

ELEVATORS

EXECUTIVE  
SUMMARY

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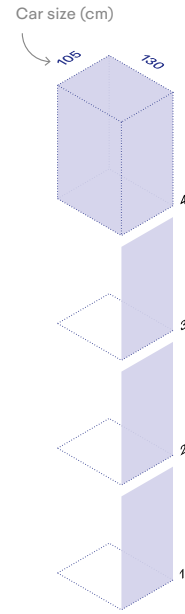
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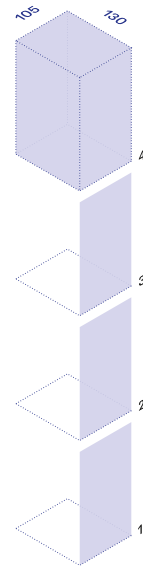
# COST AND ACCESS

The United States and Canada have the most expensive elevators in the world. Prices charged in North America (for parts and installation, but not the construction of hoistways or a few other ancillary features) are at least three times those charged by the same manufacturers in comparable mid-rise buildings in high-income countries in Western Europe. As a result, the U.S. and Canada have fewer elevators per capita than any other high-income country for which data could be found. While the U.S. and Canada are more suburban than many countries in Europe, the dominance of single-family housing alone cannot account for the lack of elevators in North America. The U.S. has more than twice as many multifamily dwelling units as Spain, but the same number of elevators in absolute terms. New York City and Switzerland have roughly equal populations, but Switzerland has twice as many passenger elevators, despite being less urban and having less of its population living in apartments. The Netherlands has a significantly higher share of its population living in single-family houses than the United States, but the U.S. has 40 percent fewer elevators per capita.

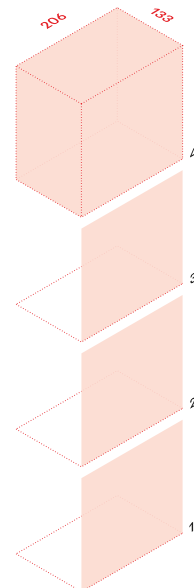
The high cost of elevators in North America has negative consequences for our cities and accessibility. New walk-up apartment buildings in major U.S. cities can reach four, five, and even six stories in height – unheard of nowadays in new buildings in Western Europe, despite lower European incomes. The high cost of elevators sometimes also leads developers to build townhouses instead of multifamily condo buildings. As more jurisdictions across North America reform building and zoning codes to permit more “point access blocks” – smaller apartment buildings where a single stair serves only a few apartments per floor, allowing architects to design more efficient family-sized apartments – the high cost of elevators will become an even bigger barrier to mid-rise development. The expense and size of elevators in North America almost completely preclude building owners from retrofitting older, occupied walk-up apartment buildings for accessibility by adding elevators, as is increasingly common in Europe and Asia.



Vaud, Switzerland (2020)  
**Schindler 3300**  
**MRL electric traction**  
 30,500 + 2,349 (VAT) CHF\*  
**\$35,348\*\***



