

TRENDS IN THE DIVERSITY OF WOOD-BASED PUBLIC AMENITIES



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Abstract. Research in various fields emphasises the benefits of nature and its positive impact on people's mental and spiritual health, and increasingly mentions its regenerative properties, helping people to regain strength and peace. Over time, especially after the COVID 19 pandemic, people have learned to appreciate the value of nature and are willing to take the opportunity to go to nature. This makes it all the more important to create opportunities to enjoy nature in the urban environment by creating quality outdoor spaces, which also means using nature-friendly materials in landscaping. Scandinavian cities have long been known as places that integrate wood into the built environment in a variety of ways, aiming to use these natural materials as much and as diversely as possible. This is evident in contemporary buildings and outdoor design, such as in the Danish capital Copenhagen. The aim of this paper is to analyse the contemporary trends and diversity in the use of wood in the design of public outdoor spaces, and to contribute to the promotion of sustainable practices in the urban environment, using the city of Copenhagen as an example. **Keywords:** sustainable public realm, landscape outdoor elements, site furniture, wooden amenities

Introduction

One of the current global trends is that people are increasingly choosing to live in cities, and by 2050 the number of people living in cities and peri-urban areas will increase significantly. This change will have a significant impact on cities around the world, and cities need to prepare for both the challenges and opportunities it will bring (ARUP, 2019; Stokmane, 2022). With these changes, urban public open spaces must be able to provide people with both functional and aesthetic environments, while considering the challenges and sustainability dimensions of climate change.

We see how fashion, style and design change over time. This is also the case in outdoor design, as trends in outdoor amenity elements change over time. They reflect the current demand for the use of a given space (site), creating places to gather, relax, play, enjoy the seasons and memorable moments of life. This creates places that create memories, thanks to the design and usability of outdoor spaces.

Local authorities often develop long-term landscaping guidelines for their areas, which include information on the main product categories: seating, litter bins, lighting, cycle racks, billboards, etc., as well as information on how they should be located, oriented and installed, thus ensuring the preservation of local identity and providing guidance for urban planners and designers to improve the built environment within a coherent style. When redeveloping or renovating an outdoor public space in a community, the outdoor furniture elements selected may consist of a family of related products from a single manufacturer, a set of furniture elements from several manufacturers with complementary features, or a combination of standard and bespoke elements. Although not ubiquitous, designers are interested in creating and maintaining a common design language in the urban environment, which is expressed in the consistency of form and colour across the spectrum of furniture elements used in urban public spaces (Main, B., & Hannah, G. G., 2010).

As design trends change, so does the range of materials used in outdoor landscaping. Such changes may be related to the specificity of the materials used or their durability, but these are not the only factors influencing the choice of outdoor elements. Over time, people have adapted their outdoor spaces to suit their needs, as a place to live and spend quality time. The choice of materials is an important aspect in the design of outdoor spaces and it has been observed that the more traditional materials are used, the more the outdoor space is used. Conversely, materials that have already proven themselves locally through people's choices are

more likely to be used. Nowadays we are all the more aware that outdoor elements not only serve the daily needs of citizens, but also help to mitigate or combat climate change, so both the materials used and their spatial arrangement are being adapted.

Sustainability and the use of natural materials, such as wood, in public areas are prioritized in Copenhagen's architectural and urban planning regulations. According to the city's Architecture Policy for 2017–2025, new constructions should reinterpret and transform existing environments in order to reflect Copenhagen's unique character. This approach often involves incorporating natural materials like wood to maintain a connection with the city's heritage (Technology and Environment Department, 2017). Additionally, the Nordic Wood in Construction initiative highlights the environmental benefits of using wood, noting its potential to reduce carbon emissions in the construction industry. This report presents various cases of innovative wooden constructions in the Nordic countries, including Denmark, underscoring the material's role in sustainable urban development (Jensen & Craig, 2019). Although these initiatives and policies encourage the use of sustainable materials, such as wood, they do not specifically require their use in all outdoor public spaces. Rather, the emphasis is on promoting designs that complement Copenhagen's historical and environmental context, allowing for material selection flexibility according to particular project needs and objectives.

