ZN892

SLUISBUURT

SLUISBUURT URBAN FABRIC
Clo(th)ed loop productive city

Ph.I
2018-2015

Potential local impact
Public proffesional guidance programs will take place for the new inhabitants into recycling and reuse of waste.

Public workshops on working with the recycled material will motivate people to produce their own designs, which could then be sold at the pop-up public stores.

Waste collectors
Each cluster has one waste collector runing parallel to the canal, where the waste of the corresponding buildings is picked up.

Waste treatment plants
Industrial public facility for phase I
(1) Plastic treatment plant
(2) Glass and metals treatment plant
(3) Wood, paper and cardboard treatment plant.
(4) Cloth and fabric treatment plant

R + D
Public facility for innovation and investigation in new ways and processes for waste treatment.

Import/Export
Before the urban plan consolidates, waste will be imported and raw material will be exported.

Ph.II
2020-2025

Potential national impact
The clusters developed in this Phase will also have their own waste collectors.

The industrial facility concerning this phase will work with the materials produced in the waste treatment plants (Ph.I) to generate fibres and fabrics.

Public research and innovation programs regarding production of new fibres.

Ph.III

Potential international impact
The clusters developed in this Phase will also have their own waste collectors.

The industrial facility concerning this phase will work with the fibres and fabrics produced in (Ph.II) to generate clothing.

Textile brands working with recycled materials will fund research and innovation programs concerning the recycled-textile-industry.

SLUISBUURT URBAN FABRIC (Phase I) Site plan 1:2500

We propose a three-productive sector urban design for a productive city, which encourages local production and social exchange.

Three-productive-sector-vector for urban planing

Urban development in the context of post-industrialism is also a point of contention. In opposition to the view that the new leaders of post-industrial society are increasingly environmentally aware, this critique asserts that it rather leads to environmental degradation, this being rooted in the patterns of development. Urban sprawl, characterised behaviourally by cities "expanding at the periphery in even lower densities" and physically by "office parks, malls, strips, condo clusters, corporate campuses and gated communities," is singled out as the main issue.[13] Resulting from a post-industrialist culture of "mobile capital, the service economy, post-Fordist disposable consumerism and banking deregulation," urban sprawl has caused post-industrialism to become environmentally and socially regressive.[13] Of the former, environmental degradation results from encroachment as cities meet demands on low-density habitation; the wider spread of population consumes more of the environment while necessitating more energy consumption in order to facilitate travel within the ever-growing city, incurring greater pollution.[13] This process evokes the neo-Malthusian concerns of overpopulation and resource scarcity that inevitably lead to environmental deterioration.[17] Of the latter, "post-industrialism's doctrine of … mobility and malleability" encourage a disconnect between communities where social belonging falls into the category of things considered by the "post-Fordist disposable consumer[ist]" attitude as interchangeable, expendable, and replaceable.[13]

Post-industrialism as a concept is highly Western-centric. Theoretically and effectively, it is only possible in the Global West, which its proponents assume to be solely capable of fully realizing industrialization and then post-industrialization. Herman Kahn optimistically predicted the "economic growth, expanded production and growing efficiency" of post-industrial societies and the resultant "material abundance and… high quality of life" to extend to "almost all people in Western societies" and only "some in Eastern societies."[17] This prediction is treated elsewhere by contentions that the post-industrial society merely perpetuates capitalism.[9][13]

Recalling the critical assertion that all modern societies are technocracies, T. Roszak completes the analysis by stating that "all societies are moving in the direction of technocracies."[9] From this, the foremost "suave technocracies" reside in the West, whereas all others are successively graded in descending order: "vulgar technocracies," "teratoid technocracies," and finally "comic opera technocracies."[9] This view importantly presumes one transition and furthermore one path of transition for societies to undergo, i.e. the one that Western societies are slated to complete. Much like the demographic transition model, this prediction does not entertain the idea of an Eastern or other alternative model of transitional development.

Waste is the city raw material recycling economics

In order to develop a real and resilient productive neighbourhood, it is vital that both the first and the second economic sectors be reintroduced in the urban development.
The first sector (resource industries) needs to be redefined in accordance to what the city can offer in terms of raw materials to be used in the urban industries to be enhanced. There is a misbelief that the urban tissue is nothing but a consumer that needs to be clarified by putting into value the materials provided within its built and natural environment: urban waste and nature.

