

## Weaving together

Three research questions stood at the basis of our proposal.

- How can a city put its heritage at the centre of its future development?
- How a multi-faceted productive city can embrace adaptability and sustainability to achieve social, economic and ecological resilience?
- What happens when you put the green and the blue first, and existing buildings second?

Acknowledging the shortcomings of a top down planning approach and the vulnerabilities of a knowledge-intensive productive city to future trends we propose a three-pronged urban toolkit that can be easily applied to other neighbourhoods or cities.

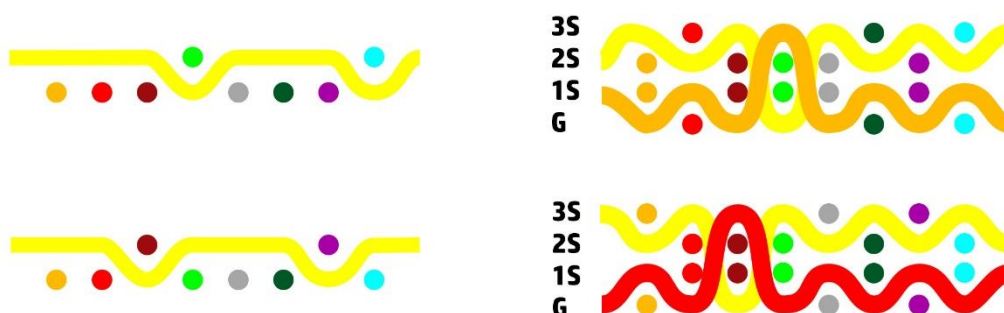
**Weaving together** takes Boras' heritage as a textile city and turns it into a planning process. Collaborative, open ended, interdependent and highly flexible the process creates an adaptive urban tissue.

The concept is applied on a territorial level, adjoining neighbourhoods being bound together through urban, green or accessibility trails; on a theoretical level, the area's functions are woven in a 3D collaborative tapestry; and on a process level, the urban toolkit rejecting the classical urban planning approach to empower private owners to collaborate and adapt to an ever changing physical and economic context.

The first prong consists of a **Function matrix** that combines traditional land uses bringing the productive city to the scale of individual workplaces, suitable for research based or creative industries. No building would be single use but part of a dense mix of housing, services and workplaces.

Going beyond horizontal mixed-use development or the layering of functions we propose a 3D function weave. Each private plot owner can choose from the Functions matrix his own mix and by threading them with one or two of the neighbouring plots' functions can weave a highly mixed-use collaborative urban tissue. Publicly owned plots can set the stage for future development providing the first function strands to be weaved.

The textile city heritage isn't the only one celebrated through the 3D, 4-harness based, weave pattern, but also Boras' history as a trade centre, a place for knowledge and cultural exchange more than mere merchandise. Its identity as a business-friendly municipality that stimulates industries to re-examine, discover and develop new business segments is enhanced through the proposed vibrant urban development, with clusters of education, research and businesses to match and extend its centre's character along the urban trails.



The productive infused housing function tread, offering a wide variety of live-work options, is predominantly kept to the upper floors with, an occasional greenhouse for urban farming or green roof above. Urban life-giving functions such as services, commercial, studios, co-working, light – high-tech or creative industries, small-scale manufacturing, are threaded to touch the ground and activate the proposed urban space, pedestrian streets and plazas.

The second toolkit prong deals with the physical environment manifested heritage. The potential of industrial buildings is given precedence for living and working developments. Rejecting the typical tabula rasa approach to industrial/brownfield urban renewal or beautification we propose a **Tabula plena** form of urban preservation inspired by Nan Ellin, Jorge Otero-Pailos and Bryony Roberts.

We propose a reuse intervention catalogue of 12 alternative approaches to architectural form to be used on a plot by plot case based on site, building, developed and function mix particularities. Each variant is accompanied by a schematic evaluation of its development cost, plot coverage ratio and floor area ratio to better inform private owners on their options.

The approaches range from a conventional repartition and re-functionalization, pruning of secondary or damaged buildings or reskinning to various forms of extending and enhancing, to even a stripping to the structural skeleton to give a physical definition to new open spaces.

Economic and aesthetic valuations would dictate the most suitable approach. The stitching of existing buildings with corridors or connective functions or a monolith unifying building is better suited for complexes with a good relation to the urban context.

Employed in similar conditions Adding and Top up differ from the previous two and each other in the value they place on the existing buildings or urban space, maintaining the building intact and reshaping the space they define through new insertions, in the case of Adding, or vertically expanding the buildings to maintain the urban space for Top up.

The Mat or Frame approach provide a new interface to the surrounding areas, through new active, open facades, while Underground and Superstructure maintain the complexes and provide additional built areas underneath or above, highlighting the buildings (Underground) or the open space (Superstructure).

Each of the approaches can be used individually on an entire plot or combined to better suit each building in a given complex.

The third, strategy balancing prong deals with the adaptable-transformative city. Users, functions, residents, social requirements and expectations change in line with the development of new technology, new modes of transport and new ways of living, residing and working. A flexible, expandable, structural grid for new buildings of 6x6m suits most functions, allowing buildings to endure, being fit to re-use and through continuous maintenance, thus sparing resources.