Methods

Based on the authors' research and teaching experience, surveys of public outdoor spaces in Copenhagen were carried out in the autumn of 2024, with sites selected in different functional areas of the city. The sites were selected for the surveys where the dominant material of the landscape elements is wood, in order to learn about its multiple uses and to assess the integration of such objects into the surrounding landscape, as well as their long-term sustainability over time. The survey data were recorded, processed, analysed and visualised using ArcGIS software (spatial analysis module), and walkability distances to selected urban amenities were calculated, thus showing the possible range of users of such places.

Results

Outdoor space has changed over time under the influence of different political and power structures, and continues to change today. We can conditionally distinguish several

TABLE 1

Characteristics of amenities in the public realm (created by the authors)

Functional areas of public realm	Type of amenities used most often on site	Specific requirements, site usage and conditions
Courtyards	Benches, tables, pergolas or shade structures, shelters, play equipment, bike racks or lockers, planters, lighting	Most often used areas by neighbourhood citizens pleased also from indoors
Public building front yards	Benches, litter receptacles, drinking water cranes, fountains, shelters, bike lockers, planters, lighting	Large hard pavement coverage areas mixed with city furniture. Places offering not just variety of activities but public amenities also should provide variety of usage options
Campuses	Benches, tables, litter receptacles, pergolas or shade structures, shelters, sport equipment, bike racks or lockers, planters, lighting	Despite most often used by campus people it is important place also for nearby inhabitants. Important to create small patches or separate gathering places
Parks	Benches, tables, litter receptacles, pergolas, arbours, lighting, sport equipment, fountains, sculptures	Long-term active and passive recreation options should be provided, walking trails, several functional zones should be created; if possible to provide waterbody
Squares	Benches, tables, litter receptacles, lighting, drinking water cranes, bike racks or lockers, planters	Short-time stops or cross-by areas; site can be used as local orienteer if local identity elements are included
Streets	Benches, litter receptacles, lighting, drinking water cranes, bike racks or lockers, planters	Besides walking and cycling routes streets have to couple with bus stations and small businesses. The more people-friendly street sites will be developed, the more liveable city become
Waterfronts	Benches, bike lockers, planters	Magnetic places dealing with erosion and flood risks, multifunctionality of place is key element
Playgrounds	Benches, litter receptacles, bike lockers, play equipment	Variety and safe pavement for specific group of users should be provided besides siting places for parents and grandparents
Parking lots	Lighting, bike lockers, planters	More frequently combined with playgrounds nearby thus solving problem for those driving to playgrounds

functional areas (see Table 1.) in the urban environment, where we can speak of uniformity or diversity of use, depending on the intensity of use.

Although open courtyards are also public spaces by nature, their users are more likely to be local residents who pass through or use the space on a daily basis, or enjoy it from the windows of their homes. Courtyards serve as meeting and leisure spaces and are therefore dominated by the needs of local residents. The generational change that takes place in a particular place will inevitably influence its ability to change and adapt to the times. Some residents will choose a particular place as their long-term home, while others will change it due to different circumstances, thus also influencing the prevailing changes in the population of the place. And while it might be assumed that the unchanging composition of a place's population does not necessitate changes in its open space, this is a misconception, as long-term residents of a place age and their priorities, especially for the use of open space, change along with them. Changes to a particular place are necessary and inevitable because of the changing nature of cities, but the need for change is also influenced by its users, the inhabitants of a particular neighbourhood or courtyard.

As mentioned above, the age of the population plays an important role in the adaptation of courtyard activities, but changing habits can also influence these changes, especially last decade with the emergence of teleworking opportunities, which allow a freer schedule and more use of urban open space, especially the outdoor space close to the home, for various activities and recreation in everyday life. The variety of landscape elements in such places is therefore

of great importance when organising courtyards into relative functional spaces (Fig.1., 2.).

Office buildings and their entrances are also changing, as offices are increasingly built in mixed-use neighbourhoods, where workplaces and homes are co-located within a neighbourhood, and public space is often shared with different users. The design of such outdoor spaces is therefore often not only concerned with the representative features of the place, but can also integrate the needs of other user groups who pass through the urban space on a daily basis, in addition to office workers. Often such spaces can be used as meeting places or playgrounds (Fig.3.), which can also be used by the children of office workers, who in the modern world spend their free time at their parents' workplaces. Modern trends also suggest that temporary installations or other temporary solutions can be installed in such places, which can be transformed when necessary to make room for larger events.