Recycling generally creates more jobs than other waste treatment methods and preserves the intrinsic material value. Although the general public tends to think of the act of material recovery as recycling, recycling actually refers to the remanufacturing of recovered items into new materials.
In the context of smart cities, the internet of things, flexibility and circular economy a proper definition of the urban metabolism is needed in order to allow for new productive urban cycles that would otherwise be simply unconceivable.

TEXTILE INDUSTRUY

Production of fashion and textiles utilizes one of the longest and most complex industrial chains in the manufacturing industry, demanding great quantities of heat energy and water.
Synthetic fibres account for about 65% of world production due to low cost and consistently same comfort as natural fibre.
Textile recovery rates for recycling remain relatively low, despite textiles being considered almost 100% reusable or recyclable. The Environmental Protection Agency (EPA) estimates that the average person throws away 31.5kg of clothing per year.
The issue of sending used clothing to Africa has generated some controversy as it can have an adverse impact on local textile industries, native dress, and local waste generation. The East African Community (EAC), proposed banning all imported used clothing by 2019.
More research is needed in areas of recycling and converting textile waste back into fibres and other materials.
Insufficient recovery of post-consumer textile waste is the greatest obstacle to the textile recycling movement, a sentiment that echoed by both the Council for Textile Recycling and the Secondary Materials and Recycled Textiles trade organization.
As the textile, apparel, fashion and retail industries move to become more sustainable, an area of interest is the use of recycled fibre, yarn, fabric, and product content in the development and production of new products. There is a great fibre reclamation potential both in the textile industry and other sectors such as construction or automobile. Waste is also collected from sources outside the textile and apparel industry.
The use of recycled raw materials aligns with the larger movements of global industries toward a circular economy (vs. linear) and working to achieve a closed-loop production cycle. There are two stages in recycling: collection and processing. To create a closed-loop system, the additional stage of creating a new, recyclable product must be added, and there are programs where the public can be involved in the process.
In January 2016, of 331 exhibitors at the Textile World, USA, there were 29 companies offering products with eco-friendly materials or using eco-friendly processes.
Cotton and polyester are probably the most common fibres recycled, including
post-consumer plastic bottles, tires, fishing nets discarded in the ocean, used carpet (carpet fluff) and post-industrial waste from manufacturing wastes.
Some examples of yarn and textile manufacturers developing recycling programs are Unifi, Tenjin, Aquafil, Martex Fiber, Evrnu, EcoAlf, Timberland, Nike, Speedo, Adidas, Hanes, The North Face, H&M, Patagonia or Levi Straus.

WHY IN SLUISBUURT

Statistics Netherlands (CBS) reports that the use of raw materials in the Dutch economy was reduced by 14% in the period 2004-2014. Production has developed towards a so-called circular economy, but the 'footprint' of the Netherlands has risen slightly. The Dutch government aims to cut the use of raw materials in half by 2030 and to achieve a completely circular economy by the year 2050.
The introduction of websites and apps, like Marktplaats, Airbnb and Peerby has made it easier to share and recycle goods. Compared to other European countries, a lot of waste (80%) is being recycled in the Netherlands, but this percentage has not grown since 2000.
In 2015, around 56% of all R&D expenditure in the Netherlands was on account of the private sector. The Netherlands invested a total amount of 13.7 billion euros in R&D that year. This represents slightly over 2% of the GDP.
The challenge is now to lead the revolution towards a productive 0 waste urbanism with innovation and citizens as the gears to make it all possible.

