One territory, four questions, one atlas

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**PRESENTATION**

**A joint initiative between four schools**

One territory, four questions, one atlas arises from the need to rethink the collaboration between the four academic institutions (KULeuven; UMinho; AHO; ETSAB-UPC) after four years of Summer Workshops (3 editions in Belgium; 1 in Portugal). The intention is to generate new synergies and a common theoretical-practical body that becomes the seed for future joint collaborations (Summerschools, BIP, other shared intensive programs).

How do we map space and experiences? How do we map global (climate change, monetary flows) vs. local processes? How do we map concepts? (boundaries, regularity, porosity) How do we map tangibles and intangibles? How do we map sensations (noises, flavours, smells)? How do we map paths and movement? How do we represent dynamics in a static drawing? What is the (ir)relevance of geographical precision?

The disciplines of architecture and urban design have representation as their main communication tool. However, in recent years, the possibilities of access to information (digital archives, open cartographic sources) and the emergence of geographic information systems have shaken the way of representing and explaining issues that were until recently linked to the physical condition of places.

This booklet presents an academic experience, "One territory, four questions, one atlas", an intensive summer research program between four institutions (KULeuven; UMinho; AHO; ETSAB-UPC), aimed to generate new synergies and a common theoretical-practical body to trigger a joint discussion on how to represent and visualise cities and life, spatial design and spatial reframing, ruptures and permanence, people and time by the act of mapping.

Twelve participants (eight professors and five PhD students) worked together grouped in three teams during one week in which four questions were progressively launched to which the participants responded by drawing. The questions triggered assorted 8-hours speed maps, which in turn served as an entry for a common discussion and unlocked hidden hypothesis.

The program explored the process based on an expanded dialogue to use domestic digital tools (hand drawings, pictures, video, google maps, cad and GIS cartographies, big data, open-source data, sound recordings) to produce incomplete understandings of the territory instead of achieving a finished product.

**The case study**

Since [drawing, mapping, representing] is linked to a specific geographical location, the exercise will focus on Colònia Güell, in Santa Coloma de Cervelló, Barcelona.

Hosting one of the most genuine Gaudi's masterpieces, the crypt in Colònia Güell, this is a representative workers' colony settled around 1890s by the famous Eusebi Güell, wealthy industrialist and artist patron. As many industrial colonies from the 19th century in Catalunya, it was born inspired by the socialist ideals as an autonomous urban community in which people worked and lived. After the industrial decline in the 1970s, the textile factory ceased its original activity and the original equilibrium was progressively broken. Years later, the whole worker's colony was considered a heritage site and the small village has kept its isolated character and its popular aspect until nowadays.

**Dynamics**

Every school as prepared one question before the meeting, by consequence they are not related. These questions build on the existing ‘tradition’ of each school, introduces a method, way of observation. Day 7 brings together the different questions and works and wraps up.

Work is organised in groups of **2-3 people** inter-schools (6-8 groups). Each group has **one day (eight hours)** to respond to each question. Groups change at each question so **new dynamics are introduced in each answer**.

**Participant Schools**

Katholieke Universiteit Leuven (KULeuven)
Universidade do Minho (UMinho)
The Oslo School of Architecture and Design (AHO)
Escola Tècnica Superior d’Arquitectura de Barcelona (ETSAB-UPC)

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QUESTION 1:
Ground condition. How do the characteristics of the ground relate to urban development of a territory?

Geological forces shape bedrock, sediments, and landforms of a territory; the ground is the very first layer that supports urban development. A powerful way to illustrate this is through the geological section of Manhattan. Through it we can see how high skyscrapers where mainly built where the hard schist bedrock is close to the surface of the ground, while where a thick layer of soft sediments lay only low-rise buildings could stand. Geology is directly related to hydrological flows, natural habitats and the way humans use and transform them; for instance, rich deep soil close to the water is fruitful-ground for agriculture while steep slopes with thin topsoil can be inhabited by sturdy plants such as pines, holm-oaks and other woody trees that can be successfully exploited for timber. The valley section of Geddes, which portrays how specific human trades and crafts evolve from the different levels of a prototypical valley is first-and-foremost rooted in their geological characteristics.

Old national roads, historical urban settlements and parcellation systems have been usually developed following the characteristics of the ground. Yet the past hundred years of radical technological and economical transformations have clearly blurred this relationship and resulted in questionable decisions. The upper crust of the earth has been deeply transformed and today’s ground condition includes humanity as a main geological changing force.

What is the status and characteristics of the current ground of the Vall Baixa? What are the hidden resources and problems that can be revealed under its surface? How can urban transformation take advantage of the ground to look after and exploit more intelligently the resources of this territory? These are some of the relevant questions that can emerge from looking down under our feet; to explore how to graphically represent it in an atlas is a crucial step to trigger a key discussion of our time.
Asymmetric palimpsest, adapt and react

During the walk through the Colònia Guëll down to the farmland the landscape reveals itself. Layers of history are imbedded in this territory.

The Colònia spreads itself over the hilly land exposing different kinds of vegetation and soil. The traces of water are present in the Colònia as well as on the foot of the hilly mountains. Here channels line the fields and lead to the river Llobregat. Like a pencil stroke the river winds itself through the landscape until it reaches the Mediterranean Sea.

To understand the ground and the soil, we have zoomed out to read the territory. After our site visit, we tried to define what the ground is and how it facilitated the challenges and possibilities that led to the contemporary urban context. For this we tried to proceed methodically by overlaying different maps.

- We overlayed a satellite image of the area with a geological map. This helped us to see the outlines of the mountains and to understand the general tectonics and topography of the area. We found that the Colònia is situated at the lower part of a mountain formation, that fades out in a flat landscape which continues to the fringes of Barcelona.

- Another overlay showed the role of the water in the area. The river had been regulated and shrunk significantly through the course of time. Over time and through corrections the river Llobregat has shrunk to a line in the flat landscape that ends in the Mediterranean Sea, leaving space to be used for farming.