A similar approach to creating transformable spaces can be seen in campus areas, which are often used as temporary exhibition spaces, including for the deployment or testing of new outdoor amenities, such as outdoor elements with integrated charging capabilities (Fig. 4.).

Parks are undoubtedly larger and more varied areas in terms of outdoor elements, serving the recreation and leisure needs of the population, where separate areas can be created for active and passive recreation, combining opportunities to enjoy nature and relax at a relaxed or more leisurely pace. Parks are undoubtedly people's first choice for leisure activities, so improving them is particularly important. It offers many opportunities for designers and urban planners,

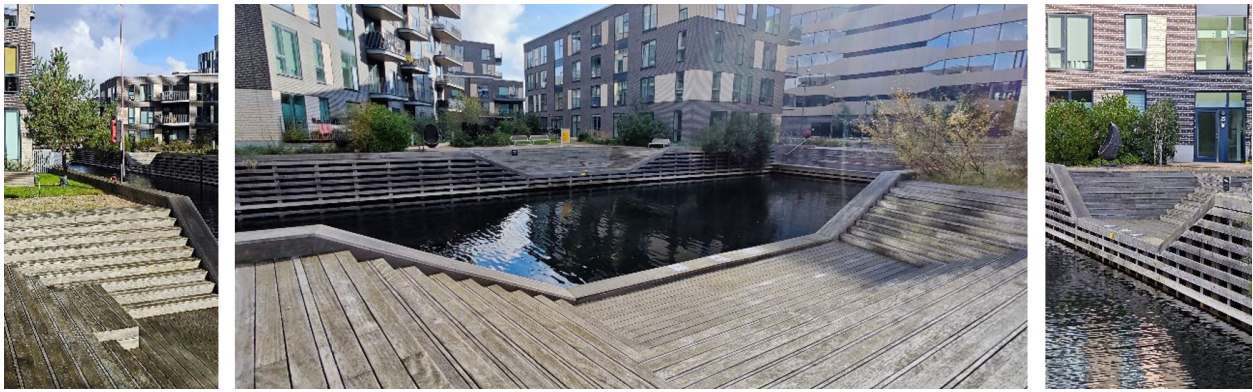


Fig. 1. Courtyard (Marble City, Copenhagen) multifunctionality – the variety of wooden structures offers opportunities for active and passive recreation, including relaxation and neighbourly conversations, fishing and mini-concerts.



Fig. 2. Residential courtyards semi-public (Grønningen and Ørestad Nord, Copenhagen)

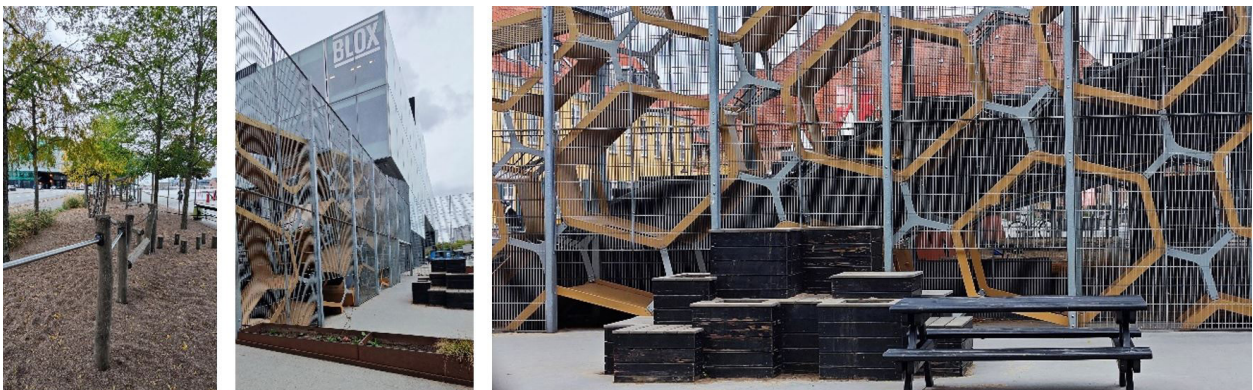


Fig. 3. Playgrounds on public entity front yard (BLOX, Danish Architecture Centre, Copenhagen)



Fig. 4. Innovative bench with charging opportunities for small devices situated in campus area (Universitetsparken, Københavns Universitet, Copenhagen)

considering the natural features of a particular site and the structure of nearby buildings, which will also largely determine the user group.