While the textile industry still accounted for as much as 20% of manufacturing value added in 1950 in the Netherlands, in 2002 this had dropped to 2.3%.
Emissions of CO2 in the cluster agriculture, mining, manufacturing industry and construction were up by nearly 2% relative to Q1 2016, while the value added rose by over 3%. This cluster contributes 27 % to total emissions.
Since 1995 production and value added in this sector have fallen by one third. In the same period the volume of clothing and shoes purchased by consumers rose by one quarter.
With the advent of Asian textile producers, the bulk of the textile industry has moved to the so-called low-wage countries. In the last 10 years textile production is moving from Asia to the low-wage countries in Europe and northern Africa due to changing consumer behaviour: fast fashion & more fashion conscious young customers with more money to spend.
Water plays an important role in the Holland Branding. Water management involves much more than building dykes and windmills. The work also entails water level management, water quality management, adapting to climate change, dredging, and wastewater treatment.
The Netherlands is known for being a maritime country for several centuries, thanks to its convenient proximity to the North Sea and the easy access to the hinterland. Today millions of goods are being transhipped at and transferred from the Dutch seaports to inland ports and vice versa. A total of six seaports can be counted in the Netherlands of which the port of Rotterdam is considered the 11th port in the world rankings. The port of Amsterdam, the 4th busiest cargo port and the 3rd biggest Cruiseport in Europe, puts a strong focus on renewable energy.
The 389 inland ports in the Netherlands have an important logistic function for the 44,000 kilometres of Dutch waterways.

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R+D
(3rd Sector)

Temporary instalation for formation and investigation

On Ph.II this plot is conceived for education, during Ph.I we propose a temporary instalation consisting on a green house for new organic material investigation, and ephemeral spaces for the public formation program.

R+D building

This space will combine public offices with an R+D program, focused in waste treatment techniques and new materials, so as to ensure a continuous development of the urban industry.

Housing mixed scale

We propose a misxed scale housing in order to integrate the towers in the urban landscape. Small scale housing will occupy the tower roof tops, creating a more private urban social space.

This houses can be used as temporary living. Both towers and small houses offer flexible spaces of public use to encourage social exchange.

COMERCIAL
(3rd Sector)

Shopping street
First floor of the buildings bordering the main comercial street will cover primary needs on Ph.I: pharmacy, supermarket, restaurants...

POP-UP stores
Temporary comercial spaces will be scatered over this plot. This way local enterpreneurs will get the chance to sell their handcrafts.
This point will atract tourists, showing the result of this productive neighborhood.

Metabolic infrastructure
All clusters will be equipped with a smart vacuum waste collective system centralized in a logistics plant by the canal. Such a metabolic infrastructure turns waste collection into the first step in the productive city.

Energy generation is also conceived in the cluster level with digesters that turn organic waste into energy and fertilizer to feed the cluster, as well as solar energy and constructed wetlands become compulsory features for a sustainable urban design.

WASTE COLLECTOR
(2nd Sector)

Fabric recycling plant
Fabric coming from each of the metabolic infraestructures will be recycled here. This industry will have a 2nd hand market for those clothes that can be reused.

Plastic recycling plant
Plastic coming from each of the metabolic infraestructures will be recycled here. On Ph.I imported plastic such as that of fishing nets will also be treated. The recycled material will then be used by locals and the exceed will be exported.

Glass and metal
Glass and metal products coming from each of the metabolic infraestructures will be recycled here. The recycling of this materials requires a similar process, so they are paired.

Paper, wood and cardboard
Paper, wood and cardboard products coming from each of the metabolic infraestructures will be recycled here. The recycling of this materials requires a similar process, so they are grouped.

WASTE TREATMENT INDUSTRY
(2nd Sector)

Logistics
Local and national transportation, will run along the Dutch channels. For the local, small scale ships will carry the waste and recycled raw materials from the metabolic infraestructure to the waste reatment plant, and from this to the different workshops.

Ph.1
2018-2015

SLUISBUURT URBAN FABRIC (Phase I) SWAxonometric view

This project is based on the belief that a new paradigm in terms of social and urban This project is based on the belief that a new paradigm in terms of social and urban development is needed for a sustainable, productive, attractive and resilient neighbourhood to be developed. The research focuses on the minimal infrastructures needed for the change to get started and on how to re-establish social and economic synergies in the urban tissue after being removed from the city by post-industrial urban design.In order to develop a real and resilient productive neighbourhood, it is vital that both the first and the second economic sectors be reintroduced in the urban development.

The first sector (resource industries) needs to be redefined in accordance to what the city can offer in terms of raw materials to be used in the urban industries to be enhanced. There is a misbelief that the urban tissue is nothing but a consumer that needs to be clarified by putting into value the materials provided within its built and natural environment: urban waste and nature.

