



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. 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	<u>Proposed Mill Plaza Redevelopment</u>
Date of Submittal	<u>May 23, 2018</u>
Applicant Name	<u>Colonial Durham</u>
Engineer Name	<u>Tighe & Bond</u>
Architect Name	<u>Harriman Associates</u>
Project Contact	<u>Ari B. Pollack, Esq. Phone: 603.228.1181</u>

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	www.phius.org
1.2	<input type="checkbox"/>	Living Building Challenge	living-future.org/lbc
1.3	<input type="checkbox"/>	LEED	www.usgbc.org
1.4	<input type="checkbox"/>	Energy Star	www.energystar.gov
1.5	<input checked="" type="checkbox"/>	None of the Above	
1.6	Other		

2. Energy Performance and Insulation, Zone 6 IECC

2	Y	N	N/A	Method	Proposed	Reference
2.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Attic or ceiling insulation exceeds NH/Town code	R <u>49</u> /30ci	Chapter 38, Town
2.2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Walls insulation exceeds NH/Town code	R <u>13</u> /7.5 ci	Chapter 38, Town
2.3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Air leakage testing proposed	<u>3</u> ACH @ <u>50</u> Pa	3ACH@50Pa is NH/Town code
2.4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Conventional slabs	R <u>1</u>	
2.5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Radiant slabs	R <u>-</u>	
2.6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Basement foundation	R <u>7.5</u> ci	
2.7	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fenestration	U <u>.43</u>	
2.8	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hot water pipes	R <u>3.6</u>	
2.9	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Heating ducts inside envelope	R <u>12</u>	
2.10	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Heating ducts outside envelope	R <u>-</u>	
2.11	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Commissioning building to confirm performance		
2.12	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ventilation system proposed	Type: <u>Energy Recovery Ventilator</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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Energy-efficient doors and windows (including screens)
3.3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Recycled content materials
3.4	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Locally sourced materials where available

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</u>
4.2	<input type="checkbox"/>	<input checked="" 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 <u>25</u>
4.5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Heating system efficiency	AFUE <u>99%</u>
4.6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	High-efficiency heating system or heat pumps	AFUE <u>99%</u>
4.7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Renewable hot water system (e.g., solar thermal)	SF <u> </u>
4.8	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Photovoltaic renewable electricity generation system (i.e., solar panels)	<u> </u> kW
4.9	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Daylight management (active or passive shades, overhangs, e.g., film, sensors)	
4.10	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Ability to charge electric vehicles	Level <u> </u>
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	<u>75</u> % efficient
4.13	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Water usage monitoring system(s)	
4.14	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Cooling load reduction features, e.g., ceiling fans, solar-ray-blocking blinds	

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)
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)
5.4	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Orientation of internal streets to maximize solar resource for building roofs)
5.5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Tree species selection and location for shading and cooling
5.6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Tree species selection and location to avoid blocking future solar access (for a solar energy system)
5.7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Passive solar lighting design (optimizes natural illumination for interiors)
5.8	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>	Parking surcharges or incentives/rebates for tenants without cars ("no free parking")
6.2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Compact car space designation
6.3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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 <u>unsecured -- covered</u> uncovered
6.7	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Storage for bicycles indoors Please circle: <u>secured</u> unsecured

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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Rainwater storage, e.g., cisterns
7.2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Xeriscaping (low-water-demand plants)
7.3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Low-nitrogen-demand turf grass
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
7.6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 (Rooftop)

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: