

Living with the Weather

in a Time of Climate Change



Green roof

Roof terrace

French w

Recessed balcony

Microclimatic enclosure

Loggia

Bay window

Biodiversity

Glazed loggia

Arcade

Deck

As more and more people live in densifying built environments, the importance of spending time outdoors, encountering natural phenomena and learning to live closer to the seasonal cycles of the weather increases. The everyday experience of being connected to nature is a key factor in long-term health and well-being. Spending time outdoors also presents opportunities to meet other people and have shared encounters.

Everyone does not necessarily need to have their own garden, but they should have access to a range of outdoor spaces and experiences, from a window box to a roof terrace, from a balcony to a public park, from a sidewalk café to a tree-lined boulevard. These spaces can bring them closer to nature and help them live better with the weather.



Learning to Live al Fresco

The Nordic countries, where people seem to spend a lot of time outdoors despite the generally harsher climate, are also some of the countries leading global efforts to address climate change.²³ It may be that people who are more in tune with their natural environment understand it better and value it more.

The images of Copenhageners cycling in the snow often shocks foreigners, especially those living in gentler climates. Just what motivates these biking Vikings? In fact, the city has a policy of clearing the snow from the bike lanes first, meaning that cycling is the first available means of transportation after a heavy snow. The weather becomes just a detail in a complex life equation where saving time is probably the most important factor.

Children in the Nordic countries also spend a considerable amount of time outdoors all the year round. From an early age, the culture of living outside regardless of the weather is established and often carried on into adult life. Cities need to be designed to encourage a culture of spending time outdoors in all seasons.

In Copenhagen, the Harbour Bath on Islands Brygge introduced sea-bathing to the citizens of the city. The public facility has helped establish new behaviors normally associated with holidays and vacationing at the beach. Swimming, games, picnics, eating ice cream, and sunbathing are all now part of everyday life in the city. The real change came from the decision to clean the polluted water in the harbor, including the contaminated river bed.

In Oslo, you can take the metro train, equipped with ski racks, from the center of the city straight to the ski slopes. In the summer, the same takes you to hiking trails. It is a huge bonus to have a convenient, direct connection on public transport from your daily urban routine to outdoor recreational activities.

Learning to live with the weather requires a sensitivity to change and a respect for nature. The spaces, form, and details of the soft city can help create opportunities to bring people closer to the forces of nature in small and simple ways as a part of their everyday life.

Copenhagen, Denmark.
Summer and Winter

01. After cleaning the water in the harbor, the Copenhagen Harbour Bath was established in the city center of Copenhagen in 2002—first as a temporary structure. It quickly became a very popular meeting place, and the structure was upgraded and made permanent. Later, a sauna was added to encourage year-round use.

02. Despite wind, rain, and occasional snow, 70% of Copenhageners continue to cycle to work in the winter.²⁴



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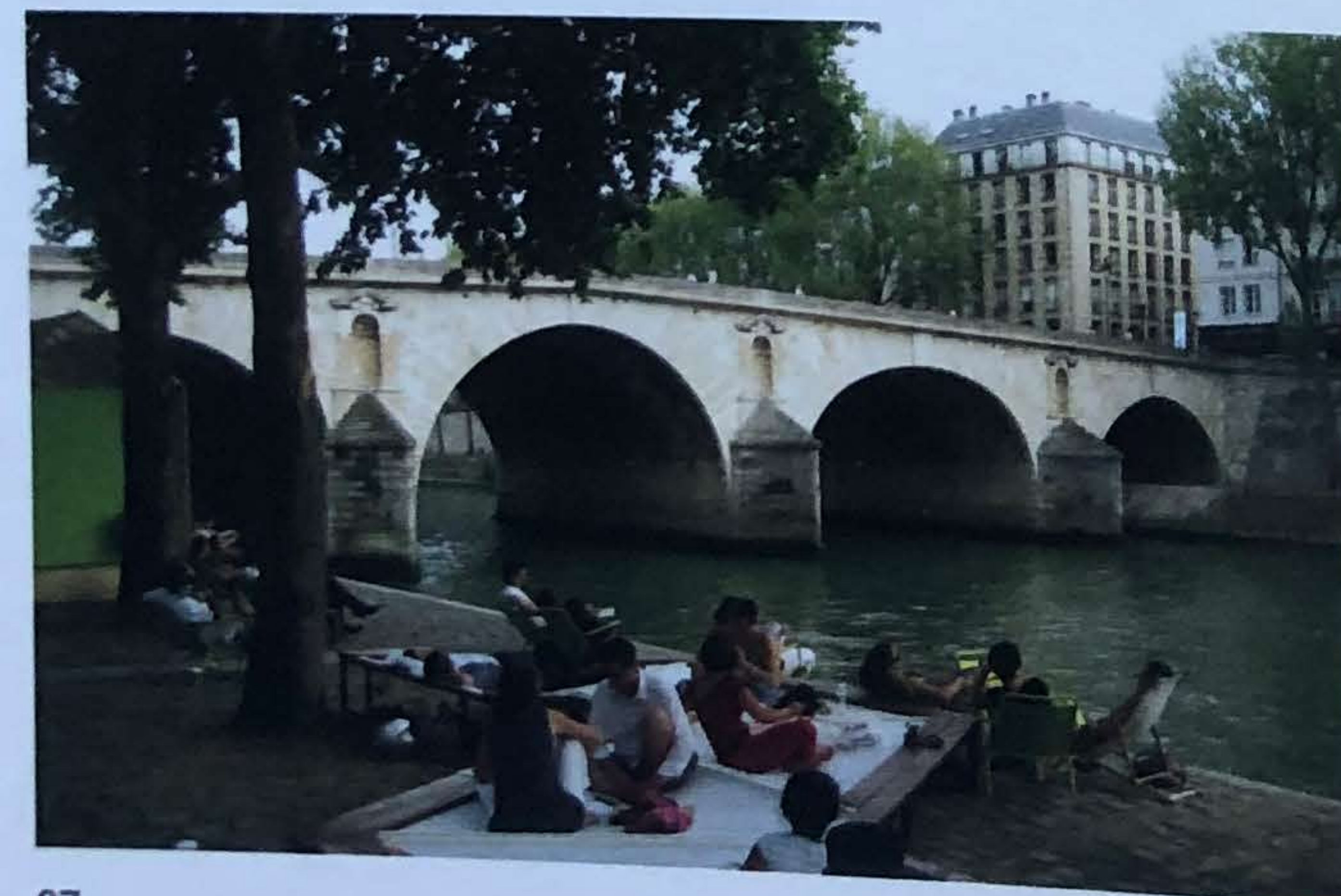
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01./02. A bathing station in Bogense, Denmark has a bathing jetty, sandy beach, ramp for wheelchairs, wooden boardwalk, and steps. The wooden buildings house changing rooms, toilets, and a sauna. On the rear of one building is a recessed bench that gently protects visitors from the cold northern winds.

03./04. Amager Beach Park, Copenhagen. An artificial beach designed to accommodate visitors and activities all year round.

05./06. Berne, Switzerland. Lightweight roof structures that extend the season. An old industrial building, which has been opened up, makes for an all-weather local community living room. A restaurant in a lightweight pavilion hanging over the riverside accentuates the connection to nature.

07. Paris, France. On the banks of the Seine, comfortable lounging furniture as part of the urban beach "Paris Plage."

Extending the Summer Season: Copenhagen Café Culture

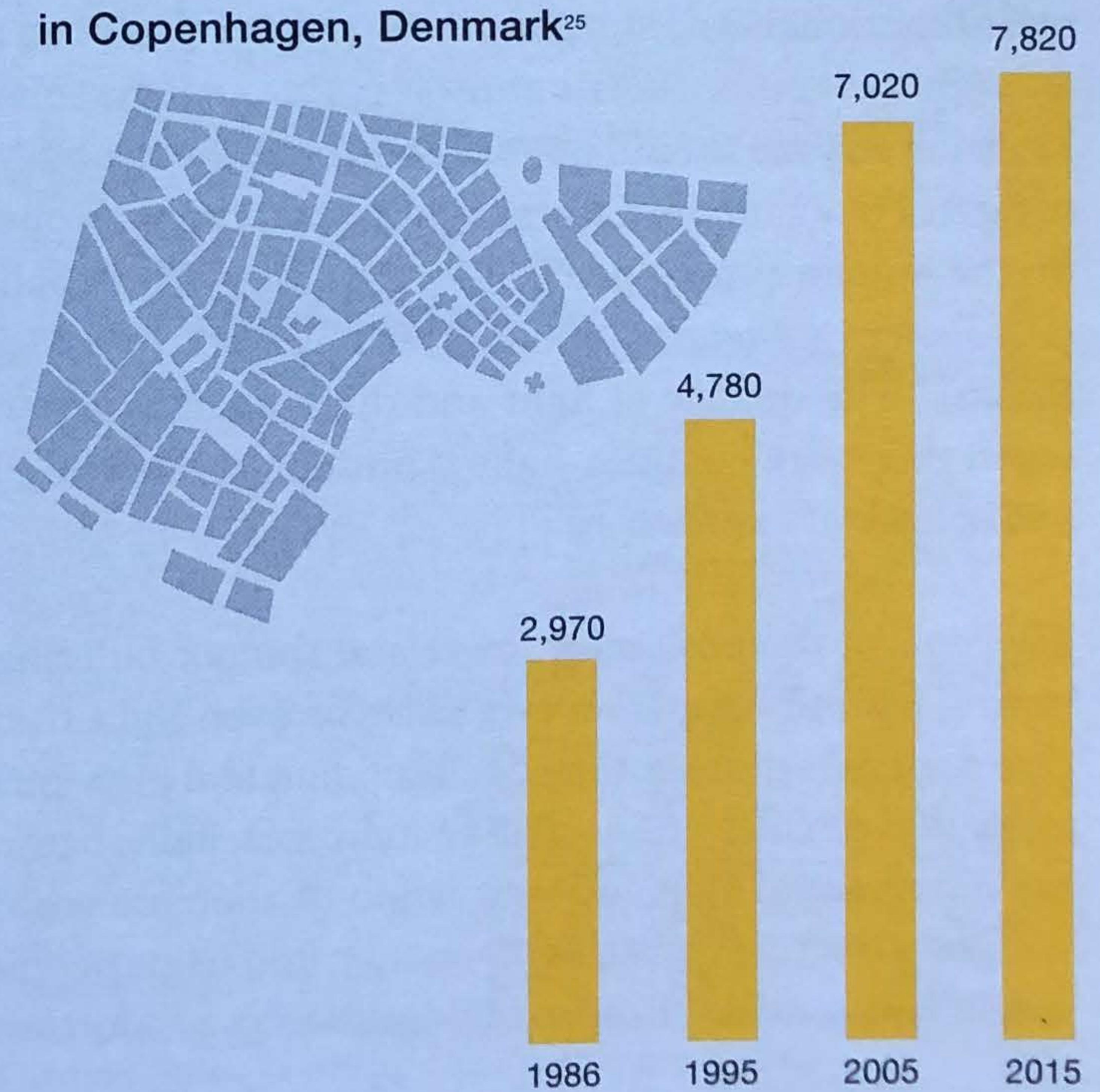


When tables and chairs were first introduced to the sidewalks of Copenhagen, the appropriate outdoor season was assumed to be short, not much longer than a couple of months. Denmark has a short summer compared to southern European cities where sidewalk cafés were more common. But the café owners and customers in Copenhagen discovered that sitting out is still quite enjoyable, even when the weather isn't perfect. Many cafés added blankets and umbrellas. Some have added heat lamps (less sustainably perhaps).

City records for outdoor café permits show an increase over time in the length of the outdoor-sitting season as well as the number of tables and chairs.

Copenhagen's outdoor café story is one of behavioral change with increased leisure time, and of learning to live with and make the most of the weather.

Number of café chairs
in Copenhagen, Denmark²⁵



Bringing the Outside In: Natural Light and Ventilation

Connecting to nature and the great outdoors starts inside the buildings where we spend most of our time. Having adequate, natural light and fresh air indoors has a dramatic effect on our health and well-being. There is no substitute for natural light. The dynamic qualities of natural light stimulate eye and brain function. Natural light improves workplace productivity and educational performance as well as healing and recovery in healthcare.²⁶

Natural ventilation and daylighting are also two of the most obvious energy-saving features to consider when designing buildings. One-third of all electricity in the US is used on lighting, cooling, heating, and ventilation.

The convention in Modernist architecture is to get direct sunlight into buildings, but the designs can often end up being very one-dimensional. The method of measuring light is quantitative, based on direct sunlight penetration at certain times of the day—usually midday for dwellings. Designing for midday light is questionable, as this is usually the time of the day when people are not at home. Additionally, in some climates, an overcast sky is more normal than a sunny sky, and light filtered through clouds behaves completely differently than direct sunlight. Light requirements are complex and differ depending on time of day and the activities taking place inside. A diversity of light (and ventilation) conditions can potentially accommodate different activities in close proximity, which is desirable in a dense, multifunctional environment.

Lighting a space should not only be about the quantity of light, but also the quality of light. For example, natural light from more than one direction is very significant for the human experience inside a building. Christopher Alexander highlights this in *A Pattern Language*, with pattern number 159: “Light on Two Sides of Every Room.” The quality of light and the human experience is dramatically different when this more complex light is present, influencing how you can read emotions and see facial expressions.²⁷

The smaller dimensions of lower and thinner buildings increase the possibility of having natural light from two sides or even light from above. These dimensions give designers more options for abundant and high-quality light. Smaller buildings mean that circulation spaces like staircases, halls, bathrooms, closets, and corridors can have natural light and ventilation. A staircase with natural light and ventilation is more attractive to use, saves energy, and helps people to better connect between inside and outside. Lower buildings have proportionally more top floor, which

01. Berne, Switzerland. A simple casement window folds in to bring the outside inside.

02. Berne, Switzerland. A generous window in the staircase of this apartment building connects to life outside and makes taking the stairs a more pleasant option to the elevator. In the summer, the windows, combined with the “chimney” of the staircase, provide effective natural cooling.

03. Tokyo, Japan. A folding window opens up the café into a hybrid inside-outside space.



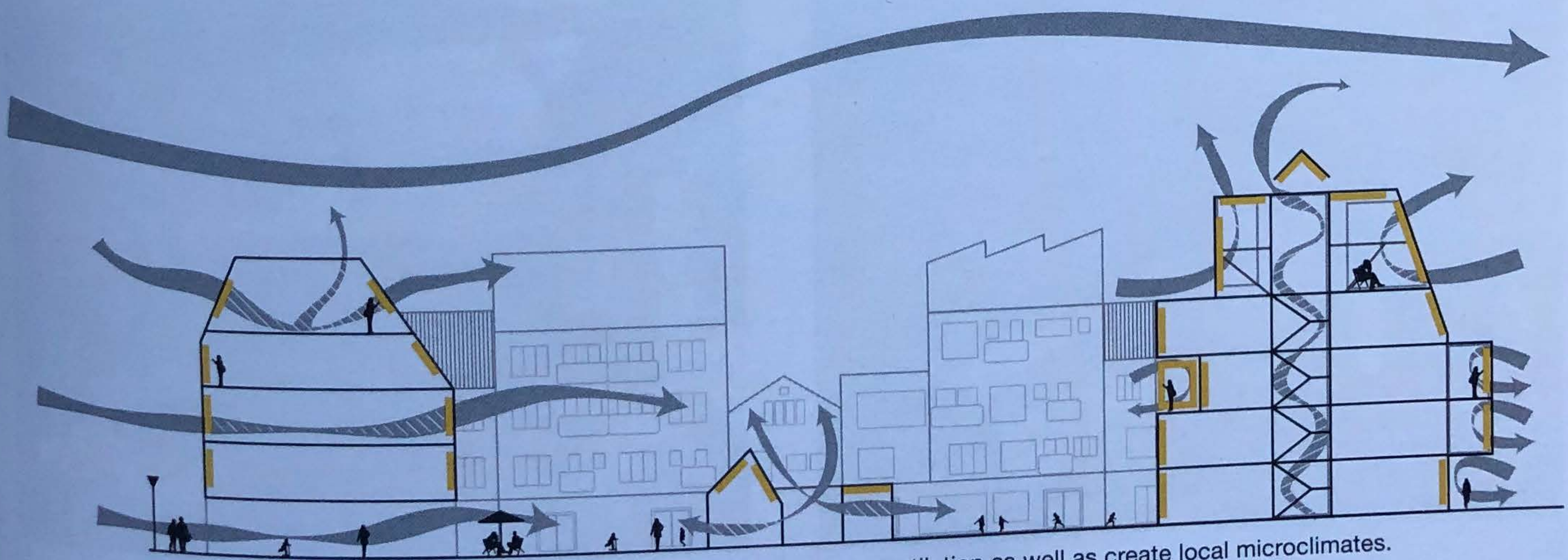
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allows more spaces to have light from above with skylights. A skylight can let in far more light than normal windows of the same glass area.

Vertical glazing is only effective up to six meters (approximately 20 feet) inside a building. Therefore, above a depth of 12 meters (approximately 39 feet), natural lighting is going to be limited. Smaller dimensions also allow natural light and ventilation into secondary spaces such as bathrooms, closets, and box rooms. This not only represents energy savings, but also the quality of life experienced in these practical spaces. Too often, we see taller and thicker buildings designed with windowless principal rooms like bedrooms and kitchens.

Natural ventilation is cheaper (ultimately free) than artificial ventilation such as air-conditioning, and saves unnecessary emissions and use of energy. An air-conditioned home in the US produces two tons of CO₂ per year. Five percent of all US electricity powers air-conditioning.²⁸ Natural ventilation is easier for the user to control and connects people better to the outside. Mechanical ventilation is expensive to install, maintain, and run. It aggravates asthma and allergies, and creates unpleasant noise. Additionally, many find the chilly feel of air-conditioned space unpleasant.



Smaller dimensions allow for more natural light and ventilation as well as create local microclimates.

There are some simple ways to achieve natural ventilation, all of which are easier to achieve in a smaller building. The best is cross-ventilation, with air entering on one side and leaving on the opposite side. A difference in temperature on opposite sides of the house creates air movement. Recesses and projections in the facade such as loggias, bay windows, and balconies, create shadows and a small but significant difference in temperature, which stimulates air movement.

Courtyards, patios, and light wells create microclimates distinct from the surroundings streets and squares, and the resulting temperature difference stimulates natural ventilation. Even details in the room layout of an apartment plan, such as the position of doors or having more than one door to a room, can stimulate better air movement.

01. Malmö, Sweden. Natural light from more than one side or from above greatly improves life indoors for homes, workplaces, and commercial spaces.

02. Tokyo, Japan.

03. Sydney, Australia.



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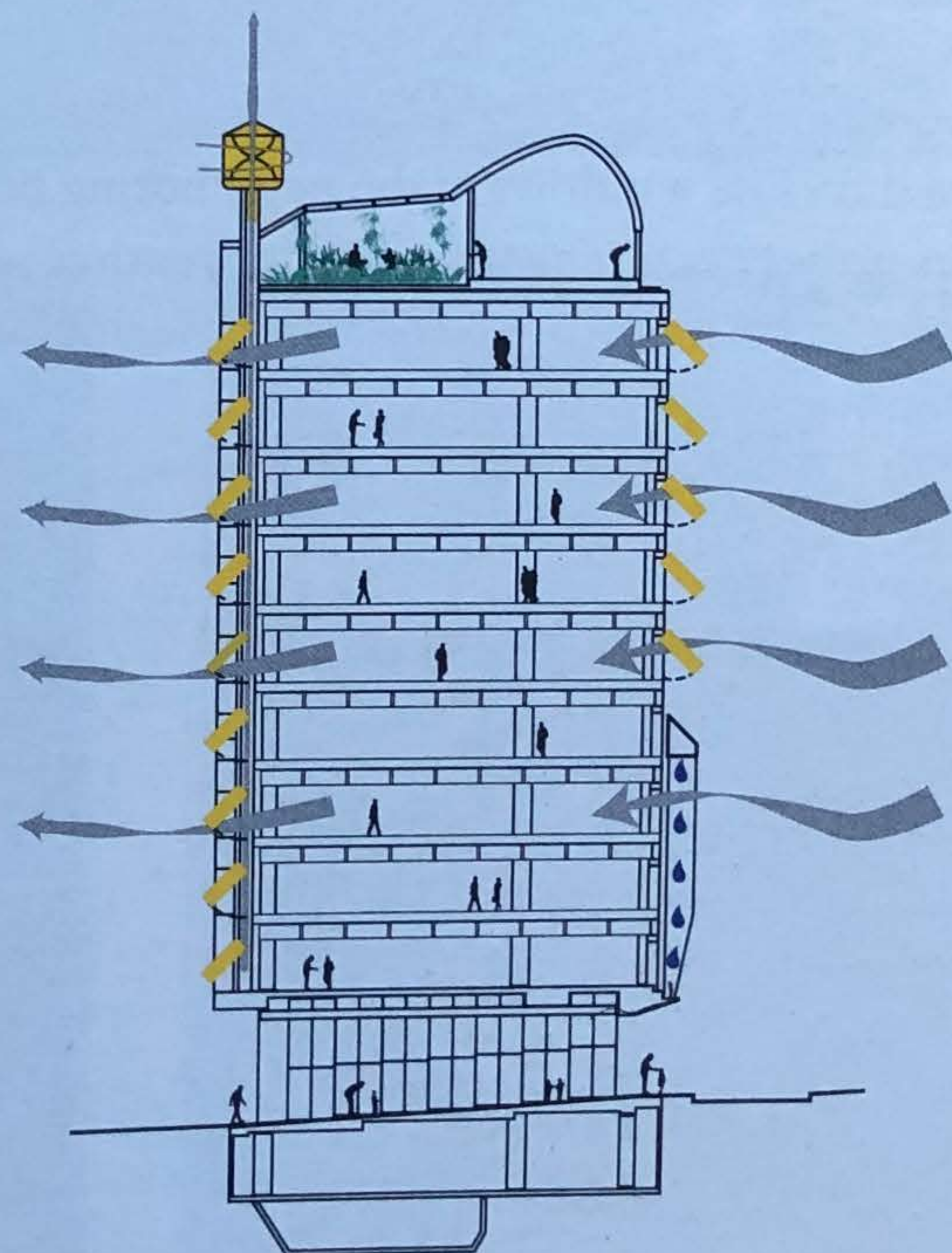
An Office Building Where You Can Open a Window: CH2, Melbourne, Australia



Photos: Diana Snape

At nine stories, CH2 in Melbourne is somewhat higher than a European 4-5 story block. However, it is far lower than many of the surrounding office towers. CH2 is a pilot project for the City of Melbourne's Zero Net Emissions by 2020 plan, designed with a wide range of sustainable features, from wind power to grey-water harvesting. Perhaps most impressive are the simple details such as shutters, windows that open, and accessible balconies on every floor.

What is also significant is the successful landing of a large workplace in the Central Business District that merges with its surroundings, with an active ground floor with shops and restaurants, and only a small lobby taking up the precious ground level, to make for a continuous streetscape.



CH2 uses the forces of nature for natural cooling and ventilation.

Windows and Doors

Windows and doors are probably the most significant of all architectural elements. Beyond the pattern they make on a building's facade, and the air and natural light they bring into buildings, windows and doors can better connect inside and outside, sometimes blurring the two. Windows and doors can encourage us to spend time on the edge of buildings, improving our relationship with the outside. Therefore the most important aspect of windows is not only how they look, but what they can do.

There are many traditional and contemporary examples of window types that have the qualities that enhance the connection between the outside from indoors. Bay windows, oriels, and miradors, which project out from the facade of the building catch more complex light from different sides. These protruding windows also allow a better view of and connection to the outside spaces.

When layered—with storm doors, shutters, blinds and metal cages—doors and windows can do more, spontaneously adapting to the environmental and social requirements of the moment.

Tall vertical window openings, like a French window, offer a view that includes three significant components: the sky, the middle ground of urban surroundings with buildings and trees, and the ground plane where the people are. The sky and clouds inform you about the weather, while the ever-changing light tells you the time of day. The windows of the neighboring buildings light up at night, expressing human presence, connecting to the weather and the changing seasons while the leaves on the trees move in the wind. Seeing people moving about the floor of the city connects to everyday life.



French window—a vertical opening that affords a view of the sky, the surrounding trees and buildings, as well as people on the ground plane.



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- 01. Barcelona, Spain. A windowsill bar allows restaurant guests to sit right on the street edge.
- 02. London, England. A mini bay window allows diners to sit in the street space in full daylight.
- 03. Corboda, Spain. The cage over the window makes for a soft interface allowing the window to be left open and the sounds and smells of inside can be shared with the street. A rollerblind and plants add extra layers.
- 04. Lucerne, Switzerland. A wide opening in a restaurant with a generous windowsill invites people to sit, bringing a little of the street life indoors.
- 05. Mexico City, Mexico. Big windows allow the café to spill out onto the street while creating a microspace around the small table. Next door, the whole frontage of the tailors workshop opens up to the street.
- 06. Tokyo, Japan. Windows at treetop height make taking the stairs in this store a pleasure.
- 07. Malmö, Sweden. A window at eye level for neighborly conversation.



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An Intuitive and Responsive Filter Between Inside and Out: Barcelona's Shuttered Windows

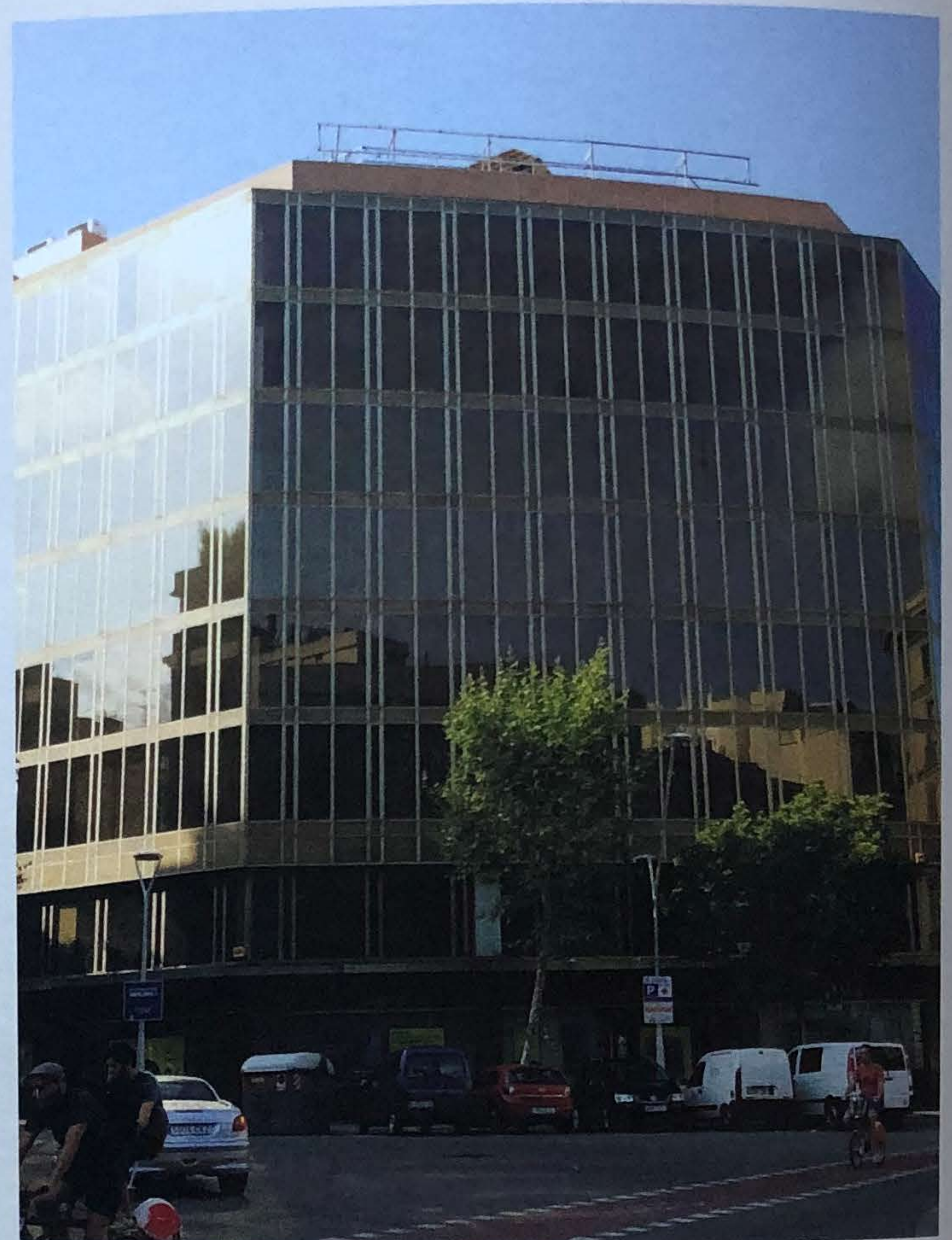


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The classic Barcelona window is a tall, vertical opening spanning from floor to ceiling, with a narrow balcony. The window is comprised of two basic elements: a pair of inner glass doors that either open inward or slide to the sides, and a pair of exterior shutters. When open, the inner glass doors take up no space in the room. The effect of opening them transforms the entire room into a virtual balcony, which affords the sublime feeling of living outside.

The fascinating thing about the Barcelona window is that it offers seemingly endless permutations of sheltering, shielding, and filtering the relationship between inside and outside.

On the outside, the two shutters fold in half to make smaller panels, and each of these smaller panels has two or three independent sets of louvres. These louvres



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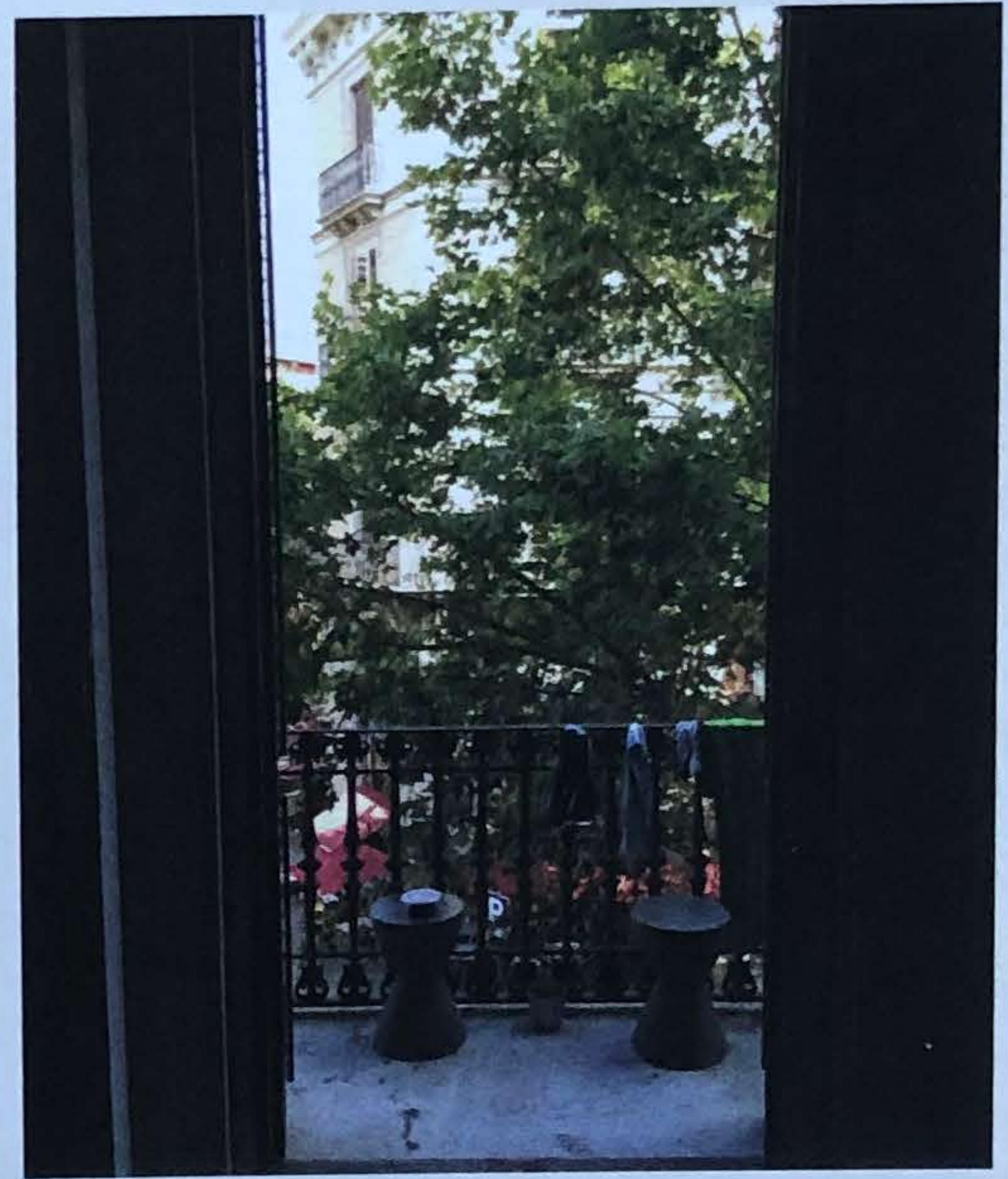
can be closed completely to make conventional solid shutters, or they can be angled upward, horizontally or downward. In this way, the louvred shutters make a highly complex and adaptable filter between inside and out, making it possible to adjust the acoustics, light, air, and visual relationship with the street.

The infinite combinations of the glass doors and shutters make it possible to maintain privacy while also bringing in light and ventilation. In this way, the window can be seen as an energy-saving device, providing both adjustable insulation and cooling without using any energy.

The Barcelona window is intuitive and easy to use. It responds immediately to the unique and precise circumstances and desires of the user.



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01./02. Two Barcelona corner buildings offer very different responses to climate. The traditional one, with shuttered windows, offers easy and endless permutations to the users inside. The modern one is inflexible and cannot respond to the needs of individuals.

03. Six different positions of the glass doors and shutters. The simple combination of windows and folding louvered shutters offers limitless permutations to filter light, air, and sound between inside and out.



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Contemporary interpretations of the shutter are highly responsive, low-tech solutions filtering light, air, and noise into the urban environment.

- 01. Barcelona, Spain
- 02. Lyon, France
- 03. Basel, Switzerland
- 04. Freiburg, Germany
- 05. Melbourne, Australia

A Practical and Flexible Filter: The Edinburgh Front Door



The traditional entrance door in Edinburgh, Scotland, is a combination of a heavy outside storm door and a lighter interior glass door. There is a vestibule or mudroom space created between the two that serves as a complex climatic filter, which can respond to the diverse daily needs of the users. Having a thermal buffer of two doors means there is better insulation and less heat loss when coming and going in cold weather.

The vestibule space can also accommodate outdoor clothing and equipment such as raincoats, rubber boots, and umbrellas typically used in rainy regions.

A fanlight above the storm door lets natural light into the hallway when the storm door is closed. The inner glass door may have patterned or opaque glass

or even a curtain for privacy. The two doors, a lamp, and perhaps the curtain layer, provide different levels of connectivity to the street. Various combinations of openings by the door and curtains, and whether the light is on or off, act as a code for behavior on the street. Both storm door and glass door can be fully open or fully closed, or slightly ajar, and locked or unlocked, creating multiple combinations. These permutations can communicate the level of openness to sociability.

The expression of openness can also increase the perception of security, as a street, especially at night, can feel safer if lights are on and doors are open. In the same way, the lit vestibule can give the illusion of people being at home, potentially reducing the likelihood of burglary.

The Immediate Outside

The next step from the doors and windows includes the supports and spaces that allow you to spend time on the building edge, immediately outside. At ground level, this is about the space immediately around entrances, as well as useable hybrid spaces along the outside edge of the building such as porches, verandas, and arcades. On the upper floors, this is about the balconies, loggias, decks, and roof terraces.

One of the simplest details that encourages life to take place on the edge of the building is a roof projected over the edge zone. The classic example is the traditional Japanese house, with its overhanging eaves. This detail makes it possible to linger between just inside and just outside. With some kind of roof or overhang, you can spend time outdoors when it's raining or in unpredictable weather. You don't have to rush in or rush out. You can have a more relaxed relationship with the weather. It also allows you to leave stuff outside, such as furniture, equipment, or clothes, without them getting wet. This may sound banal in its simplicity, but this kind of convenience makes the living inside-outside, in tune with the weather, extremely easy.

The edge that exists right outside of a building at ground level, near or around an entrance door gives you a sliver of private space. This brings public and private life very close, and promotes encounters that can create community. Sometimes, there is no private edge at all, yet somehow, it can be inhabited or colonized with pioneering elements such as bravely placed potted plants or a temporary inhabitation, such as taking a chair outside while you need it.

01. Tokyo, Japan. 15-30 cm (approximately 6-12 inches) is enough to make a three-dimensional garden in this Tokyo edge zone. Note the sliding door and bamboo screen in addition to the bamboo roller blind and hanging plants that, when combined, make for a highly individualized and highly responsive filter between inside and out.

02. Sluseholmen, Copenhagen, Denmark. 90-150 cm (35-60 inches) gives room for a pram outside, or a table and chairs as well as planting. The discrete division creates a protected wall, and the change in surface marks the change from private to public.



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10-15 cm (4-6 inches)

In as little as 10-15 cm (approximately 4-6 inches) along the edge of a building, there is space for a row of plant pots, an ashtray to be left out, or a place for a cat to perch undisturbed.



15-50 cm (6-20 inches)

With 15-50 cm (approximately 6-20 inches), there is room for bigger potted plants, a parked bike, and perhaps a narrow bench.



50-90 cm (20-35 inches)

At 50-90 cm (20-35 inches), there may be space for a little awning or small overhang. This offers protection from the elements and gives you a little buffer while coming and going. This edge zone might be enough that you leave the door ajar, and perhaps you leave a little chair outside.



90-150 cm (35-60 inches)

At 90-150 cm (35-60 inches), you can have a planting zone, a small table and a couple of chairs, space to park the pram or stroller sideways, or a couple of bikes.



150-180 cm (60-70 inches)

At 150-180 cm (60-70 inches), you may be able to have a table that you can sit fully around, or a chaise lounge. The more supports to comfort you can fit in, the more likely you are to spend time outdoors and socialize with your neighbors.

Simple Greening

The building edge is also a place where nature can flourish. Flora and fauna can thrive in an urban context when microclimates support and protect their ability to grow. Without getting involved in complicated vertical greening systems, simple measures and details like pots or planters, wires, trellises and simple metal or wooden frameworks can allow conventional buildings to support large amounts of greenery.

Spaces like balconies and outside stairs can be an ideal place for greenery. This adds to the green space of a city, which enhances our sensory experience. Instead of only seeing the gray of concrete and the sounds of people and traffic, we see green and follow the leaves as they change with the seasons, and hear the sounds of the leaves in the breeze. These elements of nature are important for our well-being. This modest green layer provides habitats for insects and birds and supports the local ecosystem. This living layer not only adds the beauty of nature to buildings, but it also helps to insulate and cool the building, purify city air, buffer noise, offer privacy, and reduce the heat-island effect.

Starting at the ground, the process of greening can begin with plantings along the outer edge of a building. In Lund, Sweden, the loosely laid cobblestones along the edge of sidewalks give residents direct access to the earth beneath, allowing planting of the street edge. This simple detail gives the residents the opportunity to cultivate plants right outside their homes, which gives something back to passersby on the street while creating a subtle buffer between the street and the building. This street-edge planting can be supported with small, metal protective frames or wires to facilitate growth up the facade of the building. The permeable surface of the loose cobbles also helps to slowly filter rainwater, so often the building-edge plants don't need to be watered. This spontaneous and modest planting along the street edge also acts as a reminder that there is fertile earth beneath the sidewalk.

The simplest of details can allow vegetation to flourish in the urban environment.

01./02. Lund, Sweden. By removing the loose-laid cobbles, residents can plant on the street edge.

03. Freiburg, Germany. Simple wires on a concrete facade allow a second skin of vegetation to grow.

04./05. Paris, France. Giant plant pots lining walk-around balconies.

06. Stockholm, Sweden. Ivy covering the front of an entire building.

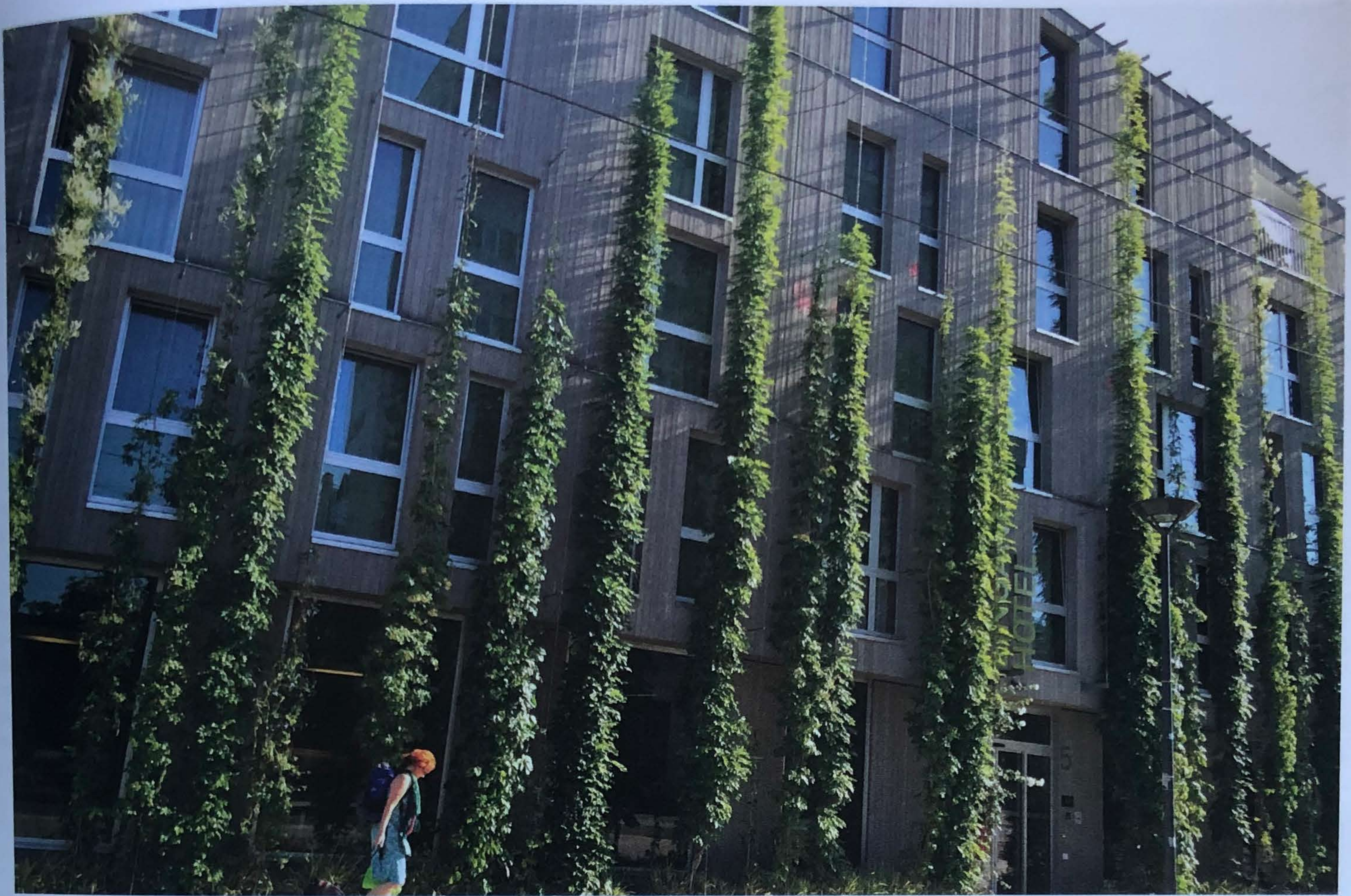
07. Freiburg, Germany. Greenery on the metal framework of loggias.



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Porches, Verandas, and Arcades

Porches and verandas are very useful spaces, conveniently located just outside the door, with their own microclimates. The porch is an outdoor room, dimensioned for social activity. It is an intermediate space that acts as a vital buffer between the private realm of the home and the public realm of the street. Porches and verandas make relatively inexpensive extra rooms, which is especially significant for smaller dwellings. They create social situations and opportunities to engage with people on the street. There is something about the clarity of territories, which makes both the porch resident and the passerby feel very comfortable engaging with each other. The classic front porch in North America is an extremely important cultural phenomenon for enabling neighborly behavior.

The scaled-up and public version of the porch or the veranda is the arcade or colonnade. Apart from giving extra sidewalk space in higher-density urban environments, this simple architectural typology creates protected outdoor space for moving and staying. The arcade provides a protected space in which both formal and informal activities can take place. The arcade is equally useful for shade on hot, sunny days and rain and wind protection on stormy days. Most of all, the arcade is intuitive to use for promoting all kinds of sociability, finding the sweet spot of personal comfort, stepping in and out, leaning on the columns.

01. Akaroa, New Zealand. A simple roof over the sidewalk, in front of main street businesses, offers shade from the sun and shelter from the rain, allows goods to be displayed outside, and encourages passersby to linger.

02./03. Sydney and Melbourne, Australia. Supermarkets open up to make a soft inside-outside zone. Putting a café/bar function right at the front of the store, in this attractive space, invites people to linger rather than rush away, which is usually the case when grocery shopping.

04./05. São Paulo, Brazil. Two views of a café "porch" space, inside-out and outside-in. The glazed box of the terrace merges with the street tree and the sidewalk. A moveable bench makes a wall toward the sidewalk, but at the same time, also creates an ambiguous soft edge with the small tables and the customers hanging over the edge.



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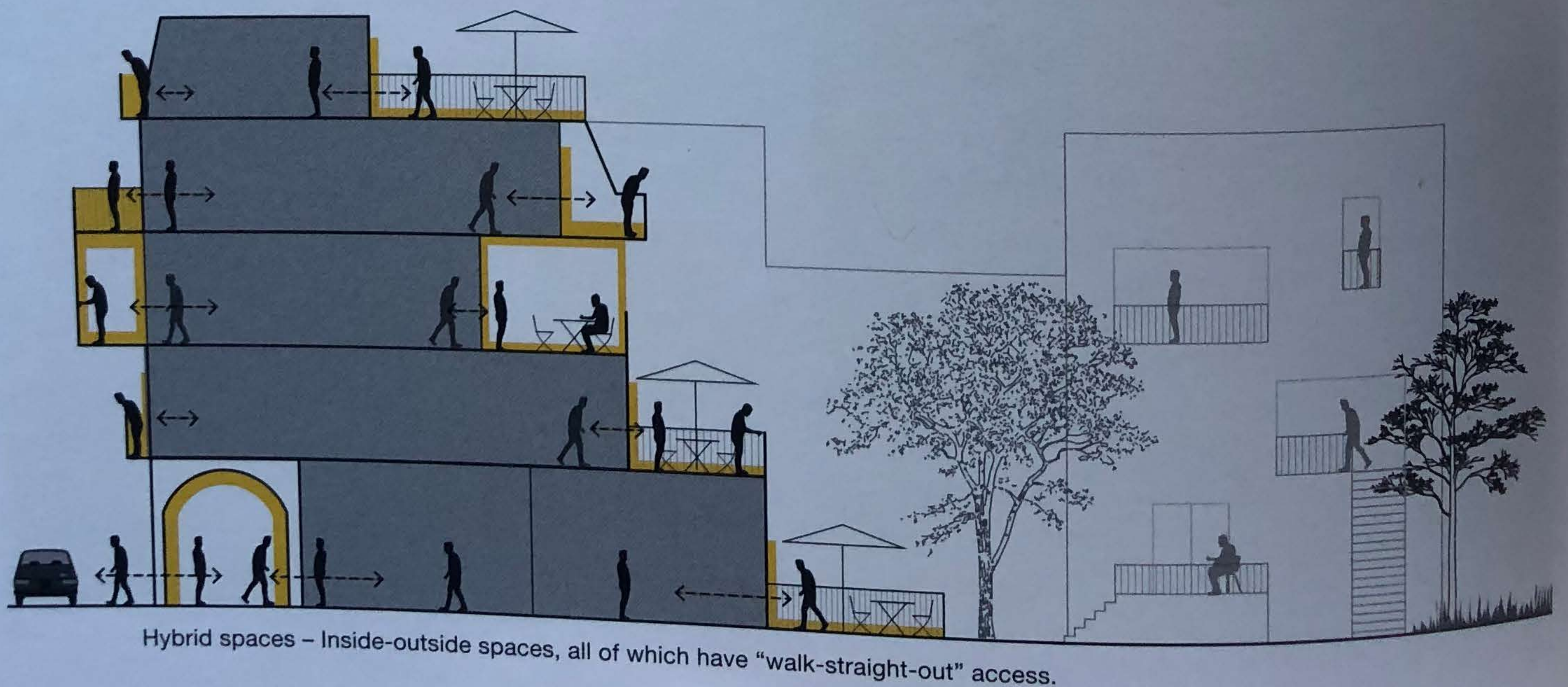
Balconies, Loggias, and Terraces

The convenience of the ground-floor hybrid spaces like porches and verandas is the relationship with indoor rooms that allows you to step straight out and step back in again. This convenience is also possible on upper floors with terraces, balconies, decks, loggias, and roof gardens. The immediacy and ease of access is vital to increase the likelihood of their use. Since there is much more security on upper floors, it is possible to leave possessions outside and leave doors and windows open (or at least unlocked). This is important for ventilation, convenient for pets and for children's play, and makes for more spontaneity and the feeling of freedom to move between inside and outside. The upstairs outdoor rooms also have greater privacy than their ground-floor counterparts and may invite more intimate dress codes and behaviors, such as sunbathing and hanging washing to dry.

Another important characteristic of successful balcony-type spaces is a degree of enclosure to increase privacy and get shelter from the wind. By being recessed into the volume of the building or protected with screens, a spatial complexity is introduced, enabling this kind of outside space to have a considerably longer useful season as well as a greater range of uses. Shutters, louvres, sliding doors and screens can help adapt such spaces to be more in tune with the exact needs of the user at different times.

However, it is also worthy of note that public or shared outdoor spaces on the upper floors are often considerably less useful, perhaps because of the lack of buffer between the public and the private, as well as an ambiguity of who the space belongs to.

01. Freiburg, Germany. Loggias with sliding, wooden shutters.
02. Lyon, France. An extra, habitable layer on building, with a glazed space with windows that both can slide as well as be opened with louvres.
03. Malmö, Sweden. Glazed balconies with folding, frameless glass panels allow a range of permutations from winter garden to fully open balcony.
04. Malmö, Sweden. A combination of bay windows and balconies creates multiple options for spending time on the building edge.
- 05./06. Lyon, France. Loggias with folding, louvred shutters offer multiple permutations for open and closed.

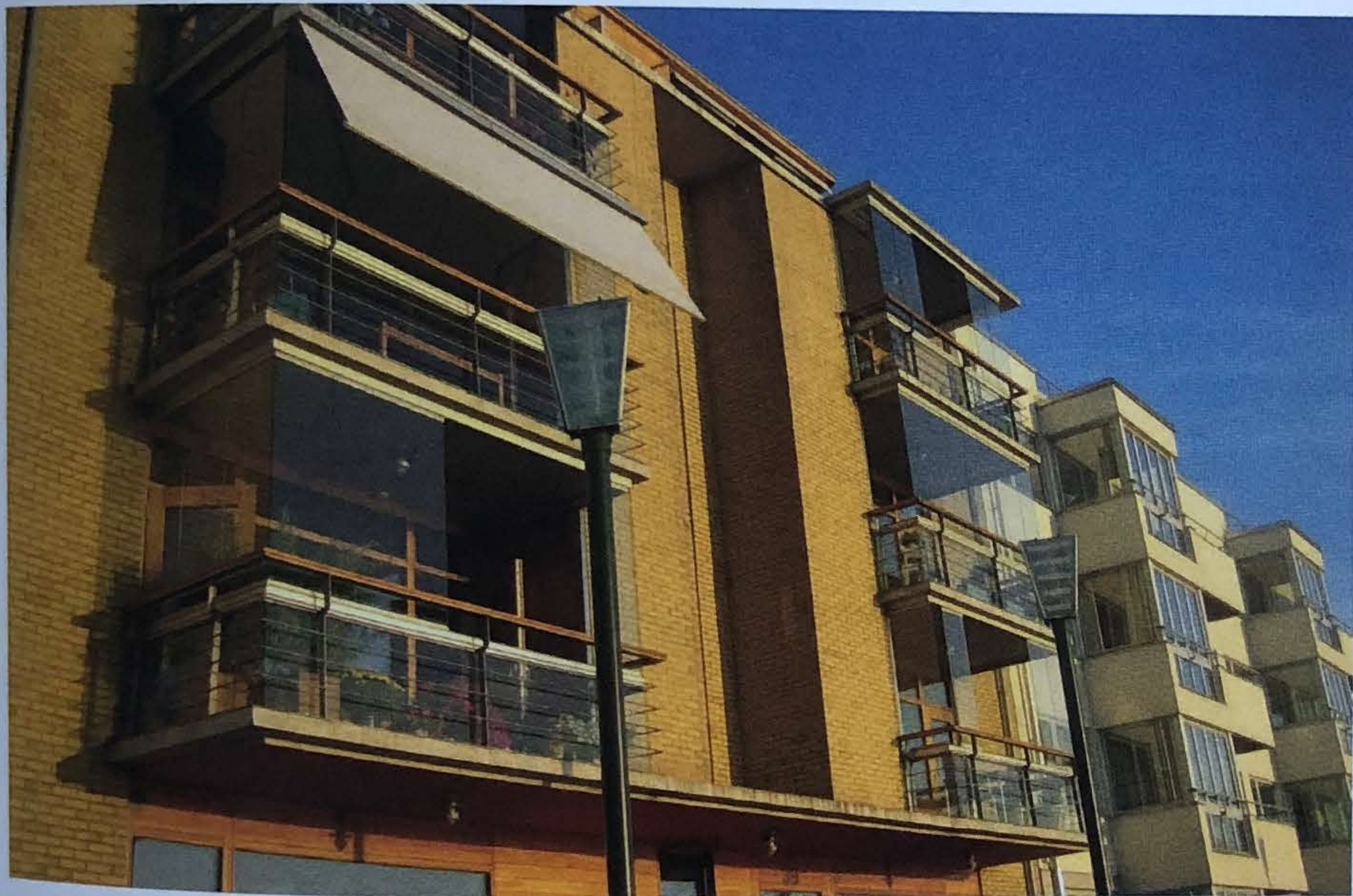




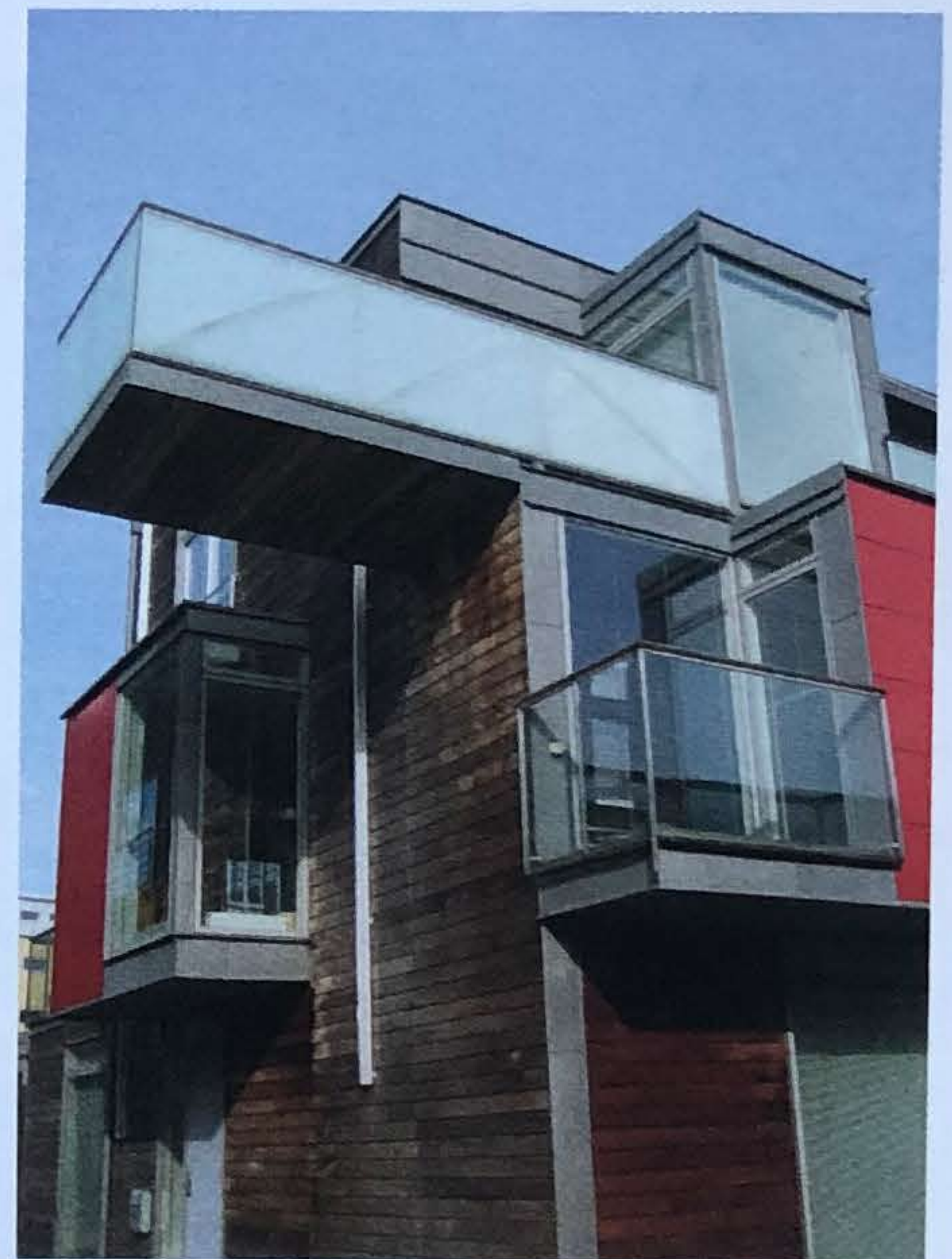
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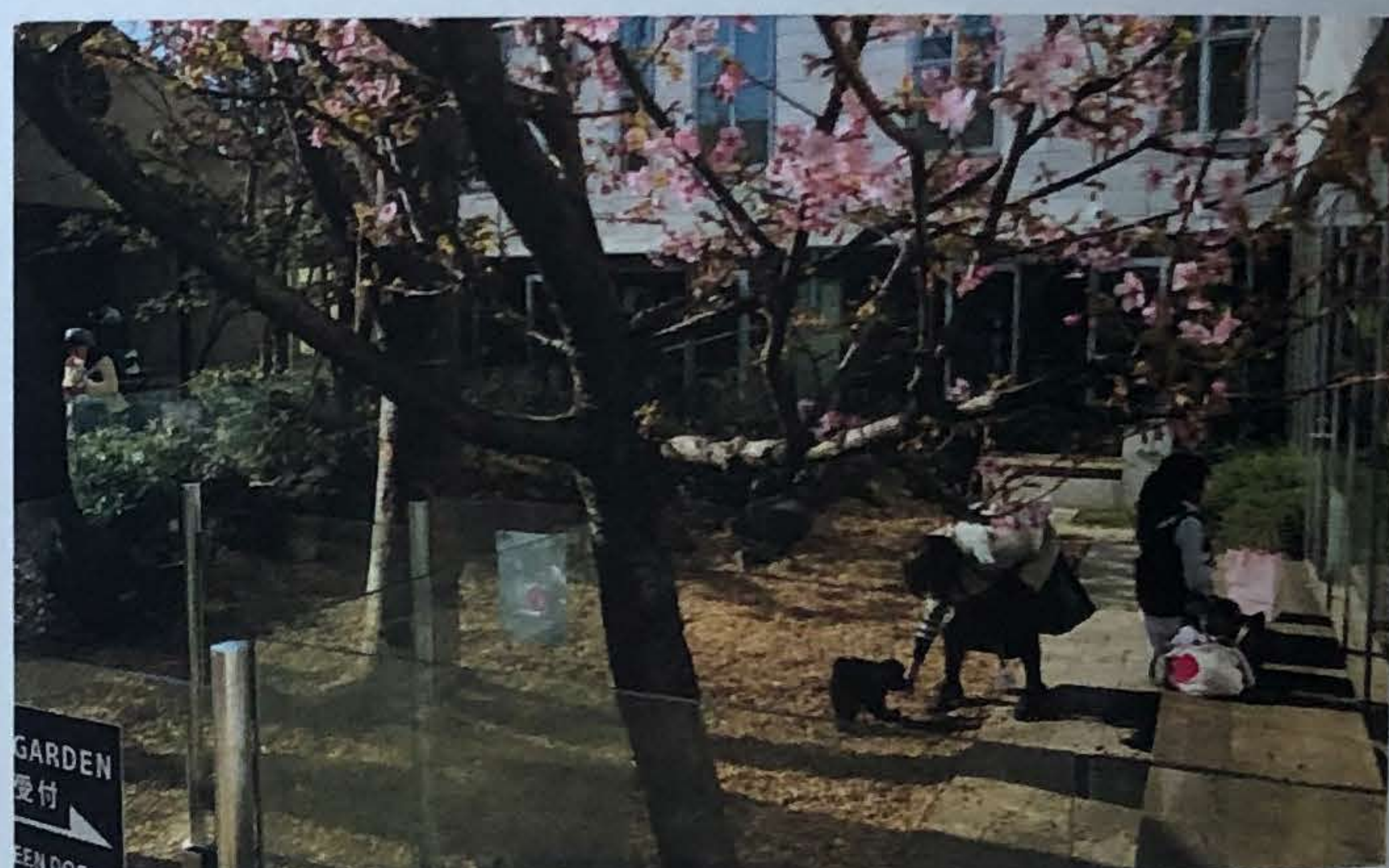


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Maximizing the Inside-Outside-Edge Experience: T-Site, Daikenyama, Tokyo, Japan



T-site is the flagship for the Tsutaya bookshop chain in the chic Daikanyama neighborhood of Tokyo. Conceived as a “library in the woods,” this innovative retail establishment looks like a small village, with low-rise pavilion buildings set in a landscaped garden.

Rather than collecting everything inside in one interior space, there are nine pavilions. The bookshop takes up three separate pavilions, each with multiple entrances, where constant movement inside and outside is actively encouraged. Thanks to large windows, which are not blocked with shop fittings or shelves, there is plenty of natural light, accentuating the changing seasons. The bookshop boasts a café and a cocktail bar and is open until 2:00 am.

The other six pavilions house distinctly different activities: a specialist camera shop, an educational

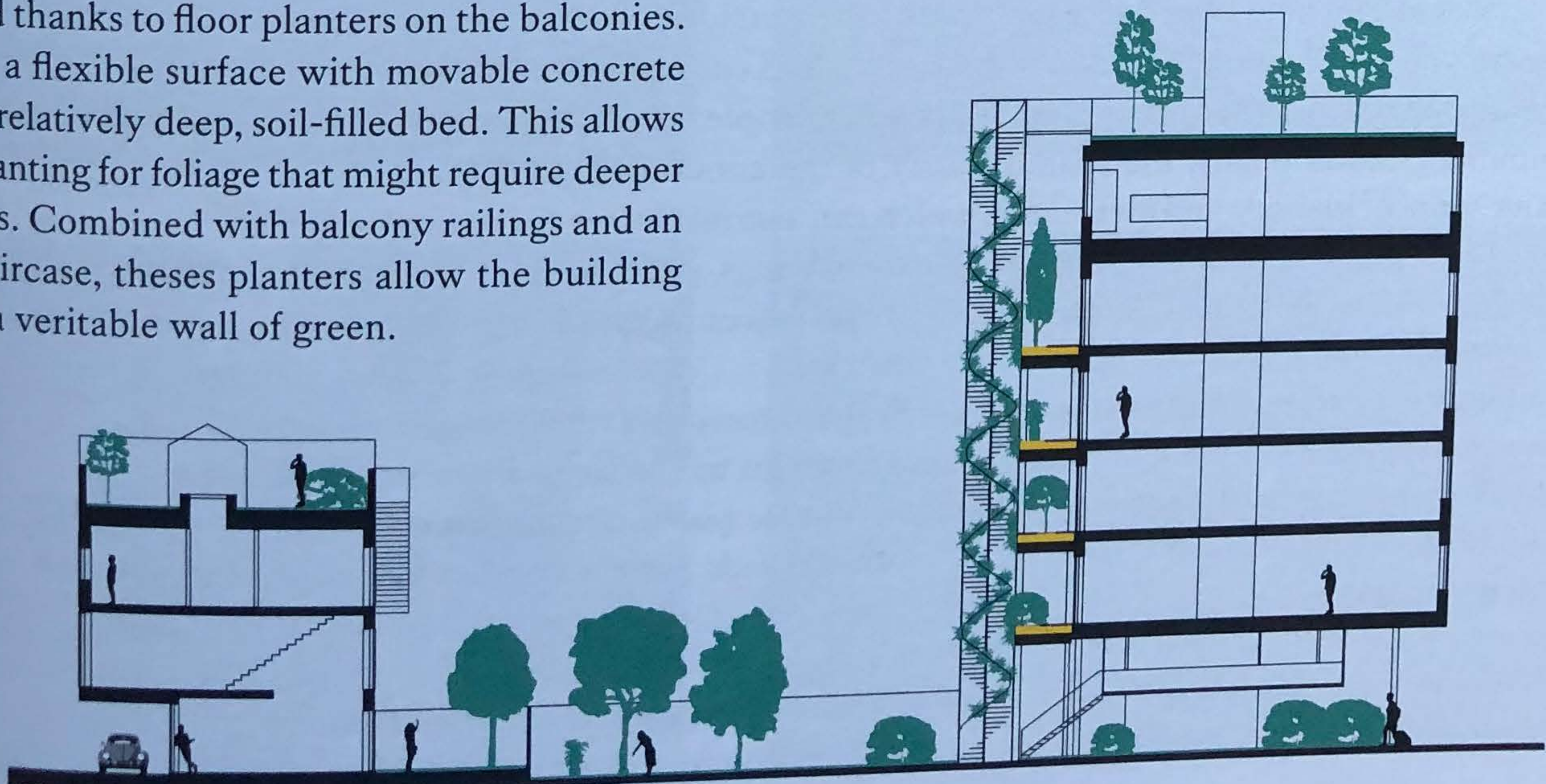
toy shop, an electric-bike showroom, a pet-service provider, a flexible gallery/showroom space for temporary events, and a bar/restaurant. The bar/restaurant pavilion is divided in smaller sections and has important covered inside-outside space to allow more time to be spent outdoors. The in-between spaces are rich in vegetation. There is a rock garden that invites play and a dog park that has as many spectators as users. The different uses invite people well beyond the usual bookshop customers.

Daikenyama T-site is much more than a bookshop. It is an outdoor destination, a mini-environment actively inviting life between buildings, encouraging people to spend more time outdoors whatever the weather, to encounter and experience difference, and to better connect to people, place, and planet.

Maximizing Vegetation in 3D: Urbana Villor, Malmö, Sweden



Urbana Villor (Urban Villas) is a Baugemeinschaft (building cooperative). The apartment building has been transformed thanks to floor planters on the balconies. These offer a flexible surface with movable concrete slabs over a relatively deep, soil-filled bed. This allows for dense planting for foliage that might require deeper root systems. Combined with balcony railings and an external staircase, these planters allow the building to support a veritable wall of green.



Maximizing Vegetation in 3D

Building Your Own Weather

Different regions of the world have different climates and weather patterns. These make for different relationships to the outside, with different cultures and behaviors. In the north of Europe, catching the sun and finding protection from prevailing winds are perhaps the most important considerations. In the south of Europe, it might be about finding shade. In climates with greater seasonal variation, a combination of spatial qualities might be desirable. The soft-city approach is about finding simple solutions to moderate the climate, and to reduce the extremes of the weather, so people can comfortably spend more time outdoors.

Protected from wind, and sometimes from the sun, spaces between buildings have their own microclimate, which is sometimes remarkably different from the surrounding climate. The enclosed space can make a place more inhabitable, allowing more activities to take place outdoors over longer time periods. This is similar to how a rock pool offers protection to allow more life, or how tiny plants thrive in the spaces between the cobbles. More things grow inside a walled garden than on an open plain. This notion of protection can be scaled up in the city, and the urban block can be seen as a big rock pool or a walled garden.

Although the urban courtyard is often smaller in area than the vast, open spaces between residential towers and slabs, it can be argued that the contained outdoor spaces within traditional urban blocks can be more valuable. These dense spaces can often be more biodynamically rich and diverse. The milder microclimate of the enclosed block enables increased use of the outside space, while spending more time outdoors supports sense of ownership and control over a space, as well as increasing the likelihood of encounters with other people, which, in turn, promotes community. Additionally, the spatial clarity of the contained space makes for a clearer sense of identity and ownership, which can also result in it being used more. The open green spaces around many high-rise buildings, point and slab blocks that are often windswept and chilly, are less desirable places to spend time in.

At a slightly larger scale, the weather can be improved through a whole neighborhood with the layout or grouping of blocks. It is important to ensure that not only the private realms of the inner courtyards, but also the public spaces between the blocks, the streets and squares of the neighborhoods have a comfortable and pleasant microclimate.

There are lessons from old villages, towns, and cities, especially medieval ones, where asymmetrical layouts indicate that human comfort was prioritized over a

01. **Malmö, Sweden.** The sunny corner between medium-height buildings makes an attractive place to spend time outdoors, both on the private balconies and in the public space.
02. **Findhorn, Scotland.** Low rise, high density coastal cottages with pitched roofs create a more pleasant micro climate in the in-between spaces.
03. **Copenhagen, Denmark.** A suntrap in the corner of a courtyard.
04. **Lucerne, Switzerland.** Traditional, asymmetrical street layouts with narrow dimensions make for a better microclimate for walking and spending time outdoors.
05. **Breitenrain, Berne, Switzerland.** The wind-protected, sunny microclimate of the courtyard allows many options for spending time outdoors, both on balconies and loggias as well as on the ground, while at the same time allowing vegetation to flourish.



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neat pattern to the plan. Historically, many more aspects of life took place outdoors, and the microclimate of spaces outside was very important. Both in hot and cold climates, vernacular building favored smaller spaces and narrower streets. Streets in northern Europe, such as those in Stockholm's old town, have similar proportions to those found in Naples, Italy, in southern Europe, where one step can take you into the sunshine and one step can take you back into the shade. In a similar way, both hot and cold countries favored courtyard typologies. The common factors seems to be scale and enclosure, where smaller spaces and protected spaces offered a greater range of use.

In northern Europe, streets might be angled, with the wider space allowing for more sun exposure. The narrower part would protect the user from excess wind. Side streets might not be aligned with each other to stop the wind from howling through. What is fascinating when looking at old city plans, especially the ones we describe as "organic," is the response to climate and topography and the diversity of places created. Superficially messy, their apparent disorder is, in fact, a richer, more subtle order that responds to climate and the diverse needs of a society that spent more time outdoors.

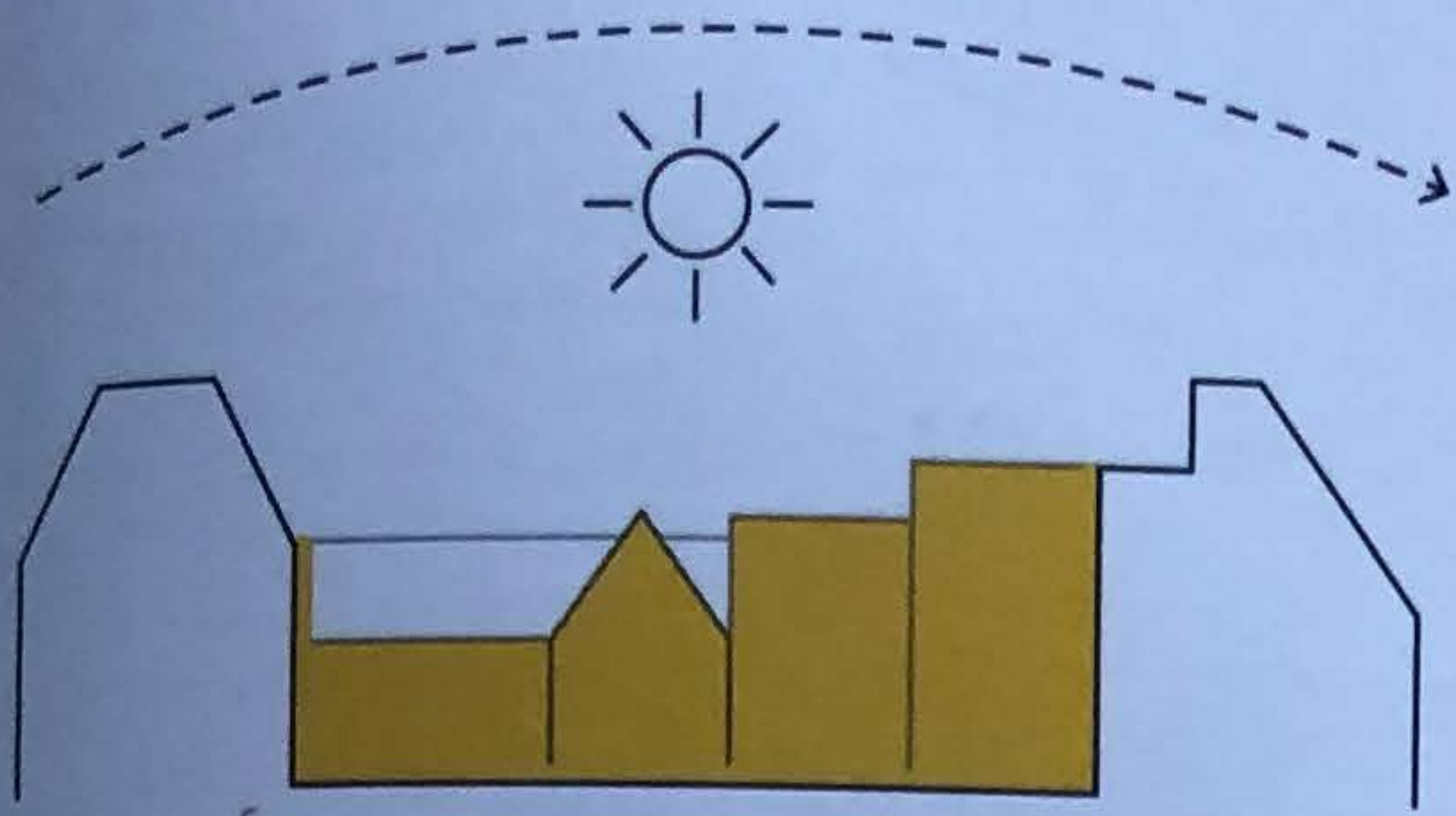
Low- and medium-rise buildings protect the outdoor spaces from the wind and (depending on the local climate) the sun, making the spaces more habitable, as well as creating protected pedestrian routes thanks to a continuous edge. Also, lower buildings can be more easily ventilated naturally, resulting in health benefits for the people who use the building, energy savings for the building user or operator, and environmental benefits for the planet.

A sloping or pitched roof can be important in creating better microclimates. Sloping roofs have an aerodynamic shape that reduces or even eliminates turbulence in the spaces between the buildings. This makes outside spaces more pleasant because strong, gusty winds and colder, more-chilling winds are eliminated. This also makes it easier to have windows open for natural ventilation. A sloped roof allows the sun to warm and naturally light the street and courtyard spaces. From the ground, a sloping roof offers a bigger view of the sky, giving a vital sense of space and openness in the otherwise built-up environment. Perhaps most obviously, the sloping shape performs better than a flat roof, using gravity to let precipitation run off.

Smaller volumes such as outbuildings and small extensions help create even smaller climatic pockets. Working with smaller volumes also offers greater flexibility, allowing for very local adaptation to climatic requirements.

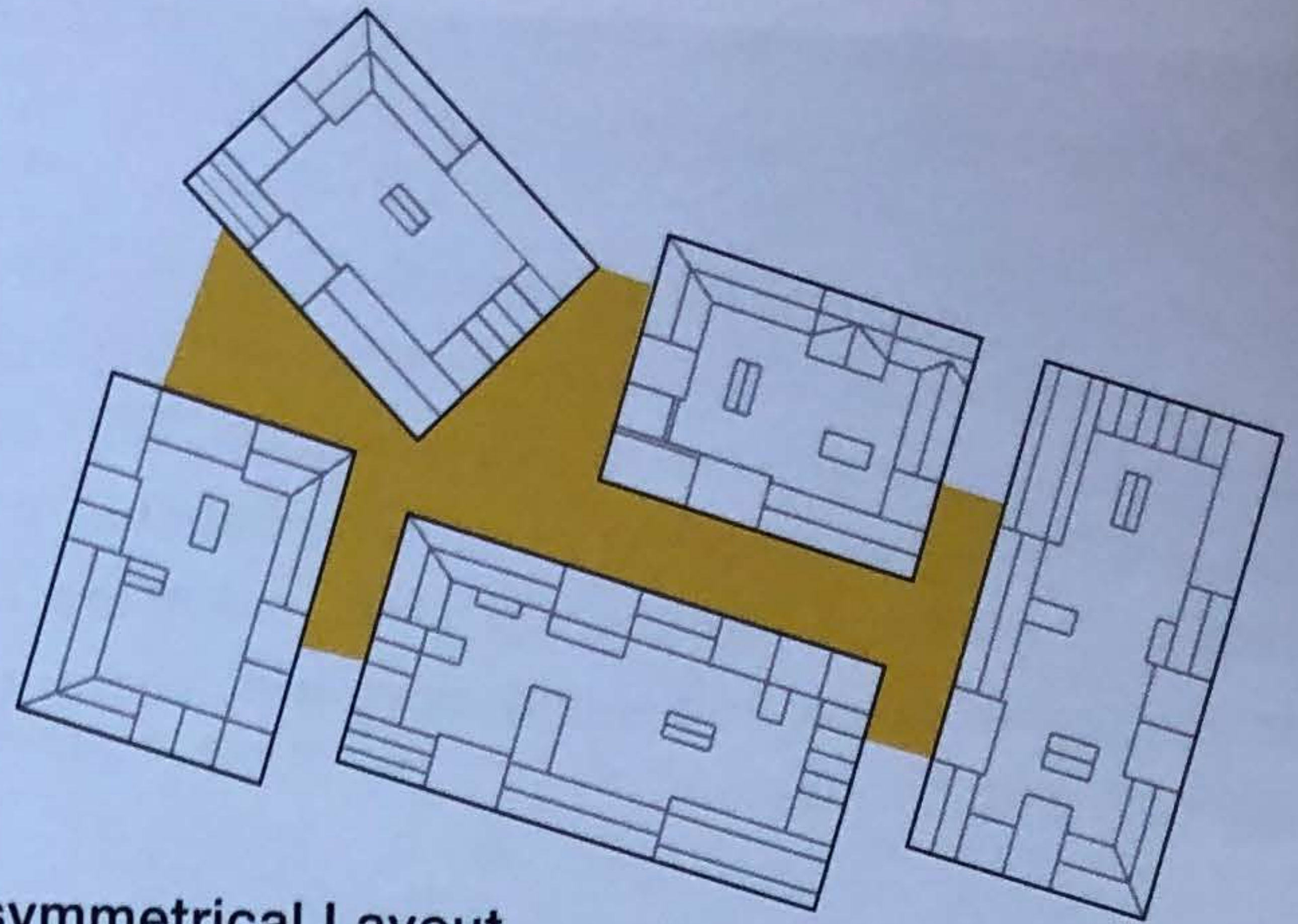
These simple aspects—enclosure, asymmetrical layout, aerodynamic roof shape and smaller built volumes—can drastically improve the microclimate of spaces between buildings, allowing more everyday life to happen outdoors.

Within the built environment, there are many examples of how urban form has created more-comfortable microclimates. The south-facing side of Lund Cathedral in Lund, Sweden, creates just such a pocket of microclimate. The sunny edge of the building and the wind protection from the church's buttresses means that the



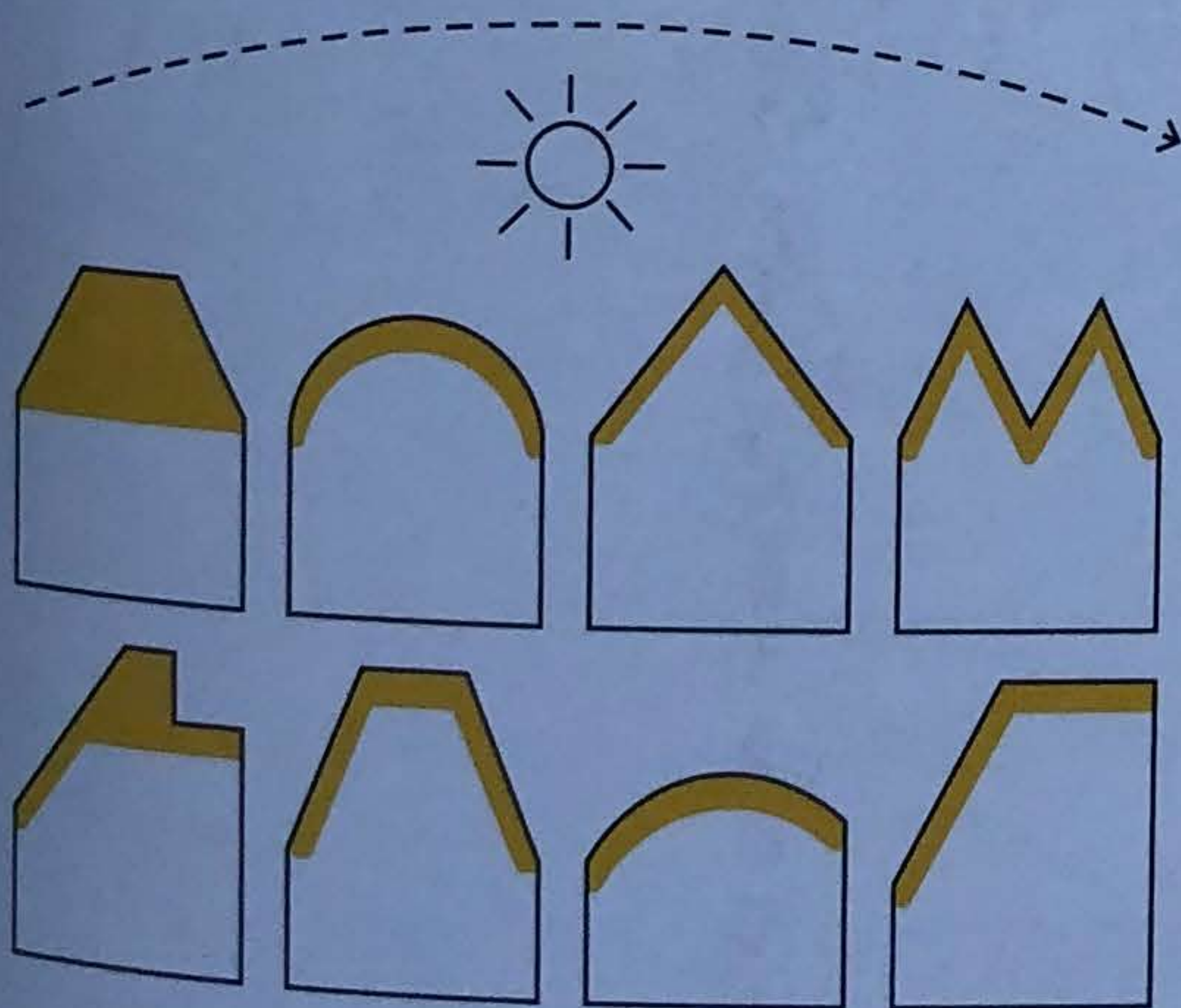
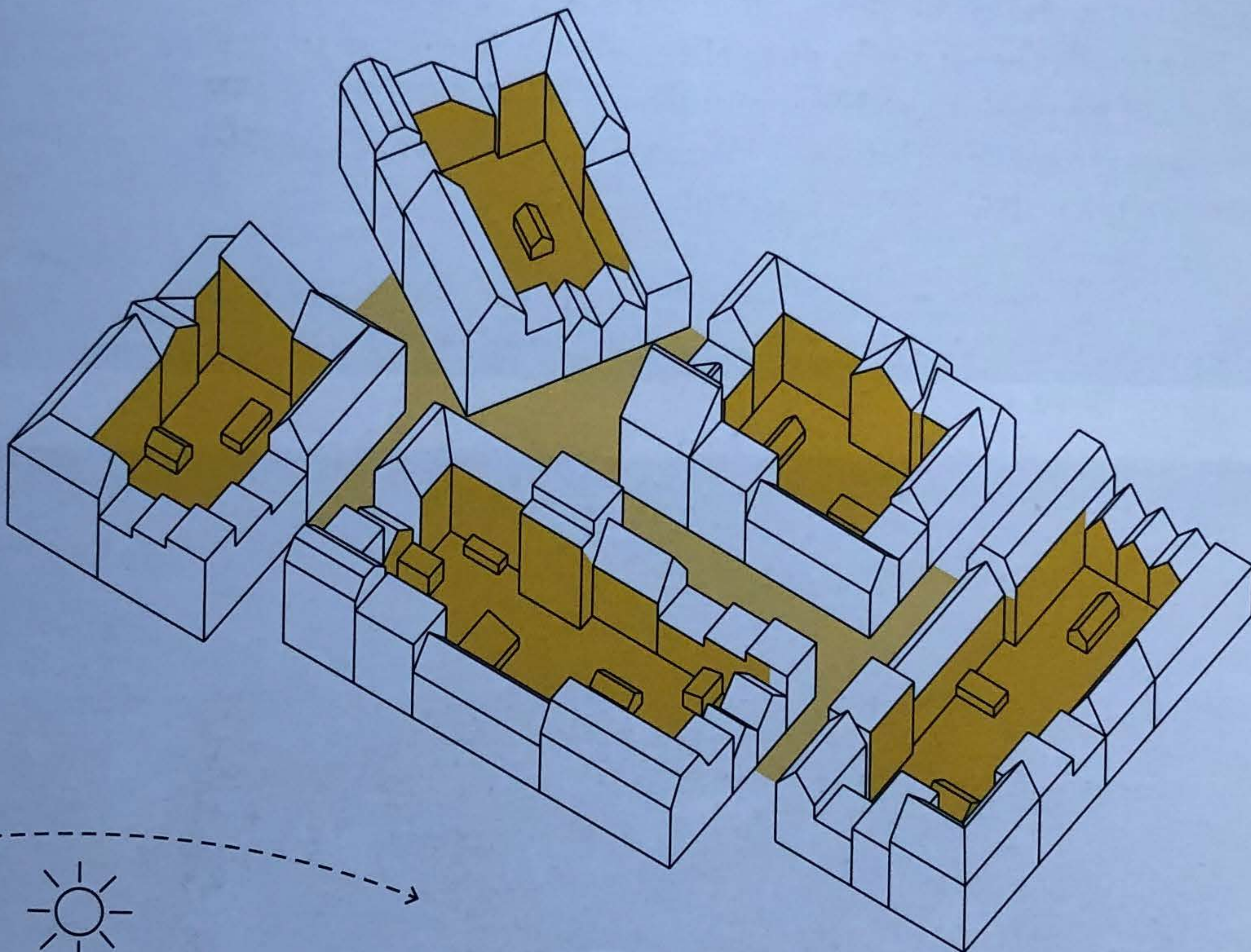
Enclosure

