

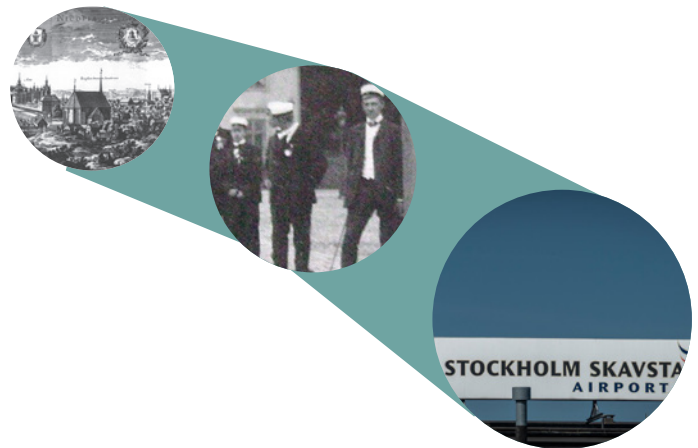
Nurture Nature!

History & culture

This short report explores the key themes that furnish the design proposal. Past, present, and future scenarios of the site and of the surrounding context are considered to understand the various narratives and relationships that make the identity of the site. 'History & culture' looks into what roots the project more deeply into the heritage of the existing community. 'Companies & people' looks into what can foster a thriving new innovative and productive community. 'Destination and transformation' looks into what is required for ever-changing futures. Last but not least 'Energy & resources' presents just a few ways in which the project can effectively be Nurture Nature!

A tale: Nyköping and the Gateway to Stockholm

Nurture Nature! writes into the three-part narrative of the rich story of Nyköping: the city, the airport, and the gateway. The city story began with a strong presence in medieval times with its fortress, later becoming a chartered city, and afterwards a Royal residential seat in the 16th century. The city rode an early waves of industrialization with textile productions, later including furniture and cars. The presence of the Swedish Air Force from the 1940s connects the airport's and the city's history, with the flying school of the army. Today, thanks to national infrastructural plans, Skåvsta and Nyköping have the opportunity to participate together to the National history, revamping their industrial past with innovation and sustainability, and of connecting distant Swedish geographies.



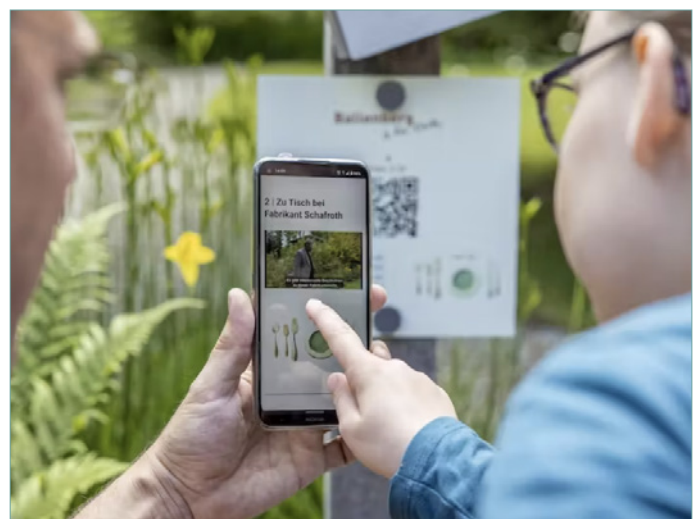
A twin: Nyköping's morphology - water, rock, green

Landscape urbanism is really the driver for the plan of Nurture Nature!. The nature of the site guides and organizes the plan layout, and the growth and programme of the district. It is interesting to note how this strategy seems to have a parallelism to the morphology of historic Nyköping. Like a 'different twin,' the old town takes shape around natural presences such as the rock of the fortress, the water of the Nyköpingsån, which divides the town into parts, and the green patches that line these elements. While the historic town runs as a chequered blanket only interrupted by the natural elements, Nurture Nature! employs the same elements as starting points to generate plans that emphasize their presence. This different interpretation of what natural features can do in urban realms marks an evolution of the urban thinking and puts the two centres in dialogue.



A tandem: archaeological and experience park

The Nyköpingsån valley is a well-known and well-regarded area of archaeological and cultural heritage. Several excavation sites are located within the city, such as Släbro and Åkroken. However studies have also uncovered archaeological findings in and around the project site. Burial grounds, settlements, fortifications, and other military findings were located around the F11 Area, and South Area. Hence the Skåvsta site could work with and offer a wonderful complementary counterpoint to the Sörmlands museum and other heritage institutions. A visitors' centre playing hub to archaeology discovery paths in the wonderful Nyköpingsån, it could also focus on experiential activities related to the agricultural and farming practices that characterized the valley for centuries. A reference for these open air museums could be found in the Ballenberg Museum in CH, where nature and culture come together.



