



Renewable Communities 2020

Massachusetts cities and towns
leading the way to 100% renewable energy

Cambridge: Fossil-fuel-free school

In the fall of 2019, Cambridge opened the King Open/Cambridge Street Upper Schools Complex, the first fossil-fuel-free school building in Massachusetts.¹

The 273,000-square-foot complex, which includes an elementary school, a middle school, administrative offices, an underground parking garage, a library, and a swimming pool, was designed by Arrowstreet and won the USGBC Green Building of the year award.²

More than 3,550 rooftop solar panels are expected to provide 60% to 75% of the energy consumed on-site. A geothermal heating and cooling system includes 190 wells descending 500 feet into the ground.³

The complex is designed to use energy efficiently. All of the lighting fixtures are LEDs, the buildings take advantage of natural daylight, and the air ventilation system is “on-demand,” activating when people arrive.⁴ The buildings are expected to use 43% less energy than a school built to meet Massachusetts’ energy code, and 70% less energy than the average U.S. school.⁵ The building is considered “net zero ready” because it will have zero carbon emissions once the electricity it receives from the grid is generated with 100% renewable energy sources.⁶

The construction of the King Open/Cambridge Street Upper Schools Complex is one step in the implementation of the city’s Net Zero Action Plan, drafted in 2015. The plan calls for net zero emissions requirements for new buildings to be implemented in phases, starting with municipal buildings, followed by residential, commercial, institutional, and lab structures.⁷ The city council has also

supported a transition to 100% renewable sources of energy for Cambridge, including the energy used in buildings and transportation, by 2035.⁸

1. “King Open/Cambridge Street Upper School & Community Complex Opening Celebration & Tour October 26, 2019,” City of Cambridge, 15 October 2019, <<https://www.cambridgema.gov/news/2019/10/kingopencambridgestreetupperschoolandcommunitycomplexopeningcelebrationtour>>.

2. Size and features: “Cambridge school/city complex aims for net zero emissions,” Jennifer Kavanaugh, Massachusetts Municipal Association, 17 October 2019, <<https://www.mma.org/cambridge-school-city-complex-aims-for-net-zero-emissions/>>. Award: “King Open/Cambridge Street Upper Schools & Community Complex USGBC Green Building of the Year,” Katherine McDonald, Arrowstreet, 22 October 2019, <<https://www.arrowstreet.com/2019/10/king-open-cambridge-street-upper-schools-community-complex-usgbc-green-building-of-the-year-finalist/>>.

3. “A new elementary school in Cambridge, Mass., aims at being a pilot for that city’s NZE commitment,” John Caulfield, Building Design + Construction, 28 October 2017, <<https://www.bdcnetwork.com/new-elementary-school-cambridge-mass-aims-being-pilot-city%E2%80%99s-nze-commitment>>.

4. LEDs: “A new elementary school in Cambridge, Mass., aims at being a pilot for that city’s NZE commitment,” John Caulfield, Building Design + Construction, 28 October 2017, <<https://www.bdcnetwork.com/new-elementary-school-cambridge-mass-aims-being-pilot-city%E2%80%99s-nze-commitment>>. Daylighting: “King Open/Cambridge Street Upper Schools & Community Complex,” Arrowstreet, <<https://www.arrowstreet.com/portfolio/king-open-cambridge-upper-street-schools-community-complex/>>. Ventilation: “Cambridge school/city complex aims for net zero emissions,” Jennifer Kavanaugh, Massachusetts Municipal Association, 17 October 2019, <<https://www.mma.org/cambridge-school-city-complex-aims-for-net-zero-emissions/>>.

5. “King Open/Cambridge Street Upper Schools & Community Complex,” Arrowstreet, <<https://www.arrowstreet.com/portfolio/king-open-cambridge-upper-street-schools-community-complex/>>.

6. “Cambridge school/city complex aims for net zero emissions,” Jennifer Kavanaugh, Massachusetts Municipal Association, 17 October 2019, <<https://www.mma.org/cambridge-school-city-complex-aims-for-net-zero-emissions/>>.

7. “The Getting to Net Zero Framework,” Integral Group, 29 April 2015, <https://www.cambridgema.gov/-/media/Files/CDD/Climate/NetZero/netzero_20150430_gettingtonetzeroframework_executivesummary_apr29_final.pdf>.

8. “Policy Order POR 2017 #109,” City of Cambridge, 24 April 2017, <http://cambridgema.iqm2.com/Citizens/Detail_LegiFile.aspx?ID=4662>.