Enclosed spaces of the courtyards as well as consistent lower building heights create protection from winds, while lower heights enable the sun to penetrate.



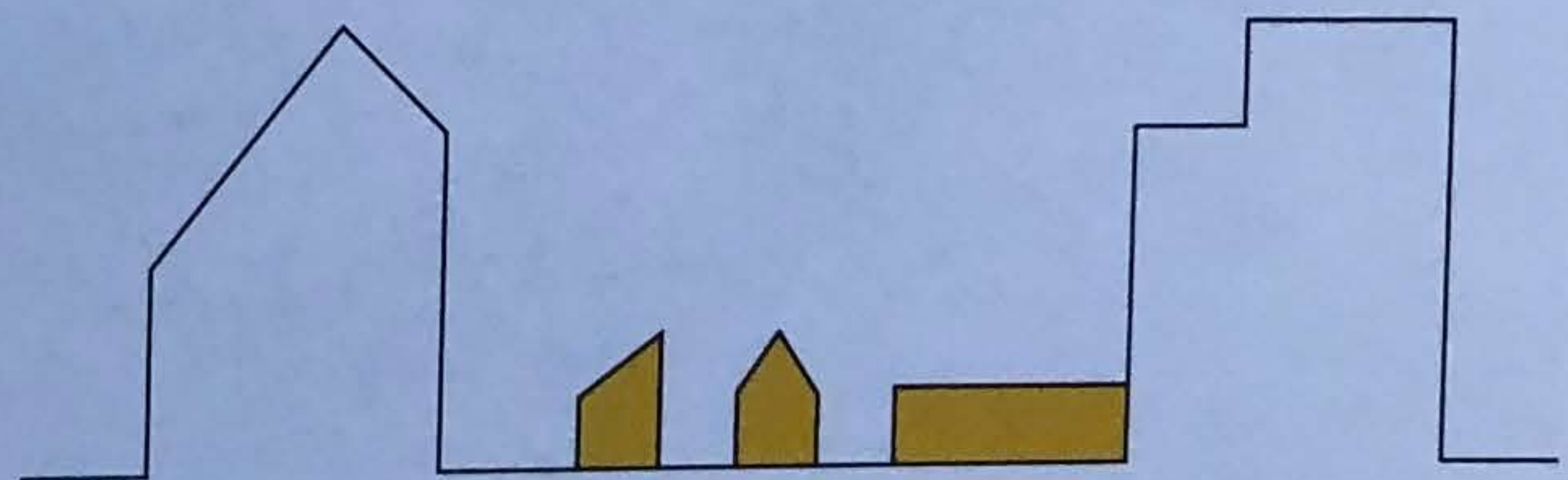
Asymmetrical Layout

An asymmetrical layout creates opportunities for stopping winds and creates spaces with a pleasant microclimate. At the same time, the variation creates a more interesting experience.



Sloping Roofs

The aerodynamic shape of sloping roofs allows the sun to access the street and courtyard as well as divert, slow, or stop winds.



Smaller Volumes

Outbuildings and smaller volumes help create good local microclimate.

heavy stone walls retain the heat and stay dry, and people can lean back and enjoy sitting outside on the long benches all year round.

Nearby, on the northeast corner of Stortorget, Lund's main square, people are able to sit outside even when there is snow on the ground because it is sheltered from the wind and catches the sun all afternoon. This corner is so popular that the city council has replaced the conventional benches with more comfortable reclined seating, a gesture to improve everyday, urban life. As people become more relaxed in the public space, and spend more time there, there are more opportunities to interact with strangers.

In Nyhavn, a harbor-side street in Copenhagen, the combination of the southwest facing waterfront and a wind-protected pocket has made for one of the most popular outdoor spaces in the city. Thoughtful organization allows commercial opportunity and public life to coexist. The street is organized into areas for walking and staying, commercial zones with tables and chairs under big umbrellas and occasionally outdoor heaters, and a strip of public space on the water's edge. Thanks to a diversity of staying and sitting opportunities, many different people can gather and spend time together in the same space, enjoying the natural aspects of evening sunshine on the water.

01. Nyhavn, Copenhagen, Denmark. The sunny side of Nyhavn has the best microclimatic conditions, used for both commercial seating under the parasols and informal seating along the water's edge.

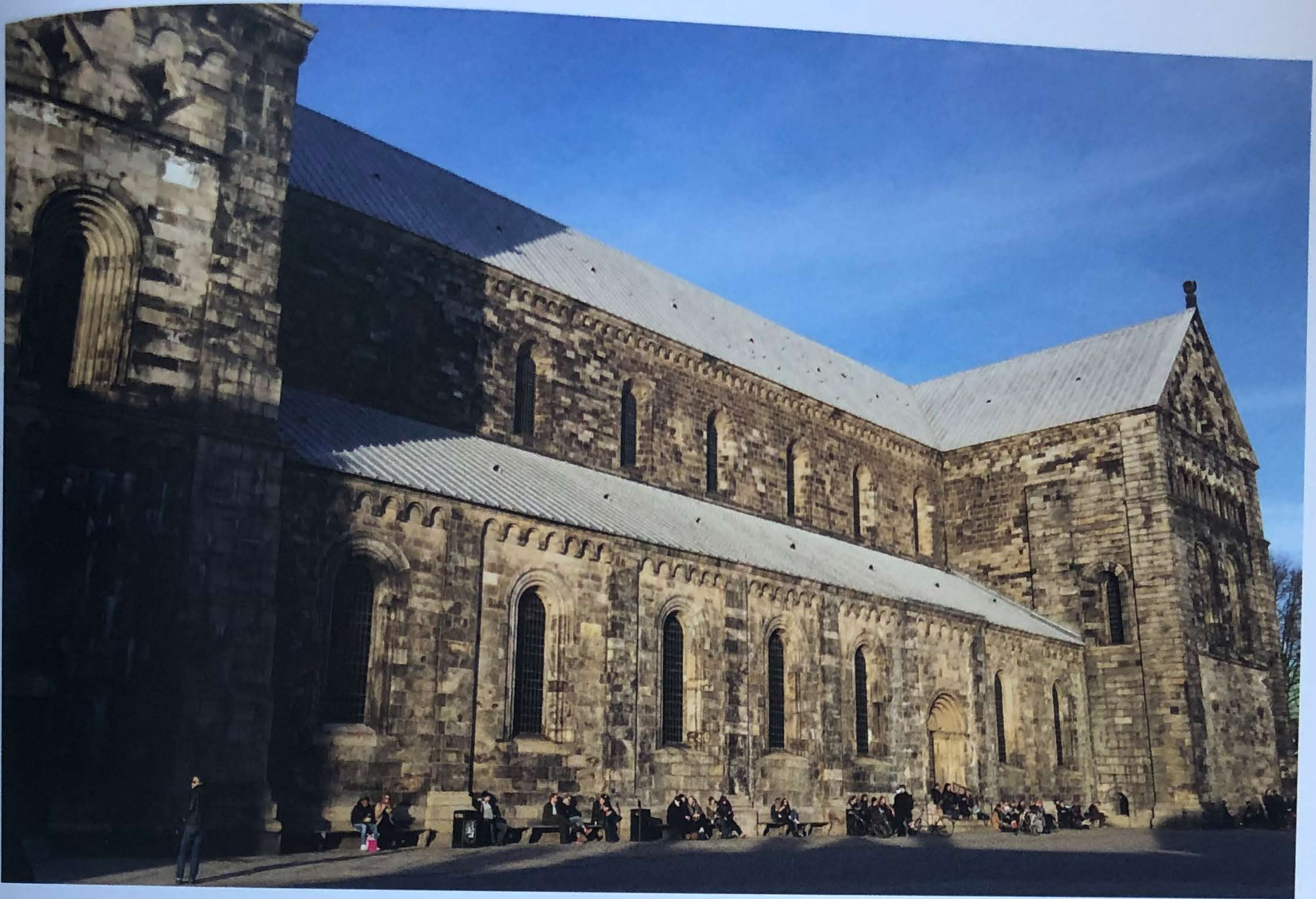
02. Lund Cathedral, Sweden. Even in winter (note the long shadows), the south-facing edge of the cathedral makes for a pleasant place to sit outdoors.

03./04. Lund Cathedral, Sweden. The addition of small, movable stools/tables increases personal comfort and allows a greater range of staying activities to take place.

05./06. Stortorget Lund, Sweden. The northeast corner of the main square in Lund makes a sun trap and is a popular place to sit in summer and winter (note the snow on the ground).



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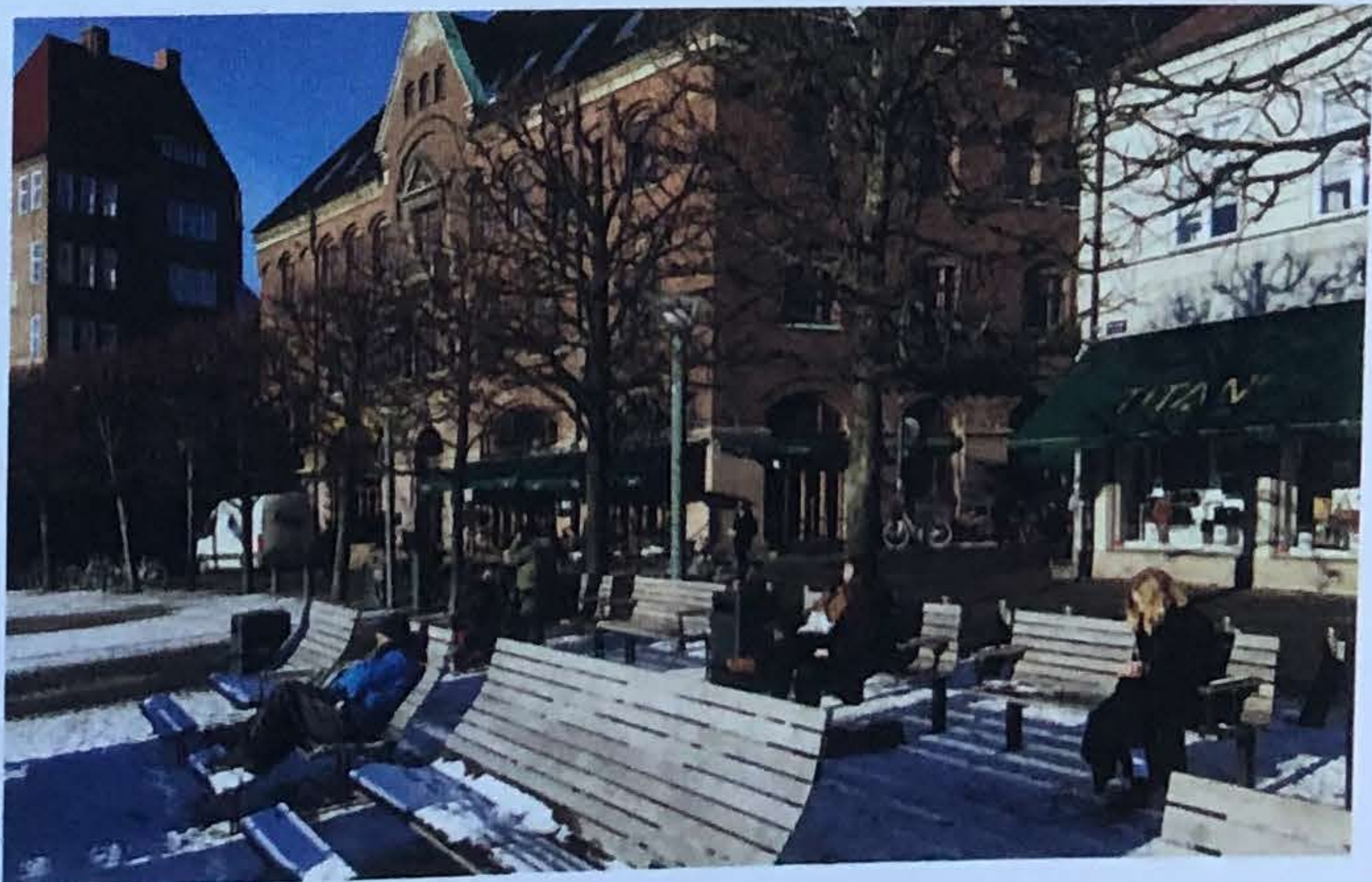
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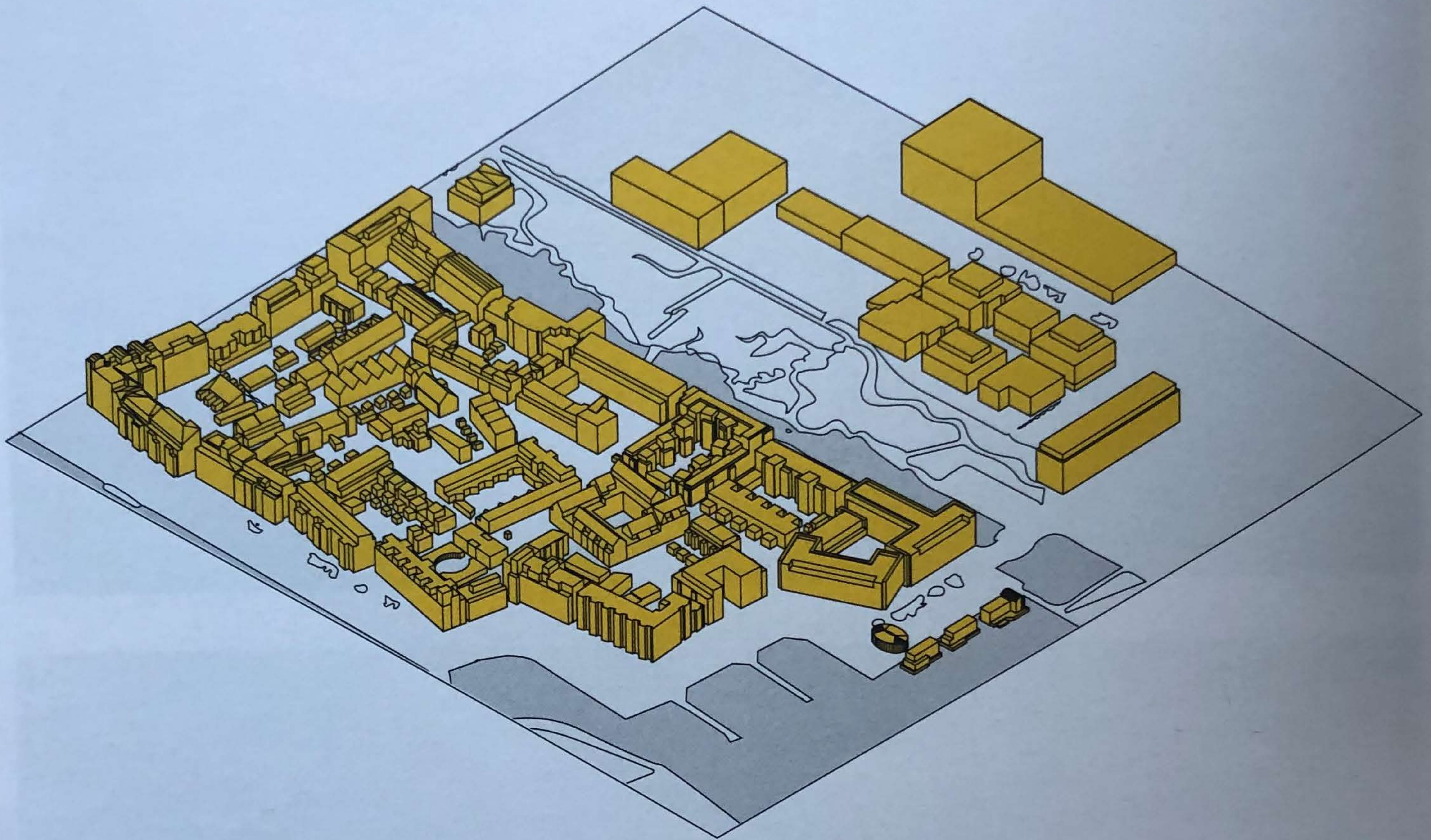


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06.

Creating a Comfortable Microclimate in a New Development: Bo01, Malmö, Sweden



Build Density

Total area:	400 x 400 m / 1,300 x 1,300 feet
Total floor area:	150,000 m ² /1,615,000 sq. ft
Housing floor area (gross):	37,000 m ² /398,000 sq. ft
Gross floor area ratio:	0.9
Site coverage ratio:	0.23

Ground Access

Build area with ground-floor access:	39%
Build area within ground-floor walking distance (4th floor or below):	83%

Bo01

As the name suggests, Bo01 was developed as a housing exhibition in 2001. Sweden has a long tradition of housing exhibitions with the goal of showcasing new technological developments, experiments, lifestyle trends, and future visions.



Bo01 is a primarily residential development on an isolated and highly exposed brownfield site in Malmö's Western Harbour. The master plan architect, Klas Tham, created a neighborhood that accommodates both density and building diversity in an urban place with a village feel, offering a viable alternative to suburban life.

Bo01 has the spatial qualities found in medieval towns, with human dimensions and elements of surprise and charm. But the neighborhood is in no way a pastiche of the past. This neighborhood is totally contemporary in architectural style, in construction logic, and in materials and technologies used.

Klas Tham designed what might be described as a shaken grid. Based on a classic urban grid of square or rectangular blocks, Tham distorted the grid to create

more complex spaces in between. The distortion is a response to the climate, shutting out the wind and creating welcoming and diverse public spaces that are oriented to catch the sun.