- The last overlay was a map of old urban structures and infrastructures with the satellite image. The old railroad and road, outlines the foot of the mountain. On the other side of the river, the straight railroad was the former border for the old urban development. Now the old towns have integrated themselves in the greater fabric of Barcelona and a new straight line is a fictional border of the city.

A synthesis map highlights the farmland and the two lines, the mountain and the water as its physical limits. On the other side of the river, a straight line marks a fictional border of an urban carpet. Over the time the ground has shaped the development of cities, farmland and infrastructure. The big road and the fast railroad track are added vertical lines that visualize in the landscape, but seem to follow abstract rules.

team: Sabine Müller, Marta Labastida, Cruz Criollo, Weronika Gajda and Catherine Papst
Ground, water & asphalt

Walking from crypt Guëll to the river one might observe subtle gradual changes. The rocky reddish and dry conditions slowly make place for boulders and grey sludge. As the deep section reveals the dialogue between the bedrock and river depositions it comes clear how water management and the road system, water & asphalt, are carefully positioned in relation to the ground. The (rain)water in the upper part of the section is collected in a series of trenches and canals and evacuated. The water in the lower part of the section is guided through a fine mazed system of canals with barrages to retain the water to the maximum and to use it for irrigation of the fields. The connection between both systems is a canal parallel to the river that captures the different streams coming from the hills, bundles them and redistributes the water towards the fields. In a similar way the road system has two logics. A cartesian grid of unpaved roads, slightly higher and imposed on the surrounding terrain, leading to the individual fields and a sequence of paved roads, inscribed in and relating to the topography.

A number of smaller sections shows the depth of both the bedrock and the thickness of the river depositions. In the upper sections all water canals, except in the Colònia itself, are open. They are no more than a small topographical articulation to collect and guide the rain. The combination of the slopes of these water canals and the non-permeable bedrock evacuates the water rapidly without a chance to infiltrate. The absence of water in these sections reflects in the vegetation of pines and dry grasses. In contrast with the almost nonchalant way the water is treated here, the roads display a careful arrangement. The materialisation and section reveal the effort to relate them to local conditions of topography and publicness. As if the road, the accessibility, prevails on the water.

In the lower sections roles between water and asphalt are switched. The water becomes a valuable asset for the crops, accessibility is almost taken for granted. In the sections of this lower part, we observe the cautious construction of the canals with their closed bottom and sides to prevent the water leaking in the ground. Only in the fields the ditches become permeable to irrigate the crops. As careful as the water is managed as nonchalant are the roads. Unpaved, slightly elevated, they accompany the canals. No subtle materialisations nor sections in relation to the topography and publicness but a zero degree of infrastructure.

team: Liselotte Vroman, Miguel Hernandez Quintanilla and Maarten Gheysen
Uphill - Reduced topsoil - Pine trees (left).

Crypt (left).
Colònia (right).

Agricultural area - Thick and rich soil, high water table - Fruit trees and crops (left).

Park down the Colònia (left).
Canal (right).

Fields (left and right).

Floodplain (left and right).
**Blow-ups and megapixels**

How to represent the ground with only first-hand information about the soil? The two-dimensional map that answers this question is proposed as a meta-explanation of the composition of the most underground layers of the ground from the reading of its external appearance. On the one hand, the geological map of Almera (1891) gives clues about the limits between alluvial and calcareous lands, as well as the consequent character of vegetation, watercourses, agricultural plot structure and position of infrastructures. On the other hand, images taken during the field visit show apparent contrasts fruit of that hidden dimension.

The representation fits in with this starting point, enlarging photographs taken on site to the maximum, to leave visible only the fertile, the humid, the dry, the barren. Through blowing up the images, the literality of what they represent loses meaning, but the chromatic or textural condition for which the fragments of photography were chosen remains. In this way, a new territorial mosaic is composed from the obtained megapixel tiles that translates the character of the ground.

The photographer Alfred Stieglitz (1864-1946), a bridge between pictorialism and documentary practices of the 20th century, considered that the function of photography is not to offer aesthetic pleasure but to provide visual truths about the world. And being literal with his words, the composed map uses reframed images to explain the reality of the ground [1]. The exercise ends with some questions. What would be the correct pixel size? Do all the tiles have to be the same size? How much ground needs to be covered with the mosaic? And how are the organic limits of reality represented within the new orthogonal geometries?


**team:** Fredrik van der Horst, Rute Carlos, Sophie Leemans and Eulàlia Gómez-Escoda
QUESTION 2:
In architecture and urban planning, conventional maps inform about the formal and planned state of the built environment. This way of looking and understanding our built environment concerns a limited view and informal and non-planned aspects of space remain under the radar. From the KU Leuven faculty of Architecture, we would like to highlight informal realities: How to get insight and understanding of informal realities through mapping?

We like to approach this question from a broad stance by proposing three diverging perspectives on this tension "formal – informal", but also allow other perspectives to be explored.

> **Perspective 1 – informal= lived experience/appropriation**
Within the discipline of architecture, in the tools used to design, the conventional architectural drawings (plans, sections, elevations, axonometries and perspective drawings) most often focus on built and materialized aspects of space. Within these traditional architectural drawings, the presence of human bodies is often missing. Besides a distinct contrast exists between the planned and lived space. One way of getting to grip on the use/lived experience and appropriation of space was explored by Adam Sharr together with his students.

> **Perspective 2 – informal: third Landscape**
In dispersed territories, where low-density built fabric prevents the formation of large-scale nature preservation, a number of informal or unplanned spaces appear to be highly biologically valuable. Passively maintained corridors of verges along rivers, canals, highways and (former) railways become attractive spaces for specific animal and plant species. In Manifeste du Tiers Paysage, Gilles Clément puts these informal spaces forward as "the sum of the space left over by man to landscape evolution – to nature alone. [...] This can be considered as the genetic reservoir of the planet, the space of the future." How can (the value of) this informal "Third Landscape" be mapped? How can its appropriation by non-humans be mapped?

> **Perspective 3 – informal: perception of space**
Mediation of formal and informal space in Barcelona is immersed in digital cultures, represented by a dense visual and spatial data structure. It allows a broad audience to be engaged in exploring the city, shaping their notion and perception of space. Content of public sphere like social media platforms is oriented on a city as a cultural heritage, purified imaginary vision of public space, areal views of a bounded and compressed urban grid, and a stage for football culture. A dynamism of activities in the public sphere is continuously updated, increasingly fragmented, and reconstructed in a formal city.

Our site in Barcelona for this workshop embraces the informal city, the city that is not exposed to oversaturation and fragmentation in the online sphere. The two meanings of the city are entangled in the meaning, experience, and representation. These informalities and formalities can be a guide in exploring the city. Mapping might help unfold and discuss the two faces and investigate the boundaries and mediation between them.
Gaudiland - land and silent form

This investigation on mapping of the formal and informal aimed to represent abstract interpretations of different site scenarios in Colònia Güell. Formal and informal are represented by contrasting a rigid structure of a guided tour and a silent form [1] discovered in public space.

A regular grid simplifies the urban structure of Colònia Güell translating visitors’ experience of a staged exhibition where they are guided with a map received in the information point. Their attention is directed in a sequence to the first, second, third, … place with an anonymised recording coming from an audio device that visitors carry during the tour. The objects are represented with numbers on the map and photos placed in order, below the plan. We observed a separation of a visitor from the site, caused by an audio talking over noises coming from the streets, people, and surroundings. Informal places become objects to be watched, listened to, photographed, and finally, formalised on a map where they have a specific order to be followed. Using google maps we reconstructed the angle and focus of a camera in hands of people that geotagged their pictures and uploaded them online. The number of pictures suggests which objects are more attractive to visitors and how they position themselves to take a photo. The formal experience took a formal shape and allowed it to represent in the same way the public spaces of Colònía Güell.

In contrast, our observation of the informal focused on one particular place with undefined use and form in the centre of Colònia Güell. We explored it by comparing it with different architectural plans of defined and measurable shape, for instance, a marketplace, ice rinks, football field, circus arena or Sagrada Familia. Overlaying it allowed us to understand the capacity and dimensions of the open area. For the Colònia Güell this undefined silent form contained many informal uses like a public square, park, market or any other temporal function. This place by its adaptability encourages different activities and becomes a stage for cultivating tradition, culture and engagement of locals together with tourists in the public life of Colònia Güell.

As an output, we created a gif file with a 2 minutes soundtrack. Moving images allowed to represent a dynamic use of public space. The recording captured the contrast between the sound of background noises, birds, cars, pedestrians and the interruptive voice of an audio guide. All together reflects on different perceptions and spaces of the site that we investigated during the mapping exercise. The next steps would be to explore the impact of presented perceptions and find specific events in the described silent form, explore the intersections of formal and informal and find a better narration between the changing photographs and the main plan. In this way, the formal and informal could better inform each other and improve understanding of public space in Colònia Güell.

[1] this term was used in the presentation of Erik Van Daele, 7th June 2022, Barcelona

team: Marta Labastida, Miguel Hernandez Quintanilla, Fredrik van der Horst and Weronika Gajda
Appropriated Sounds

When looking at Colònia Güell on an orthographic map or an aerial view, one can see the distribution and development of plots. What is not visible on such top-down perspective representations is how this environment is used, experienced, and occupied by informal and non-designated day-to-day and temporary/changeable aspects of space such as sounds, human activity, vegetation, etc.

The map “appropriated sounds” is a conceptual idea that aims to represent a time-space experience, focusing mainly on auditory aspects of this experience. During a walk, we recorded short sound fragments at different locations. On the top of the map the walked trajectory is shown as a line on an aerial view of the area. The different places on this route where sound recordings were made are marked with a circular symbol with a cross.

The different sound recordings were assembled and visualised as a sound wave. This conventional way of representing sound makes it possible to understand where sound peaks occur. In addition, what caused this sound peak was annotated. Alongside the sound reproduction, a representation of the views of façades and landscapes was equally projected in linear form, allowing the sound to be linked to spatial conditions. Finally, an extraction is made of temporary spatial aspects such as vegetation and temporary environmental conditions, which might also be related to the perceived sound.

In short, appropriated sounds is a representation of a temporary and fluid moment in time and allows to gain insight into how a particular walked trajectory is subjectively perceived in terms of sound and space.

team: Rute Carlos, Catherine Papst, Karl Inge Rosén and Liselotte Vroman
text: Liselotte Vroman
Gardening the landscape

The spaces for informality are places of opportunity for the appropriation of the void, and they also appear not to have a defined use. The Colònia Güell and its nearby urban environment group together a series of spaces that could belong to this category. In this case, the important infrastructure dedicated to mobility and spaces for cultivation generate a significant number of informal spaces. These important physical limits define “informal spaces” and also give them the status of edge or border.

Informal spaces have a very varied form and very diverse urban conditions; however, they have a similar condition that is the formal response to the environments in which they are inserted. These informal spaces are closely related to the landscape where the mobility infrastructure, the river and the irrigation canals define the borders between the urban space and the rural environment. These informal spaces have the potential to shape new urban relationships between different spaces around the neighbourhood. These urban voids are the articulation between different realities that occupy the same space, but that have very little dialogue with each other. Recognizing these spaces on the territory not only allows them to be dimensioned and classified, but also makes it easier to establish different schemes of action, associated with the urban conditions of each informal space. The mapping of these spaces manages to highlight them in the urban discussion as well as to recognize their silent existence.

“Cities are the fantastic machines that serve to transform isolation into exchange and ignorance into progress” (Solá-Morales, 2004)[1].

These informal voids, are the territories that protect the current conditions of urban silence, could become the catalysts of exchange not only human but biotic. So that the borders now so clear could be diluted in some points. In some way, the space on the edges can be denormalized and urban relations formalized.

QUESTION 3:
How can time be a tool to map places through their history, processes, dynamics, rhythms and temporal scales?

Time makes visible the multiplicities of representation inherent to the temporal sequence inscribed in the place, by incorporating distinct and elastic diachronic scales, advocated both in the short and the long times, and in the historical or geological time. Time can also represent the lived experience articulated with the various socio-spatial, political, environmental and economic dynamics of the place; and the experience of the self as an inhabitant of the place, in the way that it takes possession of the collective place and how it uses, modifies, and interacts with it.

Time reveals itself through the place. The place reveals itself through time. From this correspondence, we propose to elaborate cartographies that cross multiple scales with spatial, social and personal relationships that define the temporal thickness of the territory. These cartographies must demonstrate the procedural and operative capacity of time, revealing the transformation, uncertainty and instability of any place. Time is both operator and operative.

[1] This text is an adaptation of a text included in Silva, C.; Labastida, M.; Carlos, R.; Ferreira, F. Cartografias: Entre lugar, tempo e escala. [Cartographies: Between place, time and scale]. Guimarães, Portugal: Universidade do Minho. Laboratório de Paisagens, Património e Território (Lab2PT) 2021.
Time travel, shared memories

The map, in its simplest and most primitive form, differed from the current distant, abstract and rigorous image to approach the necessity to explain a path or a journey (time and space). With a symbolic representation and a selection of restrictive information, the first maps were capable of reproducing time, illustrating the experience and anticipating the obstacles that any traveller would encounter when crossing the same places. These maps represented an incomplete narrative of any place, built from memories and capable of being complemented with new experiences.

The material produced to answer the proposed question recovers the idea, perhaps somewhat primitive, of explaining the place through its temporal appropriation, through the memories of our trip. The process involves considering relationships between the objective and the subjective, between the scientific and the creative, between the remembered and the imagined, associating opposing or singular points of view.

Each one of us, individually, drew the visit we made to Colònia Güell and the Llobregat agricultural park that lasted more or less about eight hours. We drew without the help of any cartographic base or pictures, only using our memory. After an hour of work, we met to verify that we had used different ways to represent our experience and in each of the drawings the place emerged from different points of view, scales and details.

One option defines a scheme where continuity relates and highlights different milestones. A second option, in storyboard format, meticulously and sequentially represents some experiences that occurred in different spaces. A third option lists, through words, the most outstanding elements and sensations of the day. Finally, the fourth option selects and draws a set of remembered details and fragments.

The overlapping of these narratives produces a collective and incomplete map, capable of annexing many other memories. This map has no scale, it accumulates unconnected and singular elements: milestones, fragments, words, lines, actions, and environments... However, in common there is a diachronic order, a linear time, which organizes all memories sequentially. Would it be possible to organize them in another way? Would it be possible to expand the meaning of time to be more than a measure? How would we represent time if it were simply a memory? How would we use the sense of time?

**team:** Liselotte Vroman, Sophie Leemans, Catherine Papst and Marta Labastida
Artefacts of time

Evidently, a territory is the result of a continuous transformation over long periods through successive generations of activity, or in other words the collapse of time into a thick material sheet full of spatial traces building upon each other: from the geological forces that shape landform and soils via technologies of transport and cultivation to political-economic forces of subdivision. Urban morphology provides a method of understanding the shaping of a landscape by working with diachronic layers and thus identifying how the structure of one-time layer gives way to another.

With the analogy of the palimpsest André Corboz in 1983 pointed to the dialectics of necessary modification and irreplaceability of that very surface; there is only one. "Artefacts of time", then, takes on the question of how to represent transformation without time-lined layers, and focuses on the products and pattern flattened in that one surface. "Artefacts of time" is based on the thesis that the collapse of time in a territorial plane can best be grasped by formal peculiarities that highlight how the geometrical regime of one period mis-matches the logics of another: triangles produced by diagonal axes, curvilinear pattern cut by straight lines, turns in pattern, and perfect large radii where there should be more varied ones.

Motivated by an idea of working together physically on the same canvas, a multi-entry, ad-hoc, dynamic and tactile, almost swarm-like approach to map-making was set up:
- Four mapmakers explore the same printed aerial photograph with tracing paper, and have access to digital maps from individual computers
- No specialisations of themes or periods are assigned; vocation is induced only by physical proximity to a quadrant of the base print
- Individual ‘detective’ work is combined with group research by acclamation: "What happened here?“, "How can it be?“, "This looks illogical, there must be a reason for the rupture!“, "When did this happen? Can someone look at this?"

The result is a collection of peculiarities supplemented with notations of the years of change. These may highlight hidden, partly unwanted histories. But moreover, when territory and time are depicted through ruptures and oddities, rather than through the constructed coherence of layers, a valuation of fragments and localities emerges. And often these are the subjects of further modification.

team: Rute Carlos, Miguel Hernández Quintanilla, Weronika Gajda and Sabine Müller
5-minute experiences

The mappings in “5-minute experiences” challenges the notion of landscape as simply spatial extent, and acknowledges the importance of subjective experience in understanding our surroundings. Here, the city is not made by its objects and materials alone, but by how we travel through and interact with it, and the extent to which we have access to its content.

To understand experience, we must start with time. Subjective experience is situated in time as a sequence of moments, and configured by the way we move through our surroundings. Here, infrastructure becomes especially important. Infrastructure is the material ground for movement and circulation, and its patterns determine both how we travel, what we have access to and the quality of our experience as we do so. Our investigation into time therefore takes its vantage point in infrastructure, and seeks to reveal some hidden figure or quality not visible in most conventional geospatial data.

The basis for our investigations was a composite map showing three different isochrones for La Colònia Güell based on a 5-minute threshold — by foot, by bicycle and by car/train. This tells us something about which parts of the landscape that are most accessible to us, represented as a closed figure. The contents of the isochrones were then articulated with various media and techniques so as to say something about how the three different infrastructures in play give rise to three completely different experiences of the landscape.

The isochrones for pedestrians and cyclists were filled with tiles showing GIFs from different points in the study area, depicting the close, immersive and sensory qualities of moving freely and unsheltered through the landscape. The isochrone for car and train were filled with a diagrammatic representation of the main circulation lines through the area, highlighting a fixed and controlled mode of travel, where you experience the landscape through a window and orient yourself mainly with the use of signs and symbols.

**team:** Maarten Gheysen, Eulàlia Gómez-Escoda, Fredrik van der Horst and Karl Inge Rosén
QUESTION 4:
How can the flows related to domesticity and everyday life be mapped?

How much energy do our daily commutes consume?
What networks are activated when we communicate?
Where does our food come from?
Where does what we throw away end up?

Our daily movements have tangible and intangible implications that go beyond our area of proximity. This exercise seeks cartographies capable of synthesizing the double local-global scale of ordinary actions and the objects that surround us.

< Baix Llobregat in Laboratori d’Urbanisme de Barcelona LUB (1977), La identitat del territori català. Les
“Trashy metropolis” attempts to map the spatial consequences of domestic garbage production from a family unit to the territorial scale. In 2020 the Metropolitan Region of Barcelona produced around one million and a half tons of garbage, most of them from individual households. Meanwhile architectural impact of garbage management is highly underrepresented in the urban development discourse. Nonetheless current research points out that an intentional approach to how it is designed and spatially perceived could have an impact in the way humans interact with their daily environments, potentially, by producing less residues [1]. This cartography aims to frontally address the topic through drawing.

The map is done by representing three scales of garbage management and connecting them through fluid threads, the cartography is not chronologically but rather a mind map linking them:

- Domestic. A representation of a typical housing unit in the Colònia Güell that includes the main spaces of garbage production. The drawing connects bodily experience of space with the question of study.
- Volumetric or urban. Hand-drawn axonometric views that represent the architectural impact of the "constructions for garbage" in the urban landscape. We included the trash collecting spots in the neighbourhood and a representation of the main management facilities linked to it, these are often hidden or at the edge of urban settlements.
- Territorial. This part of the map locates geographically the different scales of garbage management within the territorial region. At the same time as one can guess the main routes of garbage flows, it triggers questions about where our garbage ends up and what the not-so-visible environmental impact of trash is.

The map highlights both an often-overlooked architectural question of design as well as it points towards structural problems that can be tackled through it - can we imagine a more transparent, caring, and even celebratory design for trash?


team: Liselotte Vroman, Rute Carlos and Miguel Hernández Quintanilla
Domestic Ficus

With Domestic Ficus we aimed to explore and visualize the social aspects, industrial processes and infrastructure that related to domestic vegetation and household plants.

The stem of this mapping revolved around revisiting the site of Colònia Güell, using google maps to outline the spatial significance of the domestic plant hold to everyday life, how acquisition and maintenance of these plants’ links to different processes throughout the local-global scale.

Using google maps we were able to discover the five-year long evolution of a domestic Ficus tree (ficus elastica) in one of the lots. Using a series of collages and maps we were able to synthesize the flows that played a role in this Ficus lifespan.

Collages elaborating the findings on how the Ficus tree may have interacted with the house creating marks on the facade, and how occupants cultivated and finally removed the plant. Which speaks to the plant’s origin and use in southeast Asia, as a living bridge long before it became an ornamental plant common around the Mediterranean basin.

Abstraction of the Infrastructure network connected to Colònia Güell in a 5-kilometer radius, maps the locations of plant nurseries, plant soil businesses and alternative travel routes. The Diagrammatic scheme of implications on a global scale of the driving forces linked to productions of planting soil, fertilizer and distribution.

team: Cruz Armando Criollo Aliendres, Weronika Gajda and Fredrik van der Horst
Local architectural expressions of global processes

Opposed to a few centuries ago, domestic flows have become increasingly global. Products and tools of everyday life such as water, building materials, gas and food are imported from all over the world. In reference to Rem Koolhaas’ work The Countryside, this map explores the architectural dimension of the modernisation of “the countryside”. More specifically, it maps architectural objects that relate to global processes. In the Llobregat valley, one can find several of these types of objects that are the expression of larger-scale processes and flows: greenhouses, water purification and sewage infrastructure, gas stations, train stations, quarries, telecom masts and so on.

Through indicating these objects on a topographic map, it becomes clear that most of these objects are located in the lowest part of the river valley, and the railway line running between Santa Coloma de Cervelló, Colònia Güell and Molí Nou forms a border between the mountains in the west and the valley with “countryside infrastructure” in the east.

For each of the indicated typologies, an abstract sum is made. For example, the typology of the greenhouse is explored through the average yearly food consumption of one person e.g., 17.4 kg of oranges, 15 kg of tomatoes, 23 kg of potatoes, 8 kg of onions, 4.5 kg of lettuce and 6 kg of peppers. To make these abstract numbers spatially tangible, these can be translated to how many kilograms of each of these crops can be grown on one square metre in a greenhouse e.g., up to 50-55 kg of tomatoes, 16 kg of onions or 900 crops of lettuce.

Thus, this map, depicting local architectural expressions of global processes emphasises the spatial impact of the domestic flows of everyday life. It can also be seen as a statement to include these ordinary spaces in the architectural debate, as the contemporary cultural landscape of the Llobregat valley, in reference to the 1992 text of De Sola-Morales.

team: Maarten Gheysen, Karl Inge Rosén, Sophie Leemans
On site

The workshop begins with a presentation of the brief at ESTAB-UPC and a site visit of the whole group to the Còlonia Güell and surroundings. The participants visited the site only once and had to take advantage of this opportunity to explore and document different situations that could be used to elaborate the cartography.