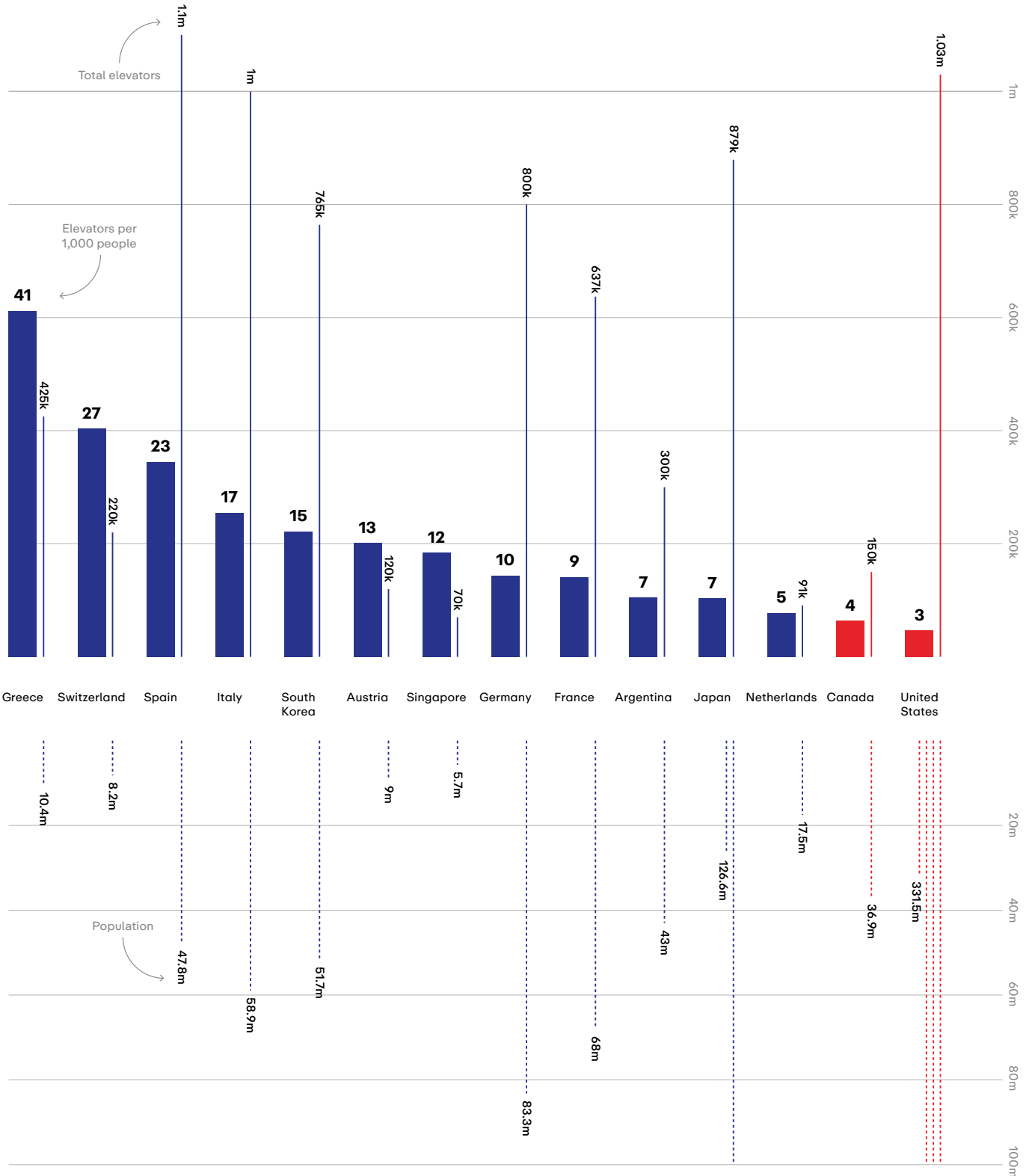
Lombardy, Italy (2022)  
**Kone MonoSpace 300 DX**  
**MRL electric traction**  
 €26,000 + €2,600 VAT\*  
**\$49,393\*\***



New York, USA (2023)  
**Kone MonoSpace 300 DX**  
**MRL electric traction**  
 \$158,000\*  
**\$157,856\*\***

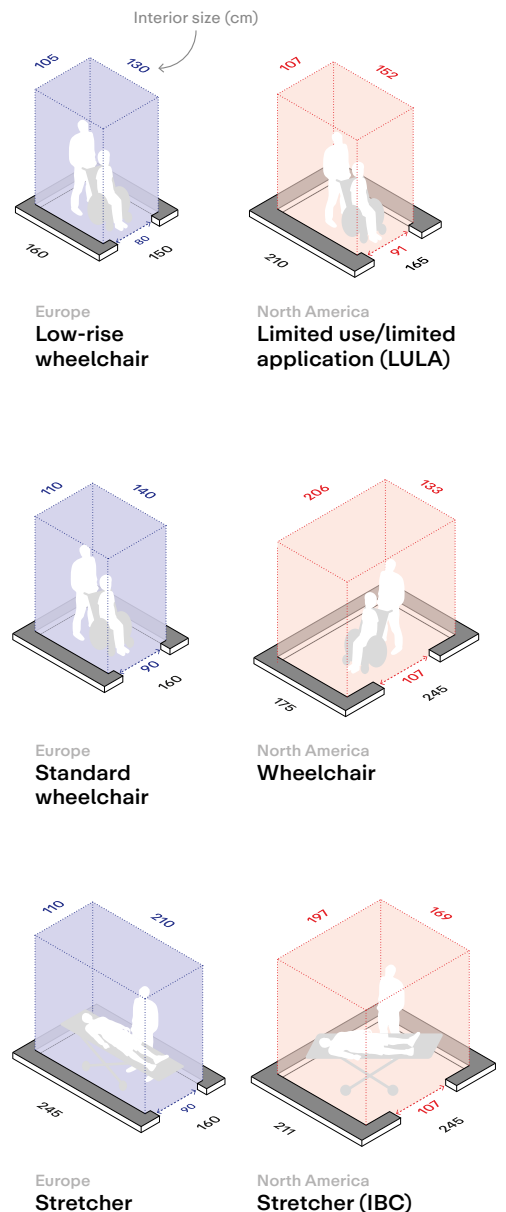
\* Adjusted price, including VAT where applicable (in USD, adjusted for purchasing power parity and then inflated to Dec. 2023 prices).

