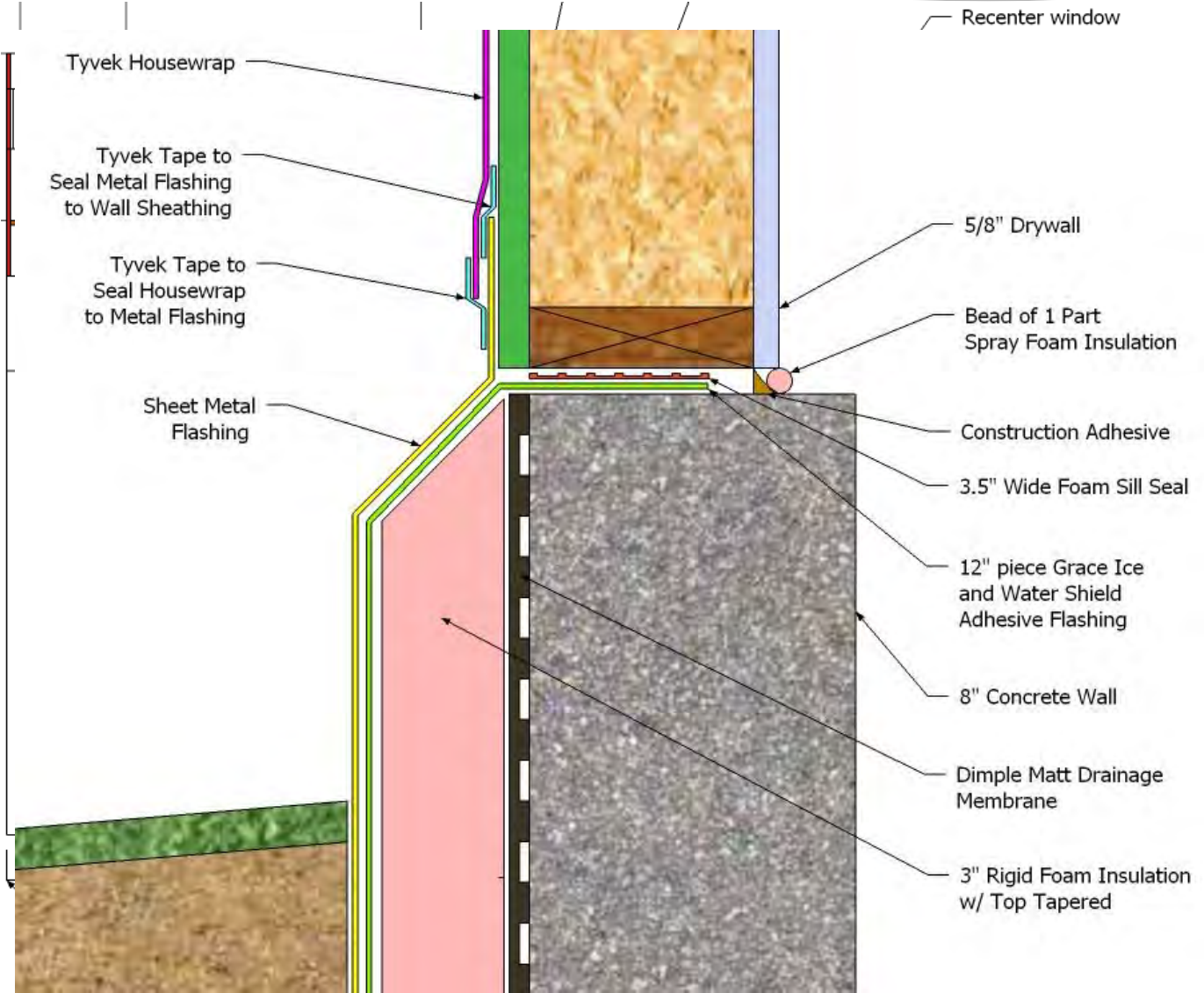
Specifications



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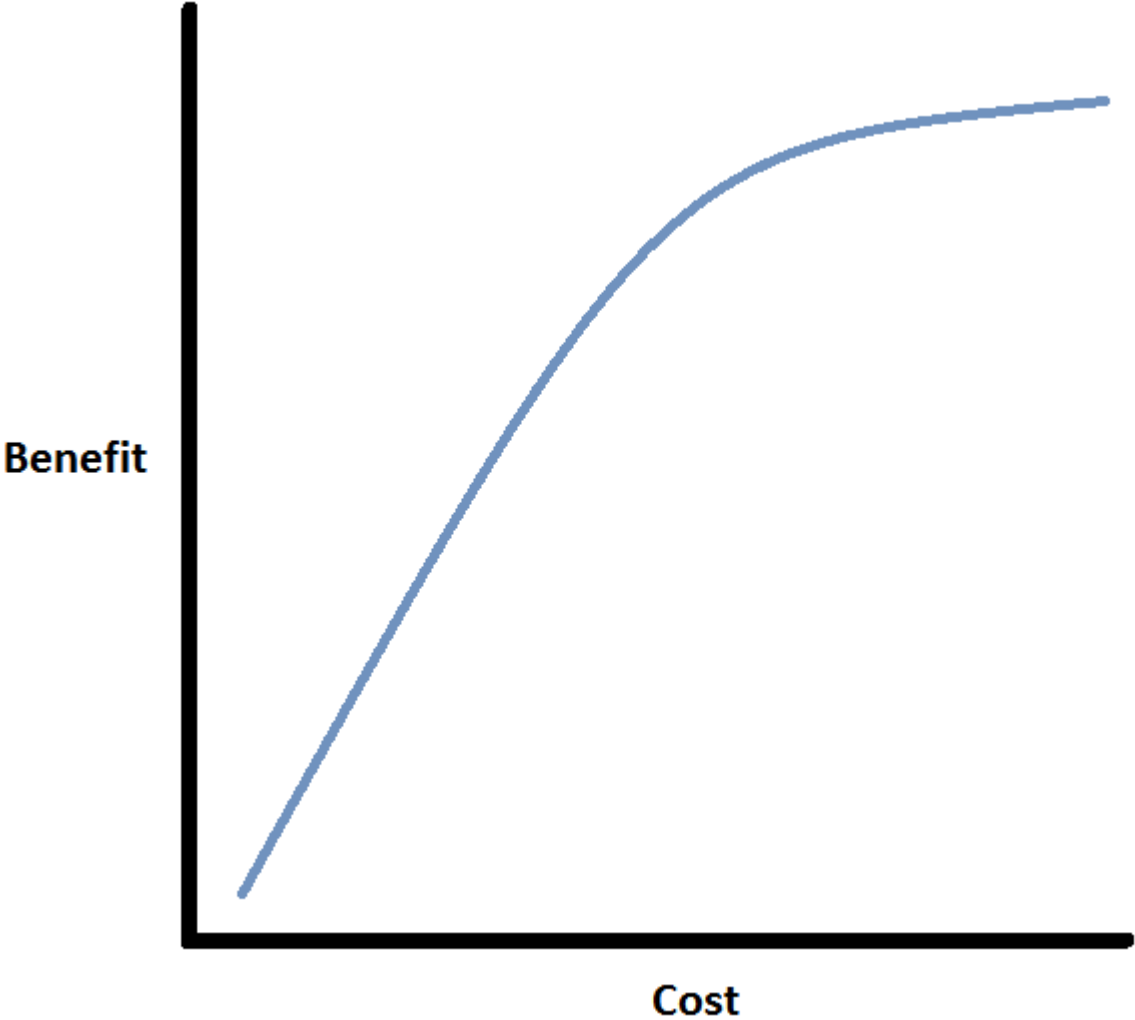
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Specifications



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Budget/Finance



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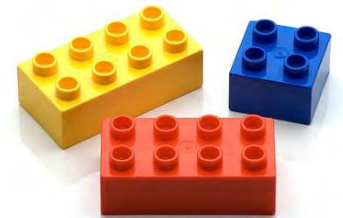
Building Materials

Engineered Wall Panels

ZIP: \$18.40

Plywood: \$18.24

OSB: \$10.15



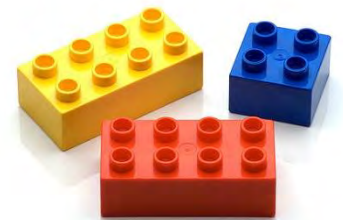
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Building Materials

**Weather
Resistive
Barrier (WRB)**

Fluid Applied
Fully Adhered
Surface Film
Lapped Rolls



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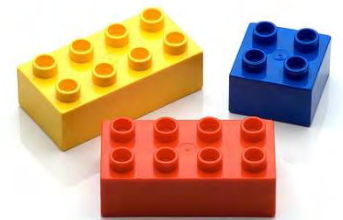
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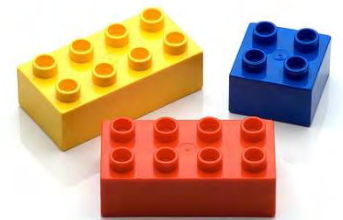
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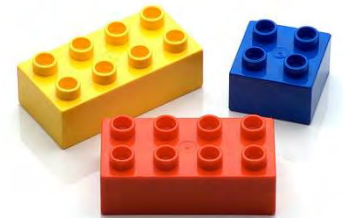
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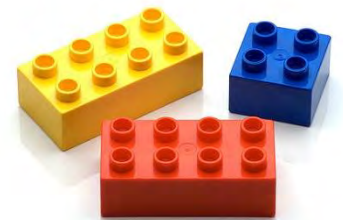
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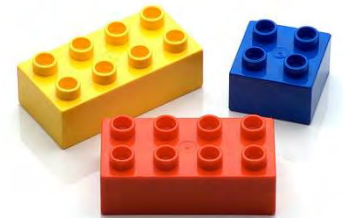
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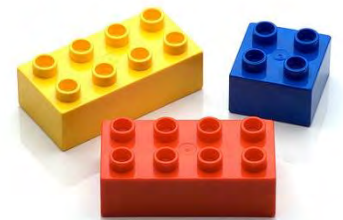


Building Materials

Weather Resistive Barrier (WRB)



Tyvek: \$1,120
Zip: \$450
Blueskin: \$3,017



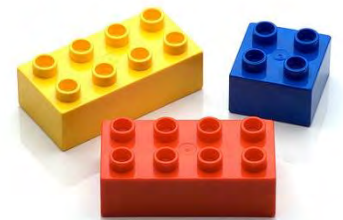
Building Materials

Triple Pane Windows

Okna: \$6,616

Intus: \$9,681

Zola: \$15,077



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Building Materials

HVAC

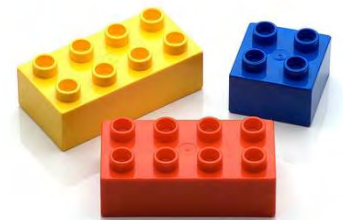
Furnace:

\$9,800

Mini-split:

\$12-16k?

GSHP: \$?



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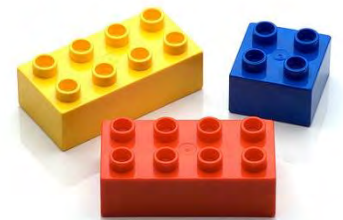
Building Materials

Whole House Ventilation

Air Cycler: \$?

Honeywell: \$?

HRV: \$?

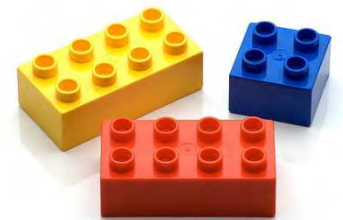


Building Materials

Wall Insulation

Fiberglass Batts

Blown Fiberglass
Blown Cellulose
Spray Foam



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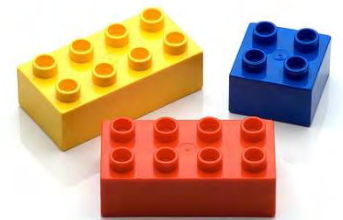
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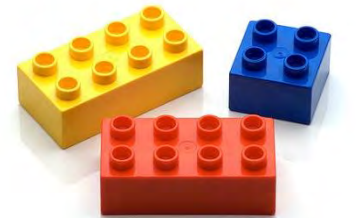
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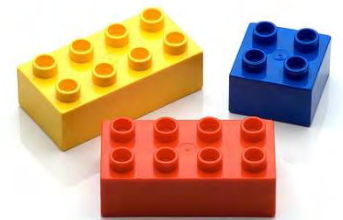
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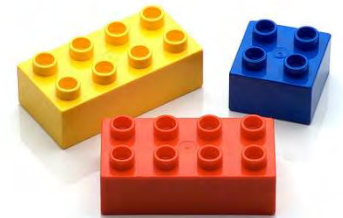


