



TOWN OF DURHAM  
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## ENERGY CONSIDERATIONS CHECKLIST

The Durham Energy Committee and the Durham Planning Board developed this checklist to encourage developers, applicants for Site Plan or Subdivision review, applicants for building permits, and Planning Board members to systematically consider the energy efficiency of Durham's new or renovated buildings and sites that are being developed or subdivided. Early discussion of such mandatory (where required under specific Town, State, or Federal standards) or optional energy efficiency measures may result in both energy and cost savings. For information on available funding energy efficiency improvements, see [www.nhsaves.com](http://www.nhsaves.com). Completion of this checklist and a meeting with the Building Inspector and a representative of the Durham Energy Committee is required prior to any Planning Board site plan or subdivision approval.

Project Name	Democracy House: Foundation for Civic Leadership
Date of Submittal	August 11, 2022
Applicant Name	Foundation For Civic Leadership
Engineer Name	
Architect Name	Bergmeyer Associates
Project Contact	Jerry Pucillo

### PART I. BUILDING CONSTRUCTION, SYSTEMS AND MATERIALS

#### 1. National Accredited Rating for Your Building(s)

These organizations have established energy-efficiency criteria. Qualifying applicants are encouraged to complete and attach the checklist from that certification (to be used for informational purposes only) and may then skip to Part III, "Consultation with Director of Zoning, Building Codes & Health."

1	Check	Rating System	Website
1.1	<input type="checkbox"/>	Passive House Institute	<a href="http://www.phius.org">www.phius.org</a>
1.2	<input type="checkbox"/>	Living Building Challenge	<a href="http://living-future.org/lbc">living-future.org/lbc</a>
1.3	<input type="checkbox"/>	LEED	<a href="http://www.usgbc.org">www.usgbc.org</a>
1.4	<input type="checkbox"/>	Energy Star	<a href="http://www.energystar.gov">www.energystar.gov</a>
1.5	<input checked="" type="checkbox"/>	None of the Above	
1.6	Other	This development has reviewed a number of these standards and chosen a mixed approach	

#### 2. Energy Performance and Insulation, Zone 6 IECC

2	Y	N	N/A	Method	Roof insulation	Proposed	Reference
2.1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<del>Attic or ceiling insulation</del>	Roof insulation tapered Polyiso, 5" at thinnest point. Actual >R-30	R <u>R-30 at thinnest</u>	Chapter 38, Town
2.2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Walls insulation exceeds NH/Town code		R <u>R-35</u>	Chapter 38, Town
2.3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Air leakage testing proposed		<u>ACH @</u> <u>Pa</u>	3ACH@50Pa is NH/Town code
2.4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Conventional slabs	Bensonwood proprietary	R <u>Min. R-20, TBC</u>	
2.5	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Radiant slabs	'OBPlus' wall panel. See attached manufacturer's guide.	R <u>N/A</u>	
2.6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Basement foundation		R <u>Min. R-10c.i., TBC</u>	
2.7	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fenestration		U <u>TBD</u>	
2.8	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hot water pipes		R <u>TBD</u>	
2.9	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Heating ducts inside envelope		R <u>TBD</u>	
2.10	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Heating ducts outside envelope		R <u>N/A</u>	
2.11	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Commissioning building to confirm performance			
2.12	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ventilation system proposed		Type: <u>Gas powered AHUs</u>	

### 3. Construction Methods and Materials

3	Y	N	N/A	Method
3.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Net zero construction, i.e., building uses less than or same amount of energy it generates -
3.2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Energy-efficient doors and windows (including screens)
3.3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Recycled content materials -WHERE APPLICABLE
3.4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Locally sourced materials where available -WHERE APPLICABLE

