

To the Honorable, the City Council:

The undersigned hereby petition the City Council of the City of Cambridge to amend the Zoning Ordinance of the City of Cambridge to ensure that all new construction or changes in use requiring Project Review Special Permits are built to avoid emission of greenhouse gases in daily operation and thereby mitigate the risks of extremely dangerous climate changes. A clear and enforceable definition of "net zero" greenhouse gas emissions is proposed. The proposed amendment allows developers a high degree of flexibility in meeting the net zero performance standard. A schematic illustration of key elements of the amendment is attached.

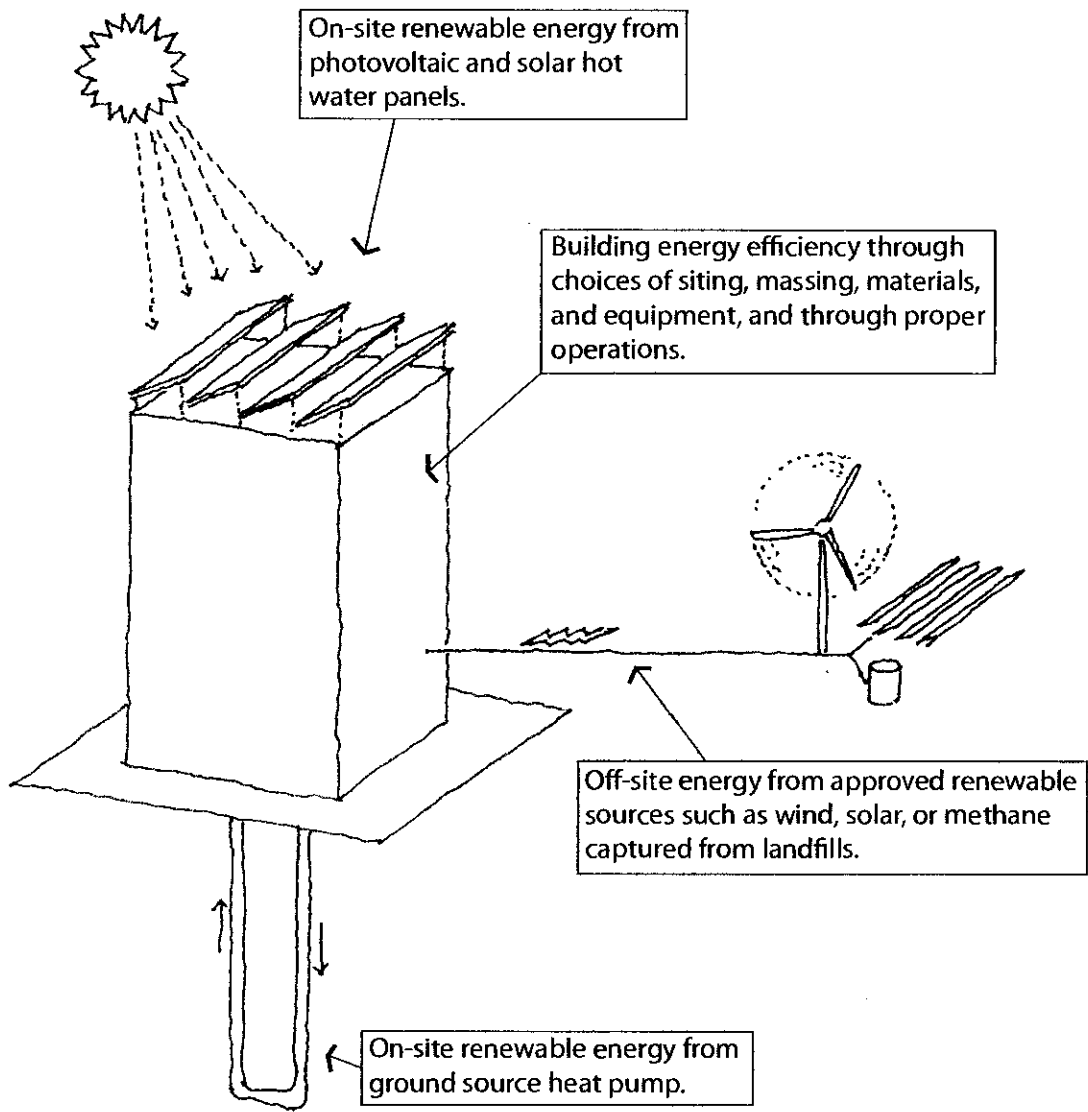
Key elements of the amendment are:

1. Review by Planning Board added to existing Project Review Special Permit process for traffic and urban design impacts;
2. Building energy efficiency is encouraged;
3. On-site generation of renewable energy is encouraged; and
4. All energy consumed on site beyond renewable energy generated on site must be from approved renewable sources or offset by verifiable renewable energy credits.