The rational rectangular shapes of the blocks reflect the building materials and components used in construction as well as the fittings and furniture that would be inside the finished buildings. The shaken grid maintains these rectangular shapes for the built form and ensures an economic rationale for construction and dwelling. The building industry is based on standardization, using the ninety-degree angle and rectangle as a base. It is expensive and time consuming to make irregular shapes in buildings; so this standardized approach was key to making the plan deliver more affordable buildings.

However, it is relatively easy and inexpensive to play with the geometry of in-between spaces. Planting beds, grass, gravel, asphalt, and even most paving can be easily adapted to irregular shapes. Unlike buildings, landscape angles with planting, grass, or paving don't need to be perfectly finished or water-tight. What some might dismiss as disorder, Tham describes as a richer order.

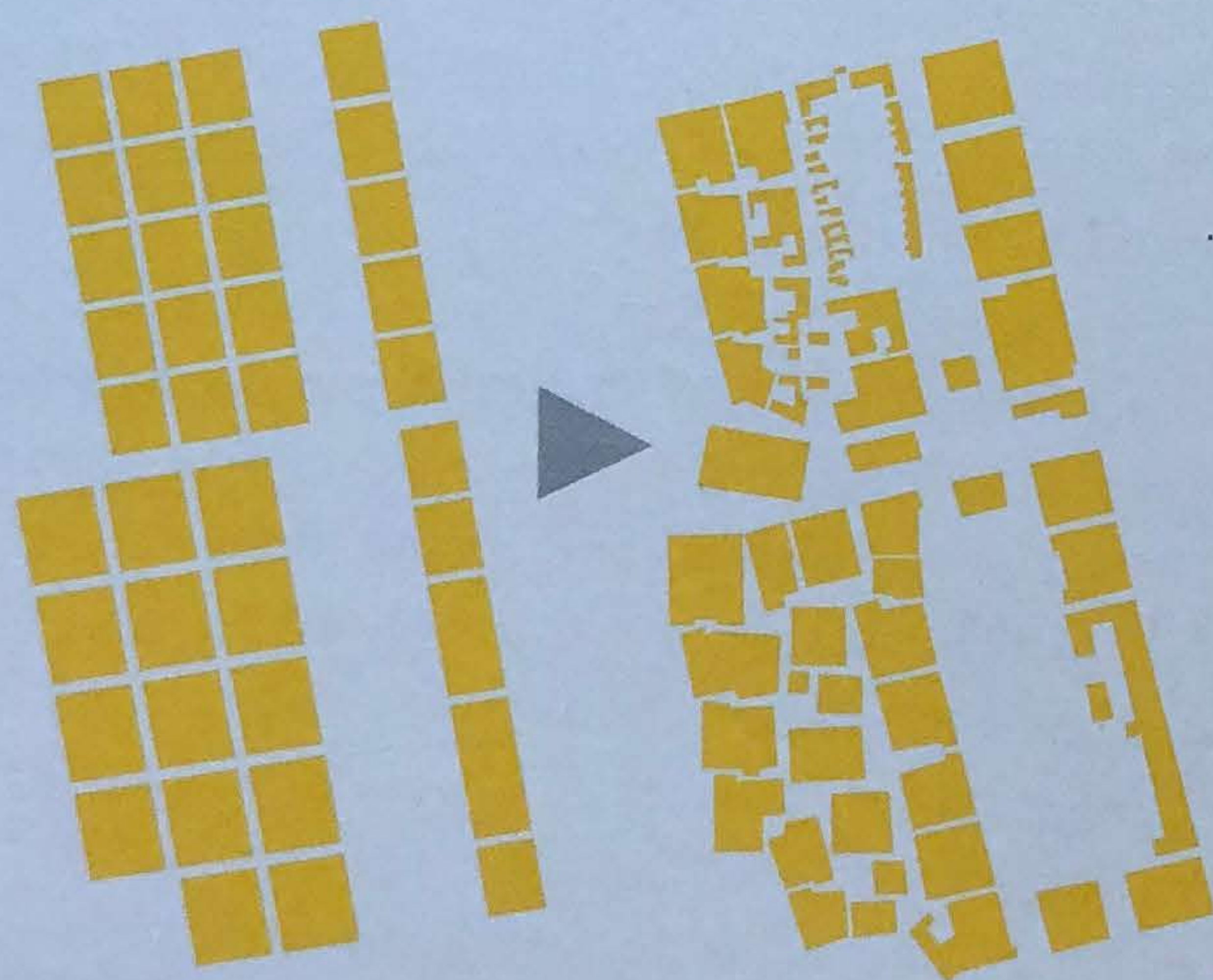
Plot-Based Urbanism

The already small blocks were subdivided into two or three plots each. Each plot was developed by a different developer with a different architect, meaning that there is a variety of housing types within the same block. The juxtaposition was initially unpopular with the developers, although there are stories of unusually high levels of competition between them when they were forced to perform side-by-side.

There is a mix of land uses, with a cluster of non-residential uses on the ground floor around the main corners. Additionally, the ground-floor spaces of the outer crusts of buildings have higher ceilings (minimum 3.5 m/12 feet) to allow for non-residential uses in the future. There is a range of dwelling types, with both houses and apartments, in different sizes and in distinctly different architectural styles. There is clear order of backs and fronts, with all buildings having front and



Zen view. The combination of the outer crust of buildings and the smaller volumes inside made for a climate protected inner world with only a glimpse of the sea.



The Shaken Grid

The plan of Bo01 is a modified grid, creating variation and a good microclimate.

back doors, creating more than one access option. The blocks are not all completely enclosed by buildings, but where there is no building, there is a wall or a gate to maintain the privacy of the residents' inner world.

All of the houses and most of the ground-floor apartments have private garden spaces in addition to the shared common gardens. The top floors have penthouse apartments and roof terraces with greenery in direct connection to inside spaces, as well as free-form, turret-like projections. In addition to the different private outdoors spaces, the blocks connect to different public spaces; the big seafront promenade to the west, the small squares with their water features, the local streets, and the small laneways. In this way, there is an exceptional spatial diversity in a very small area, allowing quite different activities to take place in very different atmospheres, all in extremely close proximity.



Movement and Behavior

The layout of Bo01 creates a clear hierarchy of spaces, with the public areas in more generous spaces on the outside edges and the smaller, more-intimate spaces in the interior. The relatively small blocks of around 50 x 50 meters (164 x 164 feet) make for a grid with an intensity of intersections, which encourages walking. The constantly changing urban scene provokes curiosity, making the explorer wonder what's round the next corner. The block layout also controls movement as not all openings are wide enough for cars, making for frequent pedestrian shortcuts.

Pedestrian behavior is different here thanks to the feeling of security that comes from having few cars traveling through. It is interesting to observe people walking in the middle of the street spaces rather than hugging the sides of the buildings—feeling the streets belong to them and clearly enjoying the spaces more.

Although cars are allowed to drive in most parts of Bo01, there are many other options that make more sense. Forty percent of residents walk or cycle to school and work, and 30% of all trips are by cycle. No one is more than 500 meters from a bus stop. Residents walk and cycle more and drive less than in the city center.



The pedestrian-friendly streets of Bo01 make a popular destination for local kindergartens.



01.

Attractive and Useful Outdoor Spaces

While the microclimate is a key aspect in making the outdoor spaces attractive and useful in this region and so close to the sea, the master plan also ensures a broad range of spatial experiences, with distinct spaces and outdoor rooms, from the most private and intimate to the most public.

Public space is a big part to the success of Bo01, from the major city destinations of the larger parks to the many small neighborhood squares. Bo01 is effectively framed by public space. To the west is the sea, and a waterfront promenade, Sundspromenad, and the green recreational park Daniaparken and to the east is the park, Ankarparken, with its seawater canal. These two significant public sides mean that there is no less-desirable backside. The two spaces have quite

different microclimates. The waterfront has the big view, which attracts the crowds to see the evening sun. It also has the strong wind of the sea, which limits activity in some weather. The canal park has a calmer and more predictable climate, and is a quieter and more relaxed space. These two spaces complement each other, and their inherent differences create options for residents who can choose where they want to spend time and when.

01. Elevation of the Sundspromenad showing juxtaposition of different buildings to make up one street. Collage: Sotaro Miyatake

02.-04. A significant behavior is residents leaving their doors open and their personal effects spilling out onto the street, demonstrating a culture of spending more time outdoors, as well as a level of trust we would associate with an old, rural village and not a relatively new, urban development.

05. A pergola in one of the small public spaces.



02.



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A Green Neighborhood

At Bo01, the plan included a so-called green-space factor, which address the benefits of elements supporting biodiversity. In the same way as every plot had a different building architect, each also had a different landscape architect, ensuring a variety of solutions. The developers and their designers used a point-based system for each site, which allowed for a diverse range of solutions to interpret the green needs of the areas around their buildings. Points were awarded for large trees and bushes, green surfaces and plant beds, greenery on walls like creepers and climbing plants, green roofs such as sedum, water surfaces like ponds and other water features. There was a list of 35 wide-ranging environmental measures, at least 10 of which should be implemented in each residential courtyard.

Green points have been awarded for including a bird nesting box for every apartment and a bat box for every plot, leaving part of courtyard garden to grow wild; planting a garden containing fifty native wild flowers; green roofs; and systems to capture and reuse rainwater.¹¹ The green-space factor is used when appropriate in the city of Malmö. Similar green-space factors have been used in German cities such as Berlin and Seattle in the US. More and more cities are considering green factors to meet the demands for greenery and biodiversity in a more dynamic way.



04.



05.

Pleasant Microclimate

Bo01 is on an extremely exposed site in the Öresund Strait. Although the location offers spectacular views and direct access to the water, it created a challenge in ensuring a pleasant and comfortable microclimate to allow inhabitants to spend as much time as possible outdoors.

In response, an outer crust of medium-rise (four-to-six story) buildings was built to effectively create a wall to protect the development from the wind. In the interior, the buildings are lower with one to three stories. The buildings either have pitched roofs or the top floors step back to deflect the wind and allow the sun deeper into the outdoors spaces. The blocks create courtyards with their own protected microclimate. There are occasional small breaks in the blocks enclosure to allow sun and light into the in-between spaces.



Below 8-10 10-16 16-18 18-21+



01.

In plan the blocks are skewed, narrowing in places to keep out the wind and widening to make sun traps of the public spaces. The blocks break down with smaller rectangular components to create staggered laneways and zigzag openings to ensure that the wind doesn't penetrate. This care for the microclimate was vital to encourage walking and spending time outdoors.

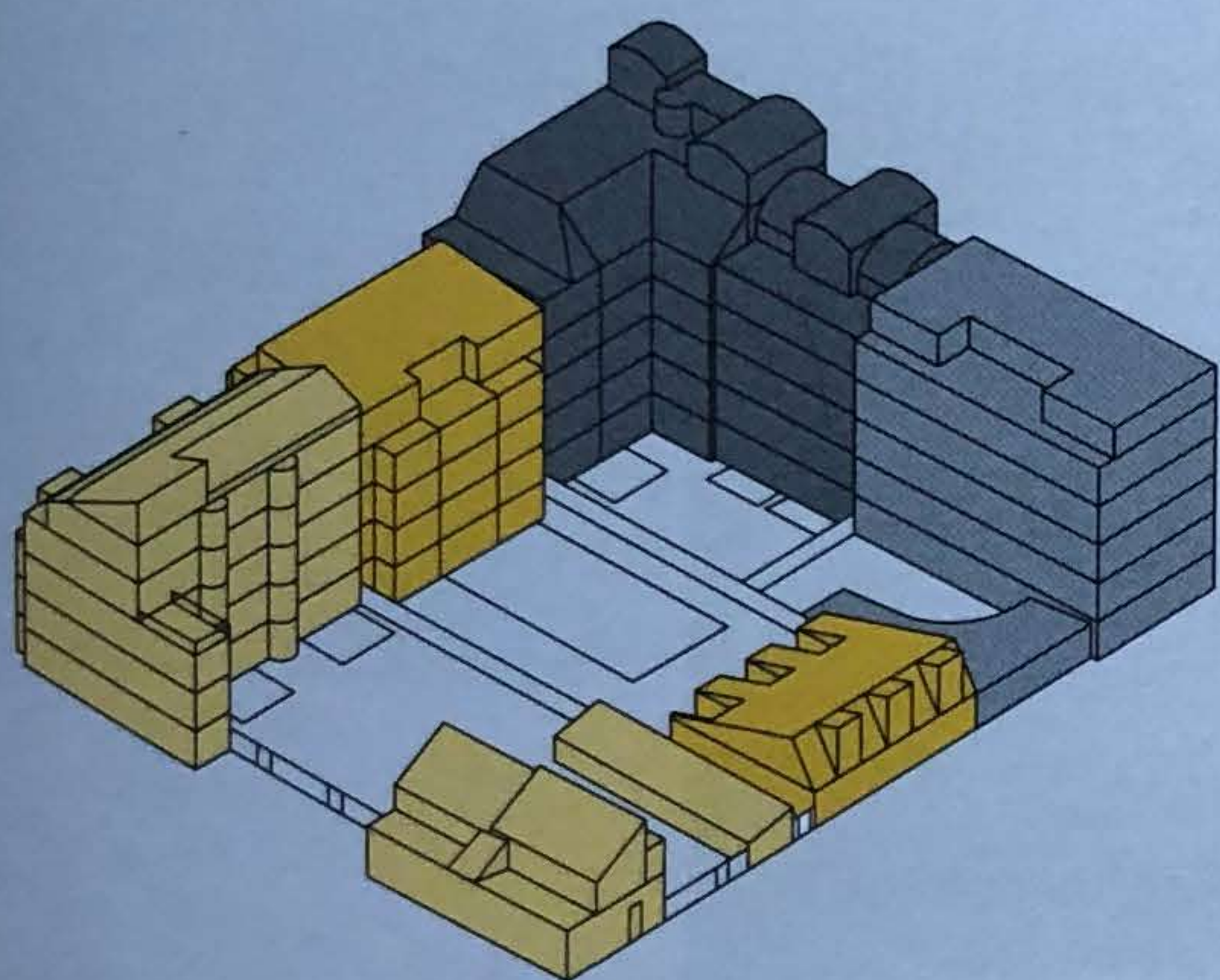
To investigate the actual microclimate effect of the layout in Bo01, Henning Larsen carried out a study of the microclimate. The study shows clearly that the attempts to stop the strong western winds and create shelter inside the neighborhood are working. On a March day with average temperatures around nine degrees Celsius (48 degrees Fahrenheit), many of the streets and spaces between the buildings will have comfortable experienced temperatures of 16-18 degrees Celsius (60-64 degrees Fahrenheit). In some places the experienced temperature is as high as 21 degrees Celsius (70 degrees Fahrenheit). The vast majority of the plan has higher temperatures than the actual temperature, despite the windy location toward the sea with dominant winds from the west-southwest.²⁹

Microrclimate Analysis, Bo01, by Henning Larsen. The study shows how the layout creates protection from the dominant western winds, creating differences in experienced temperatures on a March day, ranging from 8 to 21 degrees Celsius (46 to 70 degrees Fahrenheit).³⁰

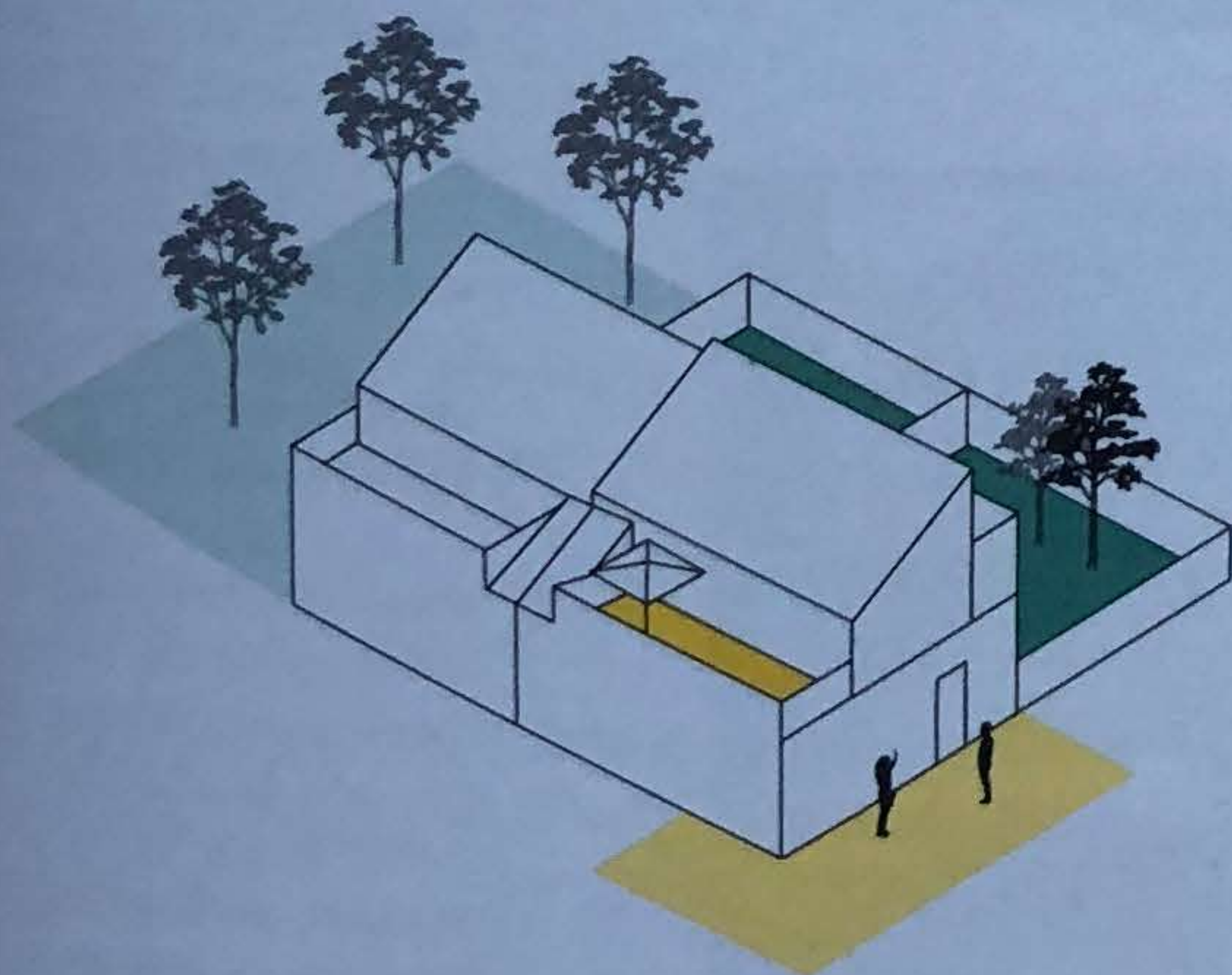
Built-in Complexity

The plan makes for complexity within complexity. For example, one of the corner blocks is divided into four separate plots, each with its own developer and each a unique project by a different architect and landscape architect. The corner building has a café-restaurant on the ground floor. The middle building has an office and a salon on its ground floor. There are apartments with sea views on the western and northern sides (the outer crust) while on the inside, to the east and south, are terraced and semi-detached houses. The scale is from 1.5 to 6.5 stories, with an average of about 3.5 or 4 stories.

It is remarkable that the semi-detached house can be on the same block as an urban café terrace. The plan allows for very different spatial conditions to coexist in the same location. Another remarkable detail is the



The block is divided into 4 separate plots, each a unique legal entity, with a different developer, architect, and landscape architect.



The semi-detached house is part of small housing association that includes the larger tenement apartment building. The residents have a choice of outdoor experiences, with both a private roof terrace to the front and a private garden to the rear, a shared lawn as well as the small, public square just outside the front door.

range of outdoor spaces one little house can have. The semi-detached house has its own private, walled garden and its own private roof terrace, as well as access to a large shared garden with a generous lawn shared with the other neighbors. In addition to these private and shared spaces, there is a small square with a water feature and a pergola just outside the front door, and access to a range of public spaces and the sea, all just minutes away on foot.

Bo01 as Game Changer

Bo01 has been a game-changer in neighborhood planning, creating a residential area that is a vibrant part of the city, where visitors and residents share many of the public spaces. In a region with relatively inexpensive housing and a strong culture of driving, it was a major breakthrough to attract former villa dwellers and families with children to a more urban context. Bo01 persuaded them that it is possible to have a high quality of life that is in close proximity to others and does not require driving a car.



02.

01. The many protected sunny edges encourage people to spend more time outdoors.
02. Sea bathing is popular in the neighborhood, and it is a common sight to see residents walking about in their dressing gowns, which adds to the intimacy of the area.