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Companies & people

Companies ecosystems

Like in natural ecosystems, a diverse mix of entities, small and large, and complementary ones, can benefit the overall well-being of the system. Understanding who these different 'organisms' could be is helpful to plan for the correct design of blocks, building stock, adjacencies, ancillary programs, and so on.

Below an indicative review of what these types can be.



People ecosystem

Competitive businesses are dependent on talent. The term 'talent' describes a well-educated, high earning pool of workers. Thus the ability to attract talent is very important, and it includes the ability to provide great working conditions and unique work places and amenities. The prospect of a balanced life style is in fact a necessary attractor. Nurture Nature! assists companies in attracting both talent and the extended working community.

Start-up

Adaptable and quick to set up, whether concerned with internet, modern logistics, urban solutions, or other, they are based on innovative business models with incremental services. A more specialized category of start-ups is called deep-tech and uses patent-backed technologies. They require strong synergies with academia, hence they create interesting adjacency relationships.

Overall assets requirements: flexible office spaces, collaborative environments, proximity to competitors, proximity to talent pool, testing facilities, strong programming to sustain knowledge exchange, and public spaces to stimulate creativity and informal sharing.

Established company

Medium to large company branches or HQs can help define an entire ecosystem, as a keystone of a district. They are more stable organisms with tested business models, applications, and collaboration networks. Their own ethos influences the surroundings.

Assets required: sole tenant building, flexible office spaces, embedded labs and testing, hubs for internal communication, amenities for employees, great connectivity and visibility.

Industrial facilities (Small to Medium)

These are storing and logistics facilities, small 3d printing manufacturing, AI technologies, customized productions, and other clean industrial uses (which allow for an efficient use of real estate, with less space dedicated to storage).

Robotic fabrication and various other techniques also alter the standards and requirements of technical spaces, for example allowing to mix productive with other uses. Industry 5.0 can therefore be small in footprint.

Assets: efficient transportation networks, logistic hubs, energy and water sources.

Academic institutions (scaled ad-hoc)

Campuses or satellite universities, research institutes and foundations, either private or publicly backed, provide the essential knowledge production core to support companies. Advanced manufacturing training academies, up-skilling, and all other initiatives to address skills gaps in the workforce, will be essential to meet the requirements of emerging industrial models.

Assets: office spaces, classrooms, training facilities, laboratories, proximity to transportation, advanced manufacturing.

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Destination and transformation

Destination: knowledge exchange

The literature on patterns of innovation shows us that innovation and healthy businesses thrive where knowledge exchange occurs. Particularly in the last three decades it's been observed that the spatial concentration of innovation can lead to more knowledge in support to local infrastructure, and to further innovators clustering in geographic proximity. Proximity to large cosmopolitan urban centers and to transportation hubs can attract diverse talent, different perspectives, that see a place where knowledge is exchanged as a destination.

Nurture Nature! wants to be a place to champion innovation in all of its forms. Companies locating here should have the chance of easily generating new ideas, learning from one another, and eventually sharing to the world.



A **knowledge hub** will be a catalyst for the district. A place where to network, share ideas, host up-skilling courses, conferences, and international workshops. Easily accessible to local workers, it will be thought as a destination for visitors from other innovation centres, students, and interested general public.

However the exceptional settings of the district will go beyond structured channels for exchanging ideas and meeting people: while running on the circuit, taking the dog to the daycare, or having a coffee in the plaza you can be serendipitously meet like minded people in informal settings.



Testing ideas fast is a key component of innovative organizations involved in manufacturing. A **prototyping centre** at the district can be both of use to local companies and it could be booked by visiting ones who need rapid prototyping and testing.

Leveraging the latest manufacturing technologies and knowledge in a shared capacity, for instance a 3D printing facility/company serving a network, can also be a way to be resources and money efficient.

Transformation: education & complete neighbourhood

Building on the proposed programme rooted on innovation, industry 5.0, wellness, and sustainability the Skåvsta district is set to great growth potential in the future.

Additionally, with the continuous evolution of transport technologies such as hydrogen powered aviation, cleaner road transportation, and more, the district sets itself for the possibility of becoming a healthier complete neighbourhood, a 15 minutes city, with high density housing, workplaces, and amenities.

Education facilities are often great pioneers in new districts, instantly activating sites with footfall and 24 hours uses. Hence, they could plant the first seed of a future complete city.

The key to achieve this scenario in the future is to design highly resilient structures, meaning buildings that can be easily converted into different uses.



Education spatial requirement can be fluid, especially in the phase of programme inception. A key trend is what is known as a **'platform university'** approach with physical spaces that facilitate interactions between teachers and students and the local community, but where the space can be used for a variety of purposes that work for both education providers and the local community. In the UK, a number of universities are beginning to design multi-purpose, mixed-use campuses in response to this need. Imperial College London campus in White City is a case in point with a 5.6ha mixed use site.