\*\* Nominal price.



# CABIN SIZE

Elevator cabins are required to be much larger in the United States than abroad, driving significant direct and indirect costs. Where elevators are provided, they must accommodate a wheelchair turning radius, and typically at least one elevator per building must fit a 7-foot stretcher (Canada has similar requirements). In Europe, on the other hand, usually only a wheelchair plus one person standing behind it is required to be accommodated in a mid-rise multifamily building’s elevator. Stretcher elevator requirements vary across countries in Europe, but often they are not required for mid-rises, and the size requirement when they are required is more modest. In all, elevator cabins in new buildings in North America are often around twice the size of those in Europe. If North America allowed European-sized elevators in new mid-rise buildings, then elevators would likely be between 13 and 44 percent cheaper, with additional savings from both the construction cost and forgone rentable/saleable area of the elevator hoistway. More expensive elevators mean fewer elevators available to the same groups who today’s very large cabins are intended to benefit, from people with disabilities to paramedics.



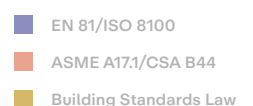
## LABOR

Elevator industry labor is less available, more expensive, and less productive in the United States than in Western Europe. The main union representing elevator workers in North America (the International Union of Elevator Constructors, or IUEC) has an opaque and difficult process for workers attempting to enter the field, and the contract that they sign with employers requires manufacturers to accept unproductive practices banning preassembly and prefabrication of many parts, at times even leading mechanics to disassemble and reassemble components on site.

The difficult conditions of the IUEC's contract stem from a shortage of workers, which gives the union significant bargaining power. The American immigration system makes no allowance for the legal entry of construction workers into the country, forcing undocumented Latin American immigrants into unlicensed and less skilled trades like painting and framing, and keeping them out of licensed trades like elevators. The European Union, on the other hand, allows free movement of workers across (and even beyond) the bloc, which has allowed firms hiring Eastern European workers to enter the market for new elevator installations in Western Europe. The United States also has a weak system of technical and vocational education in high schools to provide the construction sector with native-born workers, in contrast to much stronger systems in Europe. American occupational licensing rules can also inhibit the interstate movement of workers in some cases.

## TECHNICAL CODES AND STANDARDS

The United States and Canada are some of the only countries in the world that have not harmonized with European technical codes and standards regarding elevators, walling us off from the global market for parts. The ASME A17.1/CSA B44 elevator safety codes in use in the U.S. and Canada differ from Europe's EN 81 family of codes (which have been adopted into the ISO 8100 global standard) enough that many parts, even if they would comply with both standards, need to be separately certified for the North American market. Many manufacturers simply choose not to spend the money to certify and in some cases redesign parts for the small and isolated North American market, resulting in far less availability of elevator components in the U.S. and Canada. These non-tariff barriers to entry also make it difficult for foreign manufacturers not encumbered by agreements with the IUEC to enter the North American market and compete on labor efficiency. Unique North American elevator standards have led to no discernible improvement in safety outcomes compared to those in Europe.



## RECOMMENDATIONS FOR REFORM

### CABIN SIZE

1

Allow 1.1 m x 1.4 m European wheelchair elevators (without a wheelchair turning radius or accommodation for a stretcher) in small new apartment buildings, at risk of having no elevators at all (or never being built).

2

Allow additional relief on wheelchair turning radii in elevator cabins in larger buildings where developers provide a higher ratio of elevators to apartments.

3

Require elevator cabins to accommodate stretchers only for high-rise buildings (where the highest occupied floor or roof is more than 75 ft. above the lowest level of fire department vehicle access).

### ACCESSIBILITY

4

Require elevators in multifamily buildings above three or four stories, in conjunction with cost- and size-reducing reforms.

### TECHNICAL CODES AND STANDARDS

5

Do not allow jurisdictions to deviate from the latest ASME A17.1/CSA B44 elevator safety code.

6

Harmonize the A17.1/B44 code with the global European standard.

7

Roll back elevator hoistway opening protection requirements for most buildings.

8

Roll back visual communication requirements for most buildings.

### LABOR

9

Allow elevator mechanic licenses to be seamlessly transferred between states.

10

Create legal immigration pathways for construction workers.

11

Develop more technical and vocational programs in public high schools to train workers for the construction industry.