

Manhattan Beach Botanical Garden is a non-profit public education organization dedicated to promoting Earth-friendly gardening techniques, encouraging the use of drought-tolerant plants including California natives, and conserving our natural resources.

MBBG mission statement:

We promote Earth-friendly gardening for the conservation of water, wildlife and the well-being of our community.

9/27/14 - What should the shed look like? ...representative of MBBG's mission...

public education  
promote earth-friendly gardening techniques  
conserve natural resources

## PROGRAM

OFFICE / CHECK-IN /ARCHIVE

TOOLS

BUCKETS

COMPOSTING TOILET DEMONSTRATION

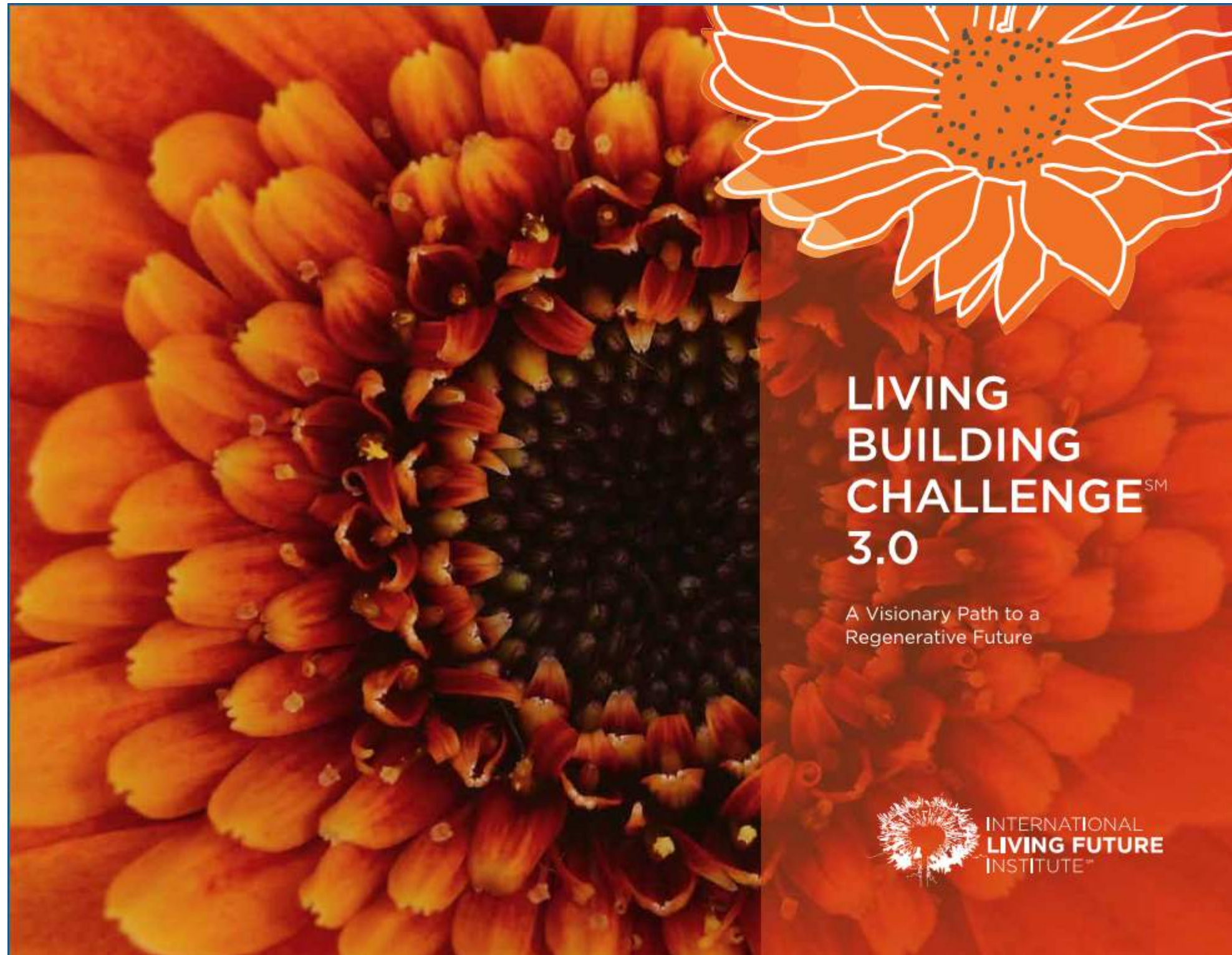
RAINWATER HARVESTING DEMONSTRATION

GRAYWATER DEMONSTRATION (SINK)

SOLAR DEMONSTRATION

CUBBIES FOR BACKPACKS





IMPERATIVE	PRELIMINARY AUDIT	FINAL AUDIT
01: Limits to Growth	X	
02: Urban Agriculture		X
03: Habitat Exchange	X	
04: Human Powered Living	X	
05: Net Positive Water		X
06: Net Positive Energy		X
07: Civilized Environment	X	
08: Healthy Interior Environment		X
09: Biophillic Environment	X	
10: Red List	X	
11: Embodied Carbon Footprint	X	
12: Responsible Industry	X	
13: Living Economy Sourcing	X	
14: Net Positive Waste		X
15: Human Scale + Humane Places		X
16: Universal Access to Nature and Place	X	
17: Equitable Investment		X
18: Just Organizations	X	
19: Beauty + Spirit		X
20: Inspiration + Education	X	

*continued* ➤

BEYOND LEED AND BEING LESS BAD - TOWARD REGENERATIVE / RESTORATIVE DESIGN  
 FLOWER PETAL ANALOGY  
 USE THE PRINCIPLES THAT ARE APPLICABLE TO GUIDE DESIGN DECISIONS

**IMAGINE** a building designed and constructed to function as elegantly and efficiently as a flower: a building informed by its bioregion's characteristics, that generates all of its own energy with renewable resources, captures and treats all of its water, and that operates efficiently and for maximum beauty.

**IMAGINE** a city block or a college campus sharing resources from building to building, growing food, and functioning without a dependency on fossil fuel-based transportation.

**IMAGINE** true sustainability in our homes, workplaces, neighborhoods, villages, towns and cities—Socially Just, Culturally Rich and Ecologically Restorative<sup>SM</sup>.

The International Living Future Institute issues a challenge:

**TO ALL DESIGN PROFESSIONALS, CONTRACTORS AND BUILDING OWNERS** to create the foundation for a sustainable future in the fabric of our communities.

**TO POLITICIANS AND GOVERNMENT OFFICIALS** to remove barriers to systemic change, and to realign incentives and market signals that truly protect the health, safety and welfare of people and all beings.

**TO ALL OF HUMANITY** to reconcile the built environment with the natural environment, into a civilization that creates greater biodiversity, resilience and opportunities for life with each adaptation and development.

**INSTEAD OF A WORLD THAT IS MERELY A LESS BAD VERSION OF THE ONE WE CURRENTLY HAVE—WE ASK A SIMPLE AND PROFOUND QUESTION—WHAT DOES GOOD LOOK LIKE?**

<http://living-future.org/lbc/about>

WATER

NET POSITIVE  
WATER



05

## WATER POTENTIAL

### SANTA MONICA PIER, CALIFORNIA (047953)

#### Period of Record Monthly Climate Summary

Period of Record : 1/ 1/1937 to 3/31/2013

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	64.1	63.7	63.4	64.5	65.4	68.1	71.0	72.1	72.1	70.4	68.0	64.8	67.3
Average Min. Temperature (F)	49.2	49.9	50.9	52.9	55.6	58.4	61.2	62.2	61.4	58.2	53.6	49.7	55.3
Average Total Precipitation (in.)	2.69	3.01	2.03	0.73	0.17	0.03	0.02	0.08	0.15	0.33	1.36	2.04	12.62
Average Total SnowFall (in.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Average Snow Depth (in.)	0	0	0	0	0	0	0	0	0	0	0	0	0

Percent of possible observations for period of record.

Max. Temp.: 93.1% Min. Temp.: 93.1% Precipitation: 94.3% Snowfall: 94.6% Snow Depth: 94.3%

Check [Station Metadata](#) or [Metadata graphics](#) for more detail about data completeness.

