



Montréal's Industrial Projects

Bureau
du design

Handbooks of Best Practices for
Design and Architecture Quality

Handbook 1 – 84 Best Practices
to Inspire Action

The Handbooks

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Handbook 2 – Taking Action! Montréal's Industrial Areas in Transition

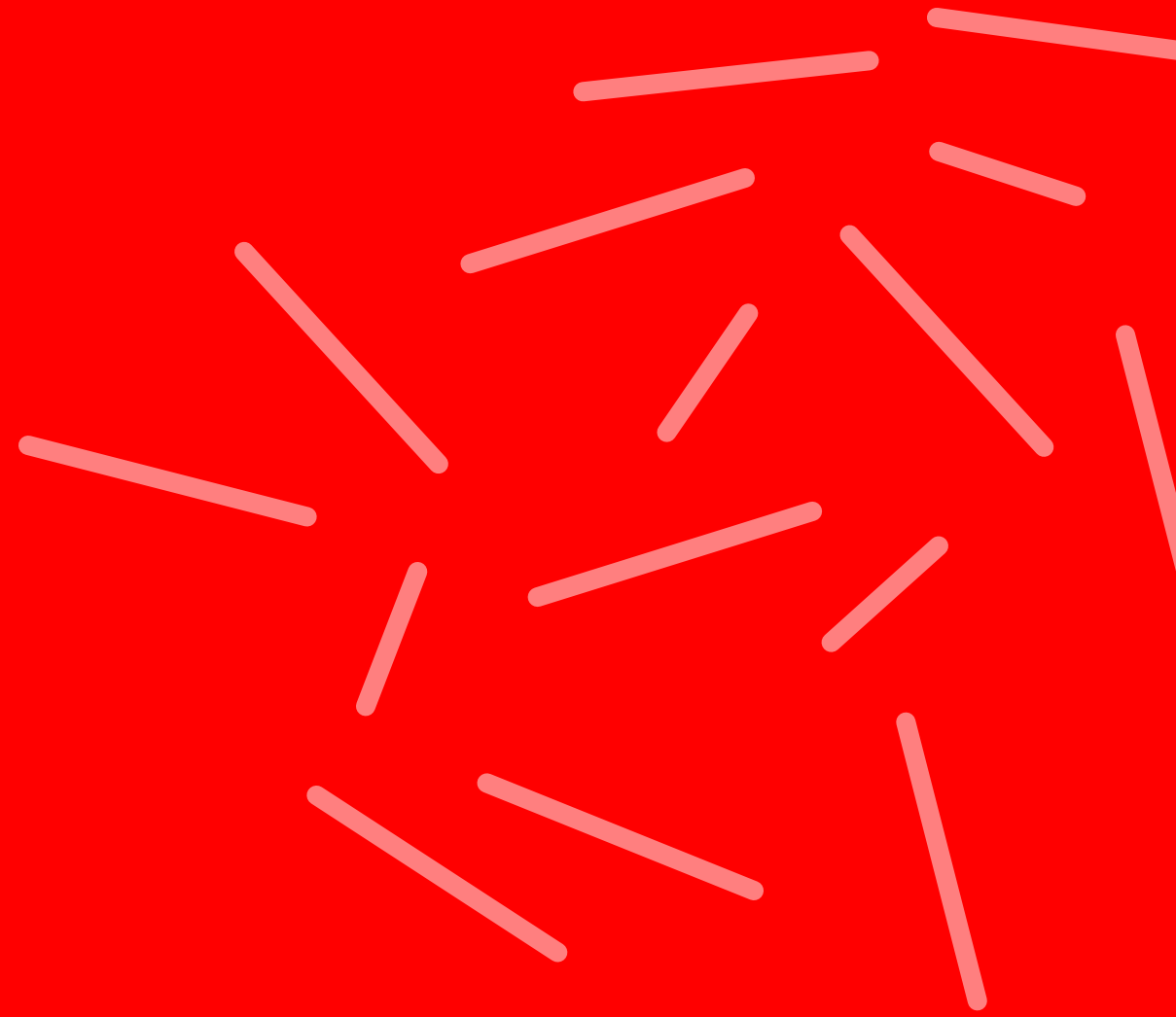
Handbook 3 – 35 Exemplary Projects Illustrating Best Practices

Industrial companies as allies for ecological and social transition

(Re)developing Montréal's industrial areas requires engagement by industrial companies and promoters as key allies in implementing innovative, superior-quality occupancy models.

The [Handbooks of Best Practices for Design and Architecture Quality for Industrial Sites](#) provide concrete solution avenues to inspire action and guide exchanges among companies, promoters and decision-makers.

With the Handbooks, the City hopes to prompt greater contributions from industrial projects and sites in implementing the [Montréal 2030 Agenda for Quality and Exemplarity in Design and Architecture](#) and delivering on the aspirations stated in the [Montréal 2030 Future Vision](#) as well as the City's other plans and policies, including the [City Vision](#) (Projet de ville) and the [2020–2030 Climate Plan](#).



Tools for support and guidance

The Handbooks explore how an industrial project can help enhance the quality of the living environment in which it is located. As such, they pay particular attention to the relationship between the project and its siting context.

The Handbooks outline the main issues that have an impact on the quality of industrial projects in Montréal. Among other things, they document the design principles that enable improved design and architectural quality. The term “design” is used here in a broad sense to refer to all planning and development disciplines.

The Handbooks aim to provide inspiration for planning and regulatory exercises for these lands conducted by the municipal administration and that of its boroughs as well as for the definition of private development and real estate projects on those lands.

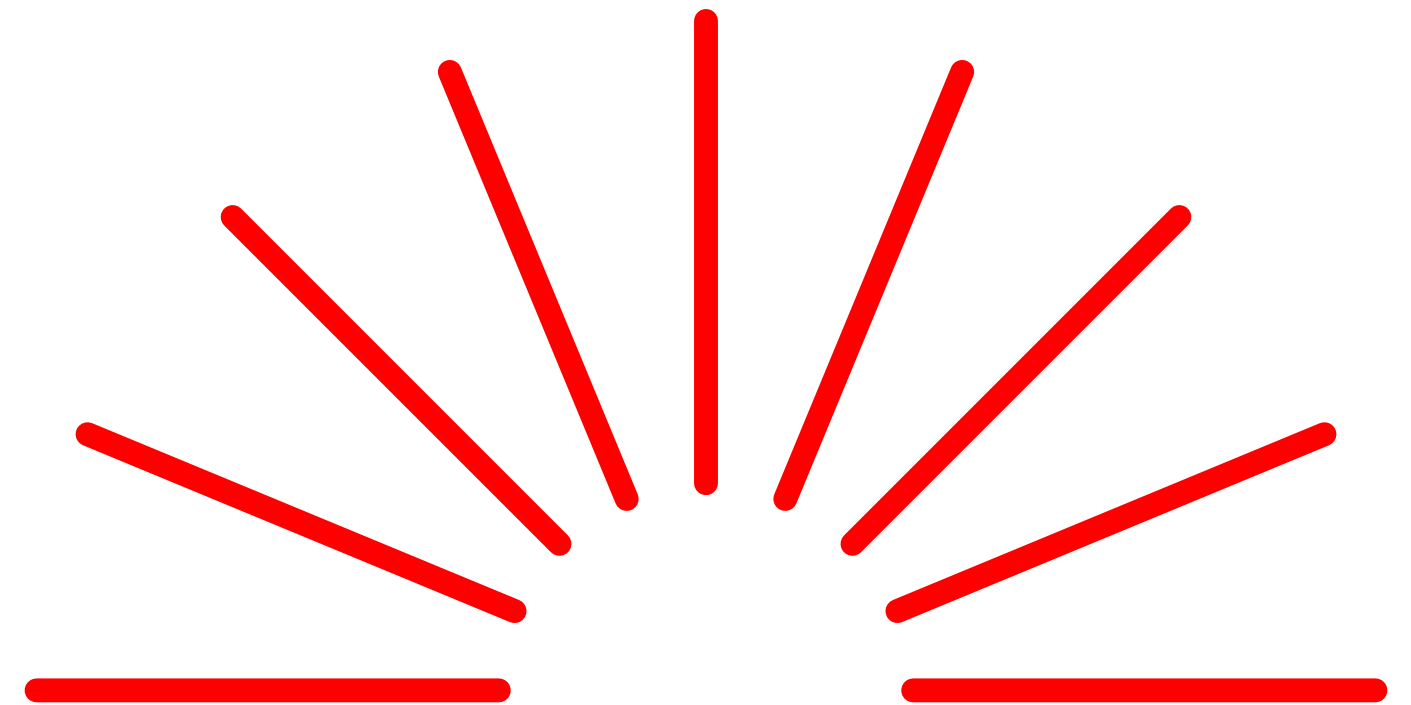
Though it has no regulatory scope, the Handbooks are the entry point for broader thinking on the quality of industrial projects in Montréal.

What is meant by an industrial project?

Manufacturing companies are considered industrial. This designation refers to processing companies' operations. Para-industrial operations related to the industrial field are included in the definition; they are similar to industrial companies in terms of their space occupancy or environmental impact (e.g., a wholesale operation, lumber yard, equipment servicing facility or repair shop).

Government, university and private research centres, as well as some laboratories, are also included in the definition of an industrial project.* A mixed-use project that is primarily industrial also meets the criteria of the approach described in this handbook.

*Description inspired by the Act Respecting Municipal Industrial Immovables (Ministère des Affaires municipales et de l'Habitation)



Development of the Handbooks in 4 key steps



Project: CESM, by Lemay with Morelli Designer / BC2 (Handbook 2, p. 77)
Image: Geneviève Dorval-Douville

The Handbooks were developed in four stages: documentation of the subject of study, a call for best practices in the planning community, issue tables, and a summary of learnings.

Step 1 – Snapshot of Montréal industrial areas (May, June and July 2022)

Documentary research was undertaken to arrive at an overall picture of Montréal industrial sites and classify them into four major types.

Step 2 – Call for best practices (July–August 2022)

Design and architecture professionals were invited to submit descriptions of development projects that contribute to quality industrial interfaces in Montréal. The call was issued locally as well as internationally via UNESCO Creative Cities Network channels.

Step 3 – Multidisciplinary issue tables (September–October 2022)

Some 30 public- and private-sector players gathered for collective thinking about the future of Montréal's industrial areas.

Participants were surveyed on their perceptions of the constraints on and potential for (re) development of four main types of lands

in Montréal, and on concrete solutions for enhancing the quality of the built environment as well as the lived experience. The observations from this step were expressed as axonometric representations schematizing existing and potential spaces (see the four main types of Montréal sites, Handbook 3).

To illustrate some of the best practices, participants submitted exemplary achievements, which are documented here in the form of project backgrounders. The best practices listed alongside each project are not exhaustive and the backgrounders must be viewed as complementary to each other.

Some non-industrial projects implemented in primarily industrial employment sectors were documented so as to highlight particularly innovative practices.

Step 4 – Drafting of the Handbooks (October, November and December 2022)

Analysis of the data gathered, summary of the learnings, preparation of visuals, formatting of the content and writing.

The dimensions of quality in design and architecture

Montréal 2030 Agenda for Quality and Exemplarity in Design and Architecture

The Montréal 2030 Agenda states that design and architecture can help shape a city that is conducive to **health** and **wellness** for all, more socially **equitable**, **pluralistic** and **inclusive**, more **environmentally responsible**, more **economically efficient**, more **culturally attractive and fulfilling**, and more **resilient** to climate change and crises.

The structure of the Handbooks is inspired by the Design Montréal Quality Toolkit, a digital tool for facilitating concrete application of these six principles of quality when implementing urban projects in Montréal.



The dimensions of quality in design and architecture



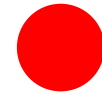
Resilience

Urban resilience refers to the capacity of a city's people, communities, institutions, businesses and systems to survive, adapt and grow, regardless of the types of chronic stress (e.g., ecological, social, economic) and acute shocks (e.g., related to weather, geophysics, hydrology, public health) they experience,* and their capacity to rapidly reconstitute quality living environments. Design and architecture can play a role in the development of solutions that properly address perceived long-term risks.



Environment

The contribution of design and architecture to climate challenges is undeniable. Better-designed buildings, sites and neighbourhoods can help mitigate the impacts of climate change. As such, all of the design disciplines are invited to be part of achieving objectives involving creation of carbon-neutral living environments and implementation of practices targeting sustainable urban planning and transportation.



Economy

Quality design and architecture generate economic value as well as assets and spaces that are more durable and distinctive, less expensive to maintain over the long term, have higher perceived value, and are thus more "profitable" or "efficient."* With quality of life having become a determining factor in choosing locations for talent and companies, design is a key element in the positioning and growth of cities.



Culture

Design and architecture greatly influence lifestyles and the ways in which residents use and engage with urban areas. The local character of a space, its genius loci, has a direct impact on people's relationship (positive or negative) to their surroundings. That "sense of place" is defined by the physical environment, but is also linked to the context and history of a site, its practices and uses, to the sensory experience of the space, the mood and atmospheres emanating from it and therefore, more globally, to the social and cultural values making up that site's particular imprint. Consideration for those social and cultural values ensures design or architecture of superior quality that makes a space more fulfilling for the people who live there and more attractive to visitors.



Equity, Diversity and Inclusion

Quality design can strengthen civic engagement and build social capital, which helps communities prosper. Better-designed neighbourhoods can contribute to an increased sense of shared identity, enrich community life, foster social cohesion, and help people live better together. Public buildings and spaces with exemplary design can stimulate social interactions and in turn aid in the integration and expression of multiple communities. Besides its esthetic quality, a public project's true value is thus evaluated based on its usage quality. The latter is intrinsically linked to a sense of equity, equality and inclusion.



Health and Wellness

The quality of design and architecture in the city has a decisive influence on its residents' health and wellness. A well-designed space can encourage people to engage in and enjoy physical activity, which reduces the risk of illnesses. Environments with obvious landmarks, clear wayfinding, and a good balance of built features and natural spaces can help create a feeling of wellness, contribute to decreased anxiety, and improve quality of life for people struggling with mental issues.

84 Best Practices to Inspire Action

Which of these 84 best practices can you incorporate into your project?

Handbook 1 lists 84 best practices across the six dimensions of quality in design and architecture. These practices have been collated from the 36 case studies of exemplary industrial projects showcased in Handbook 2. Those projects were suggested and chosen by the participants in the issue tables organized specifically to inform the process of developing the best practices handbooks (Step 3). As such, although this list of best practices is meant to be as exhaustive as possible, its main purpose is to lay the foundations for our thinking on the topic, and it is thus called upon to evolve.



Resilience

How will the project's design and architecture contribute to greater urban resilience in the event of crises or unforeseen events?

By maximizing the project's energy autonomy, through:

1. Bioclimatic design that leverages the specific climate characteristics of the site;
2. Highly energy efficient building envelope design;
3. Incorporation of passive heating, cooling and ventilation strategies;
4. Incorporation of energy efficient technologies for generating, storing, and redistributing energy at peak times or in the event of disruptions;
5. Incorporation of energy conversion and storage devices to meet demand;
6. Provision of an inter- or intra-building energy-sharing loop;
7. Modulation of volumes and spaces according to the energy requirements of the buildings' uses (e.g., heating, cooling and ventilation requirements of a factory versus offices or common spaces).

By maximizing the project's resource autonomy, through:

8. Creation of symbioses with local industry (network for reclamation of industrial resources);
9. Sorting and processing of residual organic materials (circular economy);
10. Sorting and processing of inputs and outputs (circular economy);
11. Sustainable management of stormwater and runoff, via catchment, treatment and reuse strategies;
12. Sustainable management of potable water throughout construction, operation and maintenance, via use of low-flow distribution devices and equipment for grey water recovery, filtration and reuse;
13. Production, processing and distribution of fresh market-garden produce (urban agriculture, local food security);

By mitigating the impacts of climate-related hazards, through:

14. Landscapedesign that emphasizes greening, an increased canopy and greater diversity of plant strata (to counter the heat island effect);
15. Landscapedesign that incorporates indigenous plants that are resilient to climate hazards (e.g., drought-resistant);
16. Landscapedesign that promotes soil permeability (lowering the risk of overloads and sewer backups);
17. A floodplain design to accommodate excess water in the event of heavy rainfall, seasonal flooding or extreme tides.

By mitigating the impacts of industrial hazards, through:

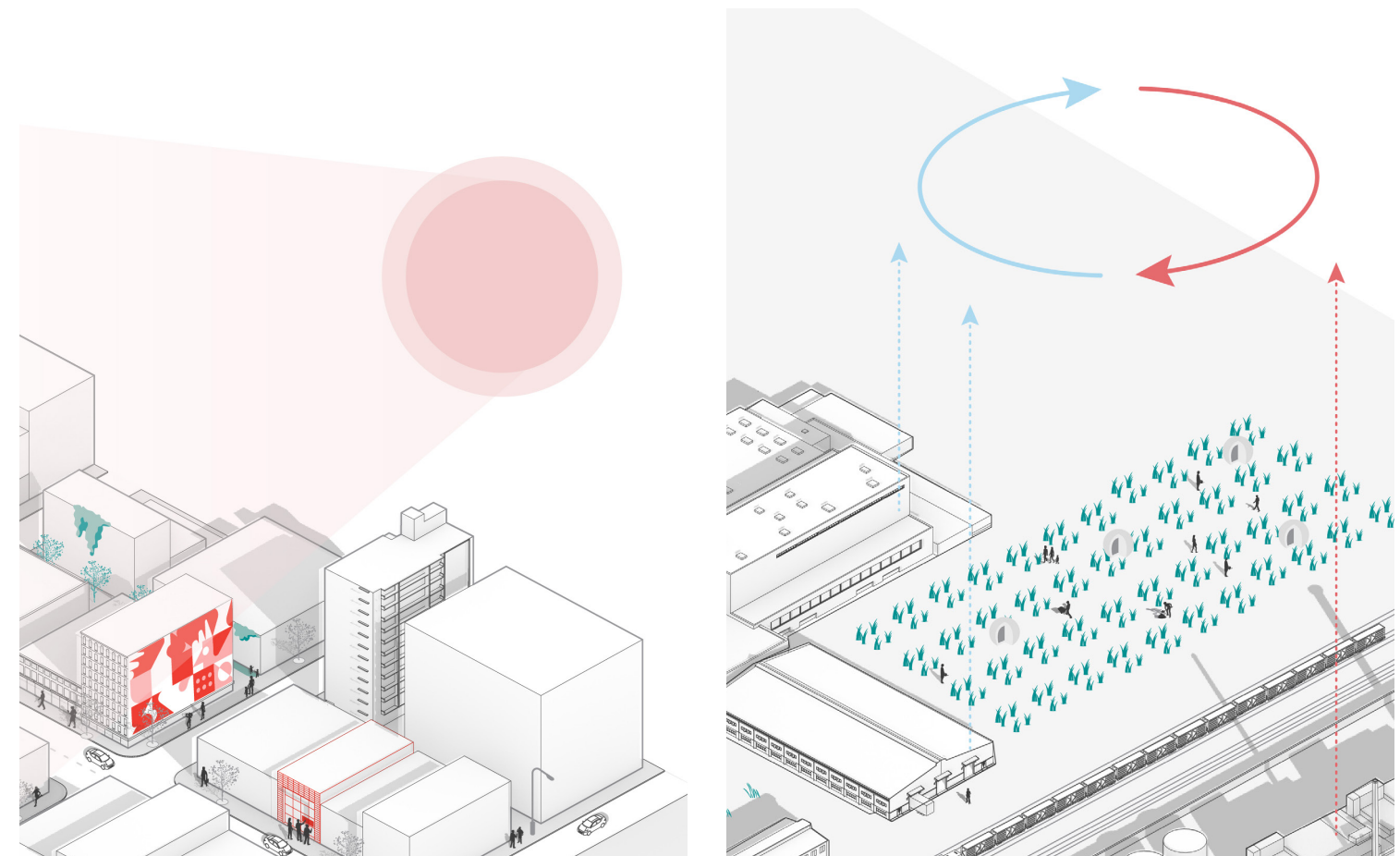
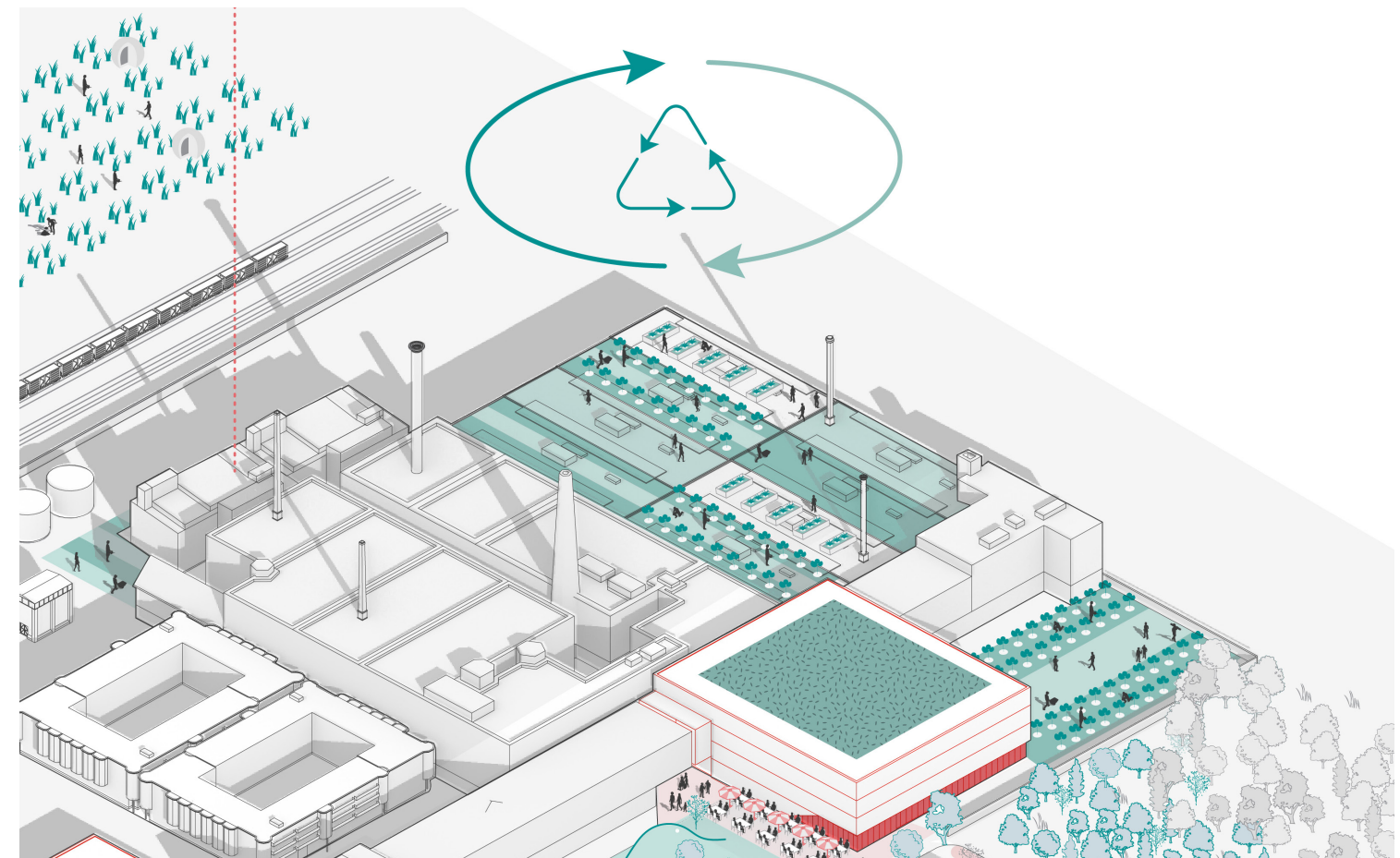
18. Spatial organization that isolates high-risk operations from the surrounding area;
19. Segregation of high-risk operations and systems;
20. Secure access points and traffic flow;
21. Incorporation of safe spaces and emergency equipment;
22. Incorporation of emergency wayfinding/signage that is clear and complies with accessibility principles.

By maximizing the project's adaptability to hosting new uses, through:

23. Flexible structural and architectural design that allows for eventual expansion in phases;
24. Flexible structural and architectural design that can accommodate changing uses (e.g., layout, envelope, traffic flow, safety standards, lighting);
25. Flexible and adaptable workspace that permit modulation as needed in case of expansion or a change of use (e.g., movable and modular furniture and partitions);
26. Design of a reversible buffer space easily adaptable to different uses.

By providing access to essential services, through:

27. Creation of and participation in a local-community mutual-assistance and distribution network (e.g., logistics centre, emergency hub).



Environment

How will the project's design and architecture help address environmental challenges?

Best practices 1 through 13, which describe strategies for reducing project energy and resource consumption, are also relevant here in addressing environmental challenges. In the interest of avoiding redundancy, they have not been repeated.

By reducing its carbon footprint, through:

- 28. Reduction of operational carbon emissions over the full lifecycle of the project (energy, water, transportation, waste, plant carbon sequestration);
- 29. Reduction of emissions from embodied carbon of materials.

By making responsible use of resources, through:

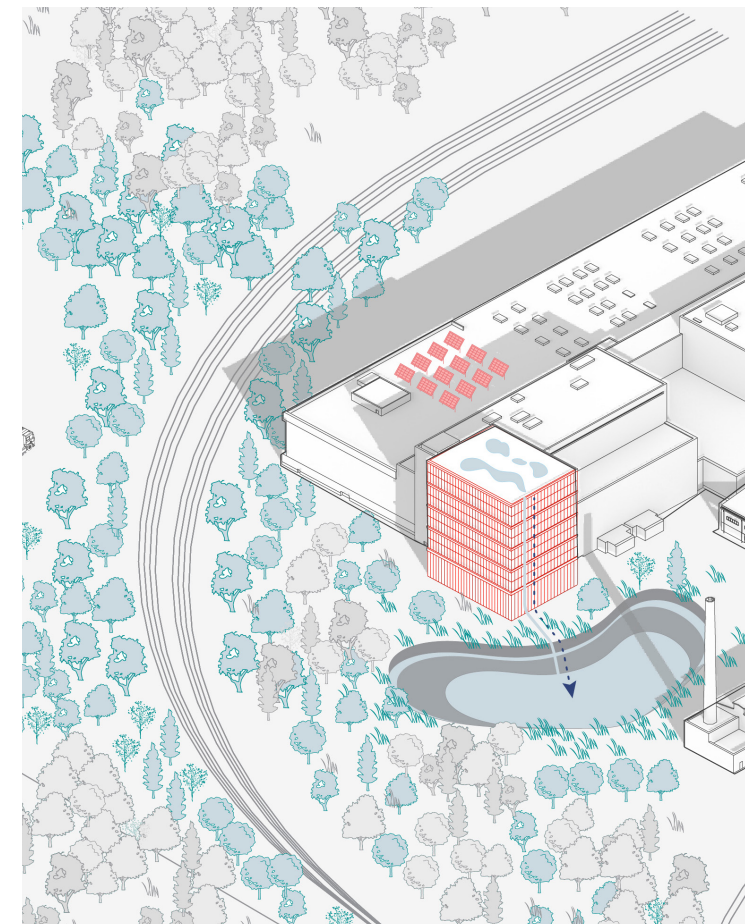
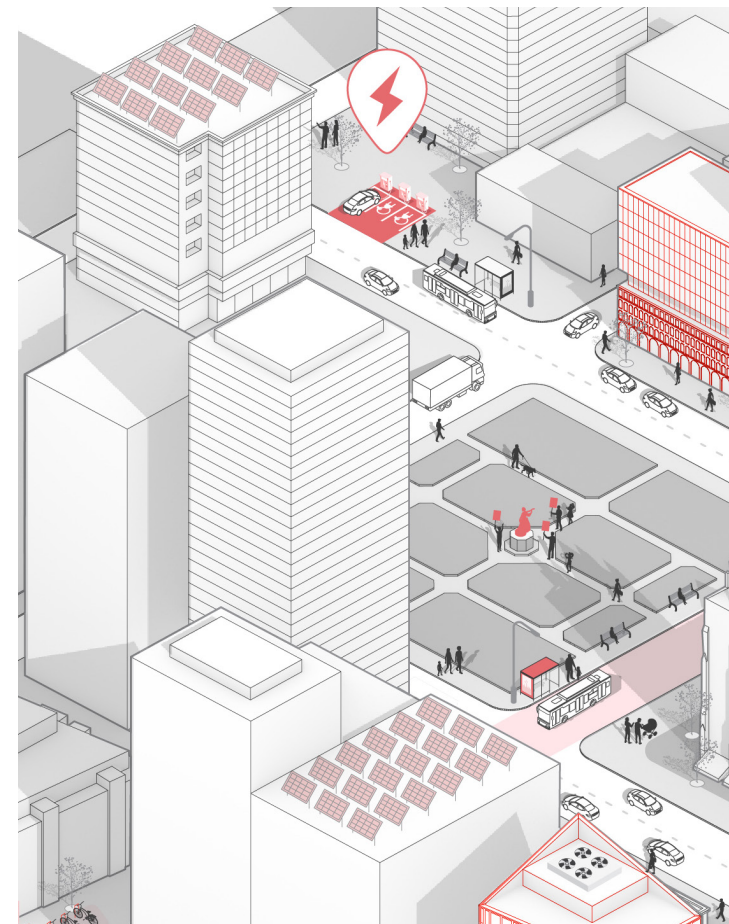
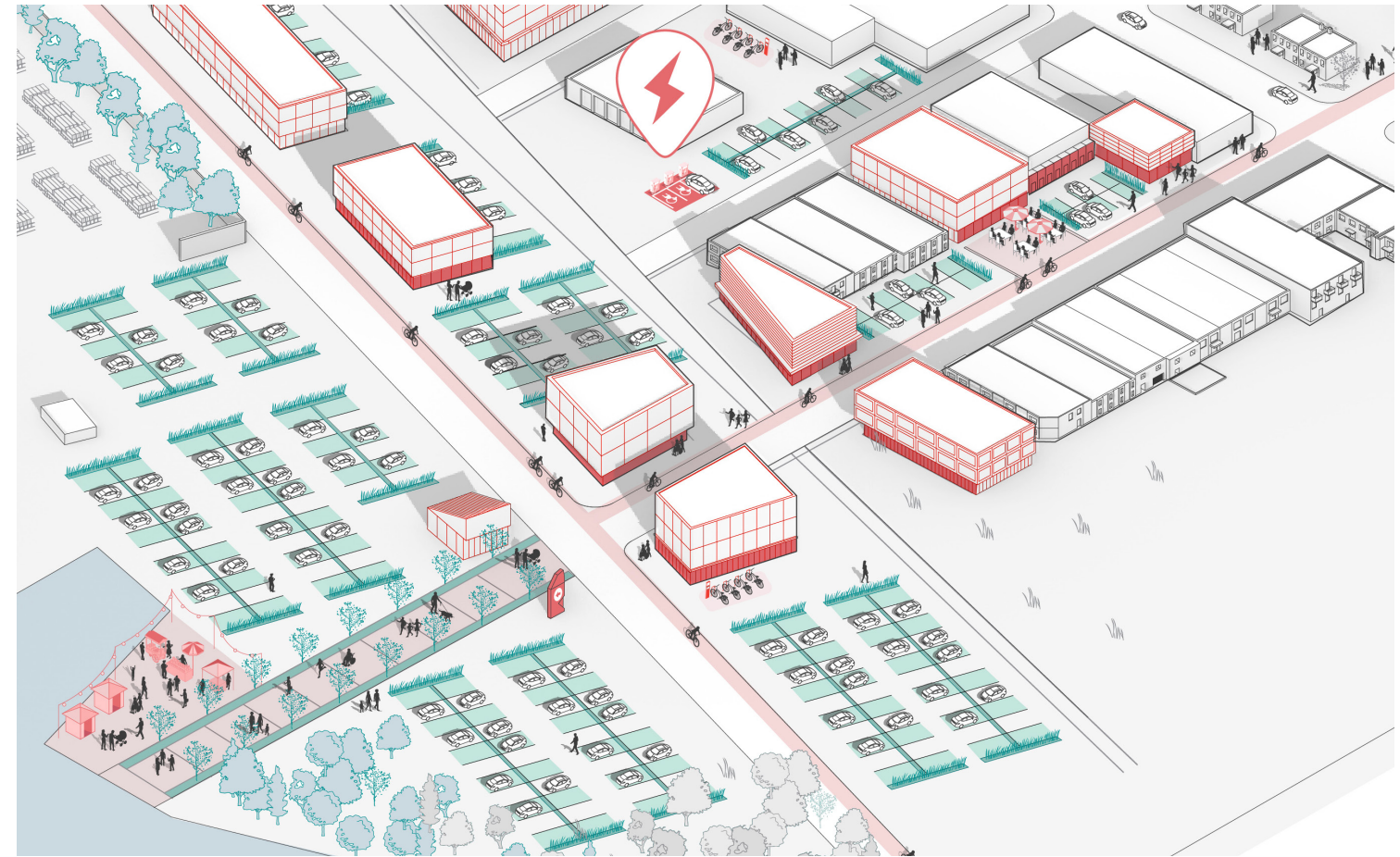
- 30. Design and construction choices that promote longer building (and material) lifecycles;
- 31. Full or partial recovery of an existing asset;
- 32. Use of recycled materials;
- 33. Use of prefabricated construction methods to limit waste;
- 34. Use of construction methods that enable efficient deconstruction at the end of the building's life;
- 35. Incorporation of initiatives to share project consumption data so as to encourage reduced energy and resource consumption throughout the project's lifecycle (raising awareness among building managers and users).

By contributing to the richness of natural environments, through:

- 36. Preservation and reconnection of green and blue biodiversity corridors to ensure a greater wealth of urban animal and plant life.

By reducing environmental pollution, through:

- 37. Soil decontamination (if possible using natural strategies);
- 38. Selection of non-toxic and non-polluting materials;
- 39. Contributions to nearby active mobility networks;
- 40. Contributions to local-community goods and services distribution networks.



How will the project's design and architecture help generate greater economic benefits?

By contributing to the neighbourhood's prosperity, through:

41. Implementation of a local-community goods and services supply network (e.g., materials and resources);
42. Production, processing and marketing of products for a local-community network (e.g., market-garden produce);
43. Provision of functions and services that complement the existing employment hub and help shape a complete living environment (mixed uses and densification, both horizontal and vertical).

By enhancing the neighbourhood's attractiveness, through:

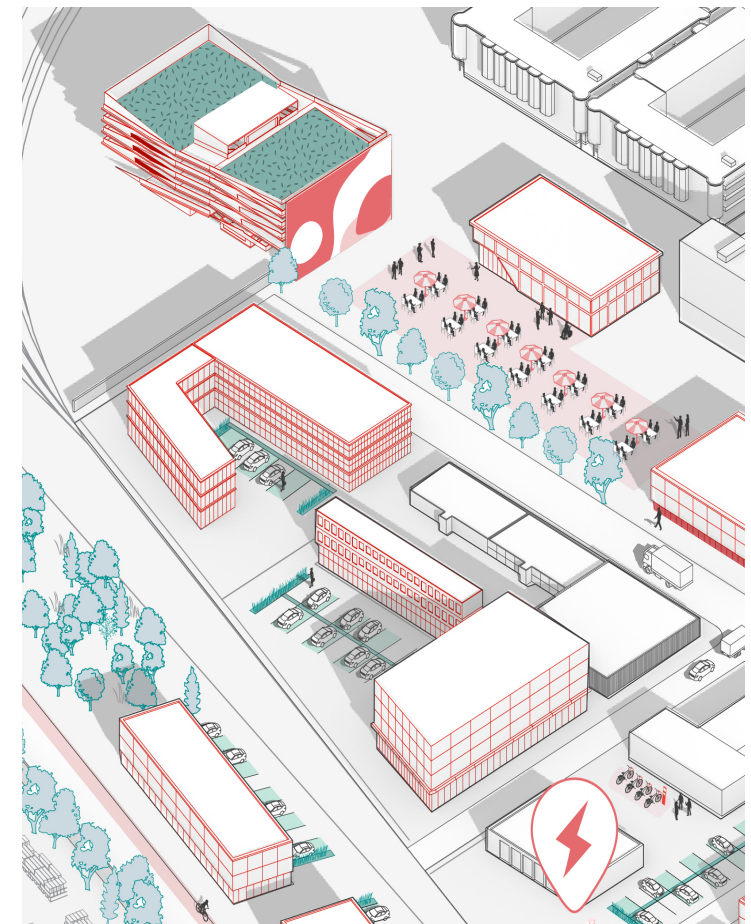
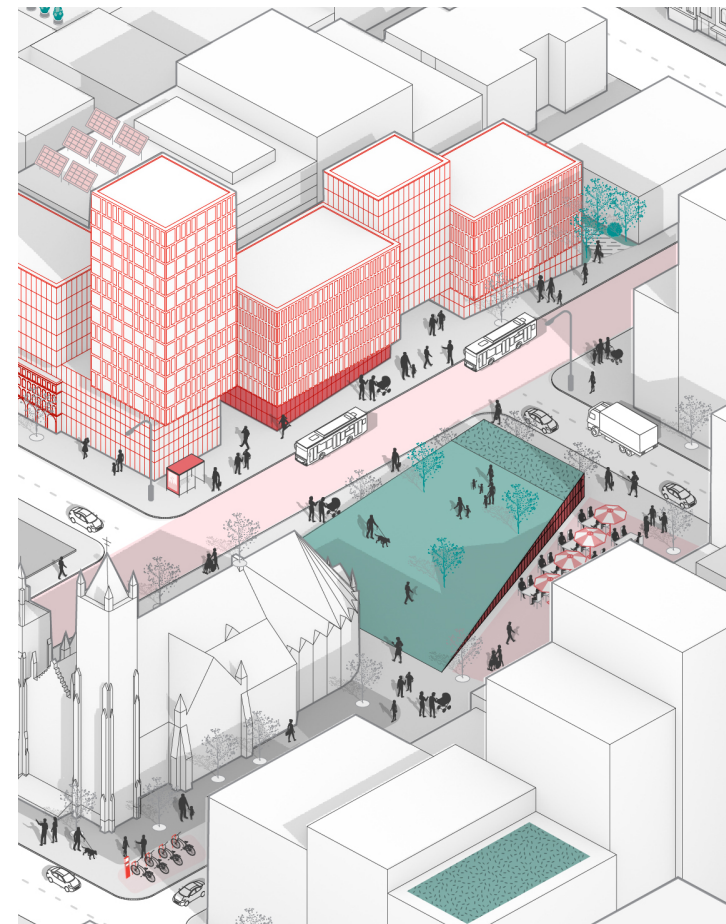
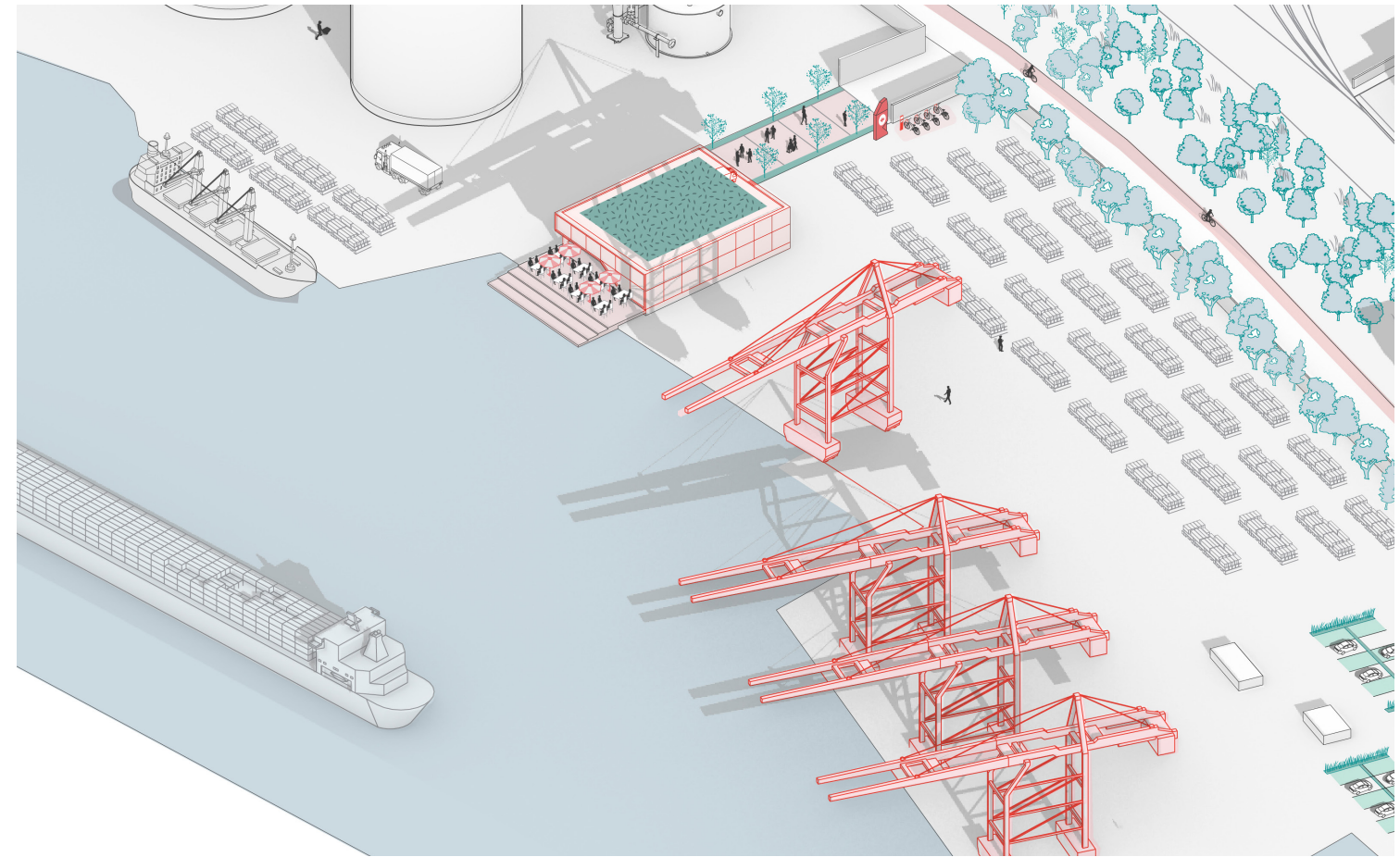
44. Highlighting of identity-shaping visual landmarks in the district (e.g., industrial heritage);
45. Highlighting of the industrial facilities and related activities as a vehicle for promotion of the company and valuing of its employees;
46. Temporary and evolving spatial design initiatives on the site beginning with the earliest stages of project development, as a means of activating and engaging future users and neighbouring communities;
47. Incorporation of temporary and/or relevant art works, installations or performances into the sites and buildings.

By emphasizing investments with significant long-term economic benefits, through:

- Best practices 1 through 13, which describe strategies for energy and resource consumption reduction and reclamation, are also relevant to this section on costs and benefits.
48. A choice of architectural signature that embodies the client's entrepreneurial activities and values and contributes to worker attraction and retention;
 49. A choice of spatial organization that optimizes operations and logistics (e.g., compactness, proximity, sequence, routing);
 50. A choice of better-performing technical equipment, to optimize floor space on a confined lot;
 51. A choice of quality amenities for work and living spaces, and of services to enhance the asset's use and resale value;
 52. A decision to share spaces and services (e.g., logistics centre, parking, electric-vehicle fleet).

By remaining trend-proof, through:

- Best practices 24 through 26, which describe strategies for enabling greater project reversibility and adaptability, are also relevant to this section on economic risks linked to trends.
53. Flexibility, adaptability and customizability of the spaces;
 54. Timelessness of styles and materials.



How will the project's design and architecture contribute to improved cultural attractiveness?

By recognizing, protecting and valuing the site's history and unique characteristics, through:

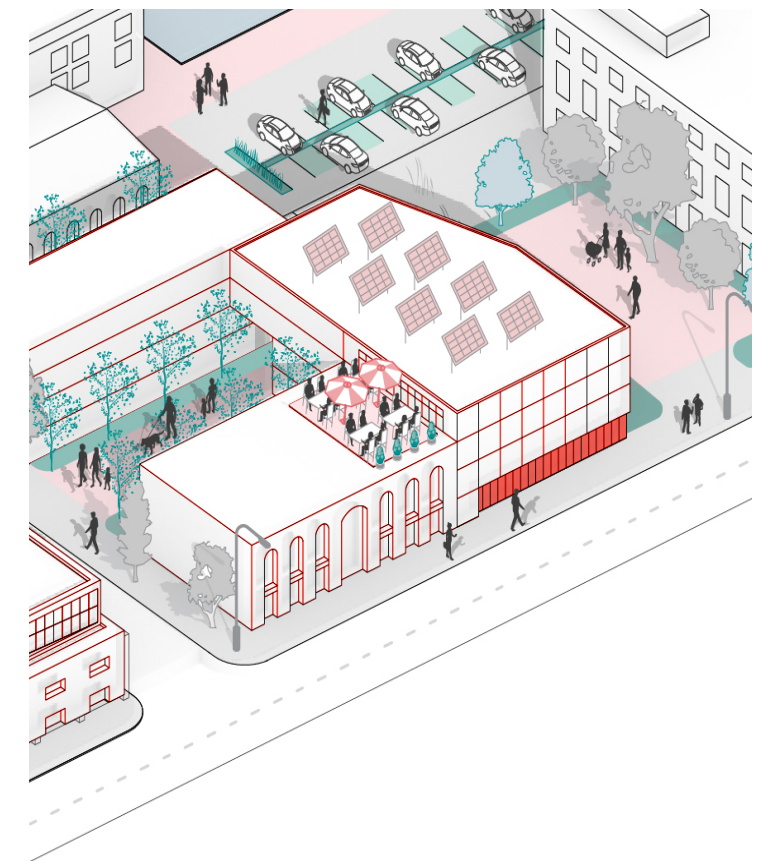
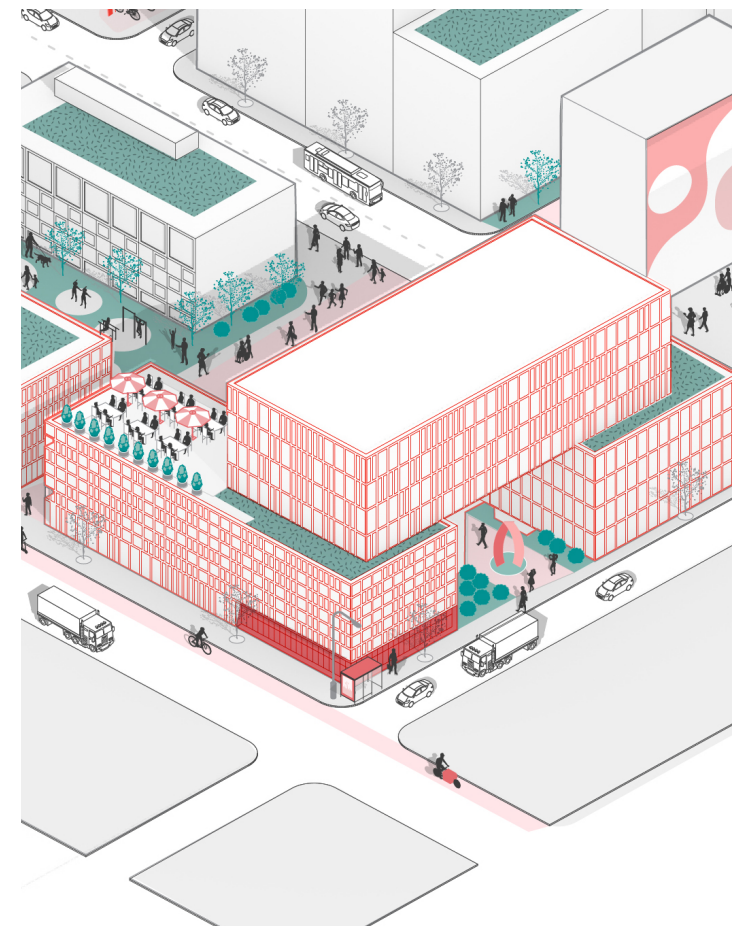
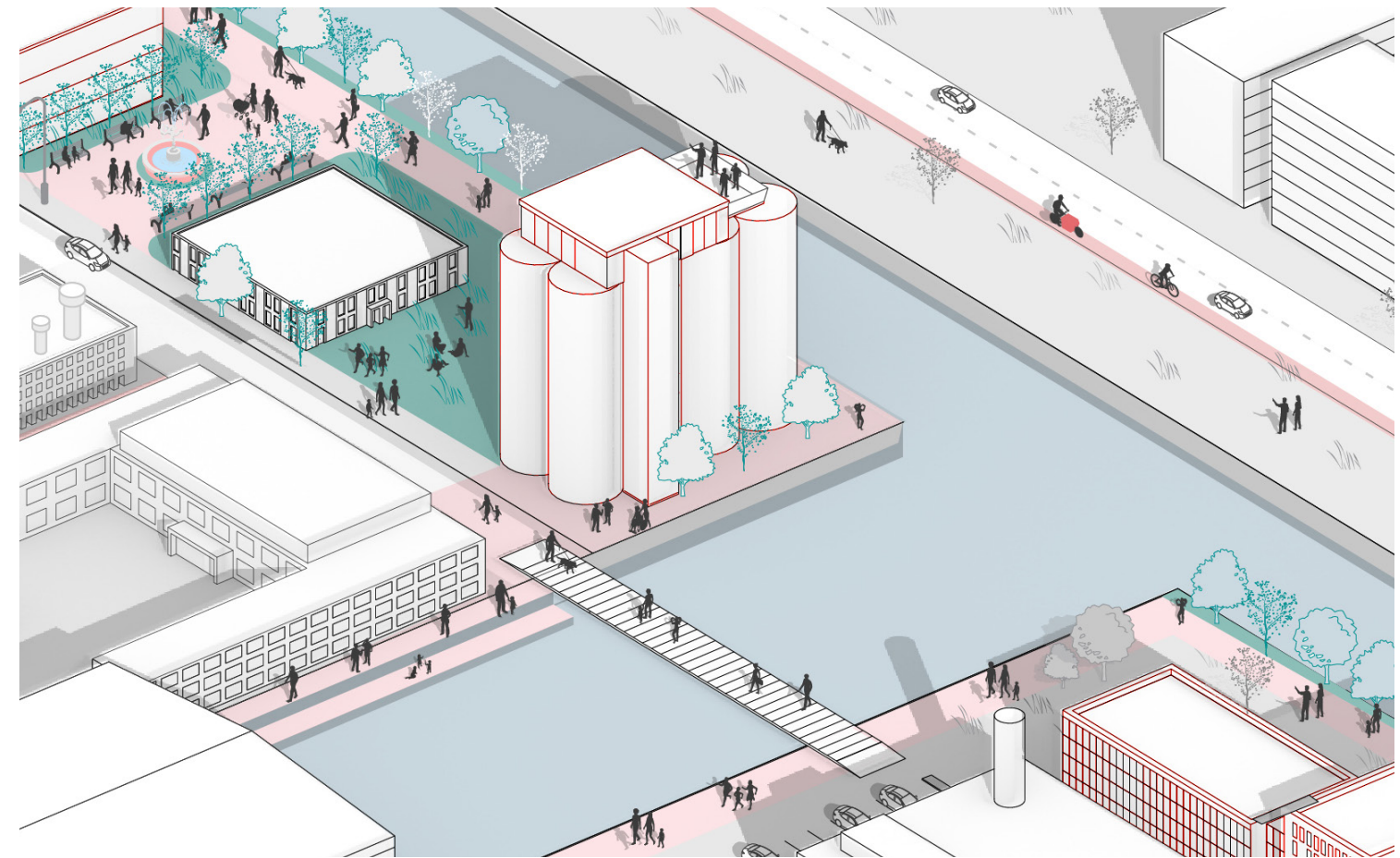
- 55. Maintenance and highlighting of a historic industrial sector and the associated expertise;
- 56. Reaffirmation and interpretation of the site's genius loci in the architectural choices (e.g., siting, volumes and materials);
- 57. Reaffirmation and interpretation of the site's genius loci in the landscaping (e.g., resurfacing of water, redevelopment of docks and shoreline);
- 58. Creation of openings and views of emblematic and heritage landscapes;
- 59. Incorporation of unique cultural references on the site or building (commemorative or celebratory features, e.g., archeological remnants).

By integrating sensitively with the site context, through:

- 60. Harmonization with existing volumes, rhythms and textures;
- 61. Particular treatment of the dynamic interface with the public space to maximize links and connections (e.g., enlivening of ground-floor spaces adjacent to pedestrian routes);
- 62. Landscapedesign that linksthebuildingtoits context;
- 63. A lighting plan for the site and building.

By encouraging rich and diversified cultural and artistic life, through:

- 64. Highlighting of various types of local expertise;
- 65. Enlivening of the public space;
- 66. Incorporation of artworks as well as event and presentation venues.



Equity, Diversity and Inclusion

How will the project's design and architecture help improve equity, diversity and inclusion?

