This paper presents the curation of a monitored dataset from an office building constructed in 2015 in Berkeley, California. The dataset includes whole-building and end-use energy consumption, HVAC system operating conditions, indoor and outdoor environmental parameters, as well as occupant counts. The data were collected during a period of three years from more than 300 sensors and meters on two office floors (each 2,325 m2) of the building.

cleaning the raw data to detect and adjust the outlier values and fill the data gaps.

A rich high-resolution three-year time-interval data of a real office building, which includes two years of pre-pandemic data, and the year of 2020 when the COVID-19 pandemic started.

The target building (Fig. 1) is a medium-sized office building (i.e., Building 59 or Wang Hall) located inside the Lawrence Berkeley National Laboratory (Berkeley Lab) campus in Berkeley, California. The building has 10,400 m2 of conditioned spaces on four floors. The lower level provides space for mechanical systems, the second level is the National Energy Research Scientifc Computing Center (NERSC), and the third and fourth levels are office spaces. The ground office floor (third floor) is primarily closed ofce space, while the second ofce foor (fourth foor) is primarily open ofce space.

Te building is divided into 57 thermal zones. Termal zones with exterior walls and windows are classifed as exterior zones; others are classifed as interior zones. Te temperatures of exterior zones are measured by the wall-mounted sensors installed within each zone served by an under-foor terminal (UFT) as part of the building automation system (BAS). Te temperatures of interior zones are measured by 16 sensors that were added by the research team at desk level, which are built with Raspberry Pi Zero W and DS18B20 Digital Temperature Sensors. Tese temperature sensors are located as close as possible to where occupants stay, for instance, at their workstations. In addition, to measure occupant counts, we deployed camera-based sensors manufactured by TRAF-SYS at the six entrances/exits of the southern wing of the building. Figure 2 presents the locations of temperature sensors and occupant sensors.

Heating and cooling are provided to the ofces by a UFAD system. Te system uses four roof-top units (RTUs) located on the roof with water-cooled direct expansion (DX) coils to supply cool air to the underfoor plenums. Each RTU serves the ground level and second level ofces between particular column lines of the building, as depicted in Fig. 3, though the areas of service are not separated by internal wall partitions. Te four RTUs operate their supply fans at the same speed, instead of separately controlling to their own sensors and setpoint. %. Tere are 50 fan-powered terminal units (UFTs) with hydronic heating coils to provide reheat. Air from the RTU is supplied to the underfoor plenum and then delivered to interior and exterior zones directly through foor difusers and additionally to exterior zones through fan-powered UFTs. Te UFTs reheat this perimeter air if necessary. Te condenser water from the RTUs is cooled by heat exchangers connected to the induced draf crossfow cooling towers located next to the building on the mechanical level