### **Sustainability – resource management**

Social and economic resilience can thus be achieved through the diverse urban tissue, able to handle prosperity as well as adversity and attempt climate change adaptation. The ecologic pillar finds its answer in the third research question, a neighbourhood proposal with the blue backbone of the River Viskan and the woven-in green stretches and urban trails. Ecological corridors are created through the green stretches connecting the surrounding parks and forests. Stormwater is managed by creating bioretention swales and retention areas along the waterway. The sport fields

were sunken to create additional stormwater storage while the resurfaced former Viskan course aids drainage.

The project was structured to adhere to the Reduce-Reuse-Recycle sustainability principle. Flexible, mixed-use, infill development well connected, physically and psychologically, to adjoining neighbourhoods, natural features and the city centre reduces car dependency as housing, production, commercial and leisure opportunities converge. A dense urban environment with reliable local and regional transportation and good accessibility to public transit and stretches with developmental continuity, inviting walking and cycling achieves resource-efficient land use. The Tabula plena toolkit is a recipe for building Reuse. The project proposal focuses on the first two Rs, Reduce and Reuse, as material recycling of demolished buildings is the easiest, most common approach.

## HS359 **Accessibility - mobility**

Accessibility to the city centre is eased through the proposed-to-be-widened KtK underpass connection to Druvefors in the north. To encourage use and ensure pedestrian safety commercial functions, preferably open 24/7 should be inserted as well. The underpass ceiling and blind walls could be decorated with murals creating a literal underground art exhibit. Along the two urban trails and the waterway the proposed paths connect the surrounding cycling, pedestrian and trail infrastructures. As over 50% of the site was not covered by public transport two new stations were proposed along Druveforsvägen. Proposed road sections maintain the driving lanes intact but introduce bioretention swales and tree lines, wide pedestrian and bike lanes.

Entrances to Gässlösa are marked on the predominantly commercial urban trails Druveforsvägen and Varbergsvägen, through landmark buildings, whose height is related to the surrounding urban context and visual relations to the ones in Centrum. The highest building, a mix of commerce, services, offices, accommodation and green public space, is proposed at the two urban trails' intersection, across the new school.

### **Blue-green stretches**

The green North-South stretch connects St. Sigfrids and St. Brigitta graveyards through a proposed pedestrian and cycling bridge over the railway and a green, partially shared, street along Ålandsgatan. An East-West green stretch is proposed along the resurfaced former Viskan course connecting Furuberg and its treasured small mixed forest to Göta. The resurfaced waterway also links the revitalized remaining industrial buildings and their proposed public squares, designed as open-air sculpture galleries.

The blue stretch, Gässlösa's backbone, connects the heathlands to Centrum and strings most of the proposed local meeting spaces along it, minimal, natural landscaping interventions to create sitting steps, pontoons or pavilions.

To combat the railway noise pollution near Druvefors a natural and built, collective parking, services and greenhouse, barrier is proposed. As project-site level landmarks the valuable industrial building are refunctionalized as cultural centre - the saw-toothed building on Silverpoppel 4 with exhibition, studio and workshop spaces in the proposed Superstructure and creative industries in the existing building; Repartitioned small scale manufacturing and galleries in the old industrial building along Viskan and production focused, creative hub, coworking and live work for the old shoe factory Wiskania. For some of Wiskania's annexes the Skeleton approach

was employed to create a well-defined open meeting space, a pedestrian bridge connected endpoint for the route along the resurfaced waterway.

### Implementation process

The first stage of development consists of the underpass widening, Viskan’s landscaping and course resurfacing, followed by a public-private partnership to create the site’s gates on the urban trails and landmark buildings, namely the hotel and offices complex on Jössagatan and Druveforsvägen, and the refunctionalized industrial buildings presented above. The second stage is infill development taking advantage of the already made investments and continuing the urban train tendrils predominantly on the Viskan banks. The colours used are indicative of the proposed functions.

**HS359** Later stages continue the acupuncture like insertion pattern. However, the open-ended, flexible toolkit-based proposed planning process, Function matrix and Tabula plena, ensures the private owners’ freedom of choice on where to invest, based on their neighbours’ actions. The illustrated variant shows a scenario based on existing building reuse and staged implementation on a plot and even building scale.

The three-prong strategy yields a dense living environment with a mixture of residences, retail, community services, parks, meeting places, offices and other non-disruptive activities that generate life and movement throughout the day. By accommodating a variety of businesses and services, both blue and white collar, the area is neither unilaterally dependent on one industry nor caters to a single demographic thus reducing its vulnerability to cyclical fluctuations and structural changes. Providing numerous housing typologies and viable live-work opportunities ensures a diversity of future residents, income, lifestyle, age and background wise, contributing to social cohesion and an inclusive, integrated, equitable neighbourhood.

A knowledge and creative driven productive neighbourhood, our proposal for Gässlösa, weaves a dense urban environment, attractive through its range of urban qualities, integration of environmental and natural considerations, flexible in implementation and adaptable in nature, safeguarding long-term sustainable use of land, water and physical environments, from an ecological, social and economic aspect.