In urban areas, squares are a special place, often transformed seasonally into a local meeting place with comfortable seating (Fig.5., 6.) and meaningful leisure opportunities, and it is therefore possible to create unconventional landscape elements in such places that serve as both a landmark and a convenient short stop. Although it may seem that such places

are most often used for short periods of time, they often have a more local function as people increasingly associate them with meeting or gathering places for local communities.

The blue-green structure of cities is often complemented by watercourses, access to which has always been an issue for their inhabitants, who want to enjoy the presence of water, often simply by being close to it. The sustainability of a place is based on providing access to such places, making urban waterfronts multifunctional and respecting

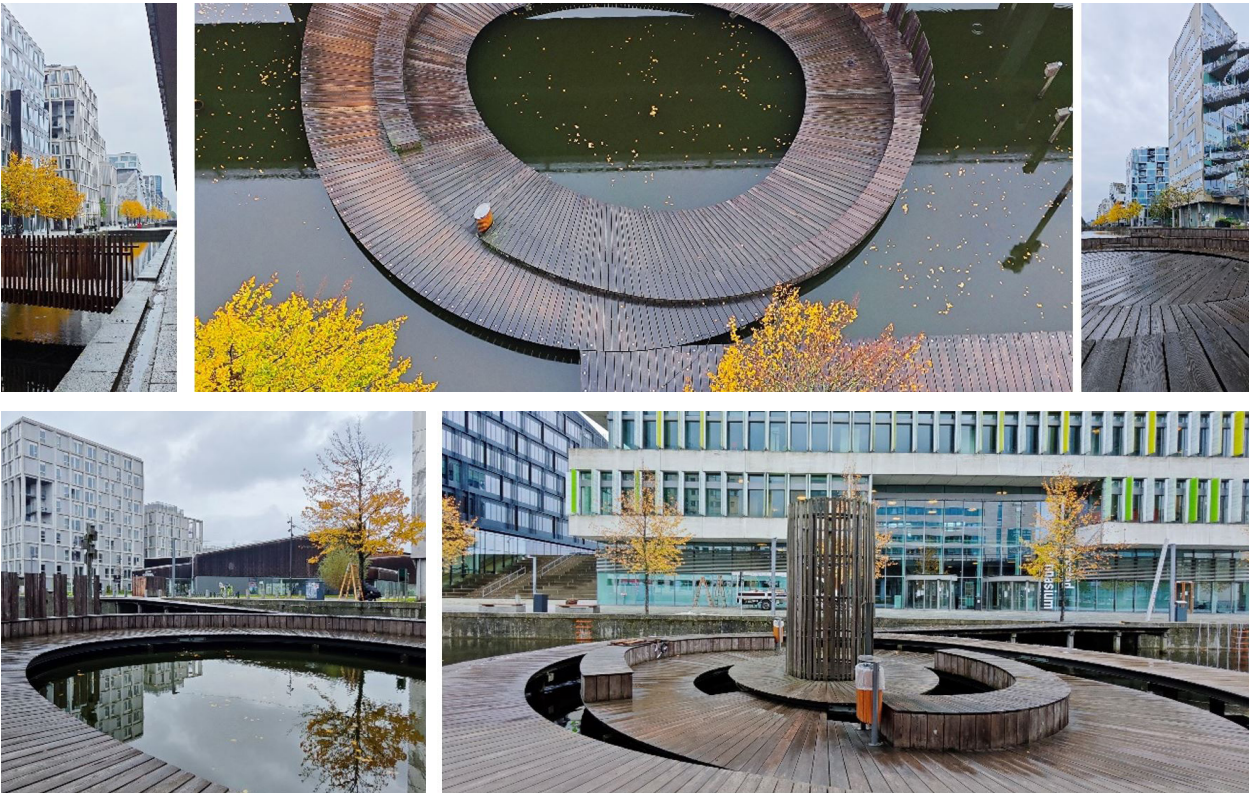


Fig. 5. Gathering places with integrated lighting suitable for use all the long including relaxation, friendly conversations, local festivities and other neighbourhood activities (Ørestad, Copenhagen)