Western Regional Climate Center, [wrcc@dri.edu](mailto:wrcc@dri.edu)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Tool Shed	2.69	3.01	2.03	0.73	0.17	0.03	0.02	0.08	0.15	0.33	1.36	2.04	12.64
16' x 16' in inches	36,864	36,864	36,864	36,864	36,864	36,864	36,864	36,864	36,864	36,864	36,864	36,864	36,864
90266 rainfall in cubic inches	99,164	110,961	74,834	26,911	6,267	1,106	737	2,949	5,530	12,165	50,135	75,203	465,961
Cubic Inch to Gallon conversion 0.004329004	429.28	480.35	323.96	116.50	27.13	4.79	3.19	12.77	23.94	52.66	217.03	325.55	2,017.15

## ENERGY

# NET POSITIVE ENERGY



One hundred and five percent of the project's energy needs must be supplied by on-site renewable energy on a net annual basis, without the use of on-site combustion.<sup>13</sup> Projects must provide on-site energy storage for resiliency.<sup>14</sup>

- <sup>13</sup> Refer to the Energy Petal Handbook for a list of renewable energy systems, clarifications and exceptions.
- <sup>14</sup> Projects must demonstrate that sufficient back-up battery power be installed for emergency lighting (at least 10 percent of lighting load) and refrigeration use for up to one week for greater resiliency.

(4) PANEL PV ARRAY ON AN 8' X 16' ROOF AREA  
65" x 40" EA.  
200-250 WATTS EA. = 800-1000 WATTS

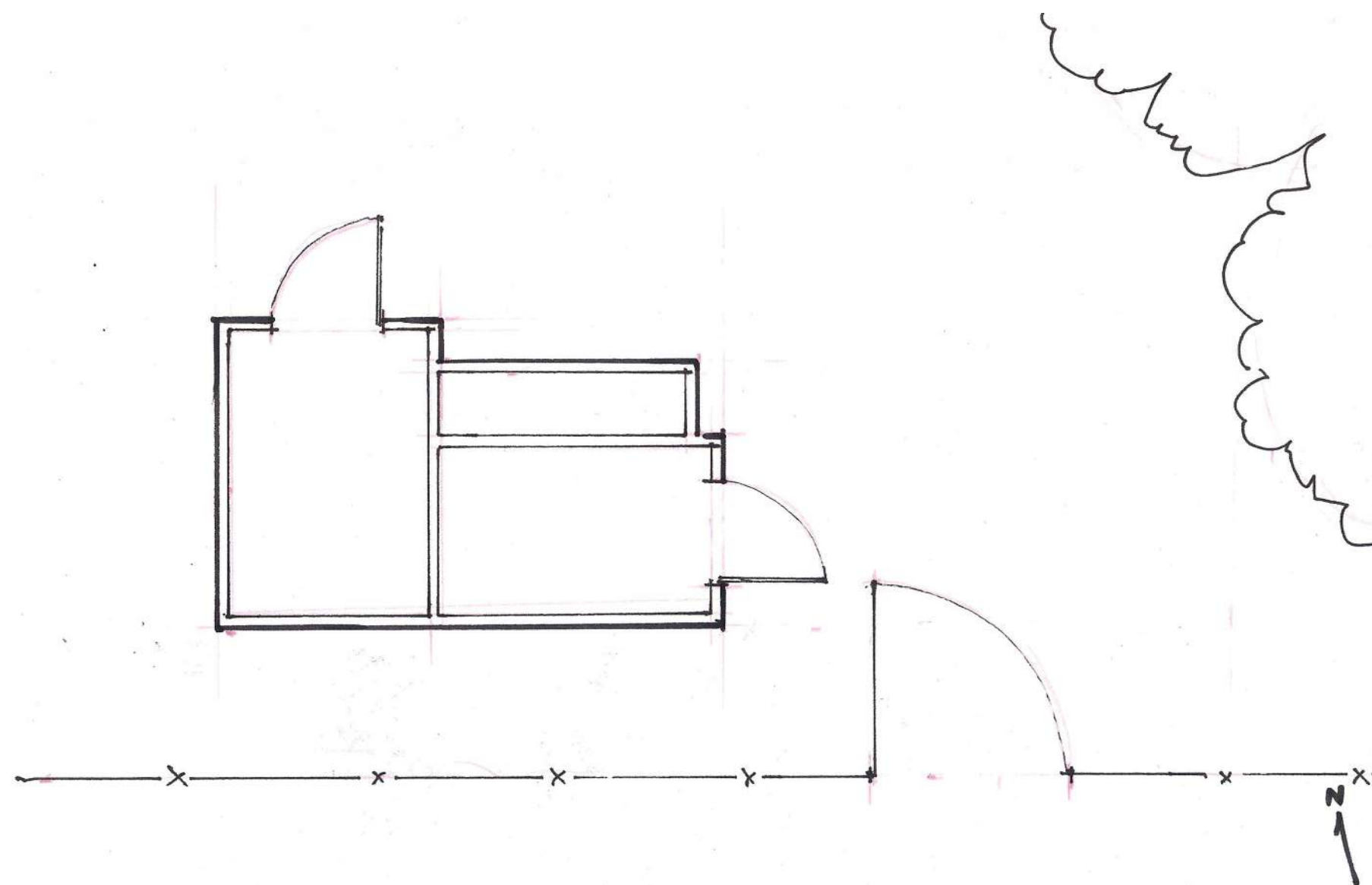
## LOADS:

IRRIGATION CONTROL  
SMALL REFRIGERATOR FOR SEEDS

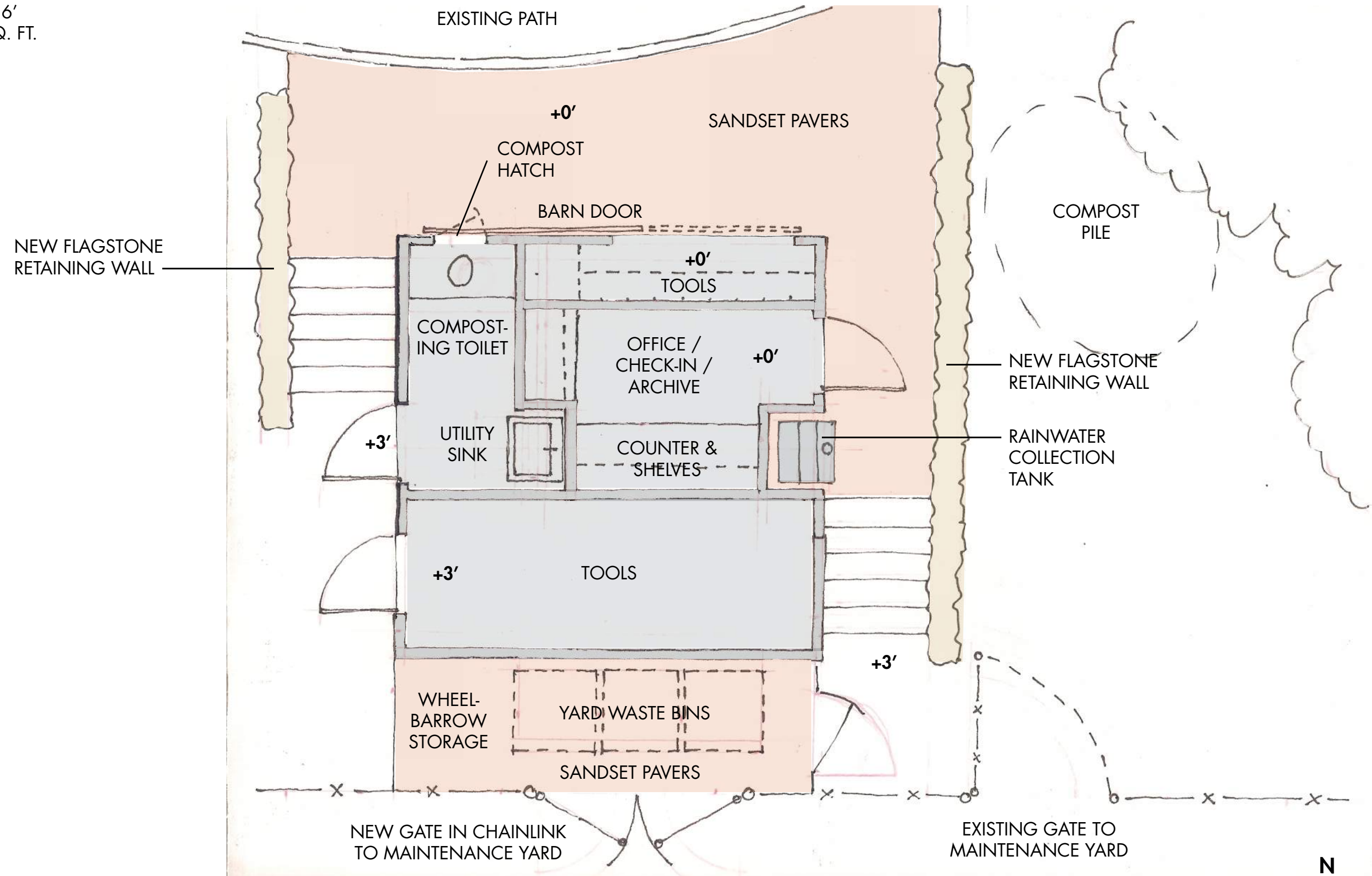
SITE LIGHTING  
WATER FEATURE PUMP

## ORIGINAL SHED:

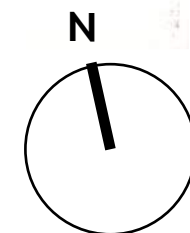
8' x 14' = 112 SQ. FT.