The known risks of unmitigated climate change include flood from storm surge, permanent rise in sea level, and heavy rainfall and longer, more frequent, and hotter heat waves. Mitigation of such risks is the fundamental purpose of the Zoning Ordinance as defined in Section 1.30.

"It shall be the purpose of this Ordinance to lessen congestion in the streets; conserve **health**; to secure **safety from fire, flood, panic and other danger**; to provide adequate light and air; to prevent overcrowding of land; to avoid undue concentration of population; to encourage housing for persons of all income levels; to facilitate the adequate provision of transportation, water supply, drainage, sewerage, schools, parks, open space and other public requirements; to **conserve the value of land and buildings, including the conservation of natural resources** and the prevention of blight **and pollution of the environment**; to encourage the most rational use of land throughout the city, including the encouragement of appropriate economic development, the protection of residential neighborhoods from incompatible activities and including the consideration of plans and policies, if any, adopted by the Cambridge Planning Board, and to **preserve and increase the amenities of the City.**" (Emphasis added.)

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Emission greenhouse gasses in daily operation of buildings can be eliminated through combined use of (1) building energy efficiency, (2) on-site generation of renewable energy, and (3) off-site energy from approved renewable sources.

Amend the Zoning Ordinance of the City of Cambridge by doing the following:

Insert the phrase "and greenhouse gas emission" in the following section (words to be inserted indicated by underline and words to be deleted by ~~strikethrough~~):

19.10 Intent and Purpose of Article 19.000

The intent of this Article 19.000 is to establish traffic ~~and~~, urban design and greenhouse gas emission standards for development projects likely to have significant impact on abutting properties and the surrounding urban environment.

Insert the phrase "and (3) create no net emission of greenhouse gases to the atmosphere in daily operation" in the following section:

19.21 Purpose. It is the intent of this Section 19.20 to ensure that new construction or changes of use in existing buildings (1) are consistent with the urban design objectives of the City ~~and~~, (2) do not impose substantial adverse impacts on city traffic and (3) create no net emission of greenhouse gases to the atmosphere in daily operation. A special permit process is established by which the Planning Board may make such findings.

Insert the following new section after Section 19.21.21 (sic) Purpose of Urban Design Review:

19.21.3 Purpose of Net Zero Emission Review. The Board shall review the specific design details of buildings and their site layout to ensure that the design of the building and its location on the lot maximize the energy efficiency of the buildings and on-site generation of renewable energy and support the performance standard of net zero greenhouse gas emissions in daily operation.

Insert the phrase "including all equipment for on-site generation of power" in the following section:

19.24 Application Procedures. An application for the Project Review Special Permit shall be made to the Planning Board. The Application shall consist of the following materials:

(1) Planning Board Special Permit Application Form. The application shall include all required plans and narrative statements. The site plan and other plans, elevations and drawings shall clearly show: (1) the access and egress points for all forms of travel to the site, (2) the location of adjacent bus and transit stops, (3) the schematic design of proposed mechanical equipment including all equipment for on-site generation of power, and (4) the architectural screening treatment proposed for that mechanical equipment. The proponent shall provide perspectives of the proposed development, including mechanical equipment, from all critical viewpoints.

Insert the following new paragraph in Section 19.24 Application Procedures:

(8) Net Zero Emission Narrative. The application shall include a report detailing how the project shall conform to the requirements of sections 22.25 and 22.26 (net zero). The report shall indicate the approaches to be adopted by the applicant in maximizing energy efficiency and on-site renewable energy generation, and minimizing the amount of non-renewable energy

required to operate the building. The narrative shall describe how building materials, building design, building orientation, and site layout are being used to meet the net zero requirements, using accepted green building standards such as LEED and ASHRAE. The report shall also include a building energy operations plan describing how the building's energy needs will be met if off-site energy is required, including potential sources for purchasing renewable energy and/or renewable energy credits (RECs), energy use reporting and ensuring tenant compliance.

Insert the following new subsection in Section 19.25 Review Criteria:

19.25.3. Net Zero Emissions Findings. Where compliance with the net zero emissions standard is required as set forth in Section 22.22, the Planning Board shall grant the special permit only if it finds that the project meets the net zero greenhouse gas emission performance standard and greenhouse gas mitigation objectives set forth in sections 22.25 and 22.26 of the Zoning Ordinance.