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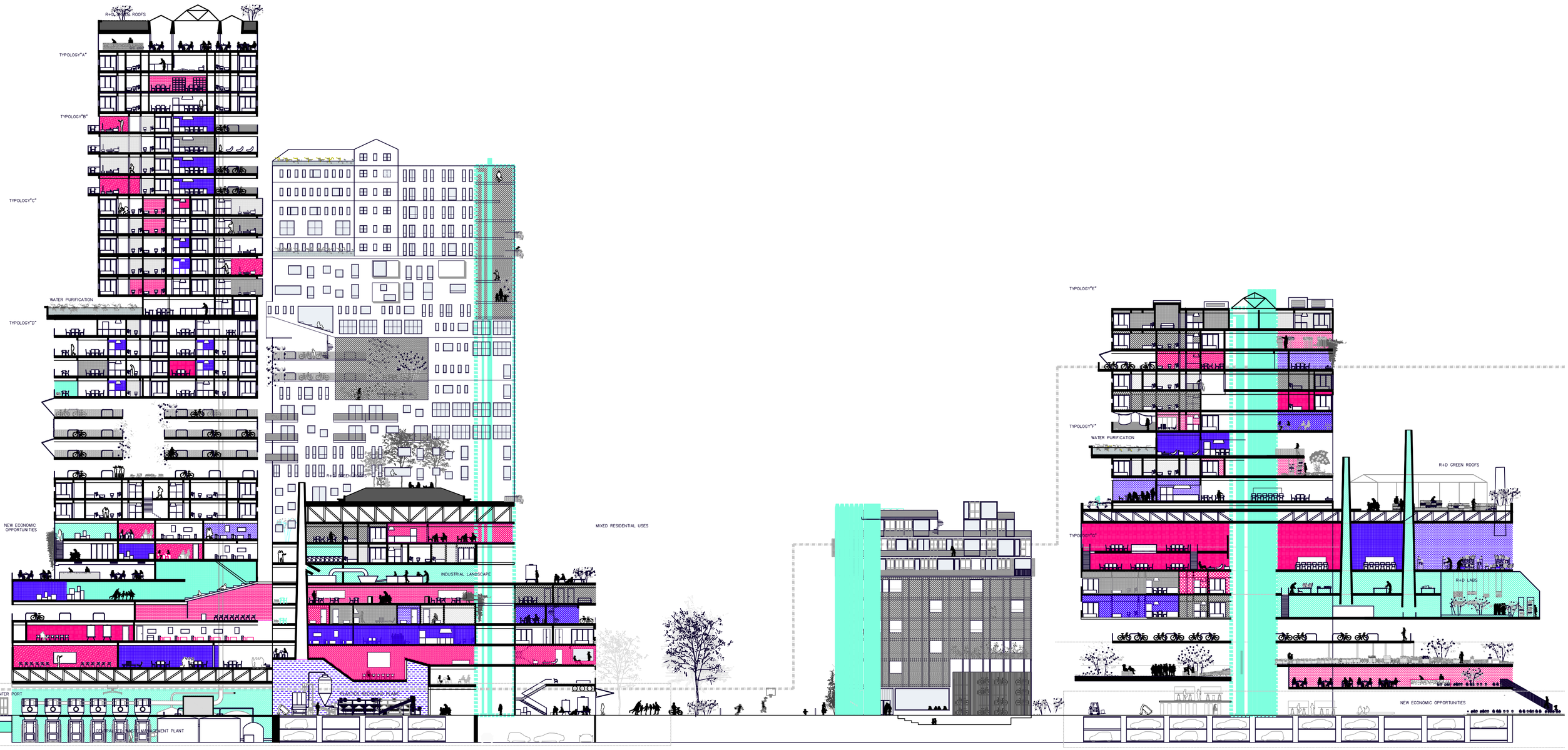


INDUSTRIAL LANDSCAPE
Industrial activity and premises as new urban landscape generators

The industry is no longer an activity to be hidden or to be ashamed of. Instead, the industrial activity becomes visible and plays a crucial role in the urban landscape, modelling new urban spaces and offering new relational opportunities for neighbours, as well as defines the new aesthetics for the area.
This new personality becomes the visible image for visitors and for the neighbourhood's branding.

PRODUCTIVE PUBLIC SPACES
Nature and open space as key elements in the urban metabolism

The Dutch are world leaders in landscape architecture and in taking advantage of nature as a tool for environmental, social and economic enhancement.
Green and open space elements in Sluisbuurt are conceived as part of the urban metabolism that make circular economy feasible.
Water purification with plants, urban crops or living adaptive shading elements are only some of the specific ways in which this concept is applied.

MIXED RESIDENTIAL USES
New management formulas for housing definition

In Sluisbuurt the residential tissue is only one other element in the R&D productive concept. As such, a same residential unit involved in different management models can be part of a collective block, a hotel or a residence taking advantage of new relational opportunities in means of shared spaces or services provided. Sharing economy turns into a variable to define the residential use instead of a problem to be neutralized.

RELATIONAL OPEN SPACE
Minimum flexible infrastructures to enhance social relationships

Open space is a right and an opportunity for neighbours relationships. Hacking urban furniture is the minimal infrastructure for new uses and activities to be implemented in the public space. Privatization with terraces is restricted to certain areas, while flexible welcoming elements colonize the remaining space, such as benched tables and meeting sitting areas.

SPORTS PUBLIC SPACE
Sports fields and multiuse areas for a healthy and diverse leisure

Sports courts, terraced grandstands, aquatic plazas and open spaces in general are introduced as key features in the public space to allow for a heterogeneous audience to meet and enjoy healthy collective leisure activities.
These surfaces ensure urban resilience towards hazardous social and environmental events and allow for new opportunities to arise.

GROWING BLOCKS
Density–adaptive urban planning inspired by industrial architecture.

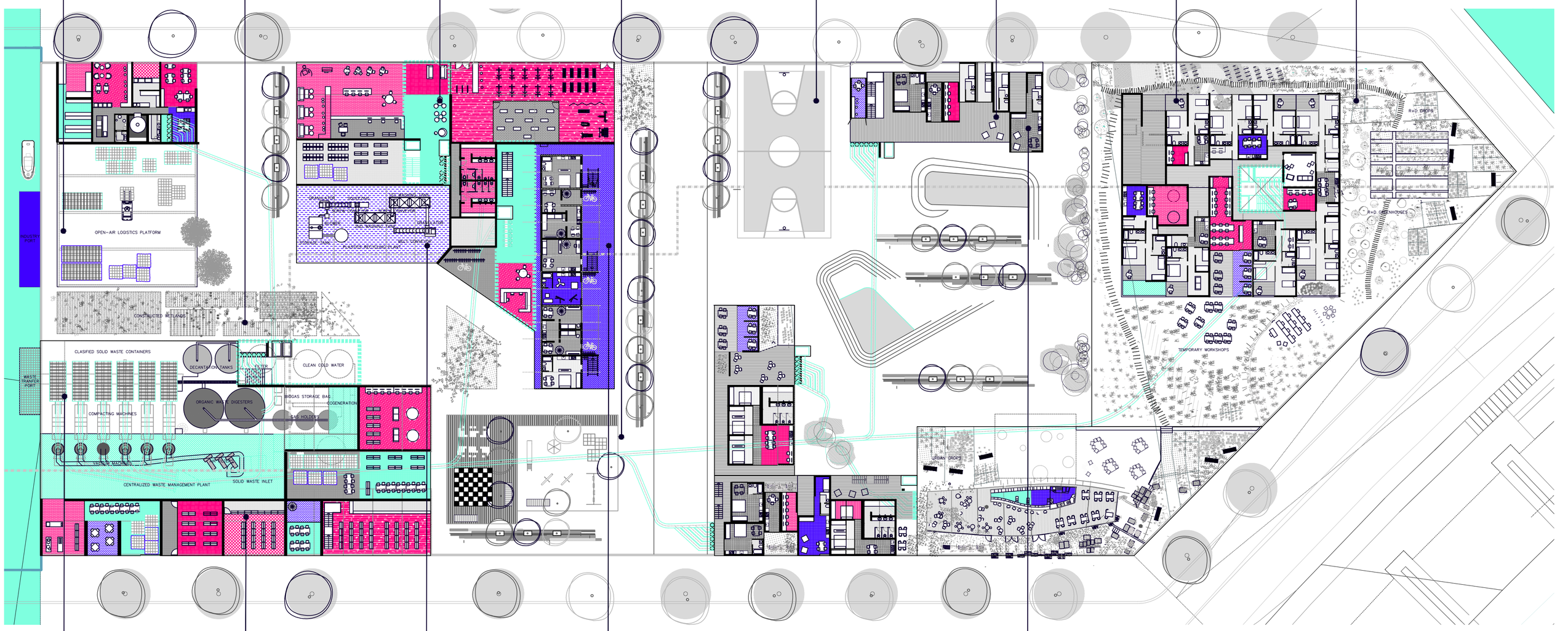
Density is not regarded as a fixed value but as an adaptive indicator that will be modified giving response to the neighbourhood's needs.
The whole neighbourhood is conceived as a living complex that needs to be able to adapt and to host new activities and dwellers in the future.
For this reason, some blocks defined as shorter in the early phases can be further enlarged by piling new residential or economic units on top.