Building Materials

Foundation Insulation

Nothing (kinda)

Rockwool
XPS Foam



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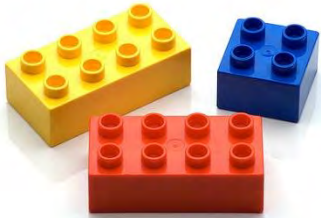
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Building Materials

Foundation Insulation

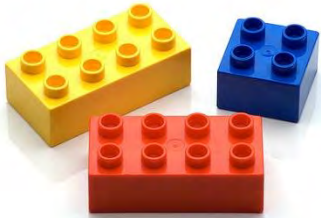
Nothing
Rockwool (\$1.10 /sf)
XPS Foam



Building Materials

Foundation Insulation

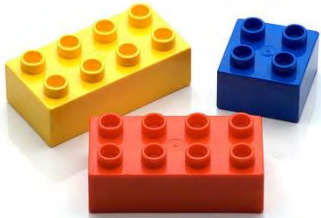
Nothing
Rockwool
XPS Foam (\$1.40/sf)



Building Materials

This

Not That



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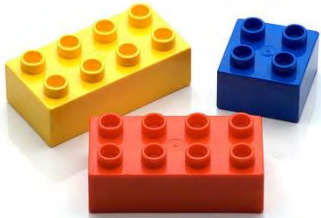
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Building Materials

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Not That



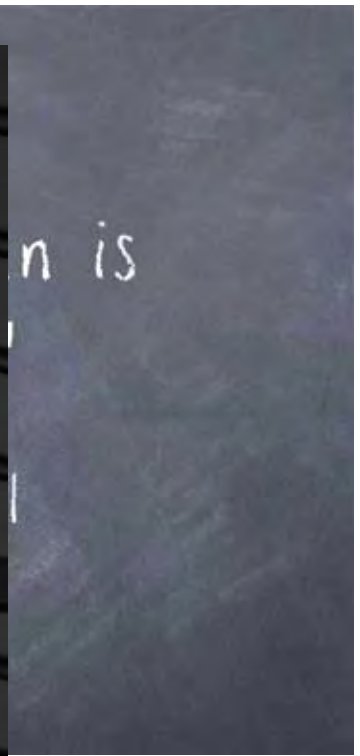
Timeline/Schedule



Work expands so as to fill the time available for its completion.

Parkinson's law

quote fancy

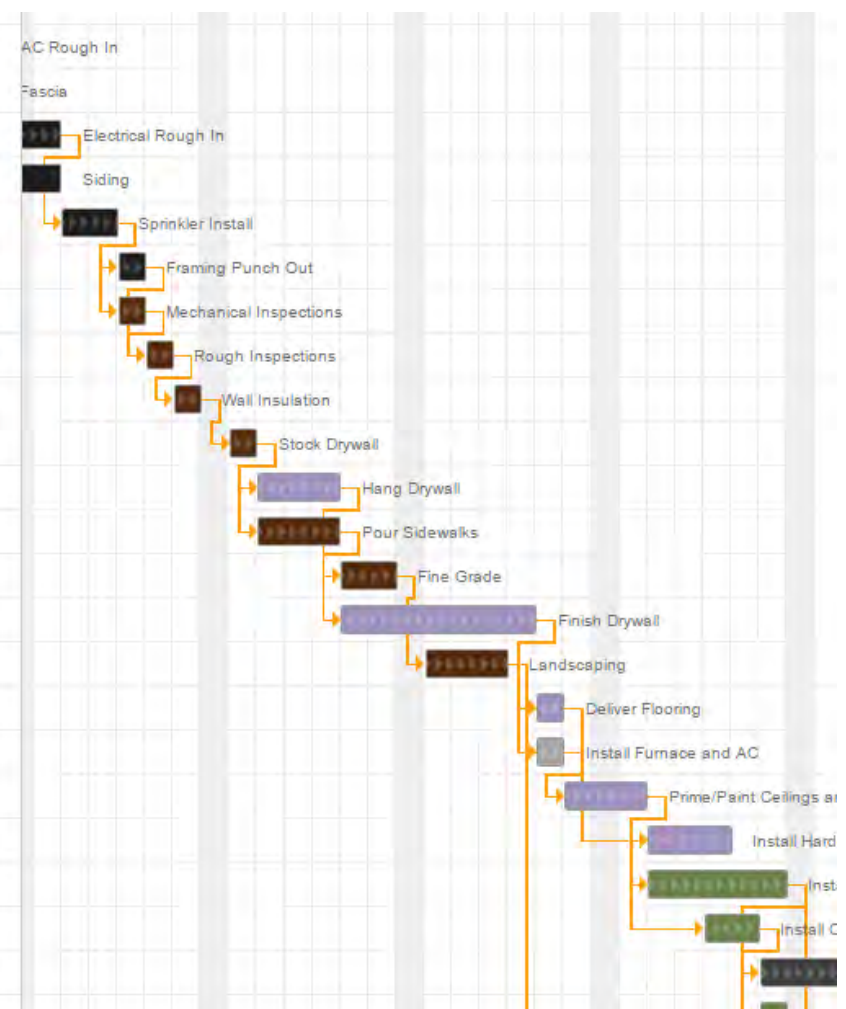


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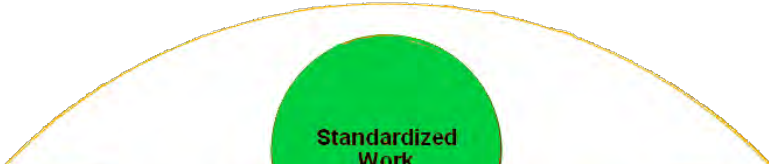
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Timeline/Schedule

| | | | | | | |
|----|----------------------------------|---|------------|------------|-----|--------|
| 32 | HVAC Rough In | 3 | 9-21-2016 | 9-23-2016 | N/A | 26, 30 |
| 33 | Soffit, Fascia | 1 | 9-22-2016 | 9-22-2016 | N/A | 31 |
| 34 | Electrical Rough In | 3 | 9-23-2016 | 9-26-2016 | N/A | 32 |
| 35 | Siding | 3 | 9-23-2016 | 9-26-2016 | N/A | 33 |
| 36 | Sprinkler Install | 2 | 9-27-2016 | 9-28-2016 | N/A | 34 |
| 37 | Framing Punch Out | 1 | 9-29-2016 | 9-29-2016 | N/A | 36 |
| 38 | Mechanical Inspections | 1 | 9-29-2016 | 9-29-2016 | N/A | 36 |
| 39 | Rough Inspections | 1 | 9-30-2016 | 9-30-2016 | N/A | 37, 38 |
| 40 | Wall Insulation | 1 | 10-1-2016 | 10-1-2016 | N/A | 39 |
| 41 | Stock Drywall | 1 | 10-3-2016 | 10-3-2016 | N/A | 40 |
| 42 | Hang Drywall | 3 | 10-4-2016 | 10-6-2016 | N/A | 41 |
| 43 | Pour Sidewalks | 3 | 10-4-2016 | 10-6-2016 | N/A | 41 |
| 44 | Fine Grade | 2 | 10-7-2016 | 10-8-2016 | N/A | 43 |
| 45 | Finish Drywall | 6 | 10-7-2016 | 10-13-2016 | N/A | 42 |
| 46 | Landscaping | 3 | 10-10-2016 | 10-12-2016 | N/A | 44 |
| 47 | Deliver Flooring | 1 | 10-14-2016 | 10-14-2016 | N/A | 48 |
| 48 | Install Furnace and AC | 1 | 10-14-2016 | 10-14-2016 | N/A | 45 |
| 49 | Prime/Paint Ceilings and Closets | 2 | 10-15-2016 | 10-17-2016 | N/A | 48 |
| 50 | Install Hardwood | 3 | 10-18-2016 | 10-20-2016 | N/A | 47, 49 |
| 51 | Install Tile | 5 | 10-18-2016 | 10-22-2016 | N/A | 49 |
| 52 | Install Cabinets | 2 | 10-20-2016 | 10-21-2016 | N/A | 50 |
| 53 | Install Trim | 4 | 10-22-2016 | 10-26-2016 | N/A | 51, 52 |



Lean/Kaizen



kai·zen
/'kīzən/
noun
a Japanese business philosophy of continuous improvement of working practices, personal efficiency, etc.