### 4. Internal Systems

4	Y	N	N/A	Method	Proposed
4.1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Lighting: high efficiency	Type: <u>LED, typ.</u>
4.2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Energy usage monitoring system(s), e.g., smart meters or submeters	
4.3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Energy-efficient appliances (refrigerators, stoves, air conditioners, ceiling fans, etc.)	
4.4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cooling system efficiency	SEER _____
4.5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Heating system efficiency <b>considering geo thermal</b>	AFUE _____
4.6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	High-efficiency heating system or heat pumps	AFUE _____
4.7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Renewable hot water system (e.g., solar thermal) <b>heat recovery</b>	SF _____
4.8	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Photovoltaic renewable electricity generation system (i.e., solar panels) <b>-planned</b>	_____ kW
4.9	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Daylight management (active or passive shades, overhangs, e.g., film, sensors)	Level _____
4.10	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ability to charge electric vehicles <b>would consider based on demand</b>	_____ % efficient
4.11	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Grey-water system (e.g., water from sinks or showers use for toilets or landscape)	
4.12	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Mechanical ventilation: heat or energy recovery ventilator	
4.13	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Water usage monitoring system(s)	
4.14	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cooling load reduction features, e.g., ceiling fans, solar-ray-blocking blinds <b>_Would consider</b>	

## PART II: SITE AND SITING CONSIDERATIONS

### 5. Solar Resource Utilization

5	Y	N	N/A	Method
5.1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Solar access (access of a solar energy system to unobstructed, direct sunlight) <b>-Reviewing solar panels on Roof</b>
5.2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Solar-ready zone (a section of the roof or building overhang reserved for a future solar photovoltaic or solar thermal system with required internal conduit or plumbing pre-installed)
5.3	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preservation of solar rights in subdivision or neighboring plots (e.g., solar skyspace easement) <b>-DESIRED</b>
5.4	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Orientation of internal streets to maximize solar resource for building roofs)
5.5	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Tree species selection and location for shading and cooling
5.6	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Tree species selection and location to avoid blocking future solar access (for a solar energy system)
5.7	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Passive solar lighting design (optimizes natural illumination for interiors) <b>-Where Applicable</b>
5.8	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Window placement maximizes winter solar penetration and minimizes summer solar penetration
5.9	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Vegetated rooftop(s) or other type of "green" roof to provide cooling and/or manage stormwater

### 6. Parking, Transportation, Accessibility, and Connectivity

6	Y	N	N/A	Method
6.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Parking surcharges or incentives/rebates for tenants without cars ("no free parking") <b>No parking in project?</b>
6.2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Compact car space designation
6.3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Advanced technology and/or alternative-fuel car space designation (e.g., hybrids; "E85")
6.4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pedestrian sidewalk network within the project area
6.5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Bicycle lane or path network within project area
6.6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Storage for bicycles outdoors Please circle: secured   unsecured -- covered   uncovered <b>covered -not secure</b>
6.7	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Storage for bicycles indoors Please circle: secured   unsecured <b>tenant storage area</b>

## 7. Landscaping and Covenant Terms

Lower water use not only results in reduced water bills but also reduces electricity usage at the Town's water and wastewater treatment facilities.

7	Y	N	N/A	Method
7.1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Rainwater storage, e.g., cisterns -permeable pavers system for storm water
7.2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Xeriscaping (low-water-demand plants) -potential on roof
7.3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Low-nitrogen-demand turf grass no grass on site
7.4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Rain garden or other "bio retention system" to manage site's storm water runoff - permeable paver system
7.6	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Permit outdoor clotheslines (not prohibited by covenant rules)
7.7	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Permit installation of outdoor energy-efficiency devices, e.g., solar panels

## PART III: CONSULTATION WITH BUILDING INSPECTOR

Consultation with the Building Inspector can help highlight and solve potential problems early in the project design phase and reduce overall costs of code compliance. A consultation with the Building Inspector and a representative of the Durham Energy Committee is required prior to approval of any site plan or subdivision application. A follow-up consultation with the Building Inspector, after Planning Board approval, is encouraged and will generally occur as part of the building permit application process.