Insert the words "to ensure that energy used in daily operation of the project cause no net increase in emissions of greenhouse gases to the atmosphere;" in the following section:


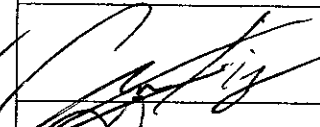
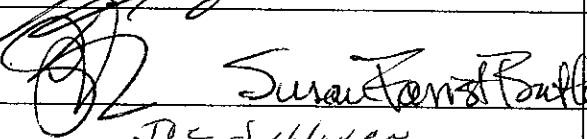
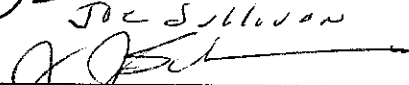
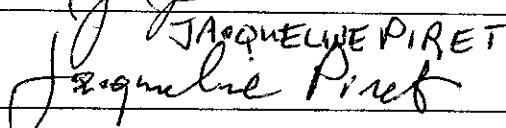
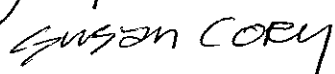

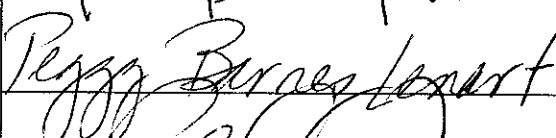
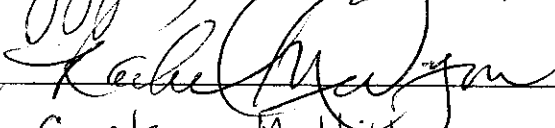

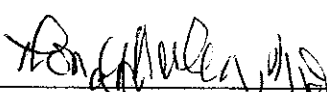
22.21 Statement of Purpose. This Section 22.20 is adopted to ensure that major new projects and substantially rehabilitated buildings in the City of Cambridge are planned, designed and constructed in a sustainable way so as to minimize adverse environmental impacts as they are initially constructed and as they are occupied and operated over the course of their useful lives. It is the purpose of this Section 22.20 to encourage the reuse of existing buildings and materials; to encourage the conservation of natural resources and reduction of toxins in new construction and substantial rehabilitation of existing buildings through selection of recycled and otherwise environmentally appropriate building materials and methods; to ensure a reduction in the use of energy in both the initial construction of the project and in its daily operation; to ensure that energy used in daily operation of the project cause no net increase in emissions of greenhouse gases to the atmosphere; and to encourage an arrangement of buildings and mix of uses, on individual lots and within the city as a whole, that will foster pedestrian, bicycle, and public transit use in the city. While the provisions of this section apply to projects of 25,000 square feet or larger, developments of all sizes are encouraged to incorporate sustainable design principles. Notwithstanding the provisions of this Article 22.00, the requirements of all local, state and/or federal regulations applicable to a project must be met, particularly the State Building Code, including its energy components.

Insert the following two new sections 22.25 and 22.26:

22.25 Requirement. Greenhouse Gas Mitigation Requirement. All new construction or changes in use requiring Project Review Special Permits shall be required to report their energy usage in daily operation on a quarterly basis and purchase Massachusetts Class I Renewable Energy Credits (RECs) for any portion of such usage that is generated by non-renewable sources (net-zero).

22.26. Procedures. Greenhouse Gas Mitigation Procedure. Where the net-zero provision of 22.25 is required as a condition of approval of any special permit, a Greenhouse Gas Mitigation plan shall be submitted to the special permit granting authority for review and approval, at a time and in a manner set forth by the special permit granting authority in its Decision. Upon approval of the plan the permittee shall be obligated to thereafter implement the provisions of the plan for as long as the special permit is in force and effect. In developing the plan the permittee shall consider and adopt as appropriate but shall not be limited to the following greenhouse gas emissions mitigation techniques:

- (1) Renewable energy when used in this section refers to the options listed in the "Eligible Renewable/Dther Technologies" section of the Massachusetts Renewable Portfolio Standard.
- (2) Building energy efficiency through choice of siting, massing, materials, equipment and operations and adoption of ASHRAE 189 as a standard if appropriate.
- (3) On-site renewable energy generation.
- (4) Procedures for compliance with the requirement of Section 22.25.
 - a. All energy consumed by the building operations and the operations of tenants must be accounted for, including emergency back-up generation (actual consumption, not capacity), and energy used for heating/cooling. Non-electrical energy supplied to the building and tenants for heating (e.g. natural gas) shall be tracked separately from electrical energy supplied to the building in appropriate units (e.g. BTU).
 - b. All renewable energy generated on-site (including any that is virtual net-metered to others) and renewable energy purchased to supply the common areas of the building (e.g. certified wind or solar energy from a source in or near Massachusetts), is quarterly subtracted from the total energy consumed by the common areas of the building. The building operator to match the remaining balance must purchase Massachusetts Class I RECs. The cost of doing so may be passed on to tenants in a fair (e.g. proportional by square footage) and transparent manner.
 - c. Excess energy generated by the building that is not used by tenants or the building itself can be assigned to other consumers via virtual net metering.
 - d. All non-renewable energy consumed by the tenants must be similarly matched by the tenants purchasing Massachusetts Class I RECs. Tenants must report their compliance to the building operator who reports the building's overall compliance, including tenants compliance, to the city.
- (5) Require that all conditions of an approved plan be made a condition of tenant leases as applicable or appropriate.

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