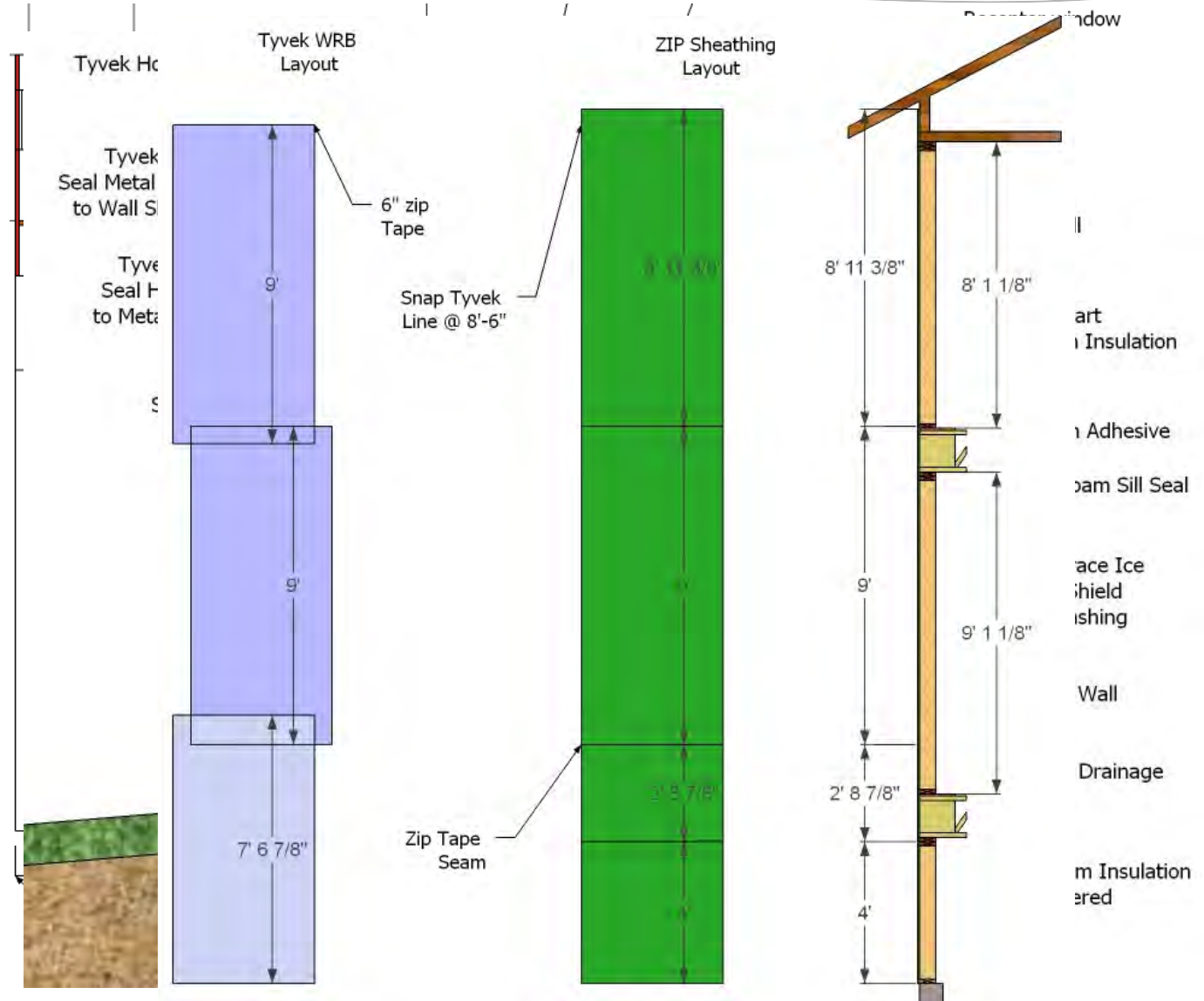
Translations, word origin, and more definitions



TOYOTA



Lean/Kaizen



TOYOTA



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Weather Resistive Barrier (WRB)



TOYOTA

*BrightLeaf
Homes*



Tying it all Together



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Tying it all Together

What square footage are we talking about?

- Above grade (2,080) \$241/sf
- Conditioned (3,210) \$161/sf
- Usable (2,925) \$172/sf

Based on a \$502,000 sales price



Tying it all Together

What's included in the price?