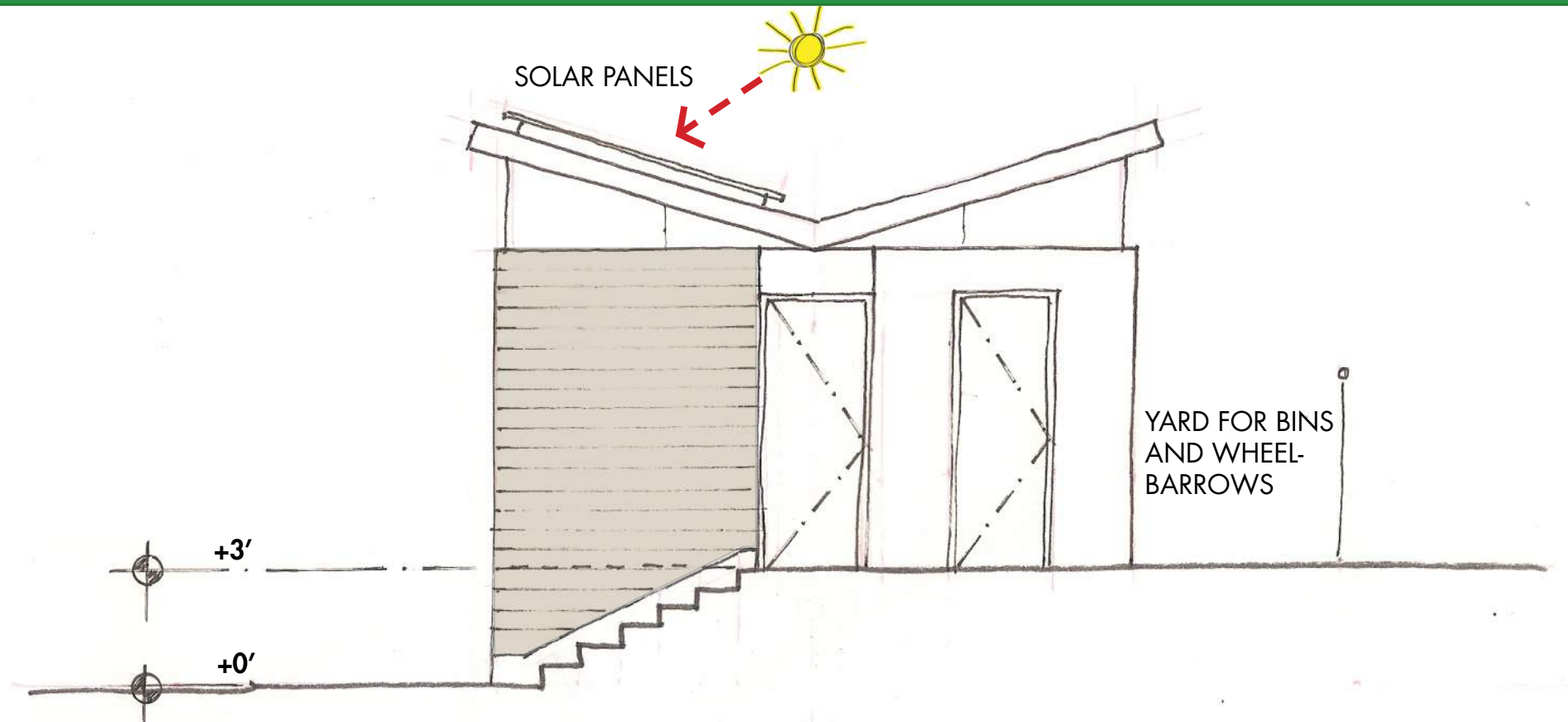