By responding to user needs equitably, through:

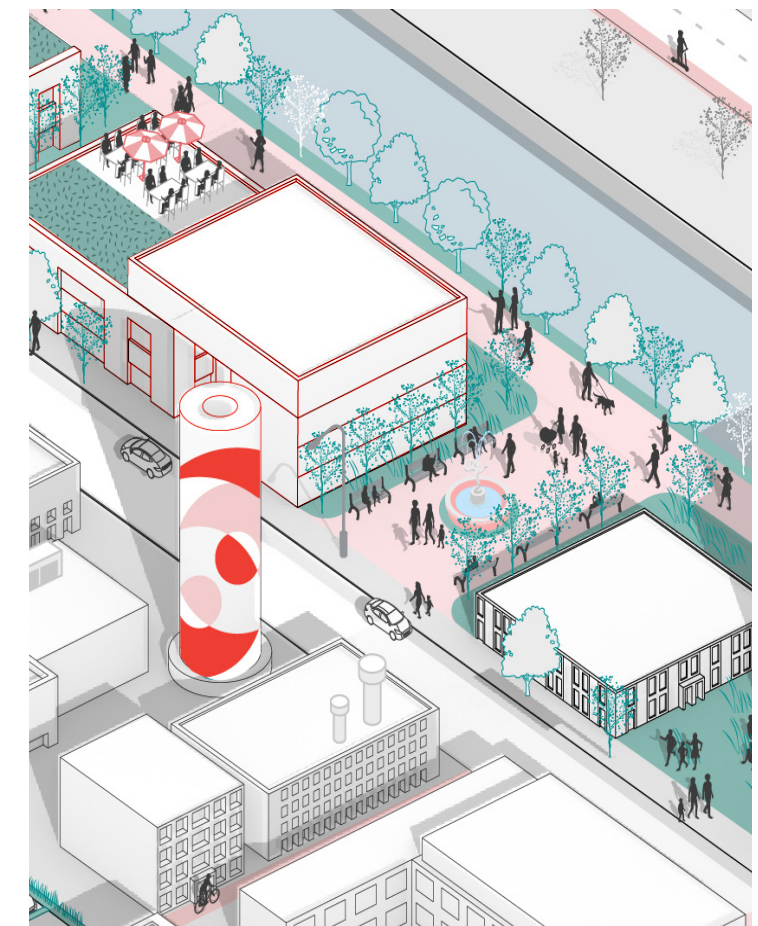
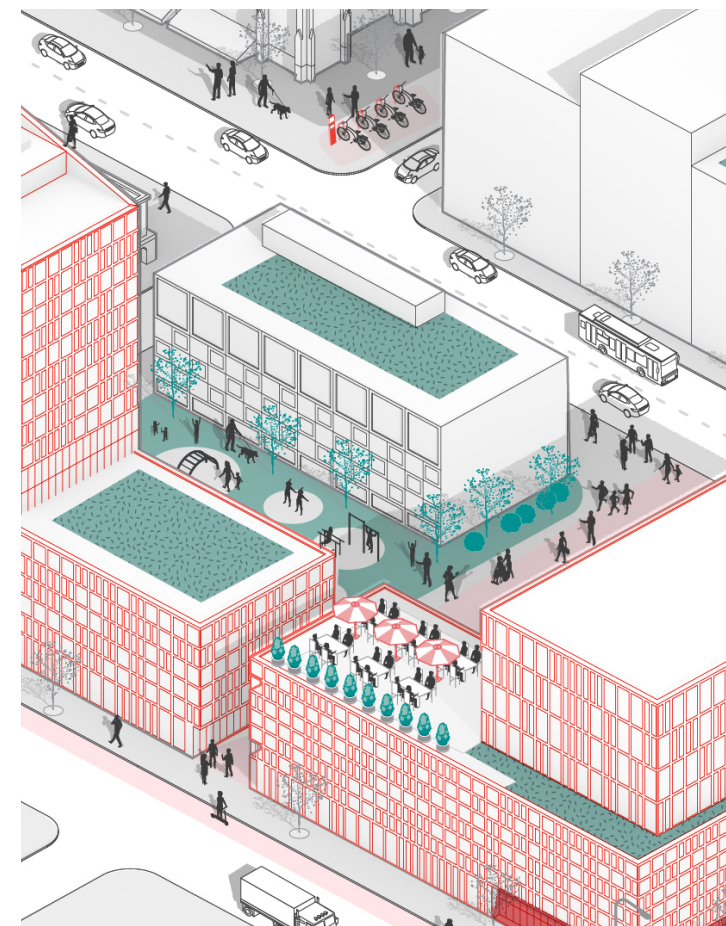
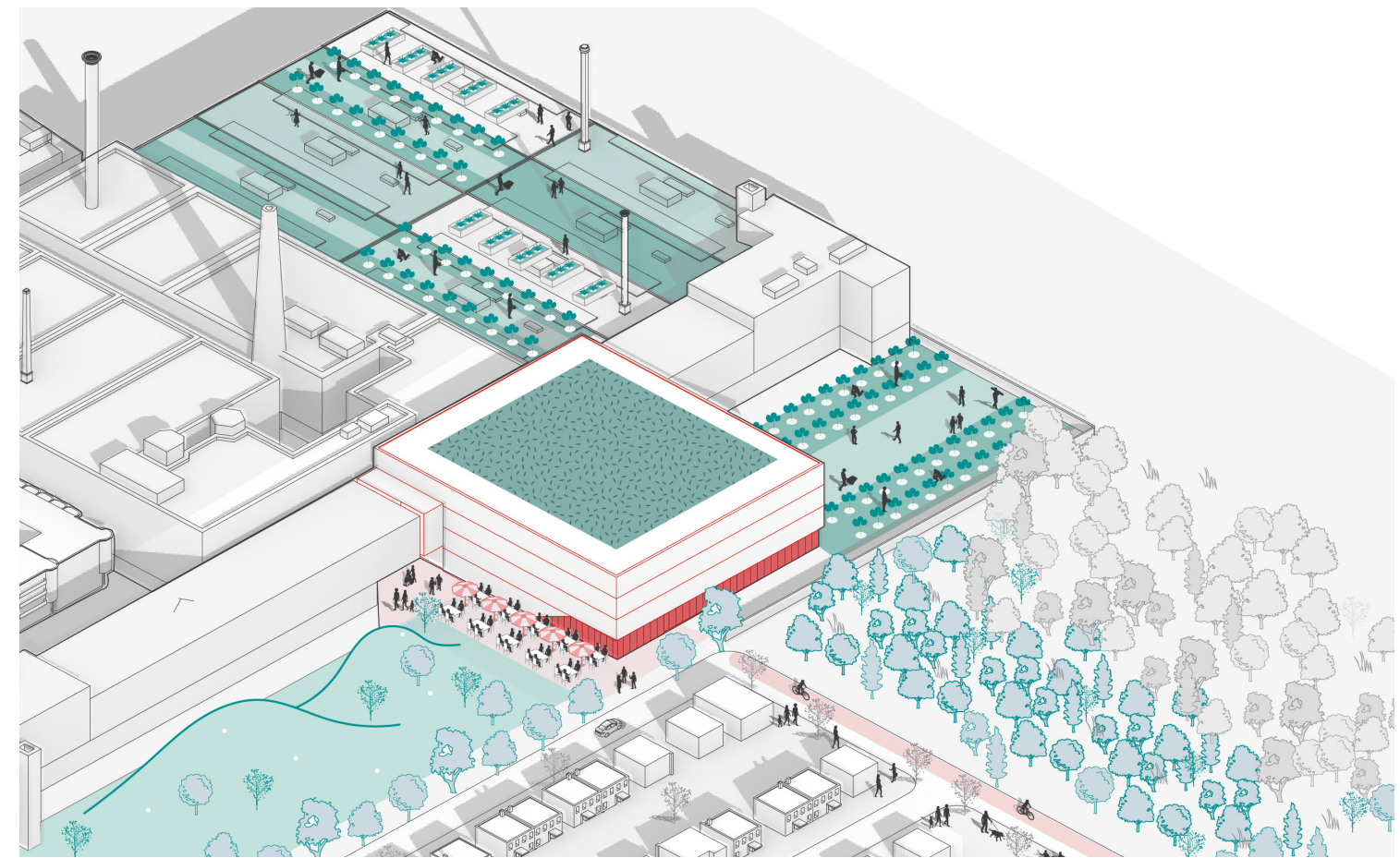
- 67. Opening-up of areas and democratizing of access to sites of shared interest (e.g., shorelines);
- 68. Strengthening of the local community service network;
- 69. Enrichment of the local network of public and community spaces.

By making the site accessible to as many people as possible, through:

- 70. Universal design strategies to ensure ease of access for people with reduced mobility;
- 71. Communication and wayfinding/signage strategies that are accessible and understandable by all.

By improving the dynamics of Living Together, through:

- Best practice 52, which describes sharing of spaces and services, is also relevant to this section, since sharing of spaces and services creates informal opportunities for gathering and exchanges.
- 72. Siting that respects neighbouring uses and activities (e.g., proximity to a cultural venue or a school);
- 73. Addition of a play-centred component (e.g., sport) to the primary function of the industrial building to promote free engagement with the space;
- 74. Inclusion of collaborative spaces dedicated to recreational or community activities (e.g., spaces for production, processing, commercialization and distribution of market-garden produce);
- 75. Laying out of new pedestrian links between lots and buildings, encouraging greater urban permeability;
- 76. Inclusive spatial planning of public spaces, for improved social mix.



Health and Wellness

How will the project's design and architecture contribute to enhancing health and wellness?

Many of the best practices numbered 1 to 76 can have a direct or indirect impact on the health and wellness of the project users as well as people in its neighbouring communities. The practices listed below are meant to be complementary, in the interest of avoiding redundancy.