The field trip included a visit to the Crypt designed by Antoni Gaudí, the Còlonia settlement and grain-fields around, and a trip through the irrigated fields of the valley and its riverbed. As we abandoned the sloped land of the Còlonia towards the flat alluvial plain, the presence of the surrounding mountains as landscape frame became more and more apparent under the Mediterranean midday sun.
At the studio

Every evening a new question is launched by a partner school, the newly formed teams have a quick meeting and discuss the strategy to follow. The day after the discussions continue on paper and screen. Shortly after lunch the teams have to present their work, questions, answers and a debate follow. The conversations are recorded in order to register the incomplete process of mapping. After the presentations members of another school present the question they had prepared.
Liselotte Vromann (both)
Liselotte Vromann (both)
THE INCOMPLETE RESULTS OF AN ACT OF MAPPING

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INTRODUCTION

The disciplines of architecture and urban design have representation as their main communication tool. However, in recent years, the possibilities of access to information – digital archives, open cartographic sources – and the emergence of geographic information systems have shaken the way of representing and explaining issues that were until recently linked to the physical condition of places.

How do we map space and experiences? How do we map global – climate change, monetary flows – vs. local processes? How do we map concepts such as boundaries, regularity or porosity? How do we map tangibles and intangibles? How do we map sensations produced by noises, flavours or smells? How do we map paths and movement? How do we represent dynamics in a static drawing? What is the (ir)relevance of geographical precision?

This paper describes the process based on an expanded dialogue to use domestic digital tools – hand drawings, pictures, video, google maps, cad and GIS cartographies, big data, open-source data, sound recordings – to produce incomplete understandings of the territory instead of achieving a finished product.

Methods

The starting point of this paper is an academic experience, “One territory, four questions, one atlas”,1 an intensive summer research program between four institutions: AHO Oslo; KU Leuven; Universidade do Minho; ETSABarcelona-UPC. The programme was aimed to generate new synergies and a common theoretical-practical body to trigger a joint discussion on how to represent and visualise cities and life, spatial design and spatial reframing, ruptures and permanence, people and time by the act of mapping. The twelve participants of the summer school worked together grouped in three teams during one week in which four questions were progressively launched to which the teams responded by drawing speed maps in 8 hours. In turn these maps served as an entry for a common discussion and unlocked hidden hypothesis.

The site

The work was developed under the premise that mapping is linked to a specific geographic location, or at least that this facilitates it. Therefore, the exercises explored a nearby location, the surroundings of the Colonia Güell, a small settlement in Santa Coloma de Cervelló, in the metropolitan region of Barcelona.
The Colonia Güell was founded as a town for workers together with the adjacent textile factory by the industrialist patron Eusebi Güell in 1896. The settlement was built between the Llobregat agricultural valley floor and the dry slopes that frame it. A seasonal creek traverses the Colonia from east to west, where the local train tracks and a road physically divide it from the agricultural park. The plan of the new town, allegedly designed by the architect Antoni Gaudí, is organized through two main perpendicular axes traced within the invisible triangle drawn by the towers of the factory, the church and the school. The church is considered a masterpiece also designed by the Catalan architect but never finished. The main housing types are two-floor family units, most of them built in brick or masonry by local architects, some of them of high architectural interest.

The town was designed so that the workers were at the same time provided work and education by the industrial patron within the physical limits of the Colonia. The factory was collectivized into a self-organized industrial community during the 1930s. Today the industrial production has moved out of the factory and its buildings house new activities such as communication agencies and start-up businesses. The town was designed so that the workers were at the same time provided work and education by the industrial patron within the physical limits of the Colonia. The factory was collectivized into a self-organized industrial community during the 1930s. Today the industrial production has moved out of the factory and its buildings house new activities such as communication agencies and start-up businesses. On the other hand, most of the houses are still inhabited by descendants of the first industrial workers of the Colonia. The multiplicity of entanglements on site – local and global, water and soil, patches, corridors, flows – provided exceptionally rich grounds for the acts of mapping.

An excursion
Walking, watching, drawing, and recording was the way for participant in the programme to collect first impressions. Due to its heritage value, the site is visited by a relatively high number of tourists that take a detour from the main gaudiesque attractions of the metropolis. The tour started following the instructions of the local museum’s audio guide, wandering and stopping by the main buildings and public spaces of the industrial town. Gradually, the attention drifted from the framed route towards the unexpected findings of the place: views towards golden wheat fields at the edge of a modernist high rise concrete neighbourhood, spontaneous appropriation of outdoor spaces to dry clothes or do yoga, bunnies against the new taxes to improve train services. These lived absorptions provided clues that would be later result in mappings.

After visiting the urban settlement, a jump outside the formal built defined border facilitated the immersion in the landscape of the agrarian park. Surrounded by the large infrastructure of roads and train rails, large agricultural plots fed by intricate systems of water channels. The journey before heading back, ended as fig trees and artichoke fields gave way to the apparent wilderness of the riverbed, plagued with impressive clusters of giant invasive reeds. The territory around the Colonia Güell appeared to the eye as an “assembly of events, of pieces and fragments, conflicting, complementing and hence condensing the urban context”. Under this light the idea of exploring these assemblages through fast, incomplete cartographic acts seemed even more relevant.

FOUR QUESTIONS
After the trip the group faced four days, eight hours per day to answer to four different questions to explore potential maps of a territory. Each one of the questions presented as subchapters in this text was answered with three maps made by the different teams. One map per question is described in the following paragraphs as example of the reflections triggered by the simultaneous acts of mapping. The resulting cartographies are considered deliberately incomplete products but are nevertheless useful for the understanding of the site, making a finished map unnecessary.

Ground condition
The first question asks how ground characteristics are related to the urban development of the Llobregat valley. Old national roads, historical urban settlements and plot structure have been usually developed following the characteristics of the ground. Yet the past hundred years of radical technological and economical transformations have clearly blurred this relationship and resulted in questionable decisions. The upper crust of the earth continues to be deeply transformed today as “the processes of demolition and construction for which humans are collectively responsible appear to transcend the human scale. These processes influence faster – at a fraction of the speed – and have a greater impact on the transformation of the troposphere than all natural processes combined”. Therefore, the graphic production should answer what is the state and characteristics of the current ground; what are the hidden resources and problems that can be revealed beneath its surface; how is it possible to unveil the geomorphological qualities and processes of the landscape; and, especially, how can the terrain be represented with only first-hand information about the ground.

The two-dimensional resulting map, entitled Blow-ups and megapixels, is proposed as a meta-explanation of the composition of the different layers of the ground from the reading of its external appearance. On the one hand, the geological map of Almera and Brossa gives clues about the limits between alluvial and calcareous lands, as well as the consequent character of vegetation, watercourses, agricultural plot structure and position of infrastructures. On the other hand, images taken during the field visit show apparent contrasts fruit of that hidden dimension. The representation fits in with this starting point, enlarging photographs taken on site to the maximum, to leave visible only the fertile, the humid, the dry, the barren, the natural and the altered. Through blowing up the images, the literality of what they represent loses meaning, but the chromatic or textural condition for which the fragments of photography were chosen remains. In this way, a new territorial mosaic is composed from the obtained megapixel tiles that translate the character of the ground.

“The photographer Alfred Stieglitz (1864-1946), a bridge between the pictorialist and documentary practices of the 20th century, considered that the function of photography is not to offer aesthetic pleasure but to provide visual truths about the world.” And being literal with his words, the composed map uses reframed images to explain the reality of the ground. The exercise also ends with questions on what would be the correct pixel size; on whether all tesserae have to be the same size; on how much
Informal realities

The second question and its consequent eight-hours map were about understanding informal realities through mapping. The question was approached from a broad stance by proposing three diverging perspectives on this tension triggering at the same time other perspectives to be explored. The first perspective challenged the fact that within the discipline of architecture, conventional architectural drawings – plans, sections, elevations, axonometries and perspective drawings – generally focus on built and materialized aspects of space. The presence of human bodies is often missing and the distinct contrast existing between planned and lived space seems to undermine the possibilities of “architectures as complex ecosystems”. Perspective number two reflected on the notion of Third Landscape, coined by the French landscape architect Gilles Clément. This concept explains how in dispersed territories, where low-density built fabric prevents the formation of large-scale nature preservation, a number of informal or unplanned spaces appear to be highly biologically valuable. Passively maintained corridors of verges along rivers, canals, highways and railways become attractive spaces for specific animal and plant species. Clément puts these informal spaces forward as “the sum of the space left over by man to landscape evolution – to nature alone. […] This can be considered as the genetic reservoir of the planet, the space of the future”. The third notion introduced was the concept of “perception of space”. Mediation of formal and informal space in Barcelona is immersed in digital cultures, represented by a dense visual and spatial data structure. It allows a broad audience to be engaged in exploring the city, shaping their notion and perception of space. Content of public sphere like social media platforms is oriented on a city as a cultural heritage, purified imaginary vision of public space, areal views of a bounded and compressed urban grid, and a stage for football culture. A dynamism of activities in the public sphere is continuously updated, increasingly fragmented, and reconstructed in a formal city. Oppositely the notion of informal city can be understood as the one that is not exposed to oversaturation and fragmentation in the online sphere. The two meanings of the city are entangled in the meaning, experience, and representation. These informalities and formalities guide the exploration of the notion of city. Mapping might help unfold and discuss the two faces and investigate the boundaries and mediation between them. When looking at Colònia Güell on an orthographic map or an aerial view, one can immediately see the distribution and development of plots. What is not visible on such top-down perspective representations is how this environment is used, experienced, and occupied by informal and non-designated day-to-day and temporary aspects of space such as sounds. The map Appropriated sounds is a conceptual idea that aims to represent a time-space experience, focusing mainly on auditory aspects of this experience. During a walk, we recorded short sound fragments at different locations. On the top of the map the walked trajectory is shown as a line on an aerial view of the area. The different places on this path where sound recordings were made are marked with a circular symbol with a cross. The different sound recordings were assembled and visualized as a sound wave. This conventional way of representing sound makes it possible to understand where sound peaks occur. In addition, what caused this sound peak was annotated. Alongside the sound reproduction, a representation of the views of façades and landscapes was equally projected in linear form, allowing the sound to be linked to spatial conditions. Finally, an extraction is made of temporary spatial aspects such as vegetation and inconstant environmental conditions, which might also be related to the perceived sound.

In short, the map is a representation of a temporary and fluid moment in time, where formal – the mapping format, ambient sound – and informal – unexpected noise jumps, the spatial-temporary extractions – interact, questioning how a particular walked trajectory is perceived.
Time

Time makes visible the multiplicities inscribed in a place by incorporating distinct and elastic diachronic scales, advocated both in short and long-time spans. Time can also represent the lived experience articulated with the various socio-spatial, political, environmental and economic dynamics of the place. So can it portray the experience of the self-being as its inhabitant, through the way one interacts with public space and sometimes appropriates it. Time reveals itself through the place. From this dialectic, the third question proposes to elaborate cartographies that cross the multiple scales of spatial, social, and personal relationships that define the temporal thickness of the territory. The last question asks how time can be a tool to map places through their history, processes, dynamics and rhythms and simultaneously use different time scales.