Bringing Nature into the City

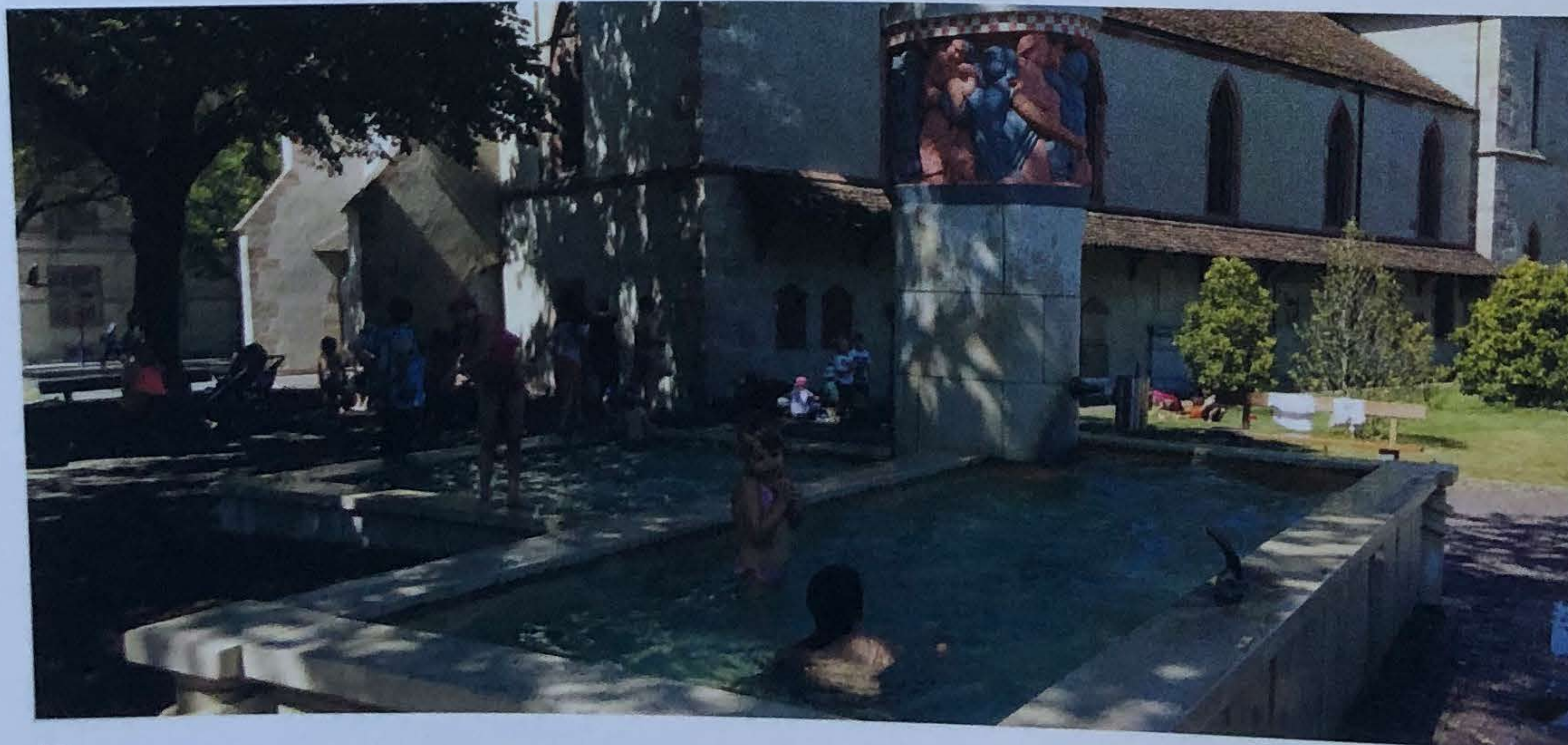
Biophilia is the affinity humans have to connect with nature. There are also many health benefits that come with encounters with nature. International research has demonstrated the healing benefits of seeing trees for hospital patients, and the Japanese practice of forest bathing is becoming well-known.

There may not always be natural landscape close by to connect with, so the experience of nature, or at least strong elements of nature, may need to be brought into the city. There are many ways to bring greenery and water back into the urban environment.

Although vegetation is probably the most important aspect of nature in improving the environment of urban places, the presence of water may be the most special. The strongest sensory experiences are associated with water, in particular running water, with sound, movement, and reflection.



01.



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01. Mariatorget, Stockholm, Sweden. At Mariatorget, a popular, centrally located park-square, the existing sounds of nature have been accentuated. The rustling of the leaves on the trees and the swooshing of the water in the fountains have been amplified via small loudspeakers, drowning out the noise of traffic.

02. Basel, Switzerland. As today's citizens become more comfortable with urban life, and as attitudes to using public space become more relaxed, old infrastructure, furniture, and equipment can be used in new ways. Here, the children of Basel use a historic fountain outside a church as a mini swimming pool.

Density and Diversity of Uses and Users: Bryant Park, New York City



One example of nature in a very urban context, and therefore worthy of particular mention, is Bryant Park in New York City.

Inspired by William Whyte, one of the most significant design decisions was to insist on movable chairs, to empower the users, allowing them to sit wherever and in whatever orientation they wanted. Bryant Park was one of the first public parks in the US to have café-style chairs and tables for public use, without the obligation to buy and consume something. This allows you to bring your own picnic and creates synergy with surrounding businesses. Another key design decision was to lower the ground level of the park, making it nearly flush with surrounding sidewalks and stripping away hedges and fences to make the park visibly and physically fully accessible.

There is a range of different-sized spaces for individuals, couples and groups; busier or quieter corners; and a flexible range of events and happenings including open-air cinema, live sports broadcasts, seasonal shopping, winter ice-skating rink, an open-air reading room (a tradition dating back to 1935), petanque, table-tennis, board games, art classes, and a carousel.

Bryant Park is characterized by density and diversity, inviting a broad range of people to spend time outside doing a very broad range of activities from working at their laptops and reading, to doing yoga and line-dancing. The park offers a high level of service, including food and drink options, clean public toilets, and free internet.

A Small Water Feature with a Big Effect: Bächle, Freiburg, Germany



In Freiburg, small and shallow channels of water run through the streets of the medieval core, reinterpreting a historical system of small streams. These *Bächle* are 20-50 centimeters (8-20 inches) wide and 5-10 centimeters (2-4 inches) deep. The water channels have multiple functions: cooling and cleaning, acting as a separator between pedestrians and trams, or defining a zone for sitting and staving. They reflect a dancing light in the narrower, dark streets. Perhaps best of all, they turn the streets into a giant playground, offering children of all ages temptation and opportunities to sail small boats, paddle, and splash about.

This very small feature has significantly larger consequences, allowing the streets to do more by increasing the intensity of use. The *Bächle* help achieve the balance between recreation (staying, sitting, and playing) and function (multi-modal traffic corridors).



A Playful Place in Front of the Parliament: Bundesplatz, Berne, Switzerland



The Bundesplatz is one of Berne's most intensively used spaces, with regular markets, demonstrations, and cultural events throughout the year. It has playful water jets that add an extra layer of life to the space, increasing the capacity and use of the square, making more of all the in-between time.

Making a playground right in front of the Houses of Parliament caused much debate over how appropriate it is for young children to run about barely clothed in front of the country's most important government building. In the end, it was recognized that the innocence of children playing safely in the middle of the city was the best reminder of the core values that the parliament represents. Although Berne has a river and many other water features, the simplicity and accessibility of the water jets changes a hard, formal space into a playful place for social and sensory experiences.



Street Trees

Planting street trees is one of the most significant things that can be done to improve an urban environment. Beyond their inherent beauty, street trees do many useful things that help improve the look, feel, and performance of urban spaces.

Trees change the climate of streets (and whole cities) by providing buildings and street surfaces with shade from the sun and protection from the wind. This makes it more pleasant to spend time outdoors on the sidewalk and easier to move about on foot and bicycle or wait for transit. In this way, trees have an important role in supporting active mobility.

More than a mere green surface, trees help reduce the heat-island effect, which blights many urban places, through shading, reflectance, evaporative cooling, and evapotranspiration. Trees act as privacy screens in densely built areas. They filter strong sunlight, reducing glare, and can act as light reflectors, throwing a dynamic “dancing” light into buildings. Trees provide a hugely significant sensory experience for people in streets with their sounds, smells, and movements. Their ever-changing appearance gives people an awareness of the seasons and the passing of time, and effectively turn streets into linear parks.

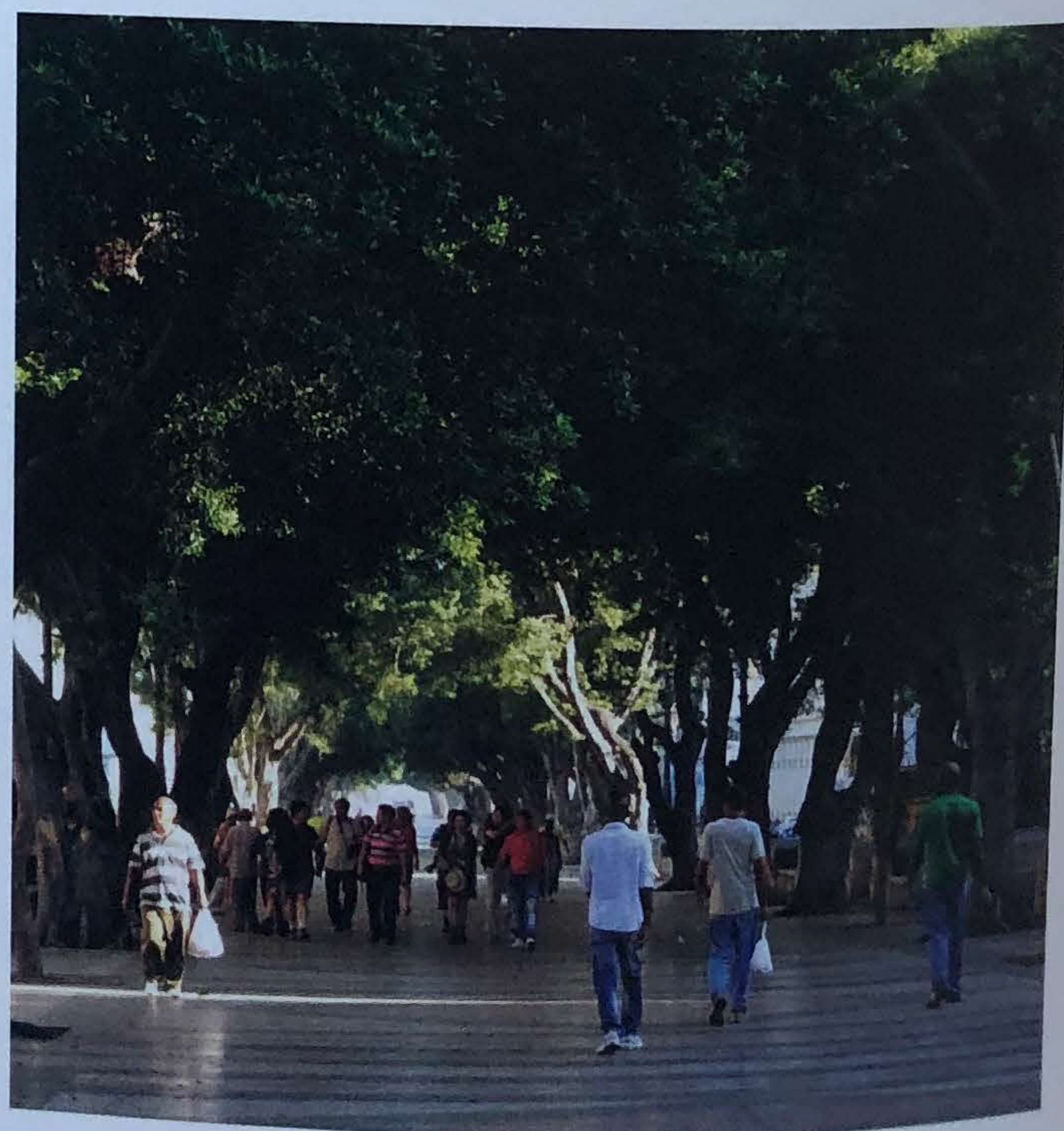
Trees absorb carbon dioxide. Since cities produce most of the carbon dioxide, it makes sense to place trees at the source of the problem and where people are most vulnerable. Trees are natural air filters, capturing dust and other particles from the air by trapping them on their leaves and in their bark, as well as absorbing unpleasant smells and pollutant gases such as ammonia, sulphur, and nitrogen oxides. This is particularly significant in relation to vehicle emissions.

01. Sydney, Australia. Street trees in a residential area create an intimate scale, improve walking conditions, and connect people to the changing seasons.

02. Havana, Cuba. Street trees form a canopy that creates an outdoor room and softens the climate for walking and staying.



01.



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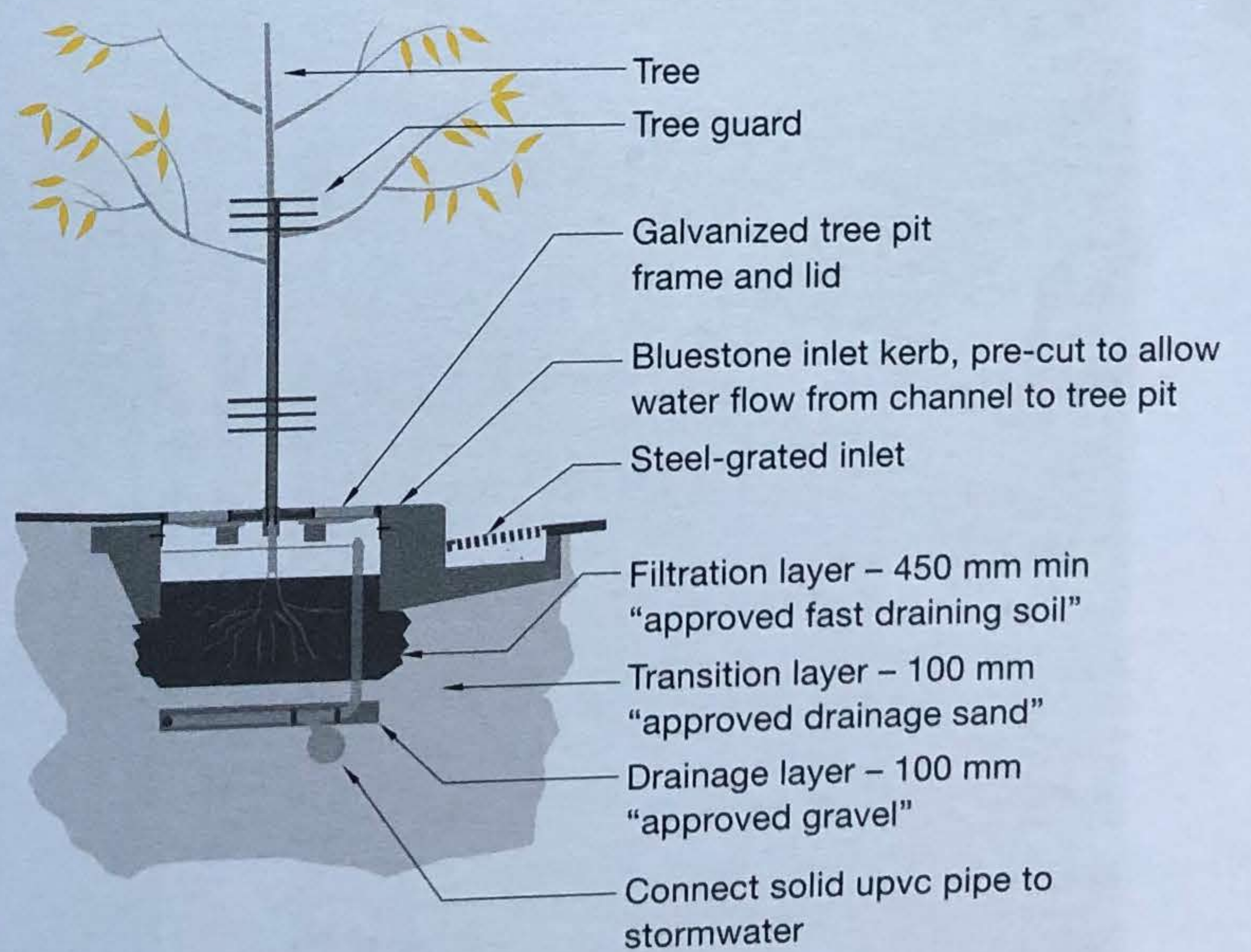
Addressing Climate Change: Urban Forest Strategy, Melbourne, Australia



Photo: David Hannah

The City of Melbourne has recognized the vital role that trees play in addressing health, removing pollution, and reducing the heat-island effect as well as simply shading the sidewalks. Planting an urban forest is part of their strategy to address the pressure that climate change, population growth, and urban heating put on the built fabric, services, and people of the city. "A healthy urban forest will play a critical role in maintaining the health and liveability of Melbourne."³¹

The concrete goals of Melbourne's Urban Forest Strategy include an increase of the tree canopy cover from 22 percent to 40 percent by 2040, and increased forest diversity. The goal is also to inform and consult, to make the trees even more relevant for the community.



A specially designed sidewalk planter captures and filters rain-water while watering the trees.

Connecting to the Nature That is There

Almost every town or city has some natural amenity, whether it's some kind of water, topography, or views. The way a place connects to its natural amenities and works to accentuate the best features, however modest, can have a significant effect on how much time people spend outdoors. Supports can be put in place to encourage people to spend time outside and encounter nature, and can also extend their comfort zone, making the experience feel easy, desirable, and pleasurable. This could include orienting new buildings to allow views of nature, uncovering a natural stream or river, planting street trees allowing microhabitats to bloom, or simply placing furniture outside of a café, allowing people to sit in the sun.

All of these encounters with nature, as grand as a view of mountains and as subtle as the sound of a birdsong, are significant and provide us with a strong awareness of the circle of life. Being aware of nature is the first step to understanding it, learning how to adapt to the environment, and living with it.

The simplest form of connecting people to nature is making what's already there easily accessible. In Freiburg, Germany, the Dreisam River runs just outside the medieval core. In the summer months, people sit on rocks in the river and enjoy its cooling effect and the shade from the trees on the riverbank. The rocks make for an informal sitting landscape, offering encounters with people as well as with nature. Even a small water surface of a few centimeters/inches deep, such as the stream that flows through the center of Kyoto, Japan, can have a strong presence.

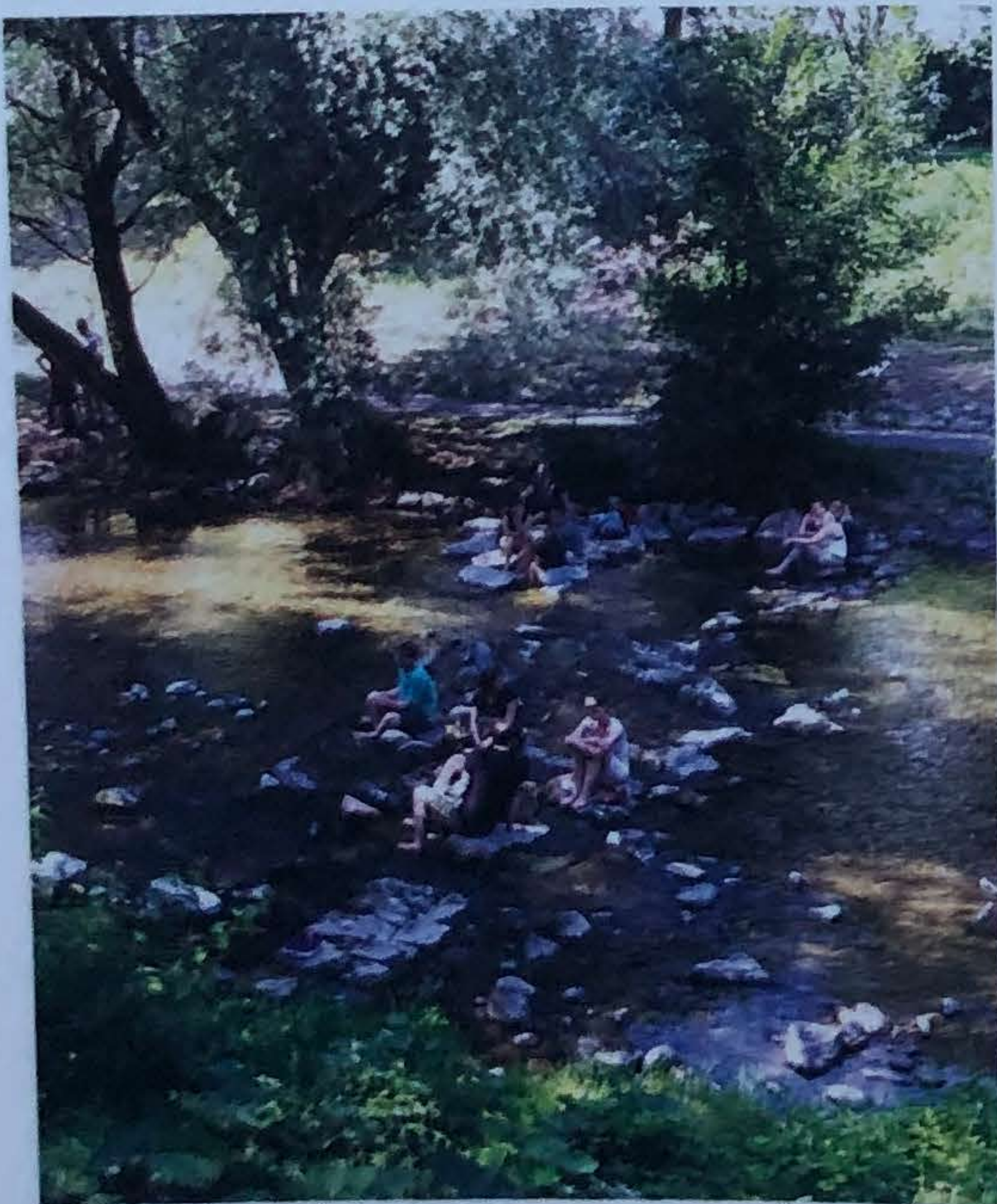
The huge significance and value of water has been recognized in cities like Århus in Denmark and the South Korean capital Seoul, both of which have gone to considerable lengths to reopen rivers previously hidden under road infrastructure. The results of these efforts have radically changed the behavior of the people and dramatically increased the amount of time spent outside.

