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<https://www.habitatmag.com/Publication-Content/Bricks-Bucks/2023/January/One-Solution-to-E-Bike-Fires-Build-a-Better-Bike-Storage-Room>

## One Solution to E-Bike Fires: Build a Better Bike-Storage Room

By Bill Morris

Many co-op and condo boards are wrestling with the best way to protect their buildings and neighbors from the recent rash of fires caused by improperly charged lithium-ion batteries on e-bikes and other mobility devices. The advice they get is often confusing.

Some lawyers are urging boards to pass a house rule banning any device powered by a lithium-ion battery — a change that requires a simple majority vote of the board rather than approval by a super-majority of residents that's required when altering a co-op's proprietary lease or a condo's bylaws. Some lawyers advise holding violators responsible for any ensuing fire, while others advise exempting owners of motorized wheelchairs from the ban.



*Aufgang Architects' bike-storage room with many fireproof features.*

The city council has also gotten into the act. Using the reasoning that the fires are caused by the improper charging of shoddy batteries, one bill before the council would ban the sale of lithium-ion batteries that aren't certified by a nationally recognized testing laboratory, such as Underwriters Laboratories or Environmental Testing Laboratories. Another bill would ban second-hand lithium-ion batteries that have been reconstructed or rebuilt using cells recovered from used batteries. Those

cheaper batteries are favored by the city's army of delivery riders. Some form of new law is expected to pass in the coming months.

Meanwhile, the Fire Department of New York has responded to the spike in battery-related fires — which rose from 44 in 2020 to nearly 200 last year, resulting in six deaths. The FDNY has posted advisories in apartment buildings, urging people not to charge lithium-ion batteries inside apartments and to be sure to plug chargers directly into wall outlets, not extension cords or power strips.

And now the firm of Aufgang Architects has come up with yet another solution: built a better bike-storage room.

“We asked ourselves how we can improve existing designs to mitigate the threat of fire to residents of these buildings,” says Sam LaMontanaro, the director of engineering at Aufgang. So the firm's engineering team set about designing a bike-storage room that could be incorporated into new construction or retrofitted into an existing building.

“We designed a bike storage room for apartment buildings that is fully encapsulated within cinderblock to contain and limit the potential for fire and heat spread,” LaMontanaro says. “As the first line of defense, sprinklers will slow the spread of fire allowing time for firefighters to get to the site. To maximize sprinkler speed and effectiveness, our design increases their density within the bike room.”

The design also specifies smoke and heat detectors, including infrared sensors, that trigger fire alarms and alert building staff in the event of a fire in the bike room. The doors are fire-rated. To ensure proper recharging of batteries, the room is fitted with electrical outlets fed by dedicated circuits so there is no need for power strips or extension cords and no additional strain on the feeds to residential and common areas. Incorporating such a bike-storage room into a new building would add minimal cost, LaMontanaro says, while retrofitting one into a 60-unit building would cost about \$25,000.

The board's work does not stop with installing such a storage room. “Part of this is a behavioral issue, and education is paramount,” LaMontanaro says. “E-bikes are expensive, and some people are a bit nervous about storing them in a public area. So there has to be good security — locks, maybe cameras. And people have to be made to realize that storing and charging bikes inside apartments can be dangerous. If there has to be some type of penalty for violators, maybe that has to be part of it. Co-op and condo boards can exert pressure on residents — and they have to make people realize that this is serious.”