Fig. 6. Landscaping of public square (Opposite of Park and Play, Copenhagen)

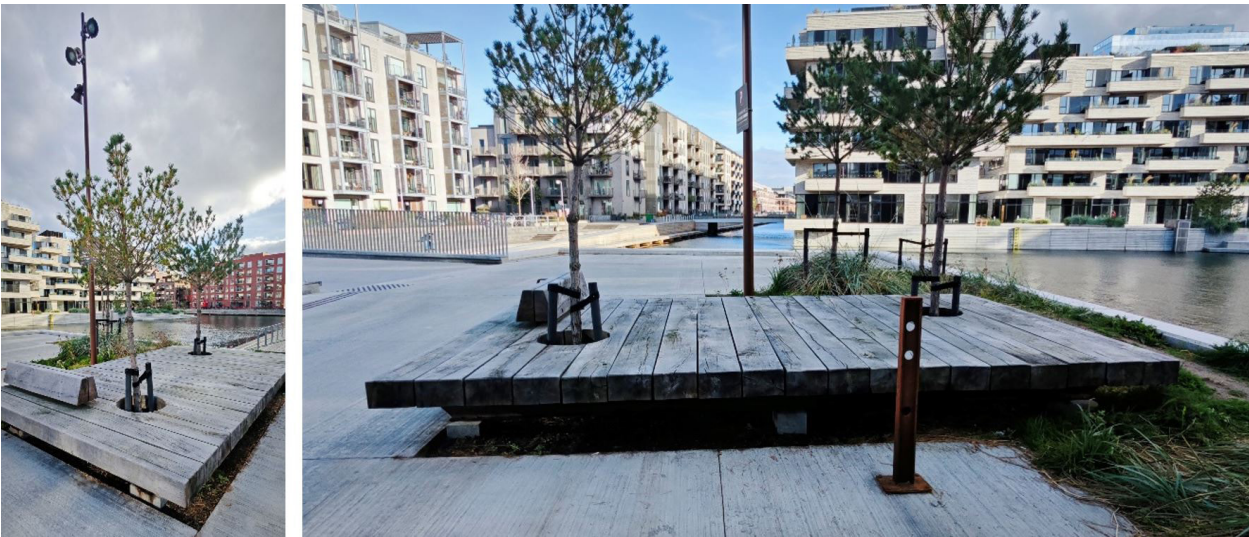


Fig. 7. Multifunctional platform (Nordhavn, Copenhagen)



Fig. 8. Waterfront solutions (Sundkaj promenade, Copenhagen)



Fig. 9. Structures near the coast of the river (Havnebadet Sluseholmen and Nordhavn, Copenhagen)

