HT 15: ALLOW STAIRWAY USE

New York City Building Code
Proposal developed by the Physical Activity Committee

Summary

Issue:
Locked doors inhibit the use of stairs, deterring physical activity and fitness.

Recommendation:
Encourage regular physical activity in buildings by requiring stair doors to be unlocked, while allowing exceptions for security access devices.

Proposed Legislation, Rule or Study

Amendments to the New York City Buildings Code

1. Add a new definition for “STAIRWAY, PUBLIC ACCESS” to Section 1002.1 as follows:

STAIRWAY, PUBLIC ACCESS. A continuous stairway accessible from the ground floor lobby and to all floors, which enables building occupants to utilize stairs to travel between floors.

2. Add a new Section 1007.3.1 as follows:

1007.3.1 Public access stairway. At least one exit stairway shall function as a public access stairway. Doors opening into a public access stairway may not be locked from either side. However, doors opening into a public access stairway may be locked from the stair side provided that any such door shall be open to authorized occupants of each floor by use of security devices such as keys, codes or card key access, and provided that such locked door does not violate any other section of this code.

Exceptions:

1. Buildings no more than three stories in height that contain an unenclosed stairway open to building occupants at all levels.

2. Buildings having a stairway other than an exit stairway that serves all floors in the building is accessible to all building occupants.

Supporting Information

Issues – Expanded

The obesity epidemic is a major health crisis facing the American public, leading to a rapid increase in the incidence of type 2 diabetes and other ailments. This crisis is particularly acute in NYC: fifty-eight percent of adults and nearly 40 percent of elementary and middle school children are overweight or obese. Rates of overweight and obesity in children in New York are higher than national rates (31 percent), and prevalence of obesity and diabetes in NYC adults is also increasing faster than national prevalence rates. Between 2002 and 2004, the prevalence of obesity and diabetes among NYC adults rose by 17 percent, while the national prevalence of obesity grew by 6 percent. These trends have a direct impact on hospitalization costs from diabetes in NYC, which doubled between 1990 and 2003 to $480 million yearly. Additionally, obesity has been directly linked to coronary heart disease, different types of cancers, hypertension, high cholesterol, stroke, liver and gallbladder disease, sleep apnea, respiratory problems, and osteoarthritis. Cardiovascular diseases, such as heart disease and strokes, are the leading cases of death in New York City. Independent of weight, physical activity is also protective against cardiovascular disease, type 2 diabetes, some of our most common and deadly cancers such as colon cancer, osteoporosis, depression, and age-related cognitive decline.

Stair climbing is a vigorous form of incidental physical activity, which can easily be incorporated into the daily lives of most able-bodied people. In many NYC buildings, stairways are locked on the stair side except for the point of egress from the building. As a consequence, occupants are impeded from using the stairs and instead resort to the elevator. In addition to difficult egress, stairways are often located at the sides or back of the building. Signage at key points to...
help people locate staircases and encourage stair uses is currently not required as part of the signage at elevators. Stairway doors are not required to have glass and allow for visibility of the stairs but are instead opaque and unwelcoming. All of the above make stairways difficult to locate and access, inconvenient, and uninviting to use.

To remedy this situation and to both allow and further promote stair use, the proposal calls for designating at least one stairway, which may be one of the fire stairs, as a public access stair. A public access stair will allow entry and egress at each floor, have doorways with visibility into stairs, and include signage. In order to address concerns for safety and security, which are the reason that stairways have been locked, the proposal allows the use of code or card key access, which can enable security to be maintained while stairways are accessible to the building occupants.

Environmental & Health Benefits
Stair use burns calories, and research has linked stair use to other health benefits such as better cardiovascular health.11 Stair climbing has been shown to raise individuals’ good cholesterol levels.12

A comprehensive review of the literature conducted by the Task Force on Community Preventive Services convened by CDC has shown that increasing access to places for physical activity consistently increases physical activity.11 Access to stairwells, in addition to stair signage prompting stair use for health benefits, stair visibility, convenience, width and aesthetics, facilitate increased stair use.14 In studies of point-of-decision prompt signage, tailoring the health benefits to a specific group or community can further increase stair usage. For example, weight messages have been found to increase stair use in those who are overweight or obese.15

In a recent study by the NYC Dept of Health and Mental Hygiene, staff who reported using the stairs were less likely to be obese compared to staff who reported not using the stairs. The Health Department also modeled the potential impacts of increasing stair access alone and found it could prevent approximately 250,000 pounds (~8% of NYC annual average weight gain). Combining this with stair signage would result in an approximate doubling of impacts, resulting in prevention of ~550,000 pounds gained by New Yorkers each year (~18% of NYC annual average weight gain). Just as the control of major diseases of the past, such as cholera and tuberculosis, relied on drastic changes to living conditions, addressing the current epidemics relies on access to health-protecting and -promoting environments.16 To this end, climbing stairs can be easily incorporated into a person’s daily routine.

