HT 4: KEEP STREET CONTAMINANTS OUT OF BUILDINGS

New York City Health Code
Proposal developed by the Materials & VOCs Committee

Summary

Issue:
Foot traffic brings many indoor air contaminants and bacteria into buildings. These particulates irritate the respiratory system and can trigger asthma.

Recommendation:
Require new buildings to install permanent entry mat systems to capture particulates.

Proposed Legislation, Rule or Study

Amendments to the New York City Health Code:

1. Add a new Section 131.14 as follows:

§131.14 Entrance particulate control. (a) Public entrances of any new building, other than any building classified under the New York City Building Code in occupancy group R-3, or with a floor plate less than 3000 square feet, shall install a permanent mat system to capture particulates entering the building.

(b) For the purposes of this section, “permanent mat system” shall mean a permanently installed grate, grille or slotted system and recessed collection area that allows for the capture of particulates that are carried into buildings by normal foot traffic. The permanent mat system shall be at least six feet long, measured in the primary direction of travel, and no less wide than the width of the entry opening. Revolving doors may alternatively include the mat system within such doorway.

Supporting Information

Issue – Expanded
Many indoor air contaminants enter buildings via foot traffic. During dry weather conditions, 1,000 people can track a quarter pound of dirt per day into a building. Since vacuums only pick up about 10% of dirt from carpets, requiring permanent entry mat systems will result in better indoor air quality. According to a microbiologist at the University of Arizona, “as many as 5,000 bacteria can cling to one square inch of footwear... 100 times more than can be found on a similar-sized area of a toilet seat.”

Environmental & Health Benefits
A New York City Department of Health report indicates that buildings with LEED certification show improved post-construction indoor air quality by lowering levels of PM10s (particles smaller than 10 microns). The preliminary findings were recently presented at the American Academy of Allergy, Asthma, and Immunology annual meeting.

This proposal was found to have no significant positive environmental impact.

This proposal was found to have a low positive health impact per building and to impact a large number of buildings. It was thus given a health score of 2.

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 1st 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 is not expected to have any significant impact on capital costs. It was thus categorized as not incurring a capital cost increment.

**Precedents**

The 2008 California Green Building Standards Code requires permanent entryway systems be installed at all entryways connected to the outdoors.\(^5\)

Numerous Agencies and School Systems include recommendations or requirements for entry systems, including but not limited to:
- NYC School Construction Authority “Green Schools Guide” \(^6\)
- Washington State Department of Health
- National Best Practices Manual for High Performance Schools
- Minnesota Department of Health
- Texas Department of State Health Services

Additionl Agencies recommending Entry Systems:
- EPA Indoor Air Quality Building Education and Assessment Model
- Battery Park City Guidelines for Commercial Buildings and Residential Buildings
- WTC Redevelopment Projects Sustainable Design Guidelines (LMDC, PANYNJ, NYSERDA)

**LEED**

LEED NC Indoor Environmental Quality Credit 5, Indoor Chemical and Pollutant Source Control, requires that projects employ permanent walk-off entryway systems at main building entrances that are directly connected to the outdoors. This recommended code revision is in accordance with LEED criteria.

LEED CI Indoor Environmental Quality Credit 5, Indoor Chemical and Pollutant Source Control, identifies the locations for permanent entryway systems at all high volume exterior entryways within the tenant area. These are not necessarily main public entrances to the building. Therefore, additional entryway systems beyond what these recommendations outline may be required in order to comply with LEED CI.

LEED for Homes credit EQ8, Contaminant Control, requires installation of permanent walk-off mats at each entry. Although this proposal excludes buildings in occupancy group R-3, other residential buildings applying for certification under this LEED rating system must comply to receive this credit.

Entryway systems are only one component of the LEED NC, CI, and LEED for Homes EQ credits and providing the mat system does not guarantee compliance.

This recommendation will also facilitate achieving LEED NC and LEED CI credit EQ3.2, Construction IAQ Management Plan, Before Occupancy and LEED EB credit EQ3, Construction IAQ Management Plan. These points are concerned with reducing overall Indoor Air Quality problems throughout the building or space.

**Implementation & Market Availability**

There are no known implementation issues for this proposal. Permanent mat systems are widely available. Permanent mat systems require detailing of finish and structural floor to receive mat system and maintain flush floor conditions consistent with the ADA Accessibility Guidelines for Buildings and Facilities (ADAAG).

**Notes**

The Committee discussed at length what buildings and entrances should be covered by this proposal. The Committee used the 2004 ADAAG as a basis to decide these questions and its deliberations are noted below.

How to define public entry? The committee sought precedents for the definition of public entry. NYC Building Code defines a public entrance as “an entrance that is not a service entrance.” The 2004 ADAAG defines public entrance as any entrance that is not service or restricted. Example - a manufacturing facility might have an area for administrative workers which would be considered a public entrance, while the entrance for the processing area would be considered a service entrance. Entrance to a parking facility would be considered a service entrance.

How to not create undue hardship for manufacturing processing? The Committee concluded that the NYC Building Code definition, which excludes service areas, covers the concept of exemption for manufacturing processing areas. The Committee also felt that by limiting the requirement to new buildings, hardship that may be present for rehab projects, such as not having sufficient depth to recess floor mat, would be avoided.

How to not create undue hardship for small establishments (primarily retail and restaurant/hospitality)? ADAAG 2004 allows exceptions for facilities less than 3,000 sf as explained in the Preamble to the ADA Guidelines and published in the Federal Register on July 23, 2004.
ENDNOTES:


2. Ibid.