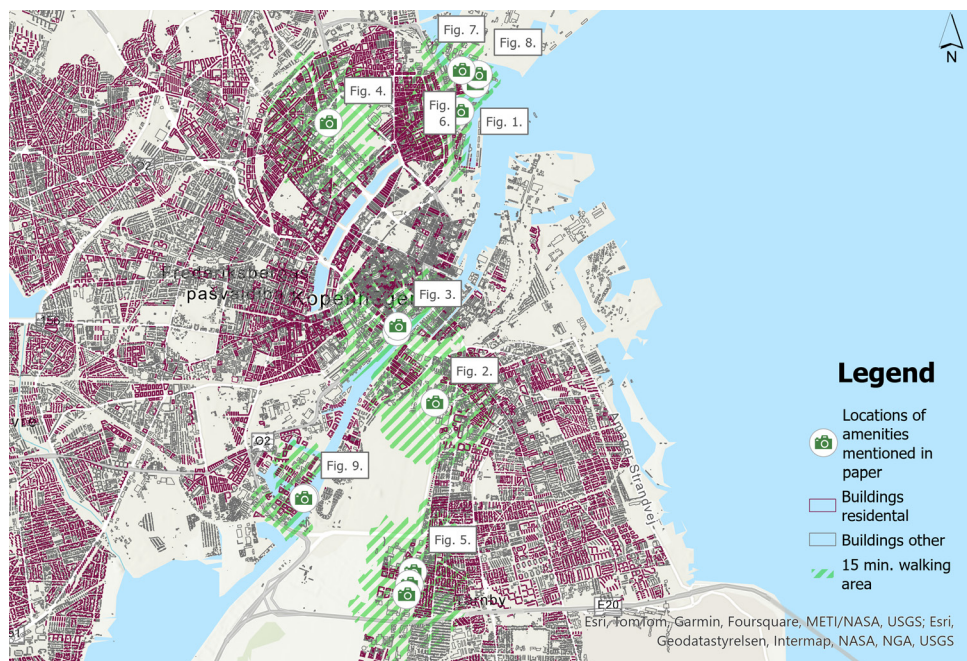


Fig. 10. Map of visited sites in Copenhagen generated in ArcGIS software, ESRI

the desire of local people to be close to the water. The waterfront should not be seen simply as a line, but rather as a network of places, functions, complements and interfaces between the waterfront and the city, between the port and the urban environment with its activities. The waterfront should be seen as a concentration of different functions, which can be economic, cultural, recreational, residential and public. It is not a closed and protected area, but an inspiring place with a permeable perimeter where the density of development varies.

One of the trends in Scandinavian urban planning best practice is to open up the built waterfront to the public, using wood as the surface material for such areas. This is

a rewarding and sustainable material, not only because of its weather resistance, but also because it integrates well with the overall public realm, where outdoor landscaping elements in Scandinavian cities are also predominantly made of wood (Fig. 7., 8., 9.). This creates a good overall visual impression and forms a harmonious vertical space.

Sites visited in Copenhagen to investigate the use of outdoor wooden elements in the urban environment are shown in Figure 10, which characterises the availability of nearby places and amenities for residents.

Nevertheless, we enjoy to use wood-based amenities sustainably integrating them into urban environment, there are some important considerations we need to consider –

wooden amenities, like outdoor furniture, wooden decks, and other structures, require regular maintenance to ensure their longevity. Typically, wooden benches and other furniture may need to be renewed or replaced every decade or less, depending on the type of wood used and the level of exposure to the elements, wooden decks and structures like pergolas often last longer, around two decades, but, to ensure safety and durability, some may need attention or renewal sooner, depending on foot traffic and weather exposure. The frequency and cost of maintenance depend on several factors, including the quality of the wood (hardwoods are more resistant to rot and damage than softwoods), environmental conditions (wood exposed to harsh weather conditions, like high moisture or intense sunlight, may deteriorate faster, and areas near saltwater or with high humidity might need more frequent treatments), and the level of use (amenities exposed to heavy use will wear out faster and may require more frequent attention).

Conclusions

Many urban outdoor spaces are multifunctional, as the urban built fabric today tends to be diverse, with homes, offices and leisure facilities all in one place, so the design of such outdoor spaces needs to be approached responsibly and creatively. When designing outdoor public spaces, it is important to make them coherent with the built fabric, to form a single stylistic ensemble for the site, and to integrate a harmony of forms and materials. Copenhagen's public realm is characterised by both standardised products and site-specific solutions.

The integration of wood in the design of outdoor amenities is an integral part of the contemporary trend, thanks to the material's good properties and its sustainable sourcing and processing. Its diversity of use can be seen in the design of different functional areas of the urban environment, creating multifunctional spaces to meet the needs of different users.

Sometimes the outdoor space serves only a specific target group, the direct users, while more often it serves many user groups, so it is important to find a solution that both benefits multiple users and creates an attractive aesthetic and visual image of the outdoor space, integrating and adapting to the surrounding and built environment. The correct integration of outdoor elements into the site provides the opportunity to use it as a landmark for the site.

It is important to create an environment that invites people to linger, to get outdoors, to be in nature, to allow as many people as possible to regenerate naturally and improve their mental health.

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