5-minute experiences\(^1\) is one of the resulting answers that challenges the notion of landscape as simply spatial extent, and acknowledges the importance of subjective experience in understanding our surroundings. Here, the city is not made by its objects and materials only, but by how we travel through and interact with it, and the extent to which we have access to its content. To understand experience, we need to start with time. Subjective experience is situated in time as a sequence of moments, and configured by the way we move through our surroundings. Here, infrastructure becomes especially important. The investigation into time takes its vantage point in infrastructure and seeks to reveal hidden figures or qualities not visible in most conventional geospatial data. The basis for our investigations was a composite map showing three different isochrones for Colònia Güell based on a 5-minute threshold – by foot, by bicycle and by car/train. The contents of the isochrones were then articulated with various media and techniques interrogating how the three different infrastructures in play give rise to three completely different experiences of the landscape. The isochrones for pedestrians and cyclists depict the close, immersive, and sensory qualities of moving freely and unschooled through the landscape. The isochrones for car and train highlight a fixed and controlled mode of travel, where landscape is experienced through a window and the passenger orients mainly with the use of signs and symbols.

Through multiple media, the mapping addresses the temporalities that traverse a territory and their effect on architectures, landscapes, and our own personal experience. It also points towards an important question, as it portrays infrastructure as protagonist of the map in the unfolding of old, current, and future temporalities.

Flows

The last question interrogated the representation of flows through the territory: those related to domesticity and daily life; those related to the energy consumed in daily commuting; those of the networks that are activated by communications; or the more invisible ones, which trace the origin of food or the destination of daily waste. Daily movements have tangible and intangible implications that go beyond our area of proximity. This question aimed to trigger cartographies capable of synthesizing the double local-global scale of ordinary actions and the objects that surround us. The fourth map, Domestic Ficus,\(^6\) aims to explore and visualize the social aspects, industrial processes and infrastructure related to domestic vegetation and household plants. The stem of this mapping revolved around revisiting the site of Colònia Güell using google maps to outline the spatial significance domestic plants hold to everyday life. How does acquisition and maintenance of these plants connect to different processes throughout the local-global scale? Using google maps we were able to discover the five-year long evolution of a domestic Ficus tree in one of the household plots. The map assembles several collages that present the findings of how the Ficus tree may have interacted with the house creating marks on the facade, and how occupants cultivated and finally removed the plant. *Ficus elastica* is a plant species originally from southeast Asia, in a deeper time perspective, the plan also acts as a bridge that connects us to the long story before it became an ornamental plant common on domestic spaces all around the Mediterranean basin. The map also introduced a diagrammatic scheme of implications on a global scale of the driving forces linked to production of planting soil, fertilizer, as well as distribution flows. This was done through an abstraction of the infrastructure network connected to Colònía Güell and the locations of plant nurseries, plant soil businesses and alternative travel routes in a 5-km radius.

Like the photographic gun of Etienne J. Marey capturing in frames the flight of a seagull,\(^17\) the speculative mapping acts as a synthesis of the movement of flows that played a role in the Ficus lifespan, bringing to the fore the accumulation of simultaneous flows that make up a territory.

CONCLUSION

The combination of the twelve acts of mapping results in an atlas of unfinished drawings. A series of conclusions built through the academic experience can be extracted.
First, that the unfinished map is a deliberate state and works as an open cartography. There is no aim in finishing the maps as the end result would not reveal new insights, just a better-looking map. Secondly, that domestic digital tools are effective at exploring and presenting territories. Unlike sophisticated GIS driven maps, the format of the unfinished cartography obliges to use daily and accessible tools. At the same time these tools have a great potential in their combinations. Unlike global GIS cartographies, the digital domestic tools bring to fore the local condition and its particularities, as an in-situ mapping. Third, the development of these cartographies allows synthesising, organising, ordering, and recording ideas, thoughts, and uncertainties. The mapping process opens new questions, speculations and, occasionally, some conclusions. A fourth relevant aspect is that these are collective maps that reflect a dialogue prior to or during their preparation. They result from an agreement and/or consensus between different ways of looking, understanding and communicating. They lie in the liminal space between the subjectivity that allows you to freely invent a narrative and the agreed objectivity that must respond to the question placed. Each of the unfinished maps became an open conversation that shows a co- construction of knowledge. A final extraction from the experience would be that unfinished maps do not fully reflect reality; they show a collectively constructed front in real and a specific question. There is a prior and conditioned selection from which there are multiple options for positioning. Each of the maps is original and they rarely repeat scales, elements, or perspectives between them. Each map seeks an original position to explore the same reality and multiply the ways of seeing or explaining it.

The combination of these conclusions makes up for an exciting approach to place analysis, representation and projection that can be explored further as complementary to other mapping techniques but potentially as a solid tool on its own. Indeed, if according to Corner “the unfolding agency of mapping is most effective when its capacity for description also sets the conditions for new eidetic and physical worlds to emerge” 18, these twelve incomplete acts of mapping proved to be effective in their results and extremely efficient in terms of the means needed to do so.

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**NOTES**

1 Summer school at Barcelona School of Architecture (ETSAB-UPC), 7th-13th June 2022
3 Tarragó, 104.
7 Gunther Vogt, “We are geographical agents!”, In Distance and Engagement, walking, thinking and making landscape, ed. Gunther Vogt and Alice Foxley (Baden: Lars Müller Publishers, 2010).
8 Made by Fredrik van der Horst, Rute Carlos, Sophie Leemans and Eulàlia Gómez-Escoda
9 Known as “Mapa geológico y topográfico de la provincia de Barcelona: región primera o de contornos de la capital” [Geological and topographical map of the province of Barcelona: first region or the outskirts of the capital city] drawn by Jaume Almera and Eduard Brossa in 1888, available at Institut Cartogràfic i Geològic de Catalunya [Cartographic and Geographic Institute of Catalonia], accessed January 24, 2023, https://cartotecadigital.icgc.cat/digital/collection/catalunya/id/2174/