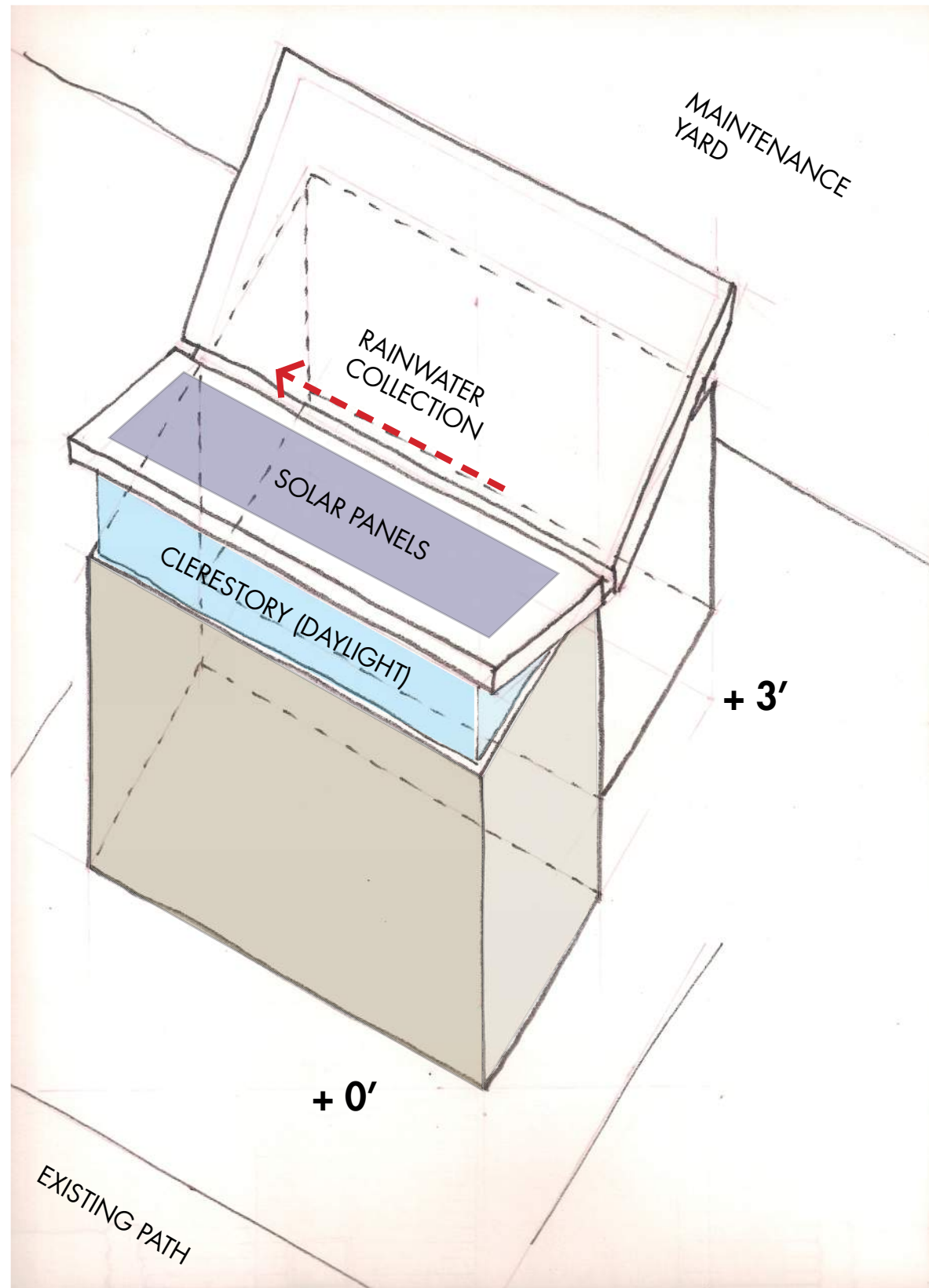


16' X 16'  
256 SQ. FT.

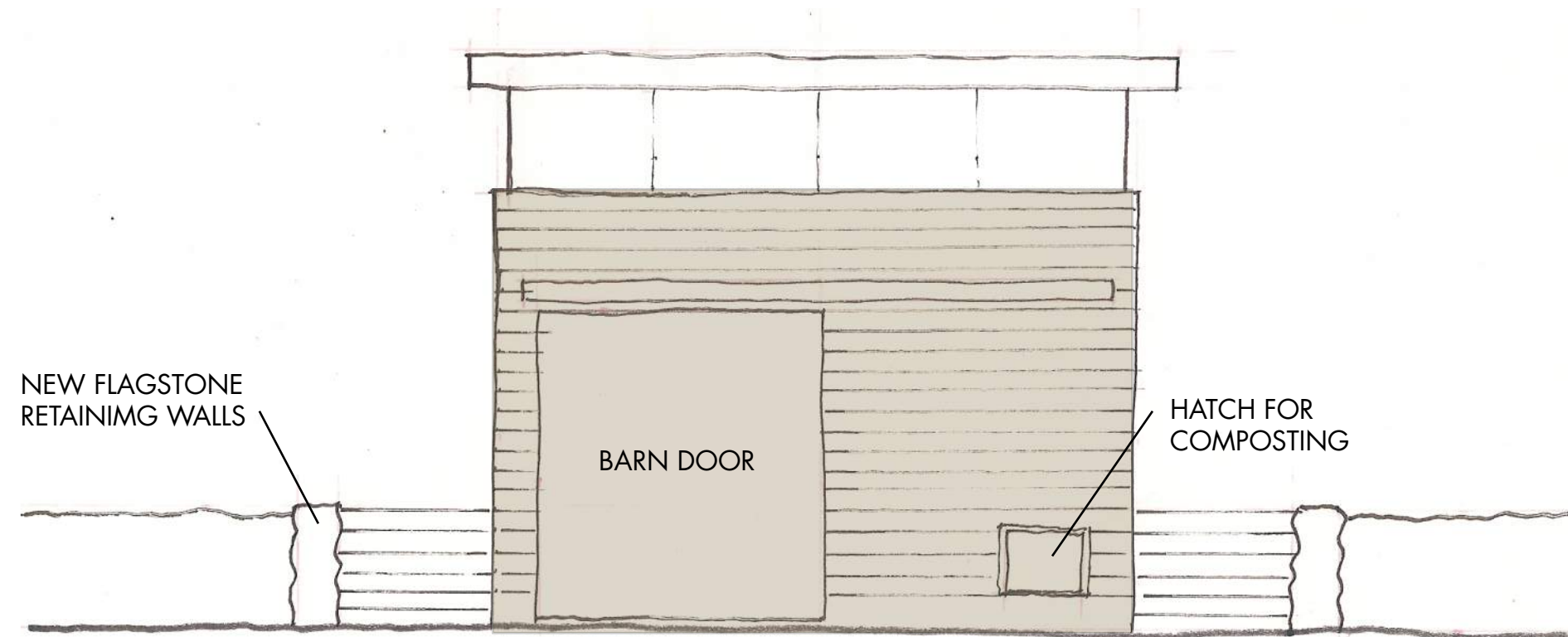


1/4" = 1'-0"





WEST ELEVATION



NORTH ELEVATION