COMMON SPACE VS PUBLIC SPACE
Community spaces to enhance community relationships

Sharing and circular economies are calling for a new understanding of the public and the private realms. Limits fade away when common areas are introduced both in residential and non–residential architecture and when "use" overcomes "property".
Common premises with sharable goods allow for bigger opportunities and better quality in terms of economic, social and residential performance.
New management examples will need to be implemented when spaces are conceived from their productive perspective instead of ownership.

R+D GREEN ROOFS
The roof as the new field for social and economic research

Roofs are to become a new liveable level with a world of opportunities ahead if managed as communal spaces. Not only is agriculture and energetic productivity introduced, but in such an effervescent neighbourhood where R&D leads the way, the roofs offer a free area for experimentation.
Greenhouse or container structures can serve as economic, flexible and temporary premises for temporary housing, workshops, R&D and any kind of productive activity to be tried before taking permanent shape in further development phases.



SMART CITY URBAN METABOLISM
Cluster–level first sector

All clusters will be equipped with a smart vacuum waste collection system, centralized in a logistics plant by the canal. Such a metabolic infrastructure turns waste collection into the first step in the productive city.
Energy generation is also conceived in the cluster level with digesters linked to the logistics plant so that organic waste can be transformed into energy and fertilizer to feed the cluster on site, as well as solar energy and constructed wetlands become compulsory features for a sustainable urban design.

NEW ECONOMIC OPPORTUNITIES
Cluster–level R&D

Apart from first need commercial premises and social facilities, part of the tertiary areas will be devoted to new economic opportunities arising from the new industrial and productive public facilities implemented. Examples of these synergic plinth activities are recycling and repairing commercial areas or second hand shops and workshops introduced in loft areas around the main recycling and industrial spaces.
Social and private management blend in this productive tissue where individuals, companies and neighbours research and develop new economies.

PUBLIC INDUSTRIAL FACILITIES
Cluster–level secondary sector

Every cluster must also feature a public industrial area related to the textile industry step to be developed in the specific phase.
In Ph. I such areas will host recycling plants for the different materials collected in the neighbourhood to feed the smaller scale and more innovative productive activities spread among the residential tissue.
These premises are to enhance R&D at different levels and to define the social, economic and aesthetic character of Sluisbuurt and to become interactive spaces for dwellers and visitors alike.

LIVING & WORKING CONCEPT
Back to the guild tradition

For a resilient, flexible and productive mixed–used neighbourhood to be consolided in Sluisbuurt, the relationship between living and working needs to be redefined towards the recovery of the traditional guild and artisan economies.
On one hand, working spaces – be them from the first, second, third or fourth sector– are treated as one other basic space in the residential units not to be neglected. On the other hand, such spaces benefit from synergies between different professions and professionals, establishing a considerably more productive network than the sum of the individual productivities alone.

THE RESIDENTIAL MANIFESTO
It's architecture that adapts to the dweller and not otherwise

Traditional real–estate definitions are obsolete. It's the number of members to be hosted in the residential unit and their willingness towards sharing and socializing that defines residential needs.
According to these basis, four types of dwellings need to be blended in the neigbourhood for a real heterogeneous social mix: Autonomous group (1), Autonomous individual (2), Social individual (3) and Social Group (4).
The understanding of the needs of each group redefines the relationships between the private, the common and the public realms, as well as helps develop the programmatic requirements for new blocks.

HOUSING PARAMETERS
sociable / sharing

solitary /self–sufficient

HOUSING SPACES
- hygenic/productive areas
- cooking/transforming areas
- relaxing/private areas
- relational/services areas
- working/intellectual areas

5m 10m 50m
1/400