By taking an interest in users' emotional wellness, through:

- 77. Incorporation of landscaping strategies that help mitigate adverse impacts of the siting context (e.g., addition of a vegetated embankment and plantings alongside a highway/expressway);
- 78. Use of programmatic and architectural strategies that help mitigate adverse impacts of the industrial operations (e.g., concealment of loading docks, reversing areas and outdoor parking areas);
- 79. Careful integration of technical equipment into the architecture (e.g., integration or camouflaging and soundproofing of mechanical equipment);
- 80. Interior layouts that draw inspiration from biophilic principles (e.g., natural light and materials, plants, views to the outside).

By taking an interest in users' physical wellness, through:

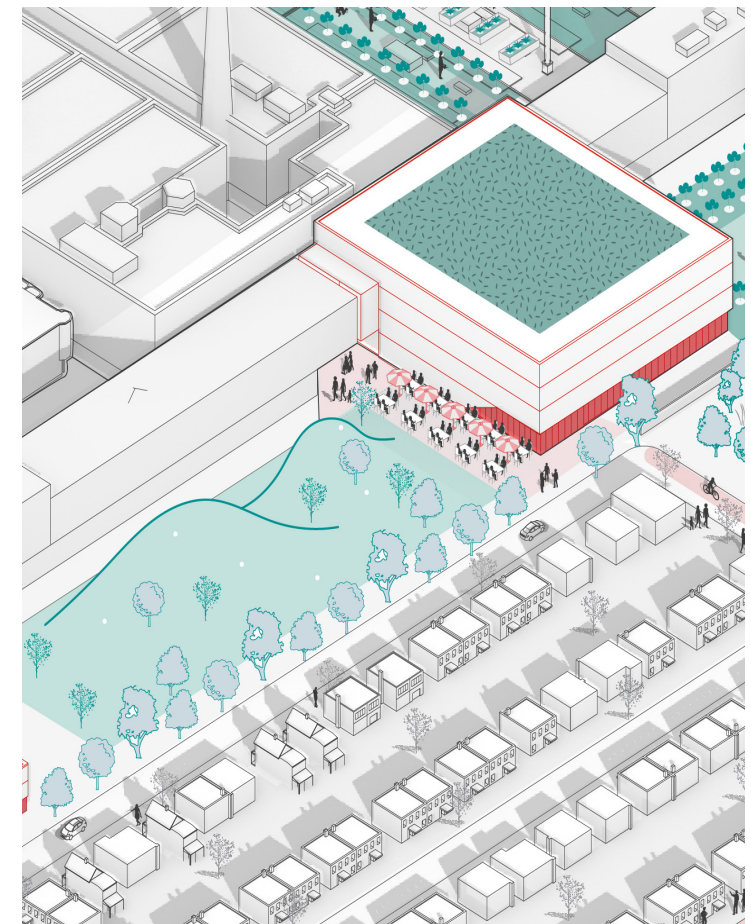
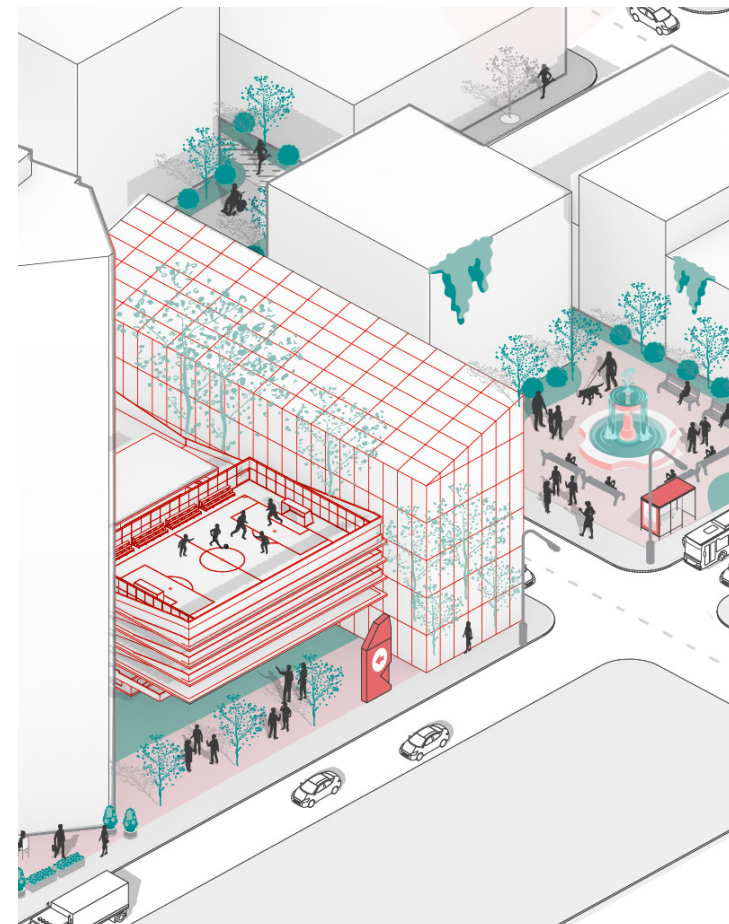
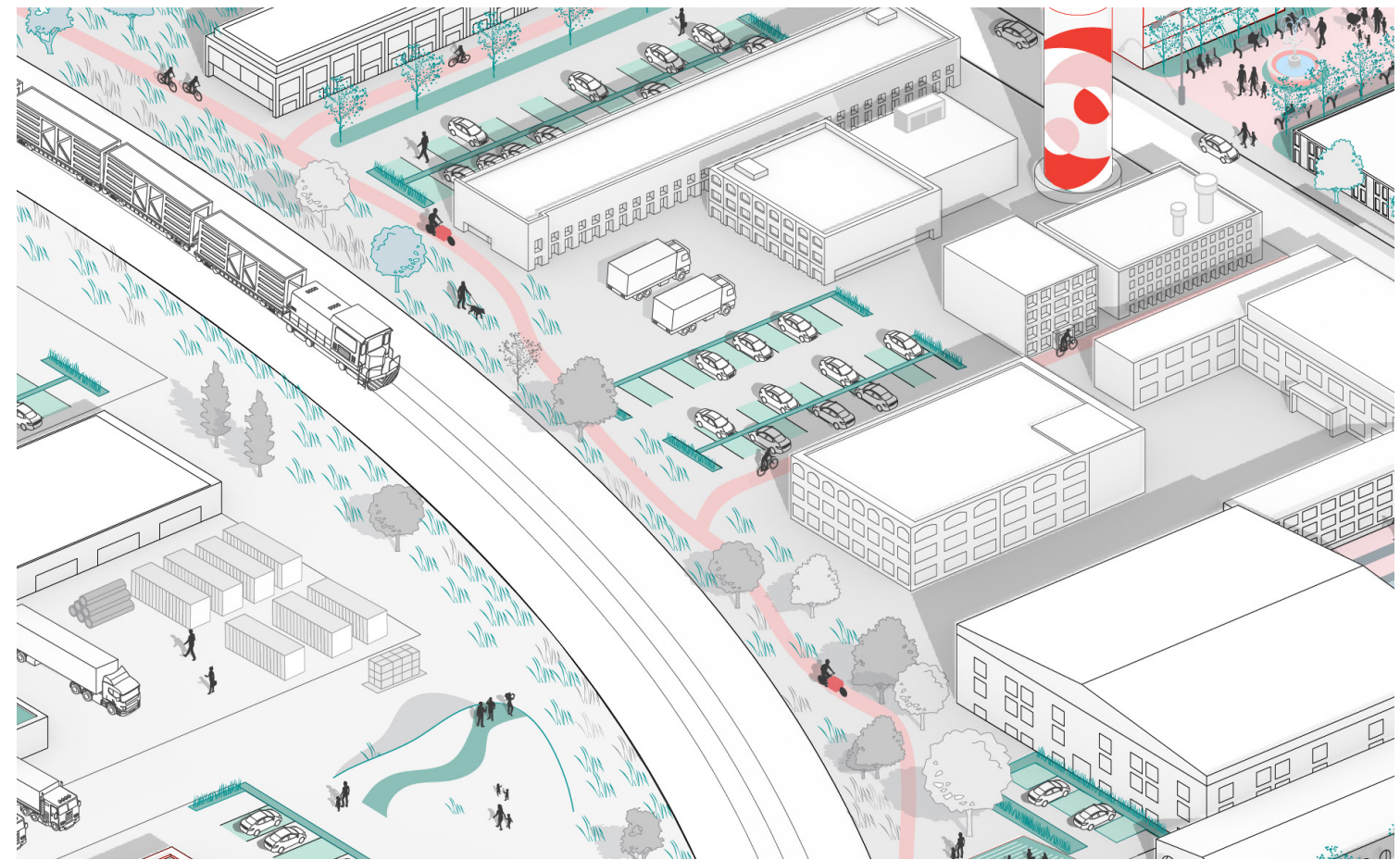
- 81. Access to local community service offering of quality fresh foods and drinking-water;
- 82. Incorporation of active lifestyle incentives (e.g., monumental staircase, lighted pedestrian links, lockers, showers, changing rooms).

By providing safe sites and facilities, through:

- 83. Safe coexistence with the industrial operations (including coexistence of the different modes of transport to/from and within the site).

By contributing to users' fulfilment, through:

- 84. Integration of awareness and teaching pathways and spaces about new ways of making and enjoying the city, advocated or developed by the industry (e.g., urban agriculture, symbioses, circular economy).



For more information
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