Consultation Notes

Meeting Date:

Signature of Building Inspector:



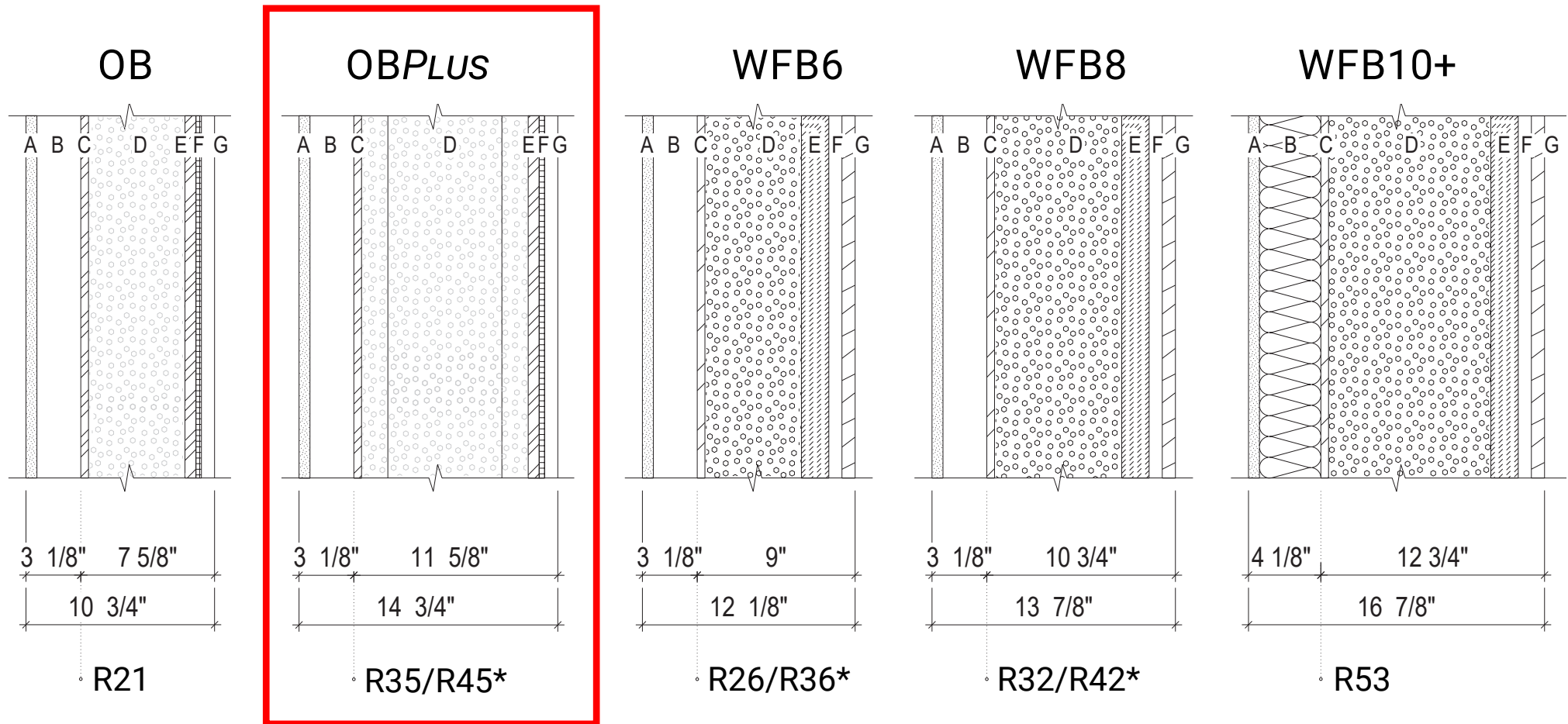
# BUILDING ENCLOSURES

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## An Introductory Guide

**TEKTONIKS**  
ADVANCED BUILDING COMPONENTS  
from Bensonwood

# WALL PANELS



The OB and OBPlus walls are sheathed with ZIP sheathing on the exterior, and use a 5/16" drainage plane.

The WFB walls use dimensional lumber studs and a vapor open exterior wood fiber board; continuous insulated sheathing.

The grid line is the interior air/vapor control layer. The service layer varies for MEP requirements. Stud thickness varies with wall.

The calculated thermal values are clear wall R-values.

\*The service cavity can be insulated for higher performance.

A. Interior Finish, shown 5/8" thick

B. Service Layer - thickness varies

C. 7/16" OSB - Airtight - Structural Grid Line

D. Structural Insulated Framing @ 24" o/c. Dense Pack Cellulose

E. Exterior Sheathing

F. Drainage Layer / Rainscreen

G. Exterior Cladding, Shown 3/4" Thick