- Hard costs only (\$256,900) \$80/sf
- Total construction cost (\$302,800) \$94/sf
- Total cost and land (\$416,900) \$130/sf
- Cost, land, supervision (\$436,900) \$136/sf
- All of that and profit (\$502,000) \$161/sf

Based on 3,210 conditioned square feet



Staggered Stud Walls



TYPICAL EXTERIOR FRAME
WALL CONSTRUCTION

Bonus Deep Dives



Air Sealed
Skylight

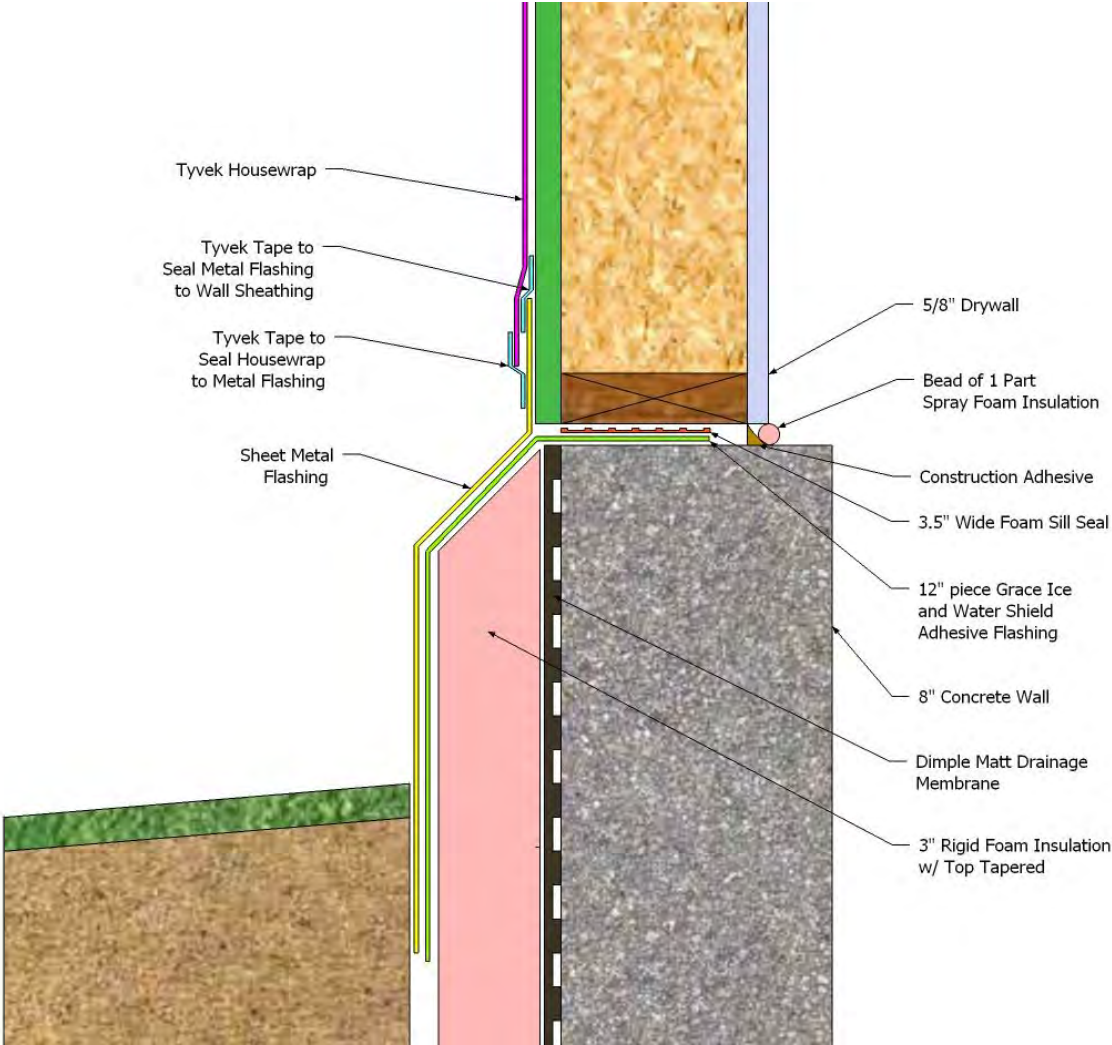


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Foundation Insulation Flashing





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