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Cover image: Joachim Beuckelaer, The vegetable vendor (1563)
Space Speculation is a research by design studio linked to the Laboratory of Urbanism, Infrastructure, and Ecologies (LoUIsE). The studio addresses the socioeconomic and ecologic transition of existing cities and their hinterland as a condition for a sustainable future, and the tools spatial designers need to harness in order to accompany such transition.

Cities are complex and interactive ecosystems. Their transformation demands a multi-scalar reflection about the material and energy flows circulating through or into them as well as the processes contributing to articulate those flows, also known as Urban Metabolism (UM). The adjective ‘urban' has major consequences on this metabolism because it addresses not just the place where metabolism takes place but also the underlying social contract that determines the form and organization of production and consumption within cities.

By placing ‘urban’ in the first place, questions other than the quantification or the detailed inventory of flows crossing our cities gain in importance, like the one about agency: Who decides the way this social contract has been designed? How is it managed? By whom? Who (agencies, associations, individuals…) are trying to question it? And how can we as spatial designers intervene upon it? How much of our work should encompass the design of places as well as the identification, connection, and disentanglement of these diverse flows and the actors gearing them?

Our first hypothesis is that only by moving from ‘mapping the urban metabolism', to ‘designing with the urban metabolism' we make possible for spatial designers, architects and alike, to move from an object-centered approach to a systemic one, engaging flows, actors and places into their proposals for urban transformation.
From linear to circular urban systems (own diagram based on Novotny, 2013).
Our focus is the city, mainly Brussels but without excluding any place. Cities are complex places where the welfare of the whole population depends on sophisticated systems of production and delivery. While a village could get by with a road and a groceries store, the city needs a smoothly working public transport system, and a comprehensive road network that allows a complicated logistical chain to bring foodstuff to its citizens and to collect and manage the waste they generate. This sheer technical and logistic complexity, that combines engineering systems and economic mechanisms with political decision-making, has come to replace our historical and rather immediate connection to the food system by breaking out its endless cycles into man-made, linear events. The city has in turn been associated to unsustainable consumption practices, responsible to a great extent for the application of environmentally harmful agriculture techniques and human exploitation here and elsewhere.

This semester we will attempt to review our connection to the food system by diving into a particular place: the morning market in Brussels, located along the northern edge of the Willebroeck Canal traversing Brussels, as an enclave between the Avenue de Vilvorde and the North-South railway corridor. The morning market spans 15 ha and houses around 130 wholesalers selling fresh products (vegetables, fruit, meat, fish, etc.) to retailers and restaurants through Belgium and Northern France. The morning market (MABRU) is adjacent to the European Center for Fruit and Vegetables (CEFL), an import-export distributor of fruits and vegetables for supermarkets. Together, the daily volumes traded within both premises can reach 3,000 tons.

The location of MABRU has been contested since the drafting of the masterplan for Schaerbeek-Formation (Studio Secchi-Vigano, 2013), intended to redevelop the biggest railway yard in Brussels. The
regional ambition is to displace the market some 3 Km to the North, to the Schaerbeek-Formation location and to make place for 3000 new apartments on the site they occupy at present. However this ambition was never followed through with, and MABRU has managed to prolong its concession on its current site till 2042. The question we wish to address goes beyond the exact location of the market (even is this aspect is deemed structural in the proposals students will formulate). The question of the future of MABRU is the opportunity to induce a more profound reflexion, to possibly free us or at least regenerate our pervasive dependency from a socio-ecologically unjust food system.
800 m
800 m
BUOYS & TRACKS

Buoys to guide our journey
The body of knowledge that will guide us throughout our journey is originated within particular families of thought: circular economy and complex systems. First buoys to guide our journey:

1) We need to critically redesign the linearity of the food system, even if we know we cannot fully reverse it. For instance, we can transform pineapples from Costa Rica in methane for our kitchens, but the resources originally spent in growing those pineapples cannot be reverted to the place in which they were first harvested. At present, the proposals inspired by circularity are restricted to the point of consumption, and hardly address the place where resources have been extracted in the first place. Additionally, circular economy does not say anything about the pollution stocks that are (sometimes) secretly guarded in our cities. We need to be aware of these limitations.

2) Cities are complex systems, sustained by long-term processes of cumulative causation. Embracing this ecosystemic complexity means mostly cherishing what is there, places and people and functions, as a simple recognition of the embodied energy contained in the status quo, but also as a form of awareness of how hard it is for current economics to move beyond its baseline: the belief in continuous, unlimited growth, and the awry look of some respected professionals towards what they consider the unprofitable circular economic approach.

3) These questions should always be interigated into a wider consideration of urban dynamics, in order to articulate ecology and equality, technics and politics, and thusly promote an inclusive and regenerative development that is truly holistic, demonstrating the interdependence between man and nature inside our limited planet.
Organization of food wholesale in Brussels' markets (www.metropolitan-estudio.eu, Space Speculation 2015-16, by M. Champougny et al.)
Initial tracks
As for the initial tracks to orient our work, students may decide:
- to work on the scenario of MABRU moving to the site of Schaerbeek Formation;
- to work on the scenario of MABRU staying where it is;
- to work on other components within the study area (defined by a circle of about 800 m centered on the MABRU location) if these can be related to the overlapping question of the design unit: review our connection to the food system.

The FOOD SYSTEM includes the process of cultivating it (growing and harvesting it, including the soil, the crops, the water, the fertilizers and pesticides), distributing it, packing it, processing it, trading it (as fresh produce or processed food, in small or big amounts, in specially conditioned places or on the street...), storing it, consuming it, managing the leftovers of everyone of those processes... Everyone of these steps has been radically conceptualized throughout history, resulting in different socio-ecological assemblages. Any further reflection needs to be aware of recent developments in the field.

The FOOD CONNECTION is something else than food alone, as during this process food is “made” by growing on land that has a location (within, near or far from the city), a legal status and real estate value (often favouring the conversion of farmland into more “lucrative” activities for landowners) as well as a landscape value (which can contribute to the city way beyond what the land “yields”). Food is also “made” by the labour of people (for whom this means earning a certain wage and living in poverty or prosperity according to what this wage can buy), by using certain tools (which impact nutritiveness) and means of transportation (which have impact pollution and congestion). Production and consumption of food therefore inextricably addresses questions such as local production
and consumption, access to land and food for all, ecological awareness, etc. Within this imbroglio, students are invited to take position. As urbanists however, our focus will always lie on the potential of space and flows as tools for transition and empowerment.

Among the questions of particular interest to us:
- organic waste as resource: MABRU (Morning Market) and CEFL (EU Center of Fruits and Vegetables) together produce more than 450 tons of organic waste/year, making them an important player in the city.
- modal shift as challenge: A small fraction of this waste flow is re-used but more than 70% is incinerated. A second important question concerns the fact that all freight is transported by truck to the MABRU-CEFL premises, despite the fact of being strategically located between the railway line and the canal.
- shared facilities as key public service: All food that is auctioned there and redistributed within Brussels is again transported by truck, and moved daily across the region from the particular storage facilities of every retailer to the point where food will be sold to consumers.
Organic waste flows in BCR (Fabric-CE-ULB, 2017)
Sanky diagram of organic waste flows in MABRU-CEFL, before and after possible reuse (Fabric-CE-ULB, 2017)
West Louisville Food Port, OMA, 2015
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<td>W2</td>
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The semester planning is organized in a series of deadlines. Compliance to these deadlines is key to a relaxed evolution of the semester while assuring a correct knowledge exchange and sharing of findings as well as guaranteeing a top quality design proposal at its conclusion. Below it follows a complete description of these deadlines:

**FRAMING:** Students choose a topic or area and formulate their first hypothesis/research question by exposing it to the rest. Format is free, but the presentation should contain all elements necessary to a correct understanding of the students' choice and its underpinning reasons. A compelling, provocative, and explanatory research question is the best guarantee of entering into a genuine creative direction.

**INQUIRING:** We see design as an informed process of inquiry, often collectively driven. We invite students at this stage to a double inquiry: on the one hand, gather material (all kinds, from pictures to interviews to observation to reference projects to quantitative data...) in order to sustain their first hypothesis and eventually to refine their research questions; on the other, explore the intrinsic spatial possibilities of the research question (dimensions, relationship to public space, physical access, visibility and aesthetics...).

One month after the start of the design studio, students are supposed to share with the rest of participants the insights they gained during the inquiry phase. Format is free, but the material displayed should suffice to take an informed decision about the exact architectural project students will develop in the following 10 weeks (3 of which are deprived of design studio sessions). Students should be able of distinguishing between available information and appropriate information for their project. We all should be aware that the more we know about our specific question or
hypothesis, the less stressed we’ll be about the need to invent something last minute.

By way of example, in previous semesters the research involved sources such as: FLOWS and ACTORS involved in the treatment of e-waste in Brussels; reference projects for the commercialization of recuperated goods and materials; the future use of cars in the city (sharing, uber, included in the real estate development...); the strategies developed by the big car manufacturers in order to keep ownership of cars during their use and retrieve the mine of reusable materials they represent after their lifetime; industrial installations of (an)aerobic treatment of organic waste inside cities; soil remediation techniques; sustainable water management; aquaponics using residual energy and water; etc.

REFINING: Students review and revise the initial hypothesis/research question and define the project they will develop till the end of the semester. The deeper the inquiry process would have been, the richer the design solutions will be, because they will be built upon the trustworthy apprehension of the site and the questions articulating the design task, and on a clear understanding of the challenges to materialize a qualitative design on architectural level. Format: conventional architectural material (scaled plans, models, collages, 3D renders...) that can still be assembled in a casual way or projected in the classroom.

