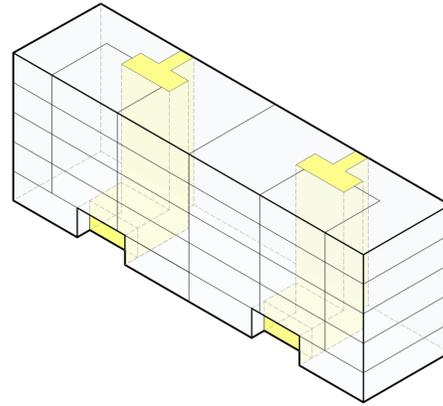


Unlocking Development with Point Access Blocks

a path towards more livable, climate adaptive, and family friendly homes

Larch Lab Policy Brief
January 2023

Michael Eliason



Key Benefits

Point Access Blocks provide compact, livable, and low-carbon multifamily housing. Larch Lab's research has found numerous benefits of Point Access Blocks over other means of vertical access, including:

- Increased livability
- Homes that can cross ventilate
- Increase in accessible homes
- Increase in small lot development
- Increase in family-sized homes
- Elimination of long corridors
- Increased floor plate efficiency
- Increased compactness
- No decrease in fire safety
- Lower embodied carbon
- Lower operational carbon
- Lower construction cost

Floor Plate Efficiency

Point Access Blocks can achieve incredible floor plate efficiencies compared to double loaded and single loaded corridor buildings.

- Point Access Blocks: up to 95%
- Double Loaded Corridor: 80-87%
- Single Loaded Corridor: 70-80%

Summary

Point Access Blocks, compact single stair buildings with dwellings centered around a stairway and elevator core, are the fundamental building block of cities the world over. These are presently legal in the U.S. – but only up to three stories. ***Seattle and New York City have conditions allowing up to six stories without incident.*** Point Access Blocks six stories and taller are legal in most of the world. Allowing taller Point Access Blocks in the U.S. can unlock smaller ‘missing middle’ and mid-rise development sites for more affordable housing, more climate adaptive housing, more multigenerational and family-sized housing.

Recommendations

Jurisdictions should amend their building codes to match language and conditions adopted by the City of Seattle. This will unlock opportunities for the development of smaller parcels especially between the ‘missing middle’ and mid-rise scales, without necessitating parcel assemblage or larger and riskier development. This would also increase opportunities for family-sized homes over typical development.

Allow multiple connected or unconnected Point Access Blocks per parcel. Seattle allows two instances, there is typically no limit in the IBC for less than 3 stories as well as in E.U. development. This unlocks the potential for larger development, long and narrow parcels, and perimeter block projects. The narrower floor plates of Point Access Blocks also allow for more open space or courtyards versus a double loaded corridor.

Convene a working group of Legislators, Code Officials, and Fire Chiefs to legalize a path toward eight story Point Access Blocks where units open into stairways.

There are significant economic benefits that occur with taller Point Access Blocks, as well as opportunities to intensify existing urban sites while maintaining open space. Globally, mid-rise Point Access Blocks are incredibly common, while the employment of sprinklers for residential buildings lower than 90’ in height is rare. With sprinklers and the adoption of Mass Timber in U.S. building codes, there are significant efficiencies and opportunities that could be achieved with Point Access Blocks in the six to eight story range.

Promote Education on the Development of Point Access Blocks. More education and outreach to policymakers, planners, developers, and the public will increase demand for Point Access Blocks which are rarely constructed due to unfamiliarity and height limitations. As cities and states revise zoning codes, having a multitude of development solutions will provide flexibility in meeting housing demand while

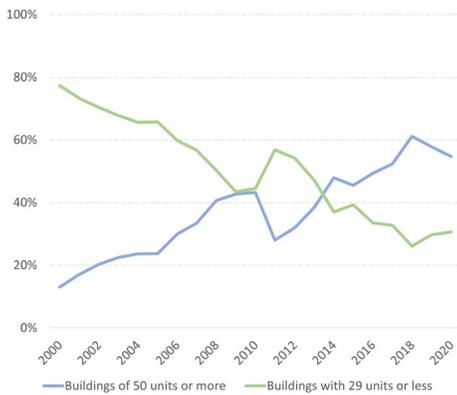


Figure 1: Percent of Multifamily Completions, by Building Size.
Source: U.S. Census Bureau.

Problem

After decades of underbuilding, an extensive shortage of housing exists in the United States - not just in large cities, but in suburban and rural areas as well. Building code requirements and the economics of construction have made small to medium-sized multifamily housing increasingly difficult to develop. Over the last twenty years, multifamily development has trended towards larger and significantly denser buildings, with a poor mix of unit sizes. In 2000, buildings of 50+ units made up just 13% of all multifamily completions. Today, over 55% of all new multifamily homes are in 50+ unit buildings. The majority of these are double loaded corridors, hotel-like buildings with a hall running down the middle and single aspect dwellings on either side. These homes tend to get little daylight, and have no opportunity to cross ventilate or mitigate urban noise.

Solution: Point Access Blocks

Point Access Blocks can unlock climate adaptive low- and mid-rise housing that is more livable, affordable, community-oriented, and family-friendly than regulations currently allow. They are the typical form of development the world over, although in the U.S. they are rarely used.

Compared to typical multifamily development in the U.S., Point Access Blocks result in housing with better daylighting, better ventilation, more efficient floor plans, larger units, and better energy efficiency. With the right framework, they can be used on a variety of scales, from small infill sites to large perimeter blocks.

They also increase opportunities for small property owners, homeowners, small developers, community land trusts, and coops to meet today's housing needs. These are groups typically unable to do large scale, well-capitalized projects.

Figure 2: Connected Point Access Blocks, showing unit diversity and typical vertical circulation under German regulations (highlighted). Seattle regulations require a rated corridor separating the stairway and dwellings.
Source: Larch Lab

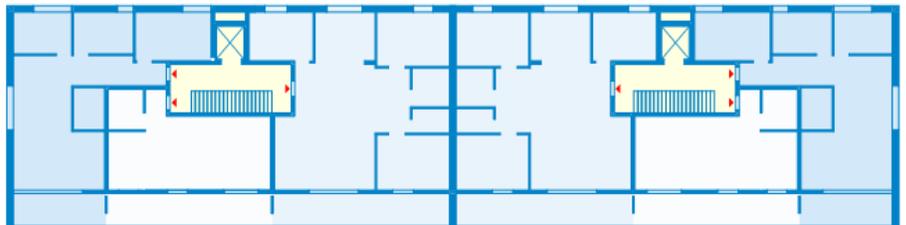
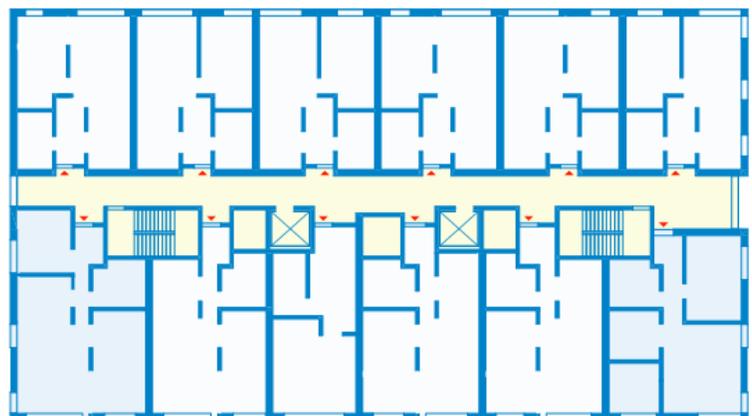


Figure 3: Double loaded corridor configuration, showing corridor, poor unit mix, and multiple stairs (highlighted)
Source: Larch Lab



The Seattle Special

Seattle's Building Code was amended to allow Point Access Blocks in 1977, with protected stairways, no height restrictions and a maximum of 4 dwellings per floor.

In 1985, the allowed height was reduced to 6 stories, with the same number of dwellings per floor.

Today, the 2018 Seattle Building Code allows Point Access Blocks to 5 and 6 stories, with conditions.

2018 Seattle Building Code,
Section 1006.3.3 Single Exits,
Condition 7:

- Max. of 5 stories (Residential) or
- Max. of 6 stories (Mixed Use)
- Max. of 4 dwellings per stairway
- 1-hour rated construction
- Equipped with sprinkler
- Max. 125-foot Travel Distance
- Units open to corridor
- Max. of two instances per parcel



Figure 5: Double loaded corridor building in Seattle, attempting to look like smaller connected buildings.

Source: Larch Lab

Safety

A 2009 United States Fire Administration report noted the average death rate in several countries where Point Access Blocks higher than 20m (65') are allowed (including Switzerland, France, Italy, Germany, Singapore, and Austria), were significantly lower than the United States. Furthermore, nearly all U.S. building codes require sprinklers for multifamily buildings over 2 stories, while almost no countries in the E.U. require sprinklers on residential buildings less than 28m (92') even when planned as Point Access Blocks. Heights when sprinklers are required vary dramatically: Sweden requires them at 16 stories; the Netherlands at 70m (230'); Spain at 80m (262'); Germany at 60m (197'); and Austria at 32m (105'). Belgium, Denmark, France, and Italy have no requirements for sprinklers in low and mid-rise residential buildings.

Beyond sprinklers, the U.S. has additional fire code requirements over most E.U. countries, including a fire-rated corridor to separate dwellings from the stairway.

Family Sized Housing

Point Access Blocks offer a greater variety of unit types and sizes, even on small urban lots. Floor plates tend to be very flexible, with a higher proportion of units ranging from two- to four-bedrooms. Current building code requirements make it difficult to avoid planning with a double loaded corridor. Thus, requirements result in a poor unit mix, consisting mostly of studios and one-bedroom homes. It is very difficult to get family-sized dwellings to work economically, as a 3-bedroom unit is effectively competing against the income of three or four studios. These regulations also mean the opportunities for even larger dwellings, or multigenerational units, are incredibly rare.

Point Access Blocks tend to have greater limitations - a maximum number of dwellings per floor per stairway, and/or a maximum floor area per stairway. These limitations encourage development to incorporate larger units in order to maximize built area. With less floor area dedicated to common circulation, there is also space to add additional living area: more bedrooms, larger units, or even communal spaces. There are also social benefits for families and elderly residents in buildings that are not large and anonymous: daylight and communicative stairways where building codes allow, and reduced social isolation.

Accessibility

Point Access Block floor plans are typically more flexible in arrangement over double loaded corridors, empowering planners and developers to incorporate adaptability and more accessible housing than typical development. Additionally, the broader mix of unit sizes affords greater potential for downsizing or aging in place within the same building and community, to a much greater degree.

Environmental Benefits

The environmental advantages of Point Access Blocks over typical development are numerous. They have reduced floor and exterior surface area compared to double loaded corridors, reducing embodied carbon. Due to their narrower floor plates, increased floor efficiency, and compact form – they have lower greenhouse gas emissions during construction and operations than typical development. Furthermore, units are shallower and often dual aspect, with daylight on opposing sides. This allows for reduced lighting demands, as well as the ability to cross ventilate – an imperative for climate adaptive housing in a warming world.

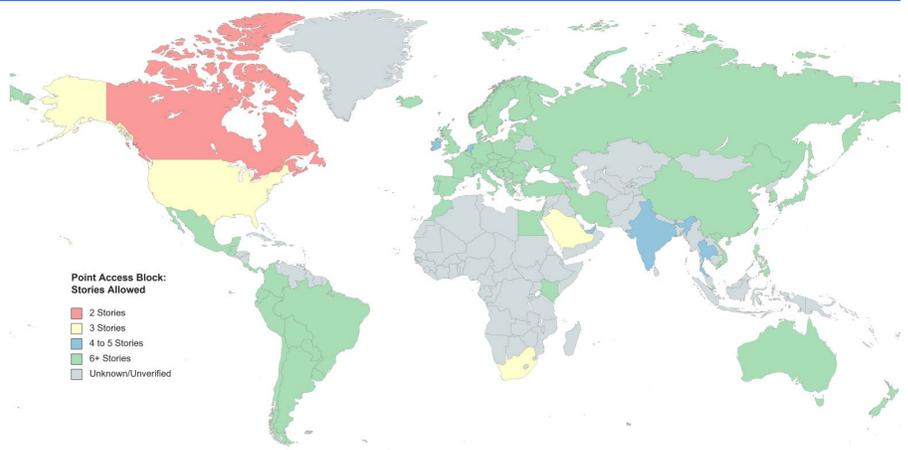


Figure 6: Map showing number of stories allowed for Point Access Blocks. Green indicates countries allowing 6 or more stories.

Source: Larch Lab

Conclusion

Targeted actions by policymakers can accelerate the adoption of regulations for more livable, climate adaptive, and family friendly homes. ***The range of benefits include lower greenhouse gas emissions, local green jobs, increasing development opportunities on small and medium-sized parcels, providing more family-sized homes in buildings, and meeting the need for affordable housing.*** Action now will provide a strong foundation cities can build upon to recover from the pandemic and pivot towards better housing outcomes and quality of life.

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Larch Lab

Author:

Michael Eliason

Media Contact:

info@larchlab.com

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We specialize in community-oriented models of housing, including *Baugruppen*: self-developed urban co-housing. Our focus is delivering on livability, resiliency, comfort, and cost-effective construction.

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Let's build it together.