01. Freiburg, Germany. The Dreisam River runs just outside the city center, with natural elements for sitting.

02. Kyoto, Japan. A few centimeters/a couple of inches of water is enough to make for a strong sensory experience.

03. Århus, Denmark. The reopening of the river in Århus has created a new and very well-used recreation space in the city center.

04. Seoul, South Korea. The rediscovered river is an iconic project, distributing an exceptional sensory experience through the central city.



01.



02.



03.



04.

An Outdoor Living Room for the Whole City: Västra Hamnen, Malmö, Sweden



01.

The Swedish city of Malmö had historically turned its back to the sea, but with the redevelopment of the Western Harbour from industrial zone to residential neighborhood, the value of the waterfront was rediscovered. The flagship Bo01 housing exhibition, introduced the Sundspromenad, a pedestrian waterfront, giving the area a resort-like feel. The pedestrian waterfront is probably the most important public space in the city.

The main feature is a multifunctional stepped wall, which functions as a storm barrier, a wind break, a seating landscape, a playground, a stage, a catwalk, a sunbathing deck, and a viewing platform that marks and accentuates the spectacular view over the water toward the Öresund Bridge and Copenhagen.

Further along in the adjacent park, Daniaparken, enclosed, wind-protected areas afford a longer season of sitting outside and sunbathing while platforms, steps, and ladders into the sea make sea-bathing easier. The removal of dangerous rocks on the seabed has made diving possible, and the spectacular end of the promenade look-out point now doubles as a diving board.

Sundspromenad and Daniaparken attract visitors from the immediate neighborhood, the larger city, and even the surrounding region. Malmö has long stretches of beach, yet every day people of every age, ethnicity, and socio-economic background, come to the Sundspromenad, proving that an urban experience of nature can be just as attractive as a natural one.



02.



03.



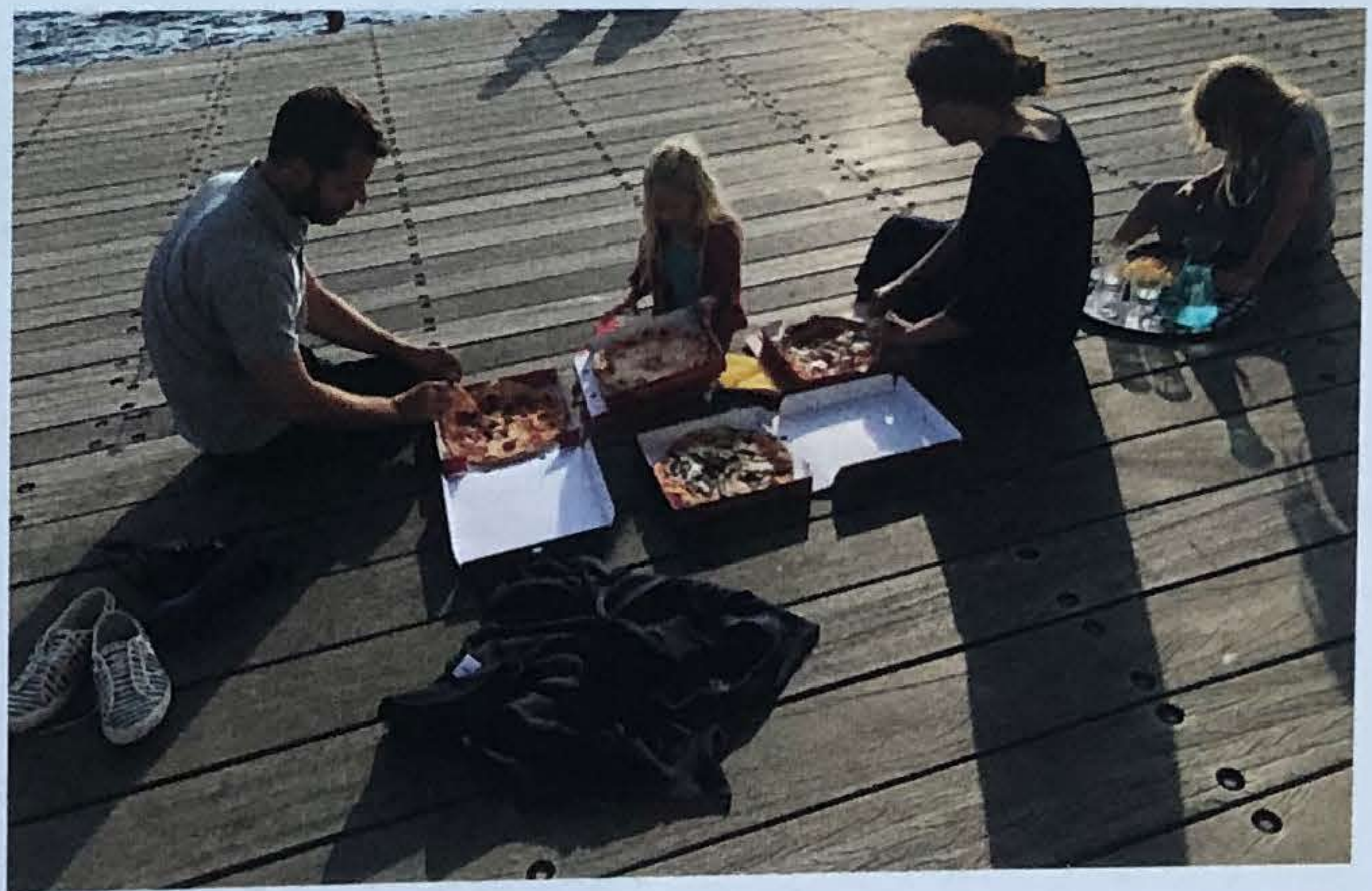
04.



05.



06.



07.



08.

Accommodating many kinds of activities, passive and active, and many kinds of people in the same place at the same time, with many opportunities and invitations to spend more time and do more outdoors. Importantly, there are many practical, small details that allow people to get closer to the phenomena of nature, making it comfortable to sit in the sun or step in and out of the sea.

- 01. The stepped boardwalk becomes a small stage for tango dancing on spring evenings.
- 02. Swimming and sunbathing—note the windbreak walls.
- 03. Look-out point diving platform.
- 04. Water features offer entertaining play opportunities for children while adults relax.
- 05. Local children selling homemade juice to visitors.
- 06. All ages swimming and sunbathing.
- 07. Locals “eating out” in the evening.
- 08. Wind-protected outdoor room for enjoying the sunshine all year round.

Making the Most of Infrastructure: Taasinge Square, Climate Neighborhood, Copenhagen, Denmark



In recent years, Copenhagen has been hit by more frequent and more severe rainstorms, which have led to extreme flooding, causing extensive damage. In response to this new challenge, the City has developed a climate-adaptation plan, which calls for the creation of new soft landscaping in public places to absorb flooding.³²

Spaces that previously had hard, impervious surfaces are being landscaped to accommodate flood water and allow slower run-off during and after rainstorms. Instead of investing in expensive underground infrastructure that is invisible to citizens and unused most of the time, the City has leveraged the investment in stormwater management to create greater value. The 2011 plan includes “Cloud Burst Projects” for more than 300

parks, streets, and squares to be implemented over the coming decades. The new landscapes improve the everyday quality of life for Copenhageners while increasing property values, increasing biodiversity, and reducing the heat-island effect.

One such new public space is Taasinge Square in Copenhagen’s first climate-resilient neighborhood, part of the City’s Climate Plan. The square that used to be covered in asphalt and parked cars has been transformed into a distinctive, green, and sustainable landmark. The park’s response to stormwater is above-ground, and therefore visible to everyone. The space promotes understanding of climate change in an active social context. When it’s not flooded, it’s a great recreational landscape for everyone to enjoy.

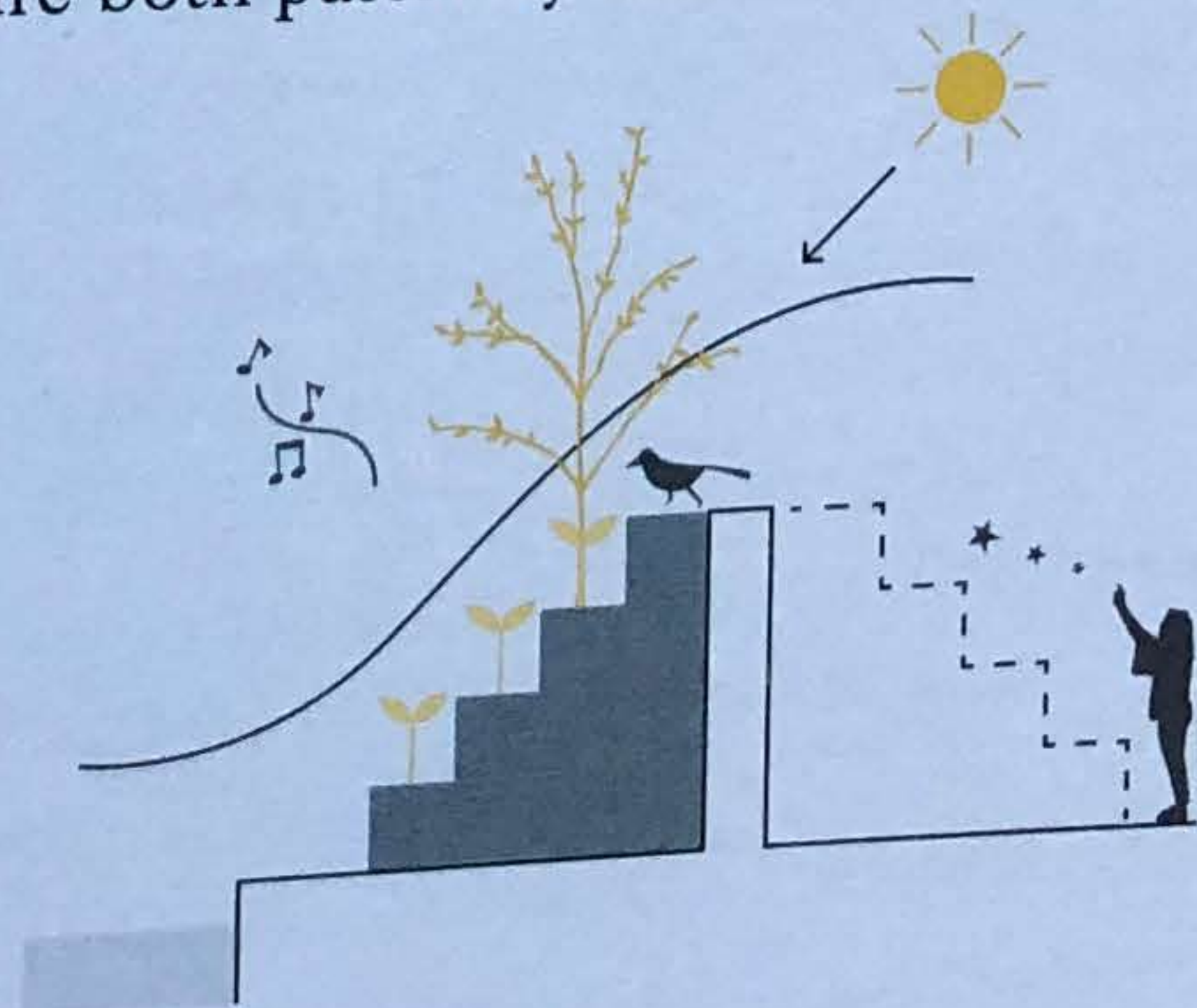
Repurposing Infrastructure as Public Space: Kizu River Waterfront Project, Osaka, Japan



The Japanese are accustomed to climatic disasters. Tsunamis, earthquakes, landslides, floods, and volcanic eruptions are all regular events. Japan has invested in hardware (infrastructure) and software (training) to ensure the safety of its citizens. High flood-defense walls protect cities like Osaka from the risk of flooding, but the walls disconnect citizens from their living waterfront. The scale of the walls eliminates any communication with the water, and the citizens lose their awareness of the sea, forgetting both their fear of and their delight in the water.

Ryoko Iwase's project from 2013-2017 repurposes the flood-defense wall, converting the hard, engineered infrastructure into public space, a terraced landscape with room for varied interpretation, inhabitation, and appropriation by the users. There is a continuous

footpath along the water's edge to encourage people to walk by the water. There are big steps for sitting, inviting people to stay and watch the water. There is also a system of planters, which softens the concrete structure with vegetation. The citizens are invited to actively tend the greenery. By reimagining infrastructure as public space, people now have the opportunity to spend more time outdoors, connecting to the forces of nature both passively and actively.



Making the Most of Nature: River Swimming in Berne, Switzerland



01.

Imagine leaving your crowded office or your tiny city apartment, hot and sweaty on a summer's day, walking just a few hundred meters and then jumping straight into the cooling waters of a river. Swimming in the Aare River in Berne is an example of an activity that makes dense city life more enjoyable. It is the opportunity to connect, physically and mentally, to the natural environment in the middle of a city. The experience engages the senses: feeling your skin submerged in the water, putting your head underwater to hear the sounds of the stones on the river bed while hearing the splashing and voices of fellow swimmers and the sounds of birds and trees on the riverbank.

In these exceptional circumstances, there is opportunity to meet and interact with your neighbors and fellow citizens. Since the current carries people downriver,

there is a ritual of getting in at the concrete steps or jumping off a footbridge, swimming with the flow, then getting out, walking back along the promenade to where you started, and then doing it all over again.

It might seem like an unlikely activity for the reserved citizens of the Swiss capital, but this natural wonder brings people from all kinds of backgrounds together in extremely relaxed circumstances. The bankers and politicians shed their suits and enjoy the experience of meeting their neighbors in their swimming costumes. The river swimming brings a kind of holiday spirit to the everyday life of the city.

River swimming is free and it is socially inclusive for a diverse group of people—young and old, different nationalities and ethnicities, locals and tourists. Even

some pets join in. Since this activity is easily accessible every day after school or after work, it means there are many and frequent opportunities to connect to nature and, at the same time, make new friends and acquaintances.

Beyond the daily enjoyment, the Aare River experience informs people's broader understanding of the weather and the environment. For example, people better understand how the water temperature in the river is affected by the weather in the mountains, and take notice from year to year of the start, the end, the length, and the consistency of the swimming season. These are relevant topics of conversation as this important annual activity is so directly affected by the weather. This feeds into a deeper understanding of the weather patterns, cycles, and how it all connects to our own experiences and lives. Even for the spectator, swimming has a relevance, and the sight of river swimmers while sitting on a train or tram connects people to their place and climate.

The infrastructure that supports the river swimming is quite basic and intuitive to use. Along the riverside, there are simple concrete steps with brightly painted handrails to make getting in and out easy as well as buoys and some simple warning signs telling people when they should get out.



02.



03.

- 01. Jumping in from a footbridge.
- 02./03. Simple concrete steps and brightly painted handrails help swimmers in and out of the river.
- 04. Swimmers walking along the riverside.



04.

“There is no such thing as bad weather, only the wrong clothes.”

Scandinavian saying

Living with the weather is about recognizing how the design of the built environment can influence our behavior, making it easy to move between inside and out, and making it comfortable to spend more time outdoors. At the same time, by taking small steps, we can move toward living more in harmony with the forces of nature in a time of climate change. Being outside means having sensory experiences, actually feeling the weather on your skin. In order to get people who live their lives indoors to develop better relationships with the outdoors, to learn to live with the weather or become better neighbors with nature, we must offer options and opportunities, frequent invitations and occasional nudges, to move closer to nature, one step at a time.

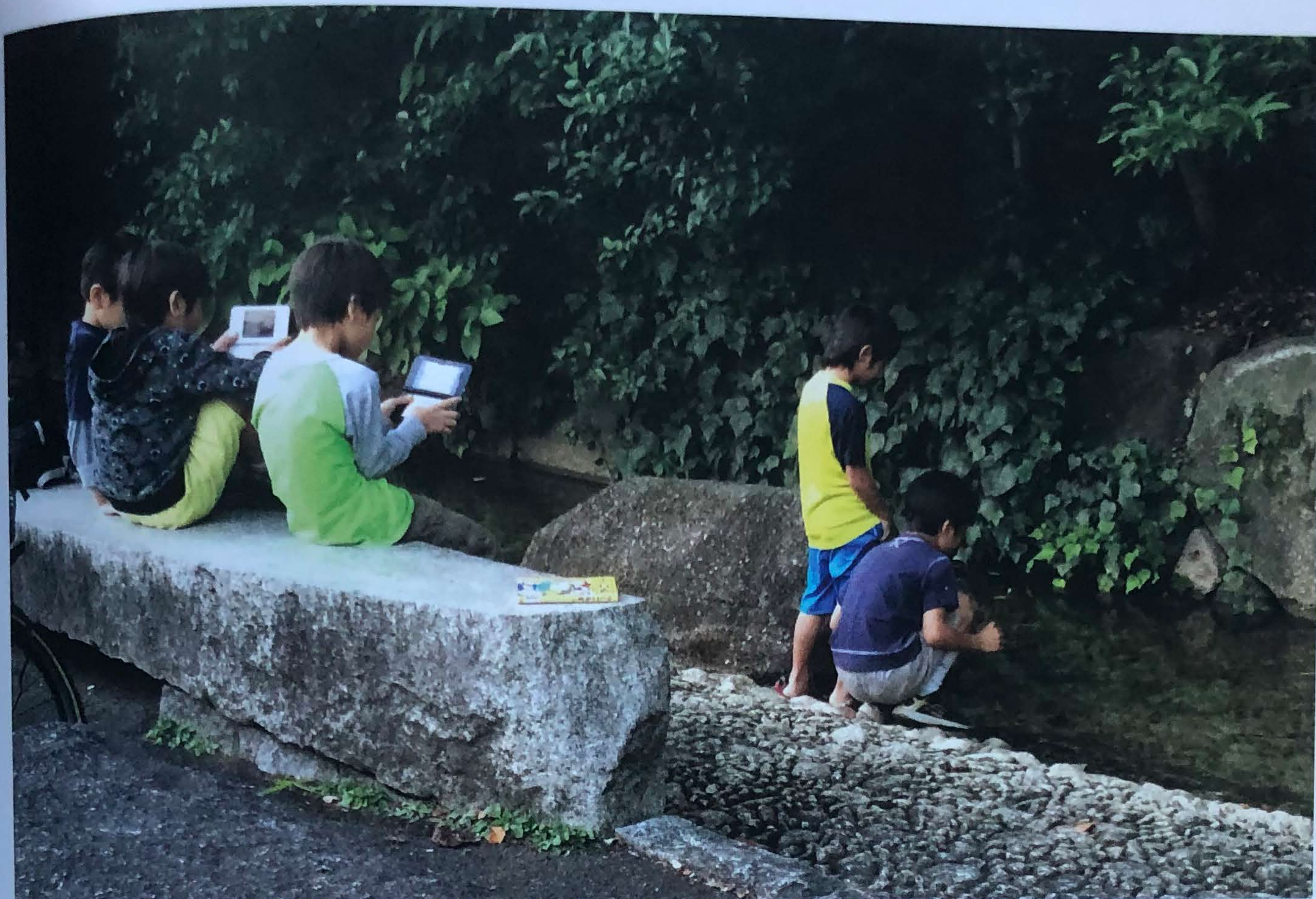
Many newly built environments such as homes, institutions, and workplaces seem to be oriented to staying indoors, and any mobility around them is based on driving. The internet age has spurred debate and research on the value of being outside and in contact with nature—especially related to the upbringing of children in an age of iPads.³³ Spending time outdoors creates opportunities for socialization, for shared experiences of natural phenomena, which in turn can help build a common understanding and consensus of what’s happening with our climate.

Every city comes with its own set of climate challenges. But weather does not only have to be something that we endure. It is also possible to design outside conditions through designs to create better, simple details—such as the shape and massing of buildings and the spaces in between—that have the potential to create more comfortable microclimates. By letting the sun in, and sometimes keeping it out, by sheltering from the wind and rain, we have the potential to make our own weather, or at least to extend the time we can spend outdoors. Low-tech, low-cost interventions such as shutters and stairs, balconies and arcades can bring people out of their normal, indoor comfort zones into a closer, more satisfying relationship with the natural and social environments outside.

There is a well-known saying in Scandinavia: “There is no such thing as bad weather, only the wrong clothes.”

01. **Tokyo, Japan.** Children being children: growing up curious and responding to what's around. We cannot force anyone to do anything, but we can at least create the opportunities for encounters with nature.

02. **Berne, Switzerland.** Chess is not just a game for two. This outdoor activity attracts a small but faithful crowd and gives them a legitimate excuse to linger longer in the outdoors.



01.



02.

Notes

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