DISPLAYING: Students collect and organize the work so far developed within the design studio in a dossier (format DINA) and submit it for feedback to a group of guests, accompanied by a short oral presentation of 10-15 minutes max by group. They actually have the entire SEMAINE DE PROJET to accomplish this task. The graphic quality and the textual exactness of the contents will be strongly valued, and considered as
a bias for a precise and engaged design research process.

During the SEMAINE D’INNOVATION PEDAGOGIQUE (26-30/03), a single atelier session will be fixed in order to make the design work progress. Attendance will be voluntary.

THE WAY TO GET THERE: Spatial design should always incorporate a reflection on the process to achieve our goals (e.g. ACTORS to approach, budget, societal or technological transitions and/or disruptions, the scale of the physical change, and the FLOWS therein involved). Students should continue working on their architectural documents while incorporating the first ideas elaborating the first strategies related to the ACTORS and the FLOWS to involve and that would support the realization of their project.

DETAILING: Students present their projects by way of architectural documents and isolate the architectural and technological innovations that would be needed so as to realize their project. A group of experts will react to their proposals and provide punctual feedback.

GREEN LIGHT: Students present the entire work elaborated throughout the semester and an external jury will assess the consistency of the story and of the approach.

END OF JUNE: FINAL JURY
UPCOMING EVENTS

08/02 On Reproduction: U&U research seminar, UGent
14:30-19.00 - 35€

Michiel Dehaene (Ghent University), Łukasz Stanek (University of Manchester), Hillary Angelo (University of California), Chiara Tornaghi (Coventry University)
Jozef Plateaustraat 22, 9000 Ghent
Contact: uu2018@ugent.be

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09/02 Guided walk + Presentations

9:00 gathering at the entrance of MABRU
9.00 - 12.00 exploration of study area
12.30 presentations at WTC by Romina CORNEJO, Raphael MAGIN, Jan ACKENHAUSEN, Elsa COSLADO, Dieter LEYSSEN, Carmen VAN MAERCKE

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10/02 Guided walk + Debate organized by BRAL
(you need to send a mail to ingrid@bral.brussels)
More info available at http://www.bral.brussels/nl/kalender-item/save-date-explore-masuivergote
STUDIO SPACE SPECULATION
METHODOLOGY

Students can choose to work individually or in a group (up to 3 participants).

They should respect the following guidelines in order to guarantee a fair and smooth development of the semester:
- informed thinking: every hypothesis should be backed up by evidence of some sort;
- iteration between analysis and design based on data interpretation instead of data inventory, i.e. we prefer reasoning instead of displaying, argumentation instead of information, fabricating instead of recollecting, intentions instead of regulations...;
- collaborative approach: we encourage co-creation inside the design studio, joint ownership and collaboration throughout all stages of the design, and teamwork;
- design research: the opportunity to construct a project for a city is an opportunity for understanding the underlying reasons of the city's form and dynamics, by using urban design as a probing tool to make sense of the world, as well as an instrument to imaginatively act and modify reality;
- clear and innovative communication: we encourage students to rethink the tools of communication they have at their disposal, and to escape the abstraction and comprehensiveness of the plan that reigns in the urban design world in order to explore alternative ways of making our work available to others (e.g. scripts, animated images, axonometric perspectives, soundscapes, collages, models...);
- ambitious, nice products: many times your work will be judged based on the promise you show on a piece of paper, and in the case of urban design, the stretched time between conception and realization can make actors and stakeholders forget what the intentions of your proposal were in the first place... both the end and intermediary products (deliverable) of your design proposals, and the process sustaining them, should be shown in the most beautiful and intriguing bundle possible.
BIBLIOGRAPHY


Kennedy, C., Pincetl, S., Bunje, P. “The study of urban metabolism and its applications to urban planning and design”, Environmental Pollution:1-9, 2010


TED talks

https://www.ted.com/talks/louise_fresco_on_feeding_the_whole_world

https://www.ted.com/talks/tristan_stuart_the_global_food_waste_scandal

https://www.ted.com/talks/roger_doiron_my_subversive_garden_plot

https://www.ted.com/talks/birke_baehr_what_s_wrong_with_our_food_system

https://www.ted.com/talks/caro lyn_steel_how_food_shapes_our_cities

https://www.ted.com/talks/tristan_stuart_the_global_food_waste_scandal

https://www.ted.com/talks/roger_doiron_my_subversive_garden_plot

https://www.ted.com/talks/birk e_baehr_what_s_wrong_with_our_food_system

Other Media

Antwerpen a la carte (permanent exhibition at the MAA in Antwerp and catalog) https://www.cyclifier.org/

Drivers of change (ARUP app)