The **residential component** of the masterplan can follow essentially the same approach of educational spaces. Starting from a potential provision of student housing to sustain academic institutions on site, the provision of a variety of scales of housing, from studio, to a family flat, can find space in the upper floors of converted buildings of the boulevard, as well as in other selected blocks.

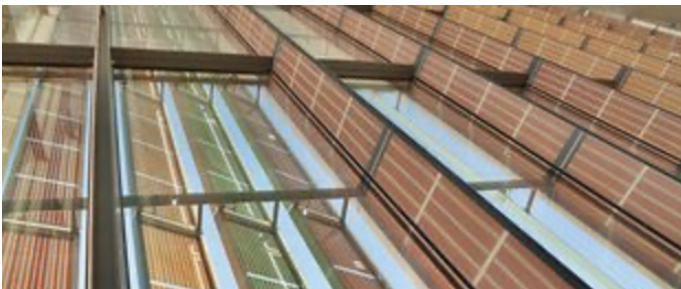
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Energy & Resources

On-site renewables

In the first place, the demand of energy should be reduced as much as possible to minimize the requirement for equipment. First of all this assumes an adequate user awareness. The district's occupants should be able to sustainable choices, low-energy consumption behaviours.

Secondly, indeed, all buildings on site should be designed with passive principles, such as fabric and glazing performance, to conserve energy. Massing, orientation, shading, natural ventilation, and layout will be taking into consideration here. Active design will support a savvy management of these buildings with low-energy lighting, smart meters, and efficient MEPs. Below some case studies for potential strategies.



The Swiss Tech Convention Center, CH, is a reference for **integrated energy strategies**. 100% of their energy comes from the EPFL campus solar park, one of the largest urban solar parks in Switzerland. "Graetzel" photovoltaic cell panels designed to produce electricity and also to protect against the sun have been installed on the west façade. A natural ventilation system operates independently on different areas of the building in place of air conditioning. Additionally, the STCC includes four geothermal pillars that allow heat exchange with the ground, and sanitary hot water produced by the recovery of waste heat from the refrigerators.

Waste cycles

Waste generation for the site should be carefully assessed, however being a brand new development, there is potential to design from day 1 for more holistic strategies.

The base is once again pushing towards users' awareness and behavioural changes to reduce the outputs. The following strategies concern on-site operation policies, such as restricted 'single-use' materials among F+B vendors, minimum packaging and 'take-back' by suppliers. Waste collection is operated via e-vehicles of materials, and then sourced for recycling and reuse.

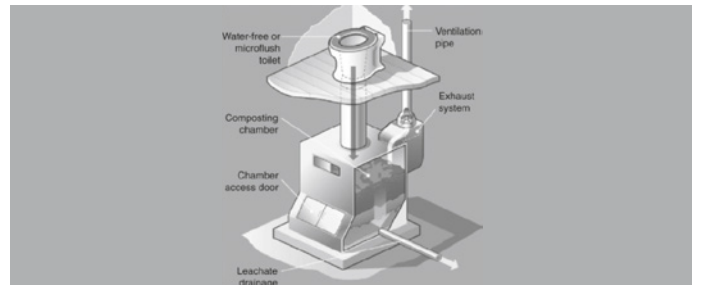
Finally, the productive nature of the district, with testing laboratories, storing facilities and workshops, and its adjacency to a major transport node especially lands itself to further scenarios for waste materials recycling. Below some case studies for potential strategies.



The **Circle Bank** Grand Solution Project is a Danish collaboration between a consortium of both knowledge, commercial, and market partners, co-funded by Innovation Fund Denmark and Realdania. Their activities aim to reach an integrated, scalable and cost-effective circular value chain, to compete with linear market. A digital platform, a construction sector's main collaboration hub – from design to demolition will help organizing a building & material bank, a stock exchange for circular materials, and circular decision support. A Swedish Circle Bank could be a natural partner at the Skåvsta site, where waste materials of prototyping could enter the circle.



Sweden has recently approved of the construction of the first permanent **electrified road** as part of the fossil-free transport network. The project aims specifically at the network for heavy vehicles. The first section will coincide with the E20 between Hallsberg and Orebro. While the exact choice of what technology to employ is under discussion, this opens up possible future scenarios to be employed at the Skåvsta site. The district will be home of logistic and productive areas which will great benefit for a low carbon dioxide emission opportunity.



Looking at the future of waste can include more sustainable approaches to sanitation as water becomes a precious asset. Building on Finnish cultural heritage, the department of environmental engineering at TAMK (Tampere University of Applied Science) started implementing systems using dry toilets, and looking at the up-scaling to urban areas. Toilet waste, rich in phosphorus and nitrogen, is carefully composted to become a nutrient rich fertilizer, one that does not impoverish soils. Water saving + nutrients recycling.