Decreased elevator use will also have a beneficial effect on the environment. Elevators in tall office buildings use approximately 4-7% of the building’s energy.17 This can result in as much as 15,000 Kilowatts used per year. As a comparison, heating a 1,700 square foot house electrically for an entire year uses only 7,100 Kilowatts per year.18

Overall, this proposal was found to have a positive, indirect environmental impact.

This proposal was found to have a high positive health impact per building and to impact a large number of buildings. It was thus given a health score of 3.

Cost & Savings
As described in the Executive Summary, Bovis Lend Lease prepared cost estimates for each Task Force proposal in the context of well-defined construction projects in specific buildings. Where possible, members of the Technical Committees prepared savings estimates for some of these projects and buildings. These cost and savings estimates are presented in the February 16 draft version of Appendix A. The innate uncertainty in how construction and operation will vary from one building to another, the complexity of the Task Force proposals, and the wide range of applications in which the proposals may be realized mean these figures are truly estimates.

This proposal was estimated to increase first capital costs by 0.0% to 0.02%, depending on building type. It was thus categorized as incurring no to a low capital cost increment.

Precedents
Although we are unaware of legal precedents for promoting stair use per se outside of emergency circumstances, precedence for codifying physical-activity promoting design for health purposes exists in building codes elsewhere. In Berlin, Germany, building codes require the installation and maintenance of a playground for housing developments with six apartments or more. Under § 8 Sect. 2 of the Berlin Building Code, it is stated that “at least 4 sq. m. of usable play area per residential unit should be provided.”13 The size of the area should amount to at least 50 sq. m., and should be suitable for play by small children. If a construction project with more than 75 apartments is planned, the playground should also be suitable for play by older children. Exceptions are only admissible if the intended use of the building makes the presence of children unlikely. The care and maintenance of private playgrounds is generally the responsibility of the owner.

Although there is a lack of legal precedents for promoting stair use for exercise, corporations and schools have begun a movement to promote stair use for exercise. At Sprint Nextel’s Overland Park office, the elevators run especially slowly in order to promote stair use. The California Department of Transportation office in California has an elevator that stops on every third floor, in order to prompt users who can to take the stairs. At Virginia Commonwealth University, the newly designed business school has placed its elevator in a non-obvious place, and the stairs in a prominent area, in
order to promote stair use.\textsuperscript{20}

**LEED**

There are no routine LEED credits directly affiliated with this proposal. However, the Riverside Health Center, a NYC Department of Health and Mental Hygiene facility, received a LEED innovation credit for physical activity promoting design. One of the design elements include stairs that are accessible (a pre-requisite are stairs that are accessible to at least the building occupants).

The Riverside Health Center LEED innovation credit also includes the following design elements: stairs that are visible through the use of fire-rated glass on doors, located within 25 feet of the main building entrance, located on the principal path of travel on each floor and visible from the elevators, are 20 percent wider than the code minimum, and use of stair prompt signs at elevators and at stairs.

The physical activity promoting design items in the above LEED NC (New Construction and Major Renovations) innovation credit proposal also complement sustainable site credits to promote walking and biking (SS Credit 2, SS Credit 4.1 and SS Credit 4.2), as well as other LEED precedents for promoting occupant health, including tobacco smoke control (EQ Prerequisite) and indoor pollutant source control (EQ Credit 5). LEED ND (Neighborhood Development) also has at least six credits that have the specific stated intent to encourage physical activity and promote public health.

**Implementation & Market Availability**

Multiple options for handling security issues are readily available. Additionally, if stair access is promoted and more people use the stairs within buildings, then such use will decrease risks that occur in less populated staircases.
ENDNOTES:


