

Major research project Eduardo de la Lastra

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**URBAN REGENERATION STRATEGY APPLYING EMPTY URBAN DIVIDES
RAILWAY LANDS IN CELAYA, MEXICO**

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MAJOR PROJECT

**URBAN REGENERATION STRATEGY
APPLYING EMPTY URBAN DIVIDES:
RAILWAY LANDS IN CELAYA, MEXICO.**

EDUARDO DE LA LASTRA VALLEJO

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Being a Major Project in Urban Design and City Planning submitted to the faculty of The Built Environment as part of the requirements for the award of the MSc in Urban Design and City Planning at University College London, I declare that this project is entirely my own work and that ideas, data and images, as well as direct quotations, drawn from elsewhere are identified and referenced.

30 August 2019

■ Acknowledge page

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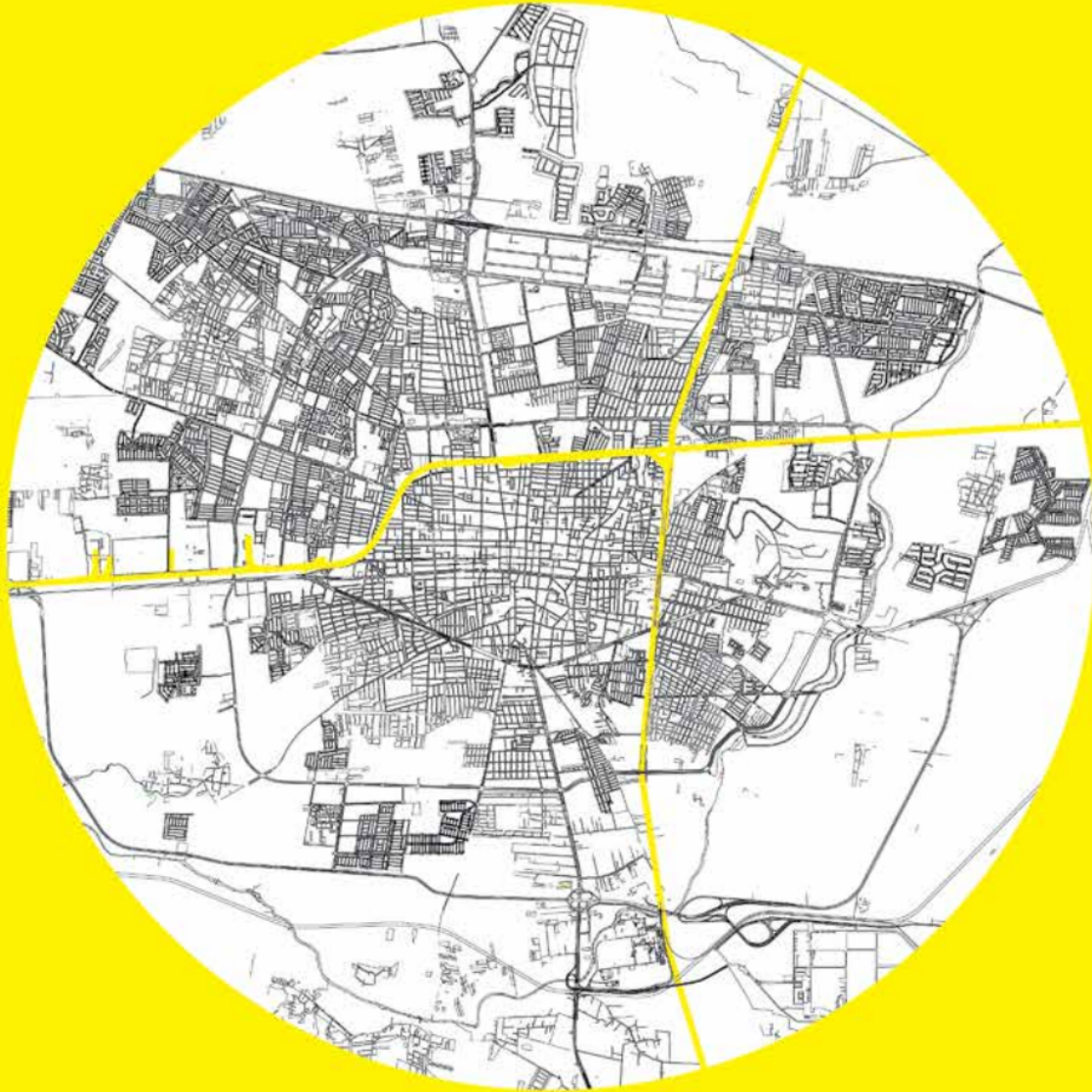
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ABSTRACT AND INTRODUCTION



Abstract

Urban divides are elements that influence how urban fabric grow and develop. They separate -physically or figuratively- space, movement and connections. It is the juxtaposition between Types, which is the context where the device can be found and Devices, which are the objects which divide.

When an urban divide ceases to operate, it changes, disappears, or stay as ruins, leading to urban emptiness (a multilayer phenomenon in the city system.).

This Major Project aims to explore different urban relationships related to urban divide typologies and devices, urban emptiness typologies and how urban regeneration projects using urban divides work as strategy axes to improve cities, allowing the design of macro-strategic projects. Therefore, this proposal focuses on analysing rail tracks as elements for urban regeneration. Projects using urban divides and urban emptiness across Mexico and United States of America are analysed to understand the effects on the urban fabric and how this practice provides tools to generate relationships between society, government and private sectors.

The chosen site for the project uses two historical railways in Celaya, Mexico. These will cease to operate in 2020 when a new railway system outside of the city is completed. These rail tracks divide Celaya's urban sprawl into four quadrants and have a complex relationship with their urban environments, as they cross diverse urban typologies, gated communities, informal settlements, historical sites, factories and industrial archaeology.

To create an Urban Regeneration Strategies applying urban divides, a detailed analysis on smaller urban divides devices within the urban fabric is important to understand the complexity of urban relationships, as these will disclosure strengths, weaknesses, opportunities and threats for improving the distribution of urban equipment, social equality, new green infrastructure, legibility, opportunities and accessibility.

This approach is an opportunity to encounter common identities in order to improve the development of urban growth and the life of their inhabitants using urban divides that will cease to operate.

Introduction

Urban growth is strongly influenced by urban divisions resulting in a variety of urban typologies and connections responding to urban divides through time. Several concerns arise when a linear urban divide use disappears and urban emptiness becomes a new interaction:

What are the implications of shifting from physical urban divisions to spatial emptiness? Does emptiness have to be given new programmatic uses to improve urban physical relationships? What happens when urban emptiness is transformed into new physical connections?

The aim of this project is to explore urban divisions, specifically, rail tracks as these elements provide complex relationships between urban divisions and these elements could act as a catalyst for urban regeneration projects in relation to urban divide

typologies, devices and emptiness typologies. Whilst supporting concepts with pictures to explain the theories used in this Major Project, the objective is to understand and apply these concepts to a particular site on the rail tracks which will cease to operate in the city of Celaya, Mexico to deepen the possibilities for a strategic urban project.

In the Mexican urban context, cities lack quality public spaces, transport infrastructure, green areas and places for recreation, collaboration, interaction and connectivity. Urban divisions result in urban security problems. An additional complexity in Mexican cities is the growth of informal settlements and the interaction of these with the wider city. Urban security within these divisions is one component to analyse, particularly when the use of urban division disappears and spatial relationships change. This security problem in Mexico has resulted in diverse projects of gated communities



Figure 1: Old Train Tracks Turn into Philly's Own High Line (Kyle Huff, 2016.)



(planned or vernacular) approved by planning authorities, resulting in future problems regarding mobility, legibility and urban connectivity. This has reinforced inequality and exclusion in the city.

Aims of the project

This Major Project aims to explore different urban relationships related to urban divide typologies and devices, urban emptiness typologies and how urban regeneration projects using urban divides linear elements inside the urban fabric work as an axis to improve quality of life, delivering macro strategic projects to improve the urban context in the future. Secondly, the project aims to highlight the role of industrial empty lands (specifically rail tracks) in the development of urban regeneration, particularly in urban conditions of the city chosen as a case study, which could be replicated in similar urban contexts in Mexico and Latin America. Finally, this work is a wake-up call to visualize what could happen when emptiness appears, how this urban phenomenon is an opportunity to create macro strategies and highlight the usage of abandon urban divisions to create strategies for urban design practice.

Critical research question

When an urban divide use ceases to operate and spatial emptiness appears, does transferability of uses in urban divides promote urban regeneration strategies?

Objectives

To analyse visually different types and categories of urban divisions

To understand how urban divides have a direct impact on the urban typologies adjacent to them

To understand the physical interactions between urban sprawl and urban divides and how diversity of uses provide different physical interactions

To analyse how urban divides have an impact on the growth and development of the city

To understand what happens when urban divide usages cease to operate, memory remains and emptiness appears



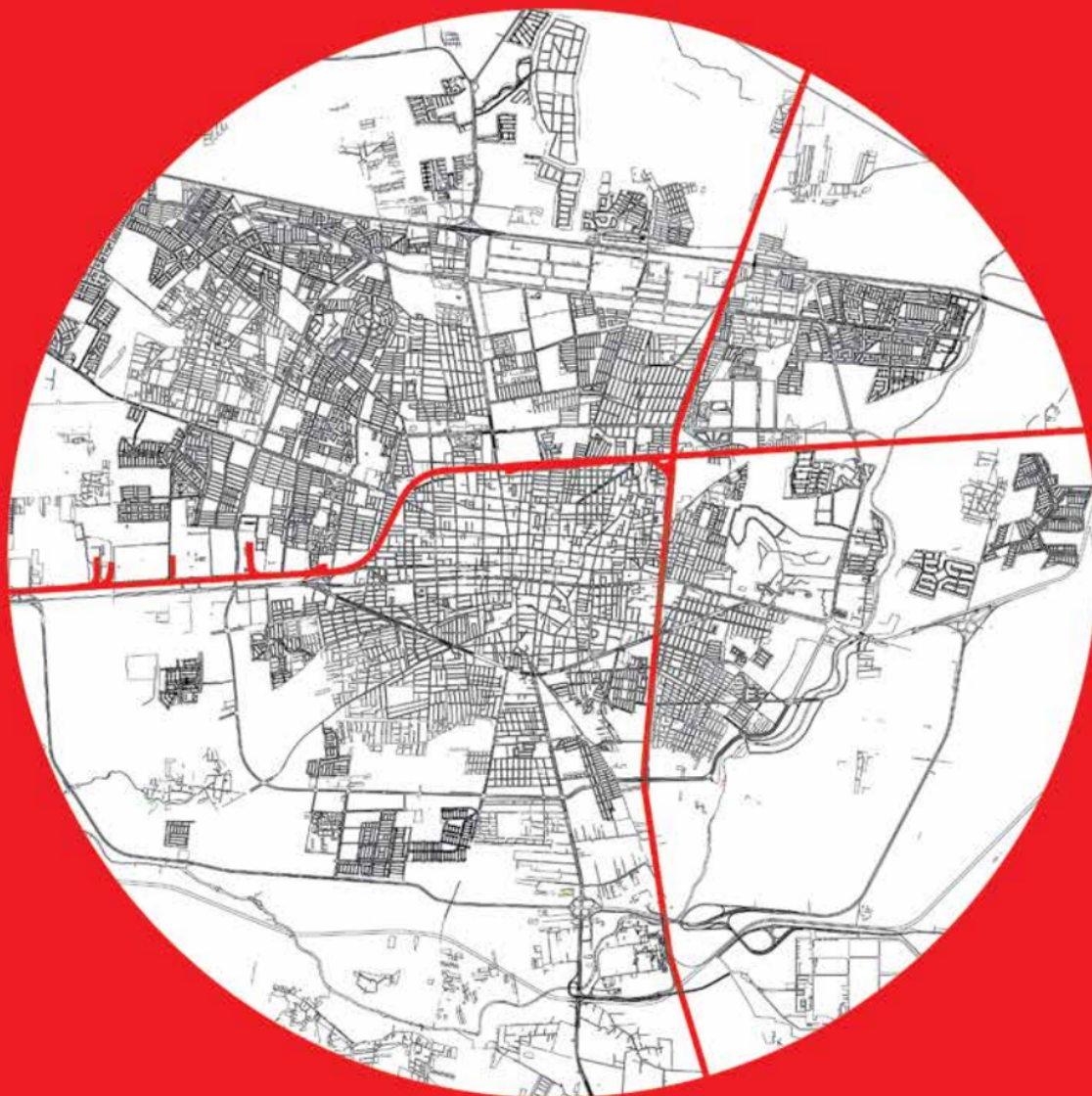
Figure 2: Jesús Pérez goes to Celaya (Casasola, 1920)



Figure 3: The High Line Viaduct (Joel Sternfeld, 2001)



Figure 4: Unequal Scenes (Johnny Miller, 2016)



LITERATURE REVIEW



What are urban divides?

Urban divides are elements that influence how cities grow and develop. These elements can change through time, specifically in their initial purposes or usages.

From an infrastructure element, such as a highway or a railway track, to an object like a fence or a door, these elements tend to divide physical space, movement and connections. Nowadays, urban divides can change, disappear or in some cases remain as ruins, creating emptiness in the urban tissue. New questions arise as the usage of urban divides ceases to operate, does all empty urban spaces have to be filled? Urban emptiness provides new solutions to existing problems in urban design practice and landscape urbanism.

Figure 5: This highway clearly divides the barrio section from the mansions and estates of Santa Fe, Mexico City. (Johnny Miller, 2016)

Urban divides can be understood as a phenomenon that triggers anthropological mutations, as it directs the way cities sprawl, hence affecting the urban landscape (Ingersoll, 2006). Cities tend to program themselves constantly and changes in the uses of urban divides could become an opportunity to improve connectivity and quality of life for the immediate surrounding built environment.

Urban divisions are elements with a strong sense of memory, as they can exist or be found beyond the physical site itself in our recollection of place. These are the symbolic constructions that connect our idea or image of a place to its physicality (Hornstain, 2011).

An example of memory construction through Urban Divides is Berlin's Wall (Note 1). In 'The Ghosts of Berlin: Confronting German History in the Urban Landscape', Brian Ladd describe:



Figure 5

Monuments are nothing if not selective aids to memory: they encourage us to remember some things and to forget others. The process of creating monuments, especially where it is openly contested, as in Berlin, shapes public memory and collective identity. (2008, p. 11)

Note 1: To understand visually Berlin's context before the fall of the Wall, I recommend to watch *Wings of Desire*, as it portrays the essence of the city in 1987.



Figure 6



Figure 7

Figure 6: Tracks of the Berlin elevated railroad stop at the border of American sector of Berlin in this air view on August 26, 1961. Beyond the fence, communist-ruled East Berlin side, the tracks have been removed (AP Photo/Worth, n.d.)

Figure 7: A woman and child walk beside a section of the Berlin Wall (AP Photo, n.d.)

Figure 8: West Berlin citizens hold a vigil atop the Berlin Wall in front of the Brandenburg Gate on November 10, 1989, the day after the East German government opened the border between East and West Berlin (Reuters/David Brauchli, n.d.)



Figure 8



Categories of urban divides

To better understand the categories of urban divides, the crowdsourced photo essay 'Evidence: visualizing urban divides' by McAllister and Sabbagh how urban divides can be catalogued by visual evidence, juxtaposing iconic divisions with everyday urban conditions to lead the reader to identify the ubiquity of urban divides (Note 2).

The categories for **types** introduced are affordable housing, refugee camps, walled cities, upscale towers, enclaves, upscale housing, university campuses, security fences, gated communities, special economic zones, upscale malls, trade zones, upscale markets, informal settlements, Olympic zones, exclusive parks, parking places, informal markets, etc.

The categories for **devices** revealed are walls, highways, security check-points, gates, ornaments, doors, fences, topography, built height, sign-age, murals, infrastructure, railway parks, vacancy, river and rail tracks, etc.

Note 2. The visual exercise of categorization by McAllister and Sabbagh, both types and categories for Urban Divides require more examples to be added in order to deepen the relationships between built juxtapositions. Hence, to define divides in particular contexts is necessary to analyse individually types and devices in each specific context.

Urban divides and urban emptiness

Urban growth is strongly influenced by urban divisions, resulting in a variety of urban typologies and connections responding to urban divides through time. However, several concerns arise when an urban divide use disappears and emptiness becomes the basis for new urban interactions in the urban fabric.

Firstly, urban emptiness adopts material, social, temporal and semantic dimensions of what the city is. It is a phenomenon integrated into the complexity of urban form and acts as a catalyst for the future development of cities seeking to limit urban sprawl. Secondly, diffusion of sprawl does not depend so much on positions in space, but on how citizens move within these urban spaces (Ingersoll, 2006). Nevertheless,



Urban Divides
Juxtaposition between Devices + Types



Devices: The object which divides



Types: The context where the Device can be found

Figure 9: Urban divides concept



Device: Wall Type: informal settlement



Device: Fence Type: unsafe urban area



Device: Fence Type: regular urban area



Device: Railway Type: regular urban area

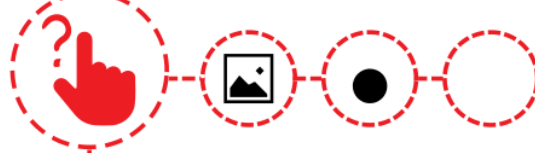
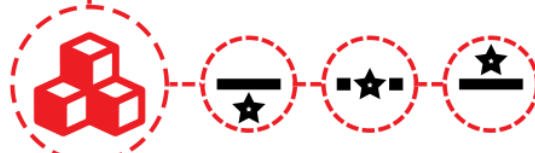
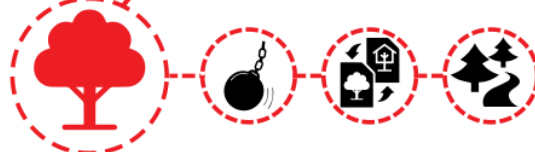


Device: Built Height Type: regular urban area



Device: Infrastructure Type: affordable housing

Figure 10: Example for different Devices and Types for Urban Divides in Celaya, Mexico.





12.1 River destroyed for avenue, Mex



12.2 Cheonggyecheon Stream, Seoul



12.3. Wollaton Park wall, Nottingham



12.4 Underground Rail track, New York



12.5 Ground-level railtrack, Berea



12.6 Above-ground viaduct, New York



12.7 Open space parking



12.8 Empty parking



12.9 Abandoned Factory, Kladno



12.10 Macy's Store (american retail)



12.11 Empty retail store (no brand)



12.12 Retail buildings, USA



12.13 Underbridge with fences



12.14 Underbridge with small pyramids



12.15 Underbridge with volumes

Figure 12: Visual examples for each typology of urban emptiness. (Source: Image Reference List)



Note 3: Petrova and Nenko describe Cities as a self-sufficient system with five components to understand complex juxtapositions:

City as a natural environment: this is the terrain, nature and climate which provide initial conditions and options for the emergence and development of the city.

City as a material environment: this is represented by the built and constructed material forms.

City as mobility: this means the city as a process. Space turns from the organizing element into an object of dynamic, changeable demand.

City as a localized identity: this is the process of identification. Globalization and migration destroy the authenticity of the cities.

City as an information environment: this is how information (data) shapes the usage of space.

Urban divides, as urban surfaces, facilitate or impede the events and dynamic processes that move through a functioning matrix of the urban connective tissue.

The urban surface is the field that allocates roads, utilities, natural habitats, neighbourhoods, buildings and open public spaces. Connectivity infrastructure such as rail tracks, streets and highways have rarely been recognized as collective spaces unto themselves (Corner, ed., 1999).

Nonetheless, urban divides are constantly evolving, particularly industrial divides. This land-use change is caused by the constant relocation of industrial facilities and activities outside cities.

The movement of industries and urban transferability generates emptiness in the built urban form. This, consequently, can create new opportunities to regenerate and create new connections between diverse urban typologies and neighbourhoods.



Figure 13

Nevertheless, it is important to address the different problems that could arise when the industrial uses of urban divides cease to operate.

Commonly, industrial space urban divides have negative connotations in the collective memory as they are perceived as symptoms of conflict or of a failed society (McAllister & Sabbagh, 2017). To reinforce this particularity, Petrova and Nenko argue:

In general the term “emptiness” has negative connotations, while it is associated with discourses of loss of meaning, social ties, material structures, or discourse of improper usage. Urban voids can be regarded as ballast, they do not possess any features of “places”, such as locale, location, or sense of place. (p. 388, 2018)

Linear infrastructures as urban divides are powerful elements for pollution, noise, material topography and

speed, which generate fragmentation and political boundaries. The potential for physical and psychological segregation when using linear urban divides in urban design practice is immediate. Linearity commands violent and controlling actions in the urban form.

Figure 13: Villa 31, Buenos Aires, Argentina (Ricardo Ceppi, 2016)

Cuff argues that the concept of linearity is to understand the power of the line in architecture and urbanism, to grasp its translation from real space to abstraction, to grasp its translation from real space to abstraction, to grasp its translation from real space and, finally, to the violent actions the line prescribes (2017, p16). An example of this violence through linearity is the development of gated communities in Latin American cities, and how these typologies change the urban fabric into a segregated entity.

Figure 14: Unequal Scenes. Santa Fe, Mexico (Johnny Miller, 2016)



Figure 14





■ The High Line, New York City, USA

The physical structure (device) is a steel rail track viaduct dominating landscape from the West Side of Manhattan. The viaduct was constructed between 1929 and 1934 to relieve street level congestion and safety hazards by lifting the railway six metres overhead. The structure reflects functionalism and aesthetics of architectural modernism. In the 1950s and 1960s, industry was able to decentralize from congested urban districts in Manhattan and, in 1991, the railway was closed entirely.

The owners of the viaduct in 1991, CSX Corporation, commissioned the Regional Planning Association (RPA) to conduct a feasible study for the reuse of the viaduct. In 1999, Joshua David and Robert Hammond were interested in saving the structure from demolition. They cofounded Friends of the High Line (FHL) that became the force behind creating the High Line Park. (Linder and Rosa, ed., 2017)

The High Line always had... a public mission: to remake a piece of urban infrastructure into a public amenity that all neighbors and city residents would use. (2017, p. 35)

However, one problem The High Line had was setting in second place to community decision-makers when designing the project, leading to unexplored assumptions about what 'good design' is:

Overall, the design process was much more concerned with conceptual and aesthetic consistency and form than it was on creating a space inclusive of a wide range of spatial practices. (2017, p. 37)

The first stage was opened in April 2009 and was finally completed in late 2014. The High Line express the relationships among citizens, the state and other institutions of power (Linder and Rosa, ed., 2018).

For the fundamental characteristic of capitalism dynamics of New York, it generates a constant reproduction and definition of spatial inequalities and unequal relationships (Oswalt and Kultustftung, 2005). The project still cuts through Manhattan, but now leaves wealth and gentrification along its path. It ignores the social, political, economic and cultural particularities of the context involved (Duany, 2013).

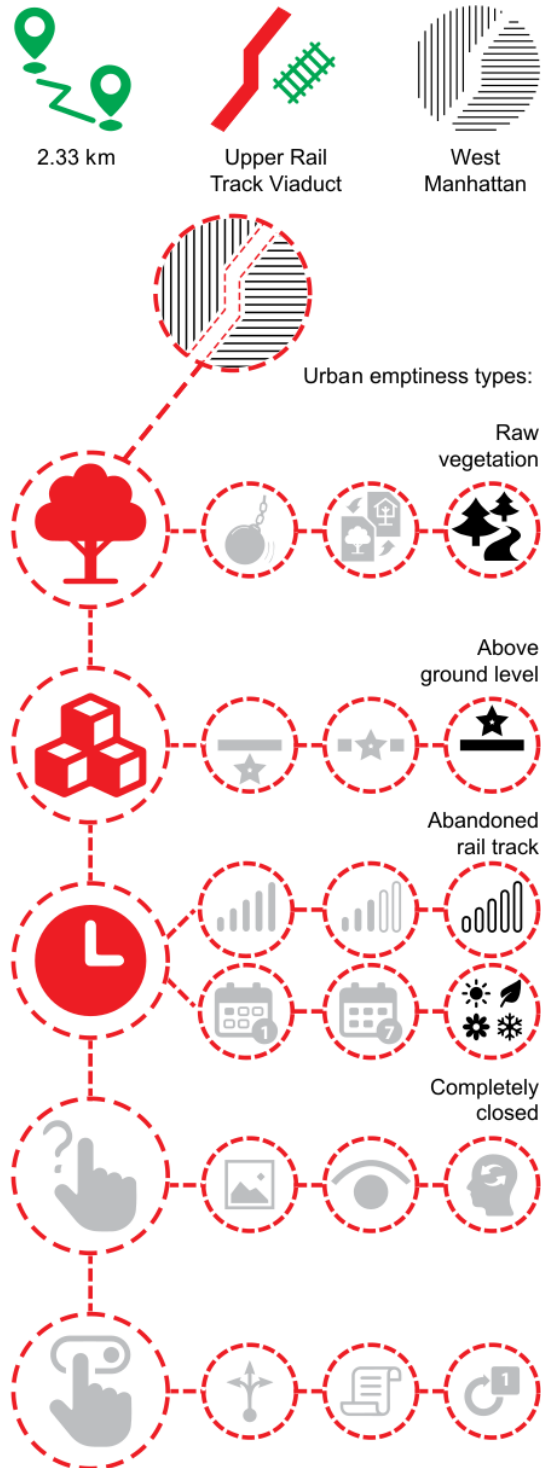


Figure 15: Analysis of urban divide devices and urban emptiness typologies for the High Line



Figure 16.1



Figure 16.2



Figure 16.3



Figure 16.4



Figure 16.5



Figure 16.6

Figure 16. Different buildings along the High Line prove diverse dynamics of architecture as a product of neoliberal consumption.





Figure 18.1



Figure 18.2

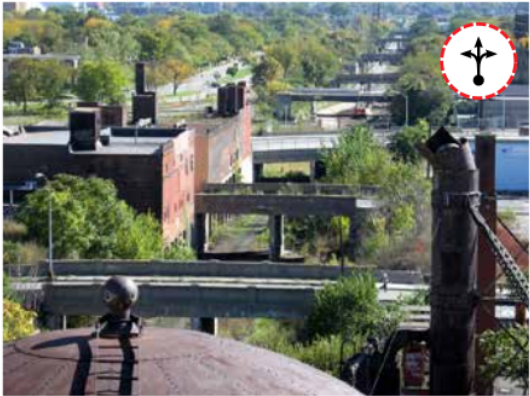


Figure 18.3



Figure 18.4



Figure 18.5



Figure 18.6

Figure 18: Infrastructure such as abutments 'jumping' the old railways serves as elements to intervene with graffiti. Ruins from industrial buildings do not integrate correctly with the green line proposal.

Ferrocarril de Cuernavaca, Mexico City, Mexico

The linear park is built on a rail track inaugurated in 1898 which connected Mexico City with Acapulco. This project is an important attempt at land-use change before deindustrialization happens, as it provides empowerment for citizens to appropriate these lands, and thus improve their context. The first stage of this project, a 1.4 km-long stretch, was opened in November 2017. The project runs from Nuevo Polanco area to Popotla. Aguayo describes the Nuevo Polanco area adjacent to the project:

[The Nuevo Polanco aim is] to transform urban passives into social and economic assets with the goal of 'taking the old industrial zone of Polanco to the avant-garde and turning it into a cosmopolitan city-center, where art, business and quality of life become the main actors [...] The project also includes public-private cooperation with the City Government to transform the Ferrocarril de Cuernavaca rail-road in a 9.4 km walkway. One of a few of the zone's green projects, the walkway includes the creation of a public, open-air, walk-ing and cycling space (a "linear park") recovered along a stretch of the old railway. (2015, p. 655)

The gentrification of Nuevo Polanco is a major problem. Social segregation will increase if land-use in vacant lands with potential for development does not use public space as guidance for designing new policies. Furthermore, factories among Ferrocarril de Cuernavaca have very defined boundaries. These typologies could become a problem if new developments use this same physicality in the future by 'copying' the same entrance fluxes to access the land, as this will reduce the potential of the project for integrating the city. Aguayo critiques the poor prospective for public place-making strategies by private developers:

The only project [...] creating green spaces in the area is the conversion of the [...] railroad into a linear park. [...] urban planning in private hands has absolutely no interest in open-use of green spaces. A city is not in the making, instead, buildings dis-articulated from residential areas are being developed; most projects located in the area of reference operate as closed units with few integrated services and no proposition for the city. (2015, p. 659)

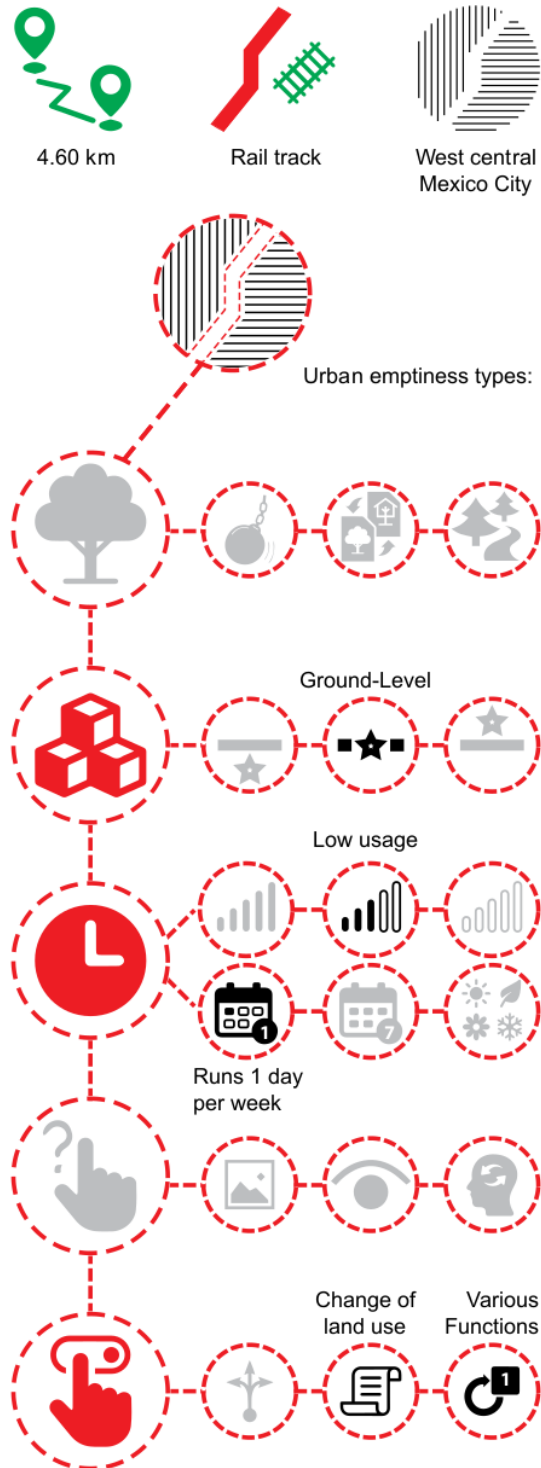


Figure 19: Analysis of urban divide devices and urban emptiness typologies for Ferrocarril de Cuernavaca



Figure 20.1



Figure 20.2



Figure 20.3



Figure 20.4



Figure 20.5



Figure 20.6

Figure 20: New public realm infrastructure in rail tracks which are still operating once per week.

The Rail Park, Philadelphia, USA

The Reading Viaduct was built in 1891 and opened in 1893. It transported people and freight into and out of the centre of Philadelphia for nearly a century. From the Reading Terminal on Market St, the elevated train line ran through the factories and warehouses of North Philadelphia. Following the region's decline in manufacturing, train traffic ceased in the early 1980s and the viaduct has remained vacant ever since (Studio Bryan Hanes, 2018). In 2010, the Centre City District and the organization Friends of the Rail Park began to evaluate options to convert the abandoned viaduct into an elevated park.

The first stage of this project, which was 400 m long, was opened in June 2018. This 'linear park strategy' incorporates two types of urban emptiness for material source. The viaduct (aboveground level) is an elevated section of the unused rail line, the cut (low ground-level) is an open-air section that runs below street level lined with 9-metre high stone walls and crossed by bridges which cross from north to south. The tunnel (underground level) is a 915-metre underground railway with some natural light entrance and ceilings reaching 7.62 metres. It crosses 10 different neighbourhoods and the vision for the community purposes involve arts, education, culture, health and wellness.

The project has a clear design line to follow for the viaduct. Architectural elements and materials of similar industrial scale and character to the original structure were used for the platforms, benches and guardrails (Urban Engineers, 2018), following design principles similar to those used in the High Line in New York.

Even so, concerns arise for design strategies for the cut and the tunnel. Without a clear project strategy to justify the full intervention and no existent physical connections at ground level, one conclusion is aboveground level railways are easier to intervene in because they act as objects instead of vacant land and have clearer guidance for landscape design. Further, there is no clear strategy on how the cut and the tunnel could be integrated into the urban tissue as an urban regeneration project, demonstrating that ground level and underground level rail tracks are more difficult to justify using as urban divides due to physical conditions.

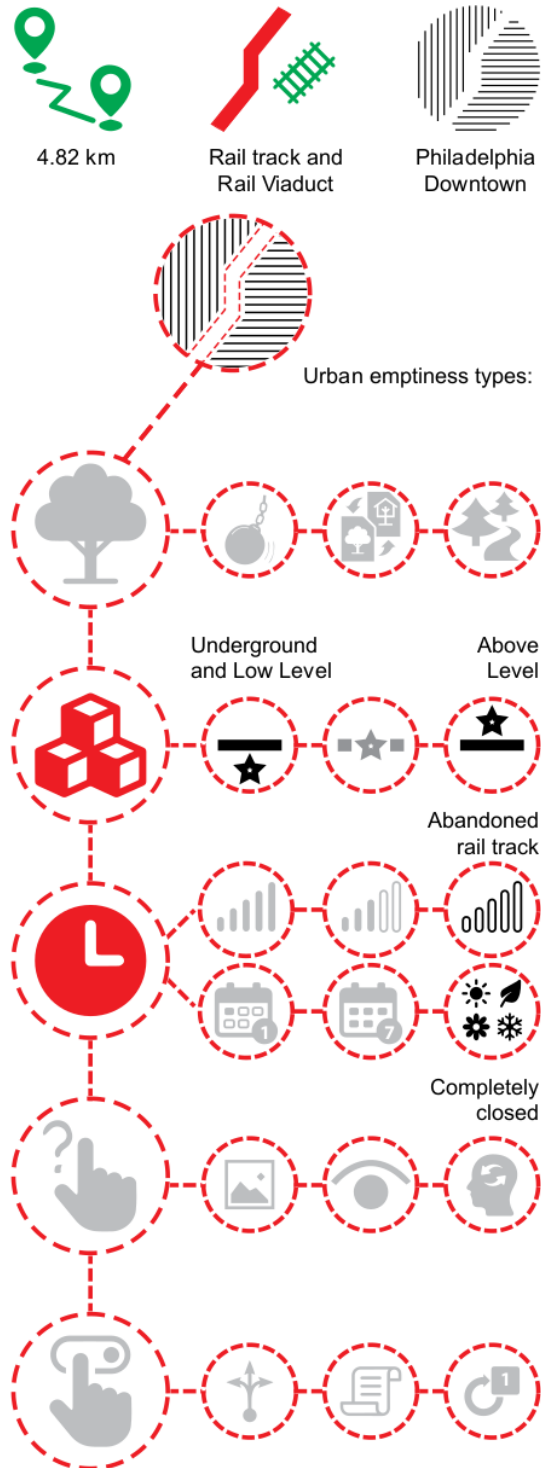


Figure 21: Urban divide device and urban emptiness types for The Rail Park



Figure 22.1



Figure 22.2

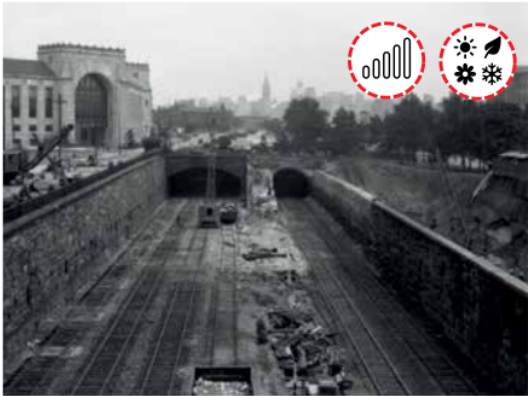


Figure 22.3



Figure 22.4



Figure 22.5



Figure 22.6

Figure 22: A project including three different types of material source.





Figure 24.1



Figure 24.2



Figure 24.3



Figure 24.4



Figure 24.5



Figure 24.6

Figure 24: Different types of interventions on Bajo Puentes project. Mainly focused on commercial land use.

■ Case studies conclusions



The High Line

- 1** The viaduct acts as an object rather than vacant land. This resulted in clear design principles to follow for architectural conceptualization. Linearity is present as a controlling object.
- 2** Vacancy in adjacent industrial buildings and empty lands allows developers to use the device as a real estate booster.
- 3** Neoliberal economic structure displaced community decision-makers, thereby making the proposal not inclusive for all.
- 4** Gentrification happens across the project, displacement and rise in property and services prices. Developers lead to building excessive architecture as a brand for the area.



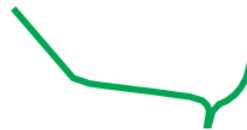
Dequindre Cut

- 5** The railway at low ground level had complicated multiple access points.
- 6** Prior graffiti interventions provided a strong sense of meaning for the project proposal, thus mixing meaning and function emptiness types as a powerful tool for the feasibility of the project.
- 7** The promoters had a clear line to follow by just transforming the cut into a green path, therefore limiting possibilities to transform and mix vacant industrial lands with the urban divide.
- 8** Inexpensive execution, due to the materiality of the device at a low ground level.



Ferrocarril de Cuernavaca

- 9** Rail tracks at ground level can support new urban usages if the emptiness of time is available, being a precedent replicable on different urban areas across Mexico.
- 10** Land-use policies have to change to increase public activities in private lands adjacent to the linear park.
- 11** Old factory typologies have to promote and improve public space facing the rail tracks.
- 12** The project addresses the importance of public realm strategies. Gentrification could become a problem if policies stay static.



The Rail Park

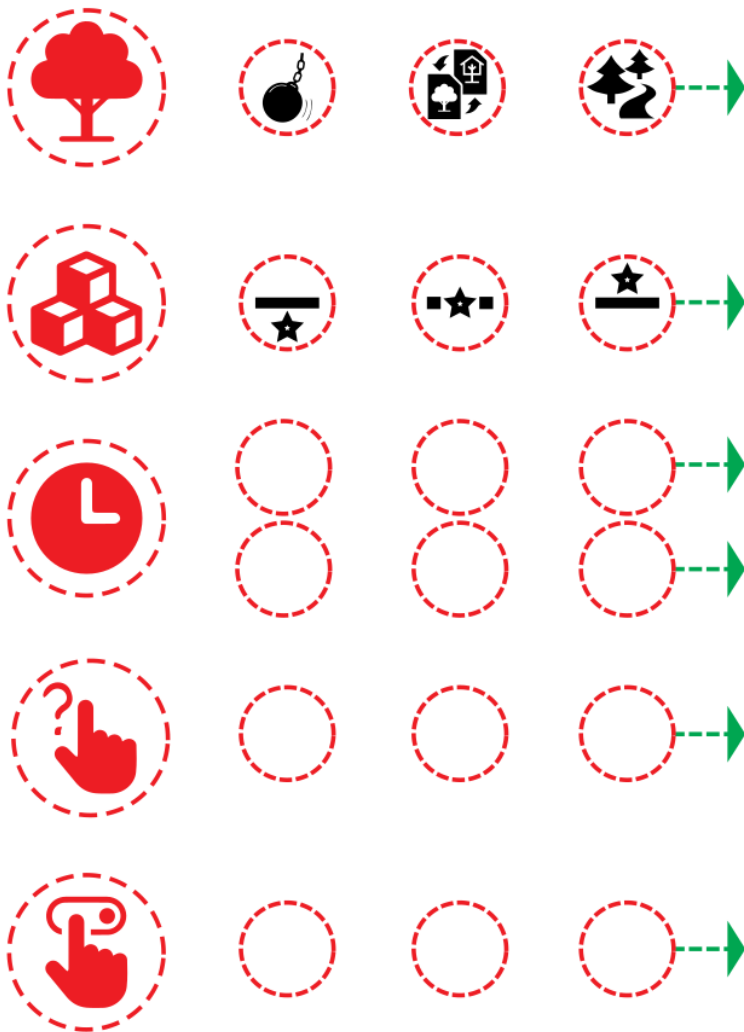
- 13** The full project vision is disconnected. Two types of material source emptiness lead to two different approaches. While the viaduct used The High Line in New York as a precedent and delivered a similar intention, the cut and the tunnel have no clear execution strategy.
- 14** Underground and low-level material sources are more difficult elements to justify an intervention.
- 15** This vision is not a strategy for urban regeneration.

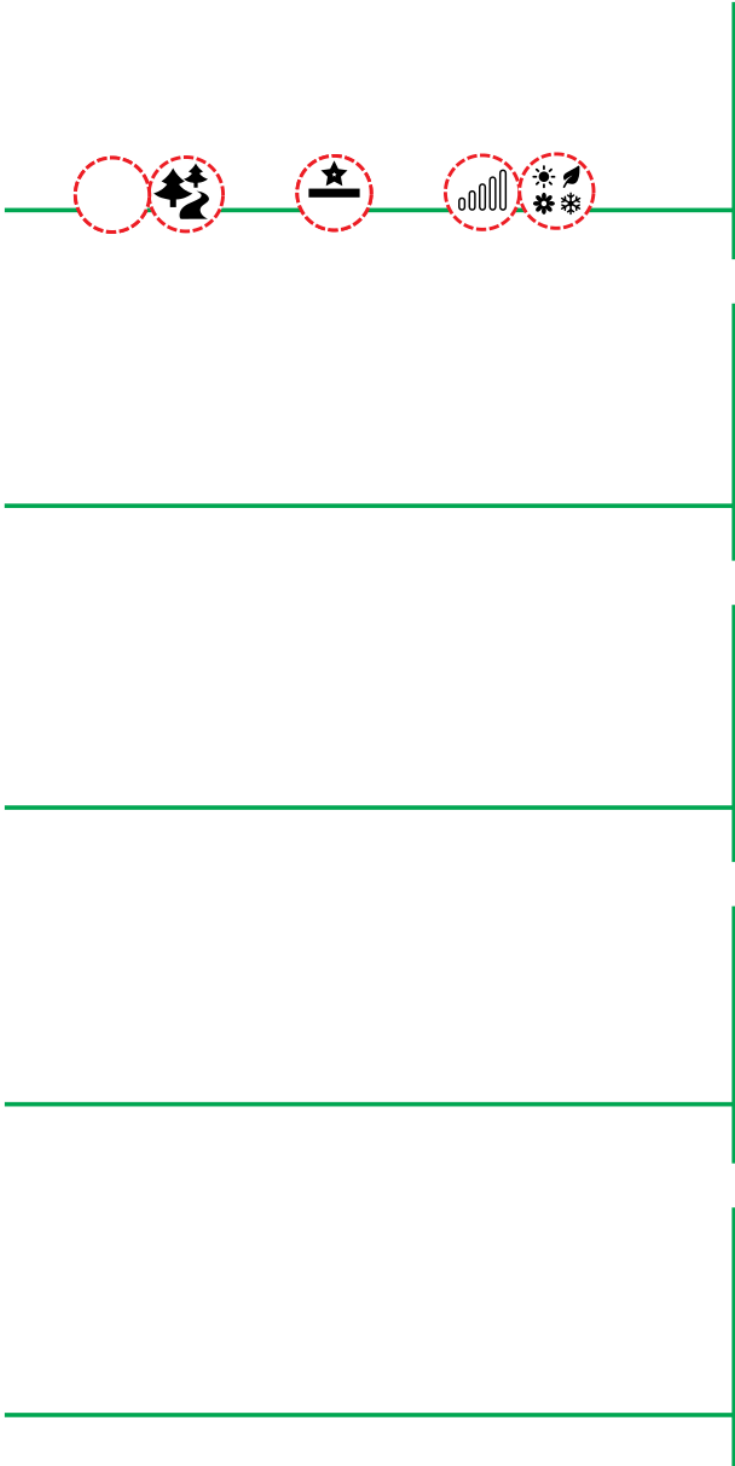


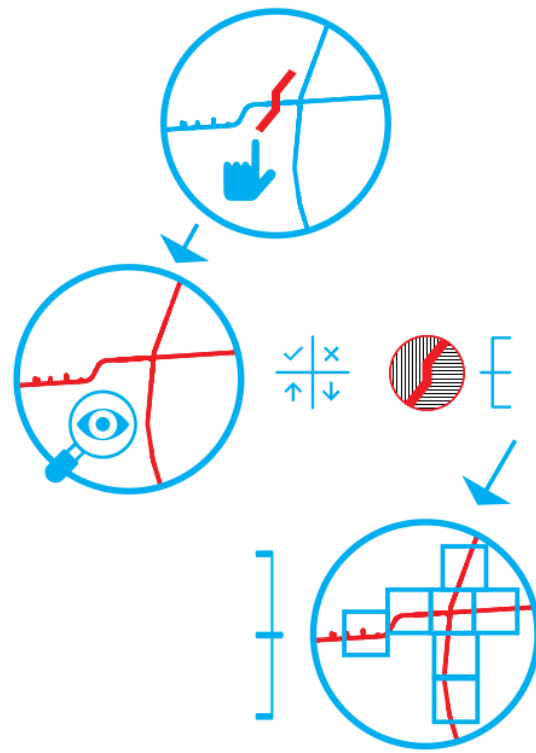
Bajo Puentes

- 16** Under bridges physical infrastructure contributes clear guidance for architectural interventions with a variety of programmatic usages.
- 17** The government has to regulate public areas to avoid gentrification and allow the maintenance of these spaces.
- 18** Successful projects achieve the best performance by mixing retail and government service points.

■ Conceptual framework









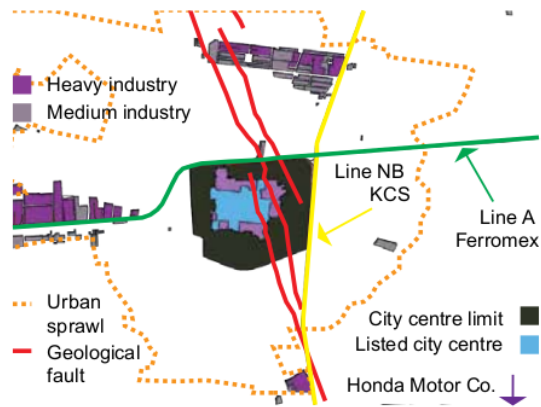
City analysis - urban sprawl

The city centre area is surrounded by the rail tracks on the north and west and it is the most affected area by the geological faults crossing from north to south. The first contemporary industrial area is located in the north of the urban sprawl. It is the only not connected industrial area to the railway system. The industrial area in the east has heavy industry; the south is where Honda Motor Company factory is located with a surface of 800 ha. To the west, factories supplying automotive industries can be found outside the urban sprawl. (28.1) Celaya lacks green areas. Few parks can be found in the city centre. Most of the green area infrastructure is located in the north part of the Ferromex A-Line. In the west, the construction of a 6 km linear park on the Laja River was abandoned due to corruption, the high cost of execution and maintenance. This is the most criticized project proposed by the Federal Planning authorities. (28.2)

Commercial land use is well defined in the main avenues. On the north-west area of the city, new shopping centres, private schools, hotels and other equipment are being built. However, the city centre is still the most important commercial area of the city. (28.3)

The avenue system connects the east and west urban fabric effectively, mainly for the movement of vehicles, public transport and products from Mexico City to Bajío (Highway 45 and Pan-American Highway). Effective north-south connections need to be proposed and built. (28.4)

Planning authorities have four categories for dwelling density. These provide tools to understand the urban fabric and its growth (28.5). The north-west area of the city is the least densified area. It has the highest cost of land per square metre and is where vacant lands, gentrification and speculation phenomenon can be found (28.6). Nowadays, the city centre has a low rate of inhabitants (28.7). Nor-Poniente area is the fastest-growing urban area due to the Federal Government's strategy for social housing. This area has problems regarding habitability, due to the poor quality of dwelling construction and inefficient connections. Most of the social housing built in the last 20 years is alongside Highway 45 (28.8). In present years, new typologies are being approved, allowing to build towers in the North-west area of the city. This land-use policy shows future speculation in the south-east area (28.9).



28.1 City Centre, geological faults and main industrial areas

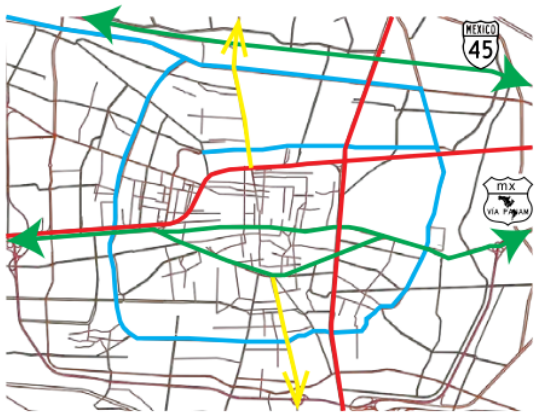


28.2 Green areas

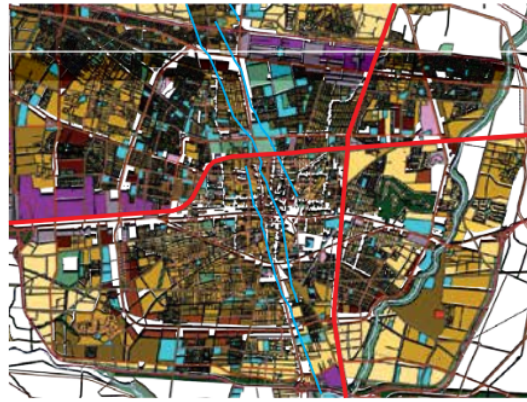


28.3 Commercial and equipment land use.

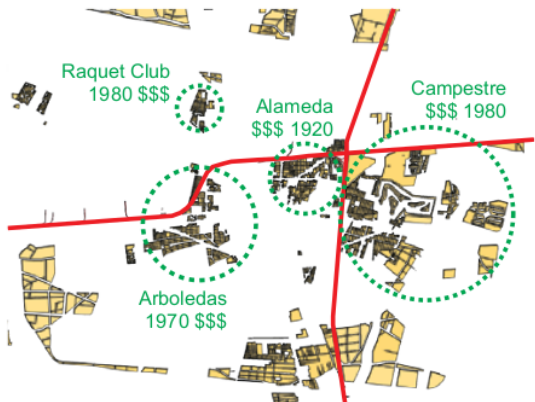
Figure 28: Celaya's urban area analysis



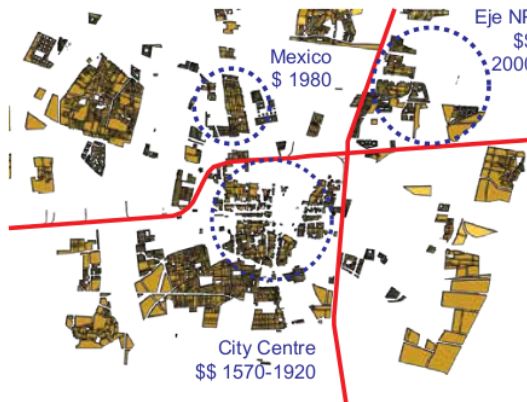
28.4 Large, Medium and Small Avenue system



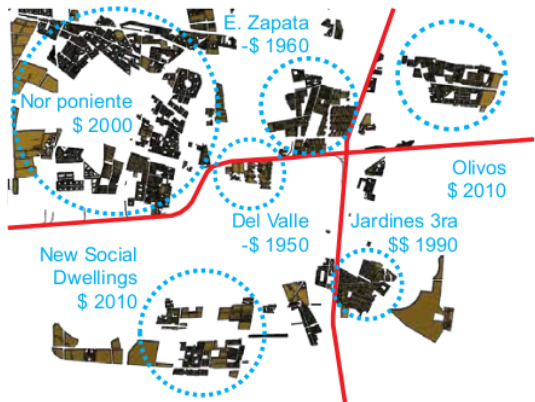
28.5 Celaya's Land Use Map (all Layers)



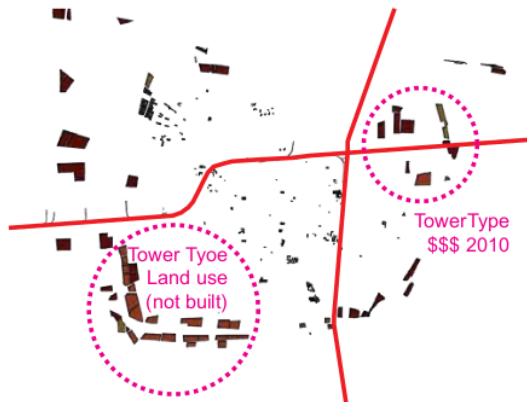
28.6 Dwelling density: H0 (30 p/ha) to H2 (200 p/ha)



28.7 Dwelling density: H2.5 (201 p/ha) to H3 (300 p/ha)



28.8 Dwelling density H3.5 (301 p/ha) to H4 (400 p/ha)



28.9 Towers HDB (400 p/ha) HDA (450 p/ha) HDM (500 p/ha)



■ City analysis - conceptual

Celaya was founded by the Spanish Kingdom on 12 October 1570, where an Otomi community named Nat-tha-hi was located. In 1655, building a city was considered and in the first part of the nineteenth century, Celaya became economic and architecturally important for Guanajuato. Fabric production became the most important economic activity in 1825 and, in 1878, the first railways were built to connect Guanajuato with Mexico City.

In 1910, the industrial Water Tower was built to commemorate the first centenary of Mexico Independence by President Porfirio Diaz. This industrial structure was fabricated by German engineers Schöndube and Brandenburg and continues to supply water to the city centre today. In 1915, The Battles of Celaya changed the course of the Mexican Revolution. These conflicts used the industrial buildings as battlefields and, thus, they became relevant for Mexican history.

The Water Tower, the rail infrastructure and industrial archaeology are the most iconic monuments in the city. Hence, industrial archaeology is an important part of local identity, allowing this conceptual approach to be part of the strategy proposal.

As in other cities in Mexico, the destruction of industrial archaeology awakens the need to understand society and what these buildings represent. Renovation or conservation with new architectural and urban programs, may allow cities to preserve our collective memory and reflect who we are as a productive society. Industrial archaeology allows (physical) observation when it comes to the concept of productivity, the complexity of the social systems related to them and the common identity of production. It is important to rethink the role that industrial archaeology can play in architecture and urban design practice. If these spaces are the recipients of political, economic and social events of the past, then preserving them becomes essential in order to understand the process of existing and upcoming social constructions.

The following images express the context where the strategic proposal takes place. (29.1 - 30.9)



29.1 Water Tower, city centre, Celaya, Mexico



29.2 Water Towers (Bernd & Hilla Becher, 1972)



29.3 Zempoala Factory, Celaya, Mexico



29.4 La Favorita Factory, Celaya, Mexico



29.5 La Internacional Factory (1929), Celaya, Mexico



29.6 La Harinera Factory, Celaya, Mexico



29.7 Thermolectric CFE, Celaya, Mexico



29.8 La Hacienda factory, Celaya, Mexico

Figure 29: Industrial archaeology concept. Buildings to support identity conceptualization, Celaya, Mexico

■ City analysis - rail tracks context

Railway lands in Mexico are mainly used for moving merchandises across the country. The passenger railway system ceased to operate in late 1994 as a result of the privatisation of rail lands, a consequence of NAFTA. Nowadays, railway infrastructure is strictly linked to industrial and logistic purposes. Companies such as Honda Motor Company and Mazda, use this infrastructure to transport their products to North America. Therefore, these circumstances led to building a new railway system outside the urban sprawl to improve operations. Additionally, the Mexican Government (2006-2012) specified the importance to remove railways inside the urban sprawl to reduce risks, illegal activities and improve quality of life for the population. This new infrastructure should be completed by late 2020.

In 2019, the Federal government (2018-2024) became interested in building new railway systems for passenger service as a strategy to decentralize the Mexican economy from Mexico City Valley. This strategy attempts to use the same railways' lands to achieve low-cost construction. The first project for this new policy is "Tren Maya", in the Yucatan Peninsula and South East Mexico.

Guanajuato State government (2018-2024) attempts to build a new passenger railway system from Guanajuato to Queretaro. The viability is high, 7.89 million people live in both States (INEGI, 2015). This area in Mexico has economic and social systems linked across the cities of San Juan Del Rio, Queretaro, Celaya, Salamanca, Irapuato, and Leon. However, the same strategy of low-cost construction will guide to re-use the old railway system inside Celaya's urban sprawl.

This decision could generate a negative impact on the population of Celaya. Infrastructure to cross-over a ground-level railway does not exist and needs to be built to reduce risks. Also, a larger volume of operations will occur with this new use. Consequently, contradicting the main reason why the Federal Government decided to build a new railway system outside the urban sprawl would be likely to happen. A common political and economic fault is to manage (figuratively) the Bajio area as a linear city system. This reduces the opportunities on what an urban divide could mean for the growth of Celaya, its competitiveness and social development.



30.1 Line A and Line NB intersection in Celaya, Mexico



30.2 Line A railyard inside Celaya, Mexico



30.3 Line NB steel bridge & abutments, Celaya, Mexico







31.4 Line A, Xochipili I and II, south to north



31.5 Line A, Railyard, Alameda, north to south



31.6 Line A - Line NB intersection. La Favorita, north to south



31.7 Line A - Line B intersection. Alameda. east to west



31.8 Line NB, Adolfo Lopez Mateos Avenue. south to north



31.9 Line NB, Honda Motor Company, north to south

Figure 31: Aerial images of Celaya's railway system Line A and Line NB. Chosen Urban Divide Device to create strategy.

Sections map and methodology for site analysis

For a specific site analysis, the chosen urban divide will be divided into 8 sections. The section order will be followed from east to west for Line A (1-4), and from north to south for Line NB (5-8). (32)

For an Urban Regeneration Strategy (URS) applying urban divides, the main Urban Divide (UD) **A** relate to smaller Urban Divide Devices (UDDs) **B**. Also, diverse Urban Divide Typologies (UDTs) would be found **C**.

Firstly, smaller UDDs are physical objects such as walls, fences, vegetation, and so on **D**. Secondly, UDTs analysis will focus on land-use categorization **E**. Vacant lands are the most valuable UDT. Further,

for the possible integration to URS, measurements are added to map the “possible integration to URS”.

As a result, section analysis will disclosure which UDDs could disappear (value 3), be modified (value 2), or be static (value 1) **F**. Additionally, UDTs accesses could be private (value 1), public/private (value 2), or public (value 3) **G**. Finally, when categorizing UDDs and UDTs, values need to be summed in order to map the five possible outcomes to integrate them into URS **H**. Urban Emptiness Types serve for SWOT analysis conclusions **I** (33). This methodology was created for this particular project.

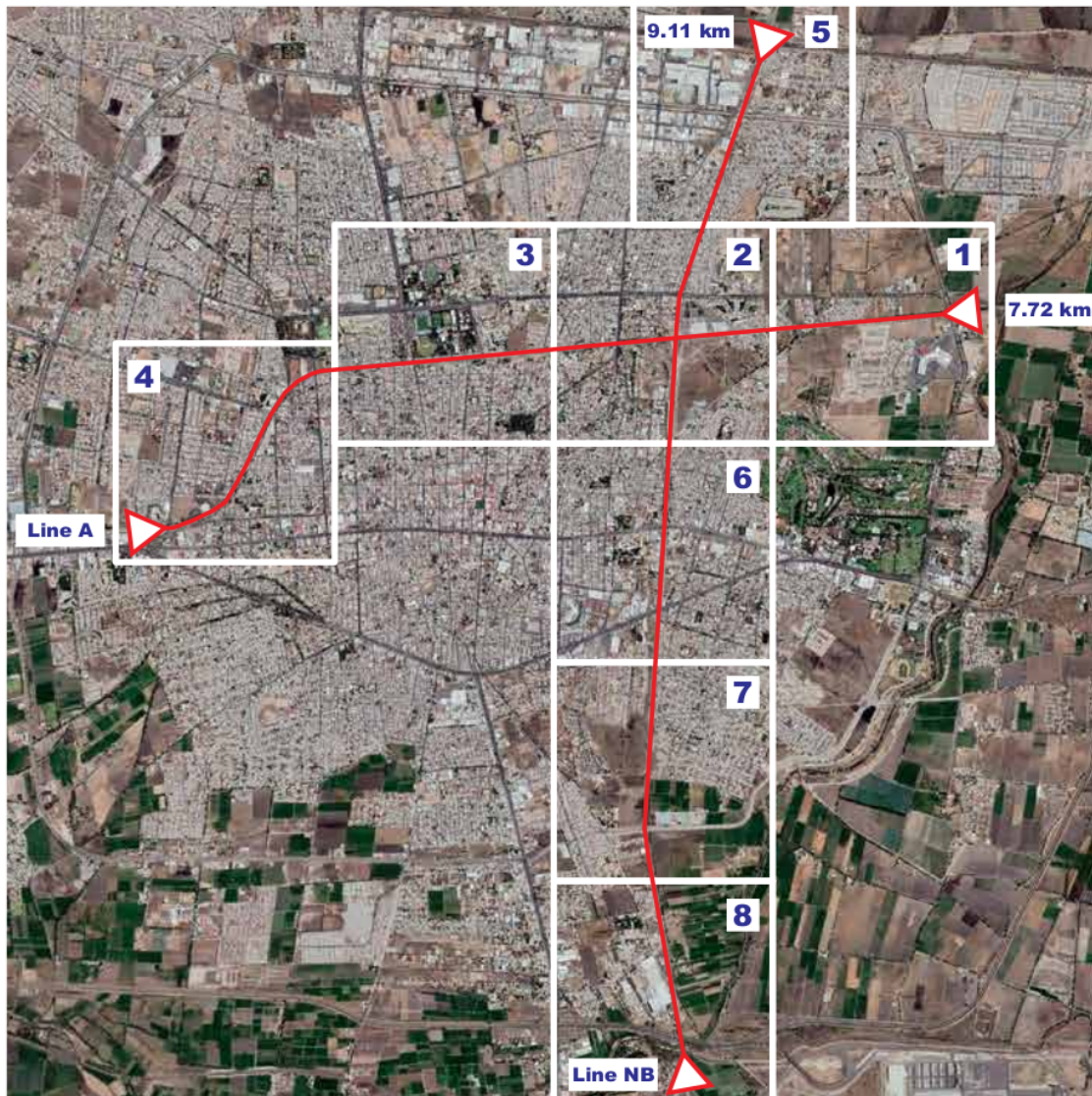


Figure 32: Sections analysis, satellite view 1:1250 North ▲ 2,500 m 0 m

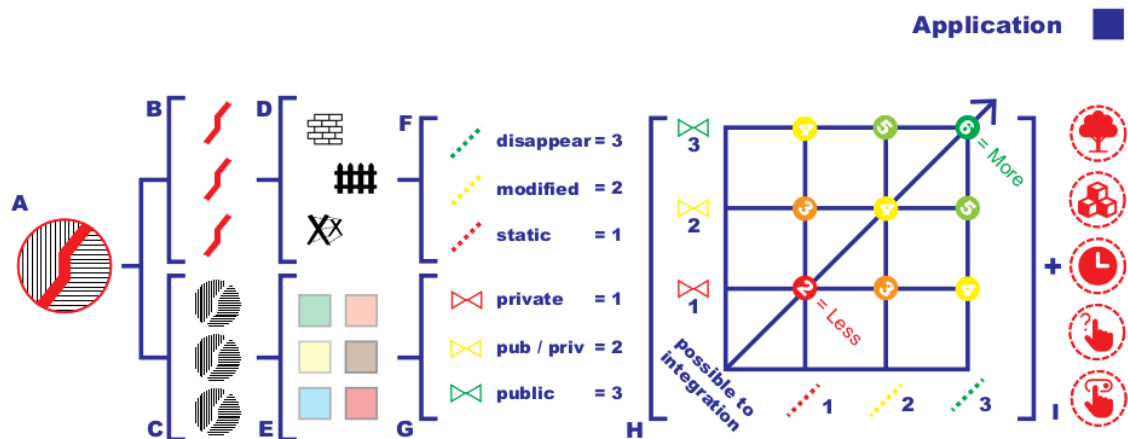


Figure 33: Methodology for site analysis for URS

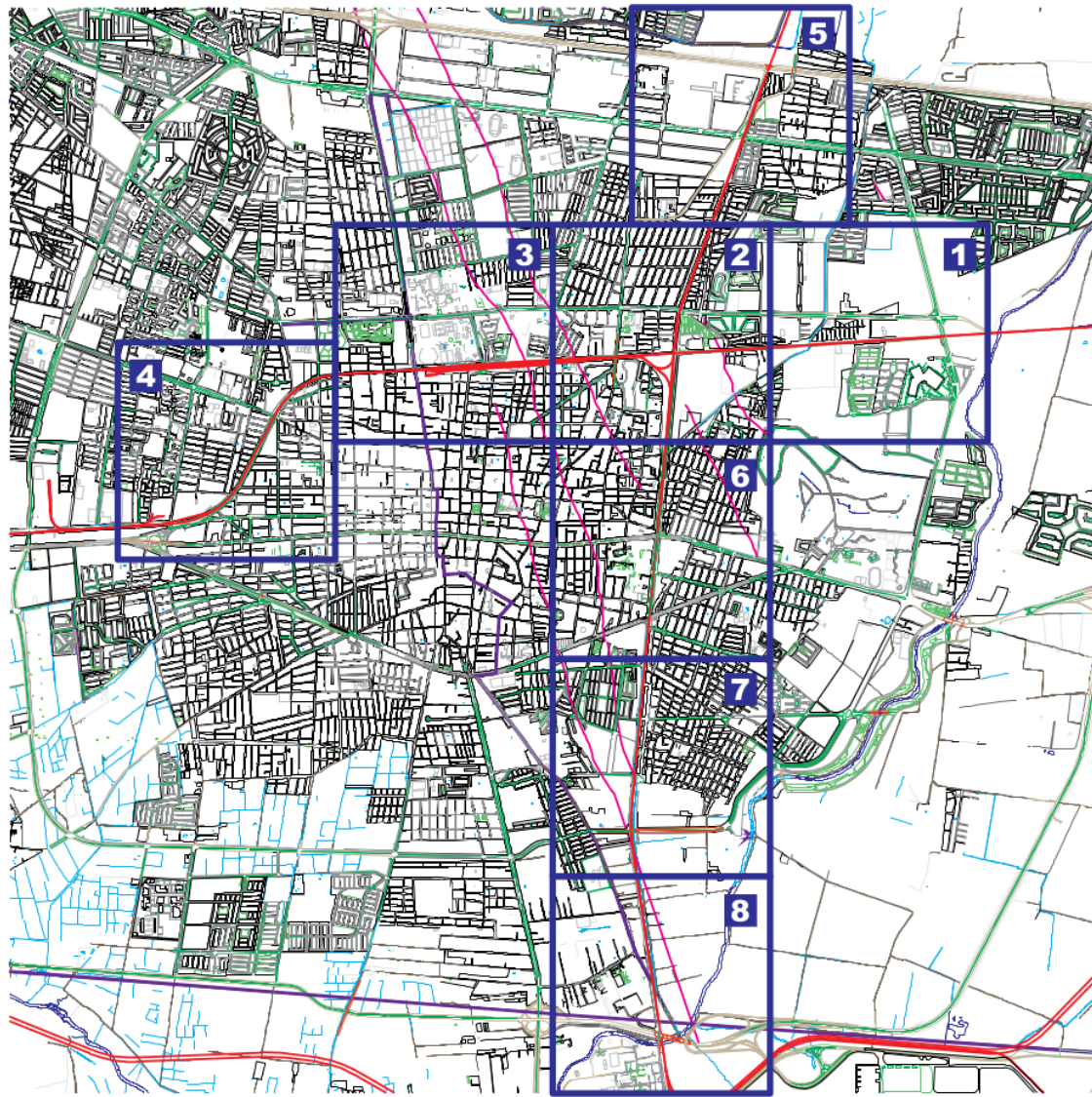


Figure 34: Sections, site analysis, plan

Sections 1 & 2



Satellite image april 2019, GoogleEarth

- | | | |
|-----------------|---------------------|-----------------|
| urban equipment | education | heritage |
| commercial | shopping | sports |
| business | hotel | culture |
| public interest | religion | hospital |
| vacant lands | government | gated community |
| gated community | informal settlement | parks |
| community | community centre | gas station |
| production | industrial-business | entertainment |

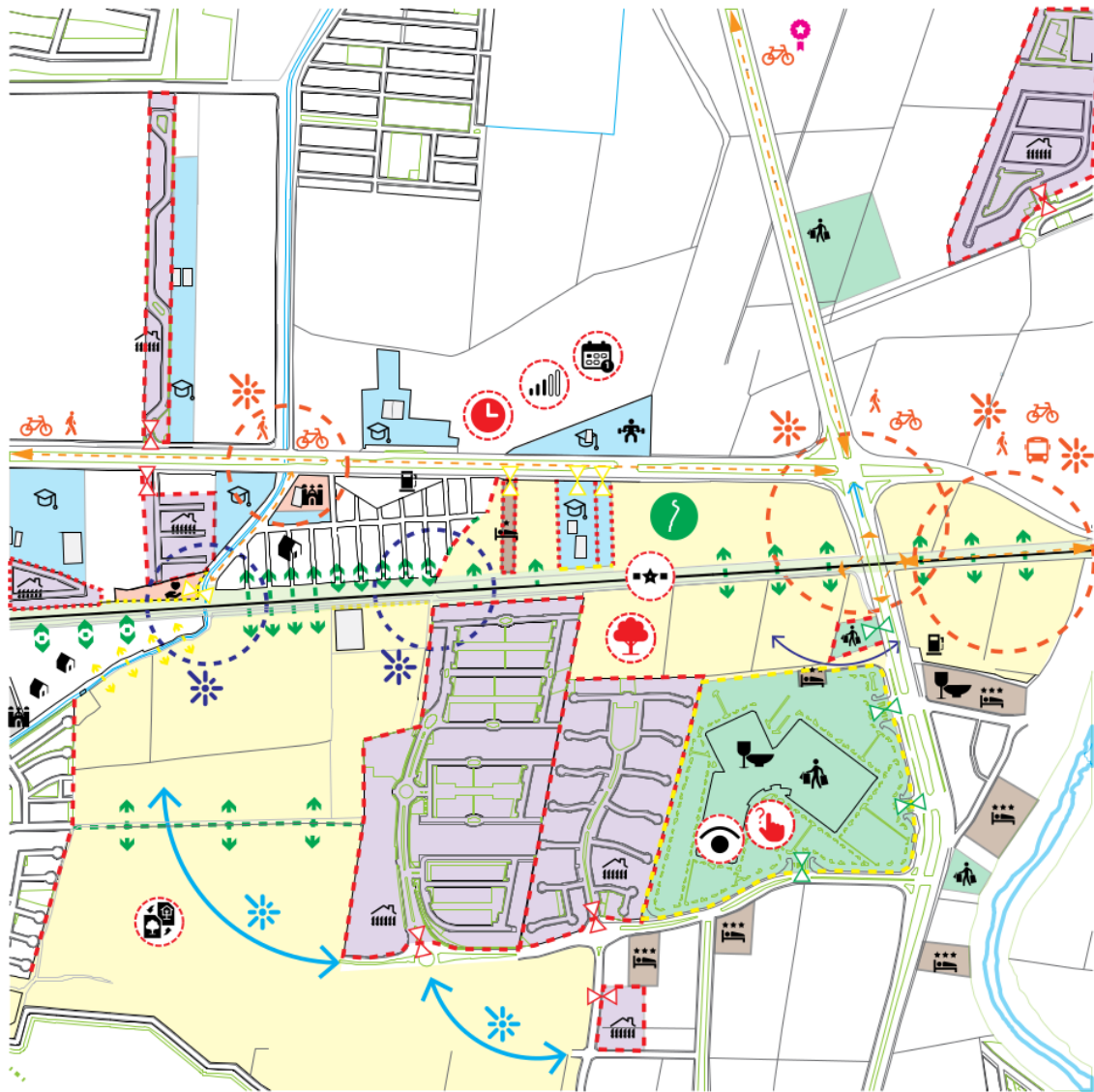


Figure 35: Section 1, Line A.

1 : 250 North



500 m

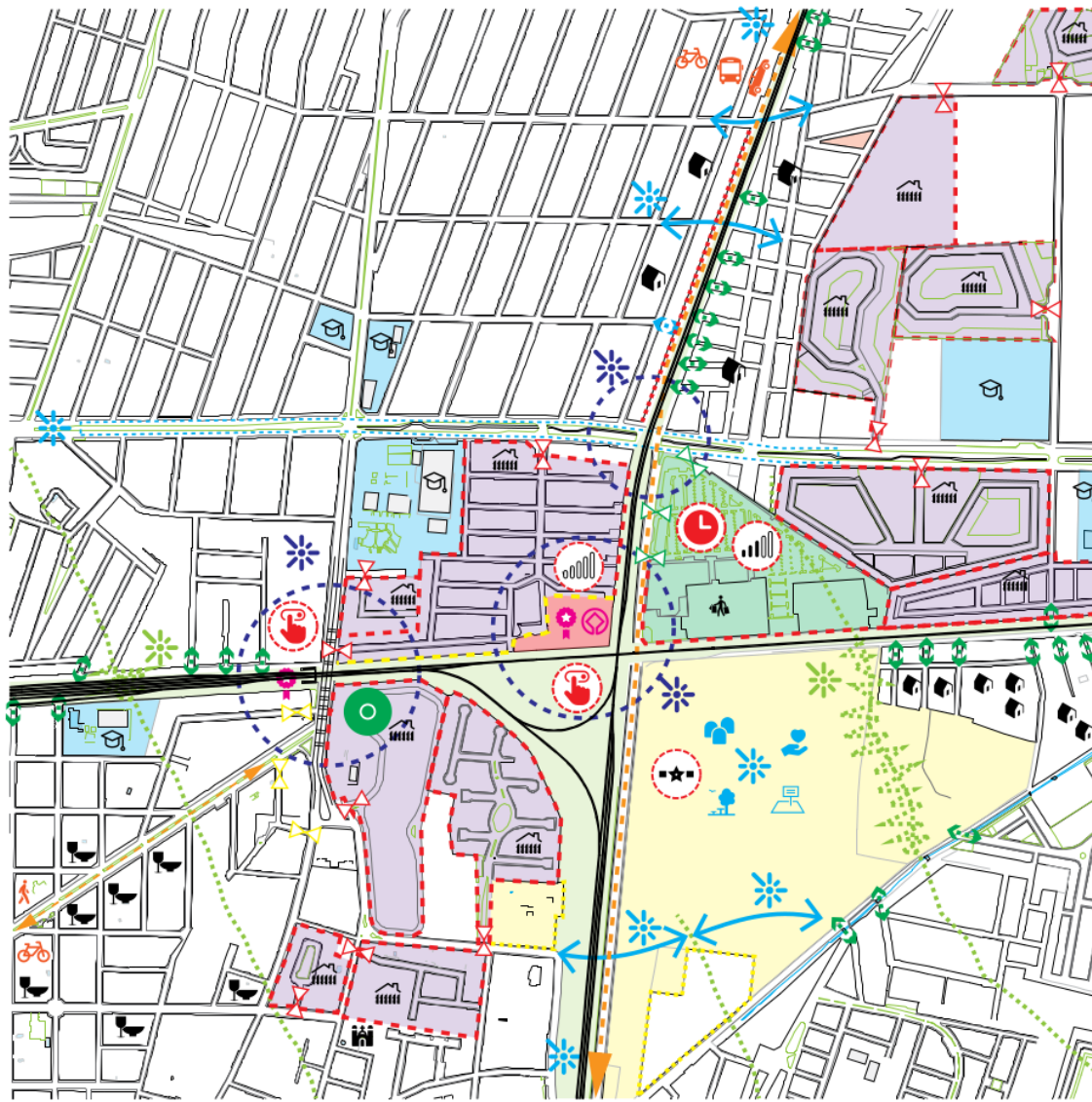


0 m

- | | | | | | |
|--|--------------------|--|--------------------------|--|----------------------|
| | UDD static (1) | | new path mapping | | real connection |
| | UDD modify (2) | | UDD high opportunities | | possible connection |
| | UDD disappear (3) | | new connections | | not-possible connect |
| | private access (1) | | risks mapping | | new connection |
| | +/- access (2) | | geological fault | | new infrastructure |
| | public access (3) | | pipelines Pemex | | mobility improvement |
| | cycle path related | | car-related | | strategic mobility |
| | pedestrian-related | | public transport-related | | conceptual value |



Satellite image april 2019, GoogleEarth



0 m 500 m North 1 : 250

Figure 36: Section 2, Line A & Line NB.

Sections 3 & 4



Satellite image april 2019, GoogleEarth

- | | | |
|-----------------|---------------------|-----------------|
| urban equipment | education | heritage |
| commercial | shopping | sports |
| business | hotel | culture |
| public interest | religion | hospital |
| vacant lands | government | gated community |
| gated community | informal settlement | parks |
| community | community centre | gas station |
| production | industrial-business | entertainment |

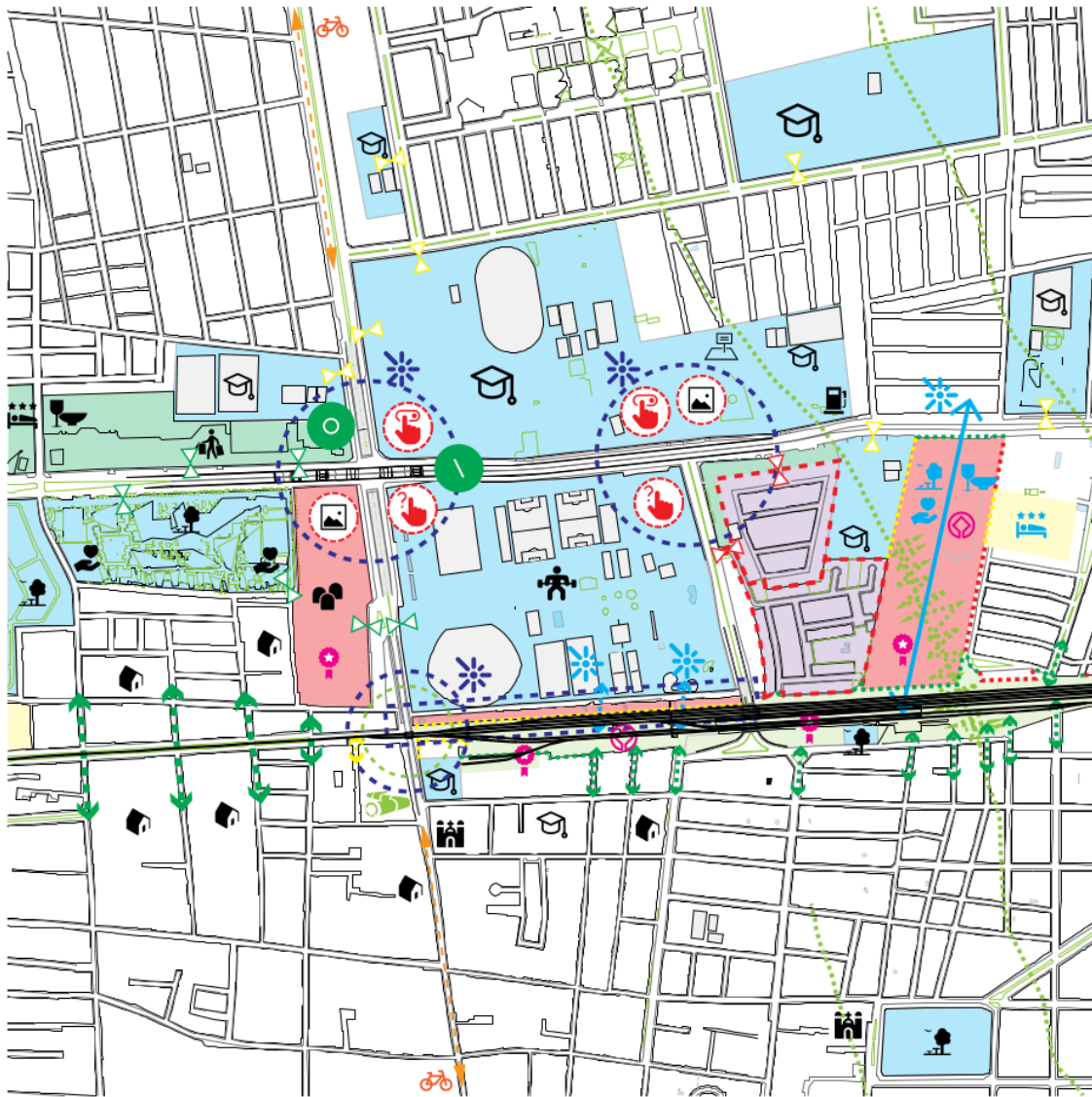


Figure 37: Section 3, Line A.

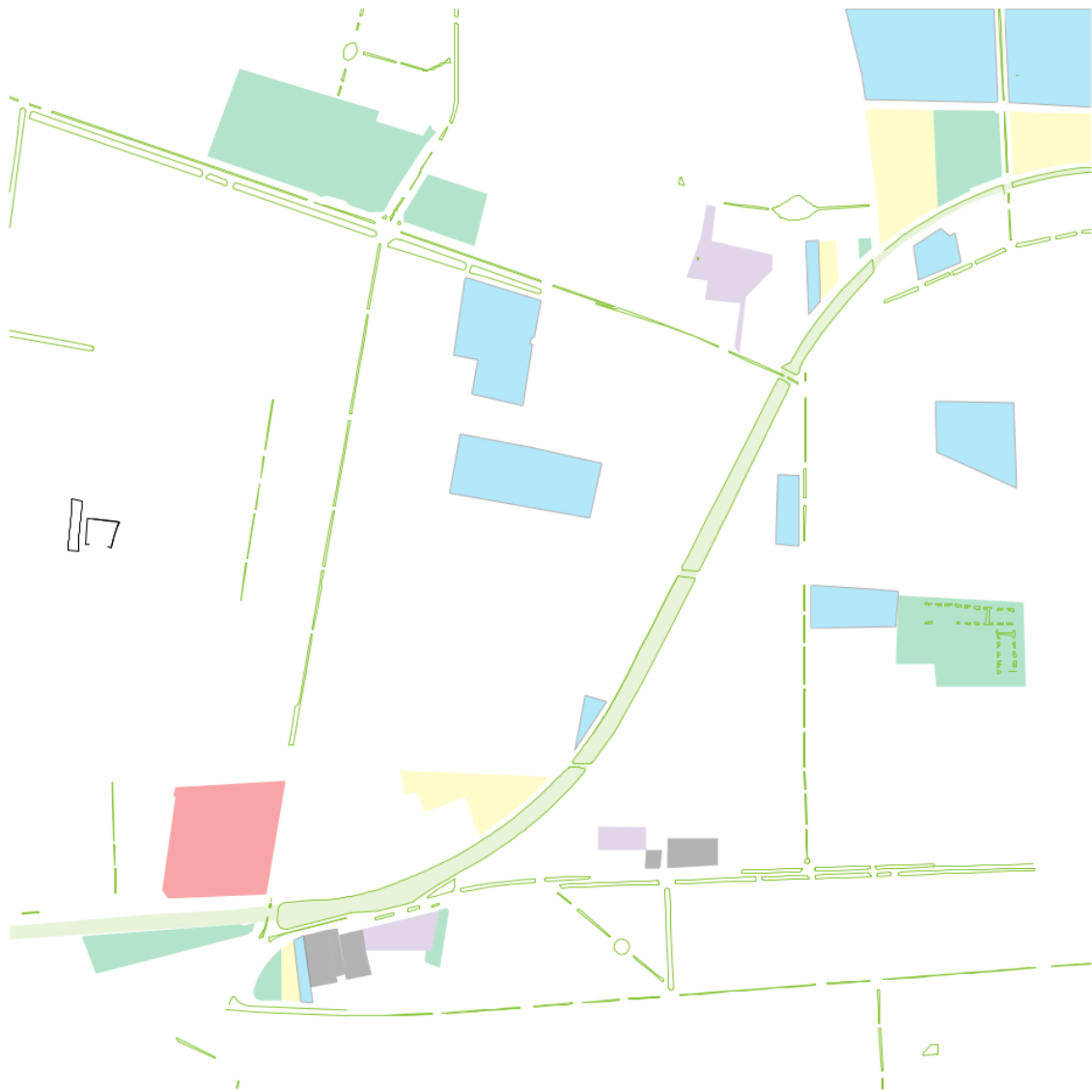
1 : 250 North



500 m



0 m





Satellite image april 2019, GoogleEarth



0 m

500 m

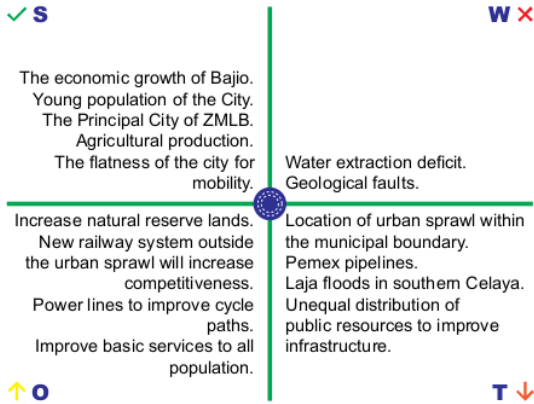
North 1 : 250

Figure 40: Section 6, Line NB.

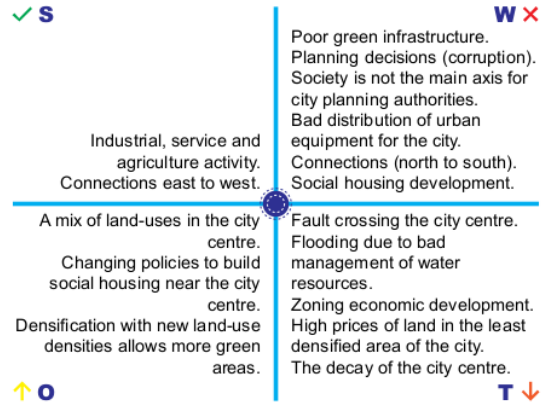




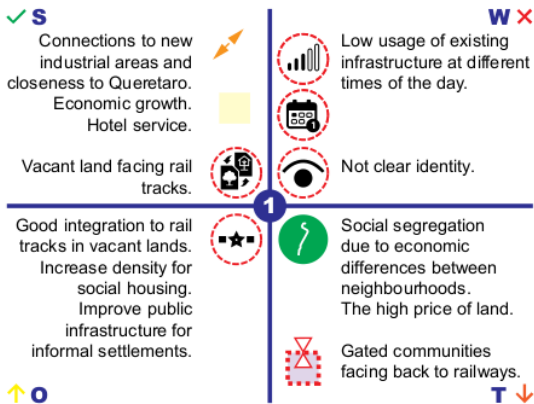
Strategic SWOTs



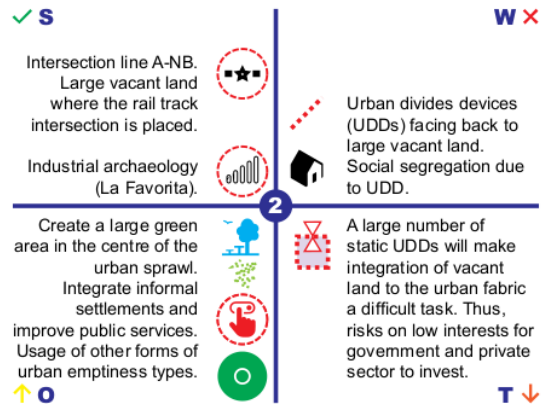
SWOT macro-level



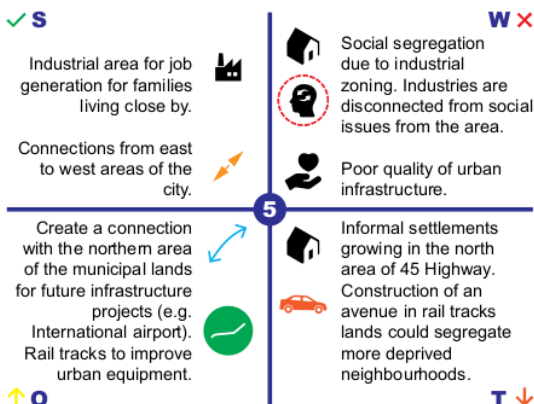
SWOT urban sprawl



SWOT section 1



SWOT section 2



SWOT section 5



SWOT section 6



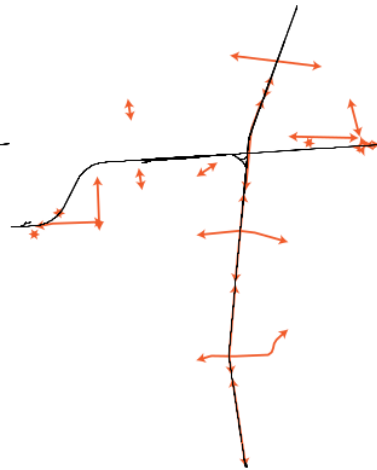
■ **Strategic proposal applying empty urban divides**



Urban equipment



Industrial areas



Cycle and pedestrian network connections



Commercial hubs



Vacant lands



Conflict areas (urban divide devices)



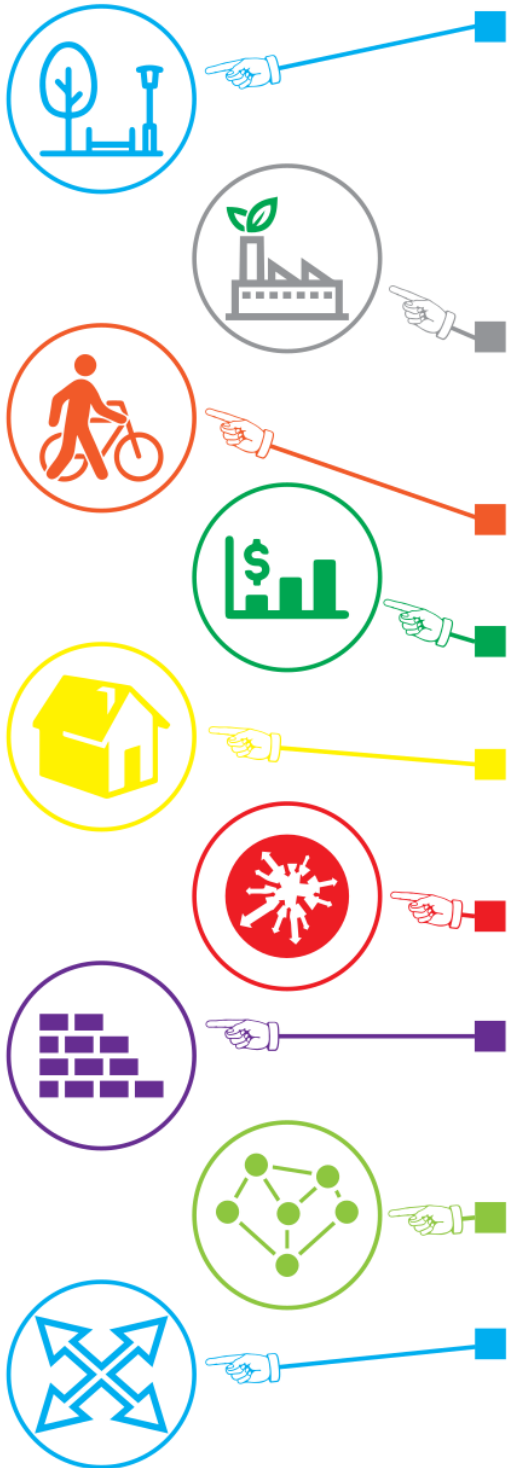
Gated communities



Existing connections



New connections



The proposal would increase distribution of urban equipment in the urban fabric, also it would allow easy access from different parts of the city to existing infrastructure. It would promote the construction of new infrastructure to support social equality. The rail tracks will become into two green corridors for the city, permitting to access green areas in perpendicular directions, emphasising the importance of saving natural resources in the 16 km new green axes.

The proposal would improve access to industrial and business centres with a sustainable public transport system, improving times and reducing pollution. Companies and the Government would partner with the project proposal to improve social inequalities.

The rail tracks would improve cycle paths and pedestrian movement, to increase the government aims of becoming a pedestrian-friendly city.

Commercial infrastructure would grow in different areas of the green corridor, using emptiness as a tool to expand economic growth for the people.

Vacant lands would allow developing social housing and urban equipment inside the urban sprawl, leading into a denser city to benefit movement and access to equal social opportunities.

The proposal would increase the legibility of urban fabric, reducing the number of urban divisions, a product of insecurity.

Gated communities would improve architectural proposals to integrate the new green axis to their real estate products. The market would shift interest to access public areas in the rail tracks to increase properties value.

The proposal would boost existing connections to improve interaction between neighbours in a different parts of the city. It would generate a strong local identity.

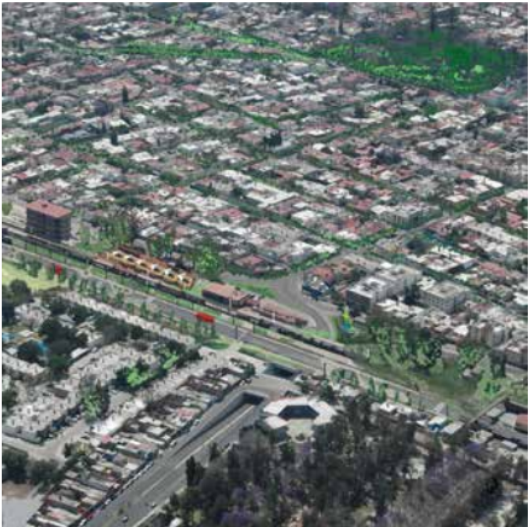
New connections would appear to improve existing urban infrastructure, transforming the city into a better working entity. Likewise, underground infrastructure such as water pipelines and electricity systems would increase the capacity of vacant lands to receive higher-density construction proposals.

Figure 43: Summary diagrams for strategic proposal applying empty urban divides in Celaya, Mexico.





44.3 Image of intentions 3



44.4 Image of intentions 4



44.7 Image of intentions 7



44.8 Image of intentions 8

Figure 44: Images of intention for strategic proposal applying empty urban divides in Celaya, Mexico.

Urban regeneration applying empty urban divides

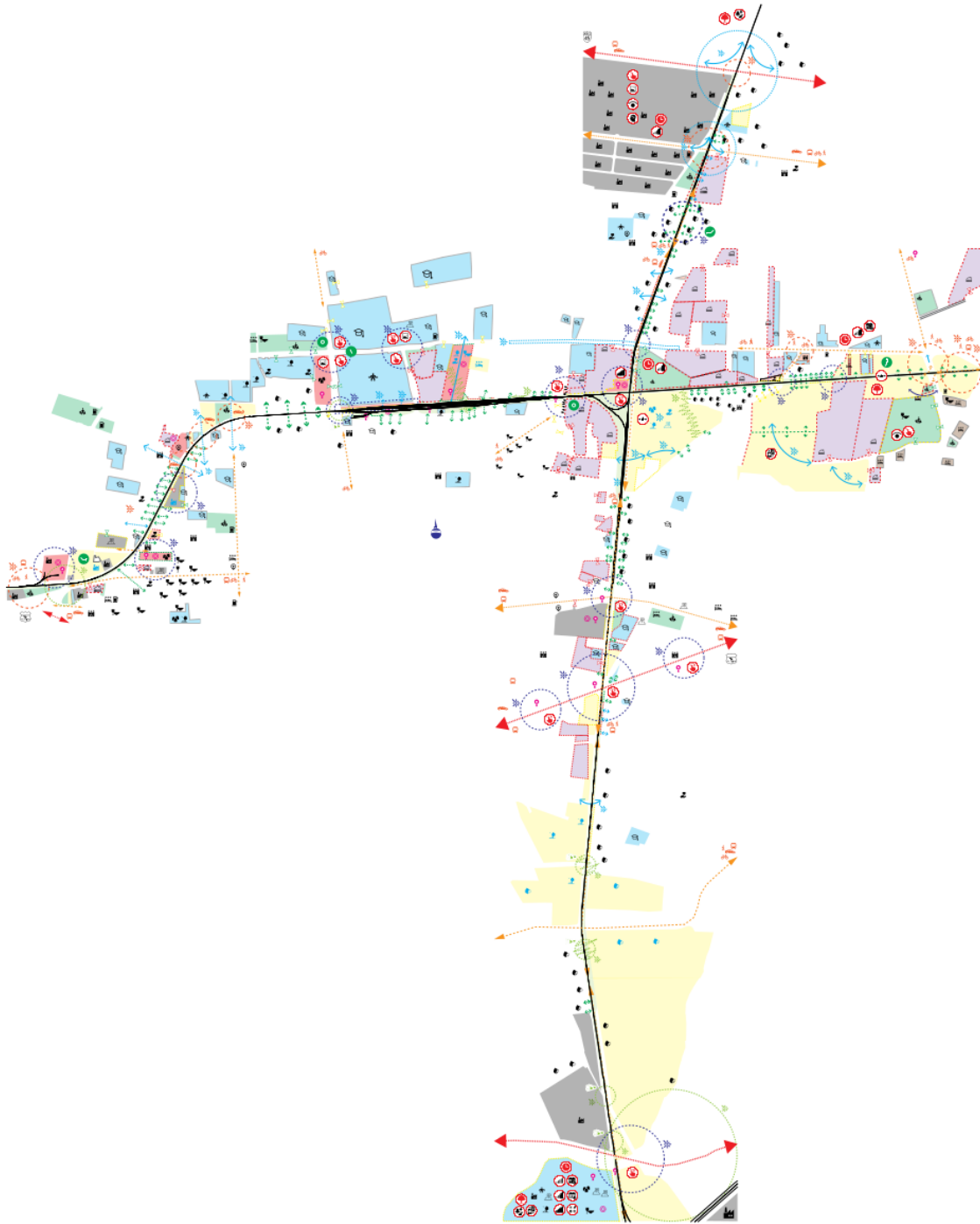


Figure 45: Summary map for strategic proposal applying empty urban divides in Celaya, Mexico.



CONCLUSION

■ Conclusion

Doing this research project allowed me to understand urban divisions as complex elements within the urban fabric. When designing strategies are applied, juxtapositions of urban divides show evident complex relationships.

However, the feasibility of transforming these elements into new urban interactions is high. Surprisingly, when an urban divide is no longer operational, the device is not the most important element to recognise and analyse. Urban emptiness categories are.

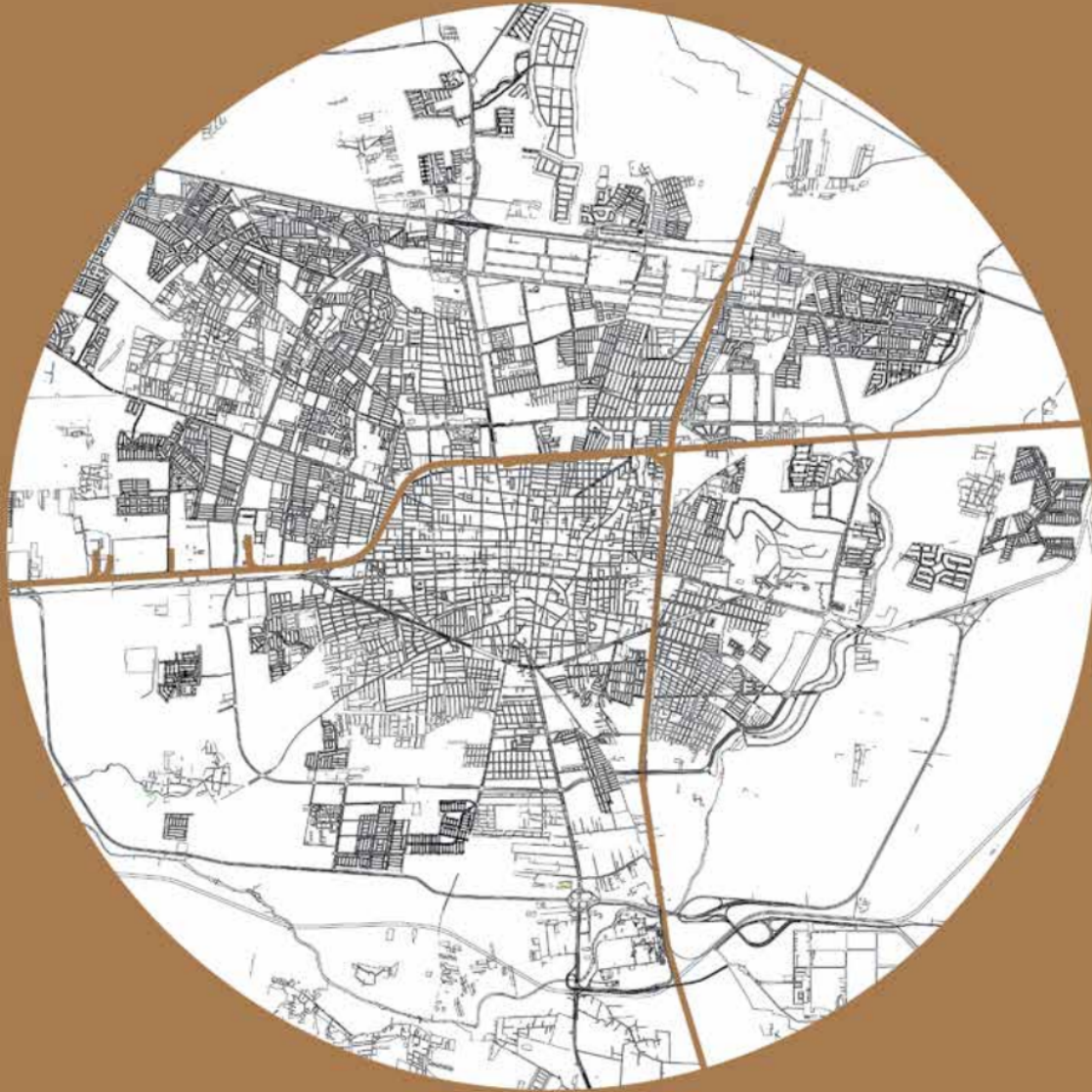
Limited research has been done on how urban divides and urban emptiness interact with each other as tools for urban regeneration. Nonetheless, urban design practice uses emptiness to create or transform the urban fabric without deepening those substantial relationships.

The rare opportunity Celaya will have when the rail track system will cease to operate will provide a unique chance for a regeneration strategy proposal and understanding relationships between urban divides and urban emptiness is imperative. A considerably large area of the city could be improved. Highlighting these concepts for future proposals is an important achievement for the future of these railways.

Emphasising the importance of this railways (physically and figuratively) for the future of social equality in Celaya is needed to guide all social interests to a similar objective. People's well-being is the most important part when approaching a new use for these lands.

Governments and private sectors need to understand the opportunities this event will generate, and observe the potential threats when deciding on how to intervene. Organized society has to be part of the decision-making process for a clear line to follow. Likewise, urban design practices have a unique chance to generate an open discussion if this proposal becomes a reality. National and international competitions for design and analysis would have to take place to expand knowledge on urban divisions, creating information which will serve for similar projects in the future.

This work is a wake-up call for urban designers to look beyond what has been documented and analysed and seeks to provide concepts for further urban design practice discussions.



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Note 1

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Figure Reference List

Figure 1

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Figure 2

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Figure 3

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Figure 4

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Figure 5

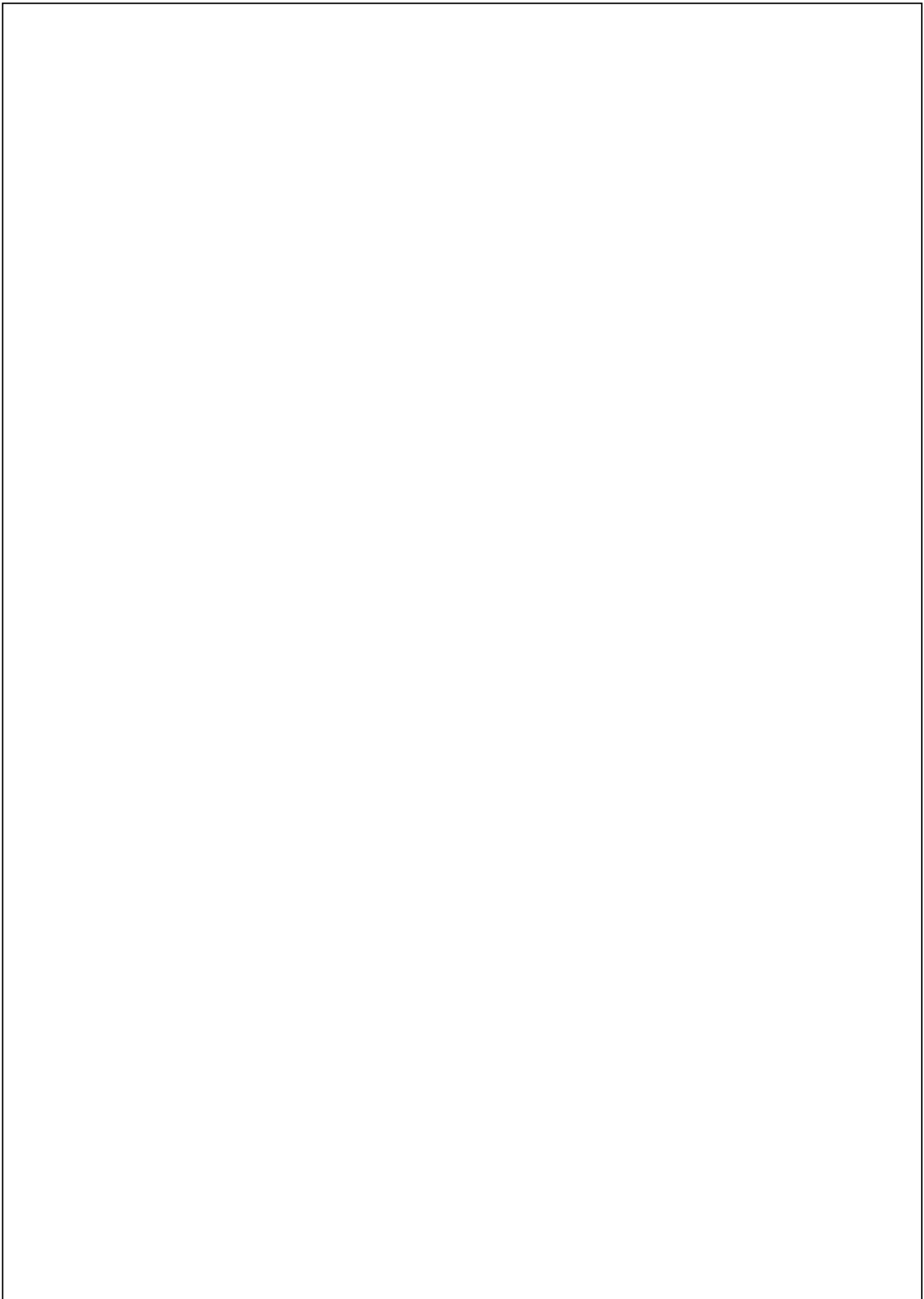
Unequal Scenes - Mexico City [WWW Document], n.d. URL <https://unequalscenes.com/mexico-city-df> (accessed 6.4.19).

Figure 6

Taylor, A., n.d. The Berlin Wall, 25 Years After the Fall - The Atlantic [WWW Document]. URL <https://www.theatlantic.com/photo/2014/11/the-berlin-wall-25-years-after-the-fall/100845/> (accessed 7.18.19).

Figure 7

Taylor, A., n.d. The Berlin Wall, 25 Years After the Fall - The Atlantic [WWW Document]. URL <https://www.theatlantic.com/photo/2014/11/the-berlin-wall-25-years-after-the-fall/100845/> (accessed 7.18.19).





12.11

Photo by Brian Ulrich. The Death and Life of the American Shopping Mall [WWW Document], n.d. . Time. URL <http://time.com/4865957/death-and-life-shopping-mall/> (accessed 4.10.19).

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Photo by Photo Darren MacDonald. Rainbow Mall a poor fit for library/art gallery, report argues [WWW Document], n.d. . Sudbury.com. URL <https://www.sudbury.com/local-news/rainbow-mall-a-poor-fit-for-libraryart-gallery-report-argues-805545> (accessed 4.10.19).

12.13

Pinterest (México / Mexico) [WWW Document], n.d. . Pinterest. URL <https://www.pinterest.com.mx/bevwindjack/deterrents/> (accessed 4.12.19).

12.14

Area under Ballard Bridge fenced off to keep out homeless campers – My Ballard [WWW Document], n.d. URL <http://www.myballard.com/2018/02/07/area-under-ballard-bridge-fenced-off-to-keep-out-homeless-campers/> (accessed 4.12.19).

12.15

Picos de cemento bajo los puentes en China [WWW Document], 2012. . Marcianos. URL <https://marcianosmx.com/picos-de-cemento-bajo-los-puentes-en-china/> (accessed 4.12.19).

Figure 13

Cué, C.E., 2016. La 31, de villa miseria a nuevo barrio de Buenos Aires. El País. URL https://elpais.com/internacional/2016/08/30/argentina/1472565308_299661.html/ (accessed 7.18.19).

Figure 14

Unequal Scenes - Mexico City [WWW Document], n.d. URL <https://unequalscenes.com/mexico-city-df> (accessed 6.4.19).

Figure 15

Analysis of Urban Divide devices and Urban Emptiness typologies for The High Line. De la Lastra, 2019.

Figure 16

Different buildings along the High Line prove diverse dynamics of architecture as a product of neoliberal consumption. De la Lastra, 2019.

This diagram include the following images:

16.1

In Disuse [WWW Document], n.d. . The High Line. URL <https://www.thehighline.org/photos-videos/historical/high-line-in-disuse/> (accessed 4.11.19).

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16.6

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Figure 17

Analysis of Urban Divide devices and Urban Emptiness typologies for Dequindre Cut. De la Lastra, 2019.

Figure 18

Infrastructure “jumping” old railways serve as elements to intervene with graffiti. Ruins from industrial buildings do not integrate correctly with the green line proposal. De la Lastra, 2019.

This diagram include the following images:

18.1

Hyperakt, 2019. Russell Street Deli [WWW Document]. On the Grid. URL <https://onthegrid.city/detroit/eastern-market/russell-street-deli> (accessed 4.12.19).

18.2

Hyperakt, 2019. Russell Street Deli [WWW Document]. On the Grid. URL <https://onthegrid.city/detroit/eastern-market/russell-street-deli> (accessed 4.12.19).

18.3

Imagen: Dequindre Cut | www.imagenesmi.com [WWW Document], n.d. URL https://www.google.com/imgres?imgurl=http://wacots.org/nailhed/EasternMarket/images/IMG_3164_jpg.jpg&imgrefurl=https://www.imagenesmi.com/im%C3%A1genes/dequindre-cut-d8.html&h=583&w=778&tbnid=KBdThwhXo9nRHM&tbnh=194&tbnw=259&usq=K_Cn0BTvxt0p47TXtXjbOCizNAB-d0=&hl=es-419&docid=KxNPAdzqVGhtmM&itg=1 (accessed 4.12.19).

18.4

Dequindre Cut [WWW Document], n.d. . High Line Network. URL <https://network.thehighline.org/projects/dequindre-cut/> (accessed 4.11.19).

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Dequindre Cut [WWW Document], n.d. . High Line Network. URL <https://network.thehighline.org/projects/dequindre-cut/> (accessed 4.11.19).

18.6

Dequindre Cut [WWW Document], n.d. . High Line Network. URL <https://network.thehighline.org/projects/dequindre-cut/> (accessed 4.11.19).

Figure 19

Analysis of Urban Divide devices and Urban Emptiness typologies for Ferrocarril de Cuernavaca. De la Lastra, 2019.

Figure 20

New public realm infrastructure in rail tracks which are still operating once per week. De la Lastra, 2019.

This diagram include the following images:

20.1


PARQUE LINEAL FERROCARRIL DE CUERNAVACA: PRIMER TRAMO | [WWW Document], n.d. URL <http://www.arquitectura-panamericana.com/parque-lineal-ferrocarril-de-cuernavaca-primer-tramo/> (accessed 4.11.19).

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Photo by Arturo Arrieta. Gaeta-Springall Arquitectos inaugura el nuevo Parque Lineal Ferrocarril de Cuernavaca en Ciudad de México [WWW Document], 2018. . Plataforma Arquitectura. URL <https://www.plataformaarquitectura.cl/cl/886446/gaeta-springall-arquitectos-inaugura-el-nuevo-parque-lineal-ferrocarril-de-cuernavaca-en-ciudad-de-mexico> (accessed 4.11.19).

20.3

PARQUE LINEAL FERROCARRIL DE CUERNAVACA: PRIMER TRAMO | [WWW Document], n.d. URL [http://www.arquitectura-](http://www.arquitectura-panamericana.com/parque-lineal-ferrocarril-de-cuernavaca-primer-tramo/)



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20.4

PARQUE LINEAL FERROCARRIL DE CUERNAVACA: PRIMER TRAMO | [WWW Document], n.d. URL <http://www.arquitectura-panamericana.com/parque-lineal-ferrocarril-de-cuernavaca-primer-tramo/> (accessed 4.11.19).

20.5

PARQUE LINEAL FERROCARRIL DE CUERNAVACA: PRIMER TRAMO | [WWW Document], n.d. URL <http://www.arquitectura-panamericana.com/parque-lineal-ferrocarril-de-cuernavaca-primer-tramo/> (accessed 4.11.19).

20.6

Cautiva y molesta tren en Nuevo Polanco [WWW Document], n.d. URL <https://www.reforma.com/aplicacioneslibre/preacceso/articulo/default.aspx?id=255517&v=4&urlredirect=https://www.reforma.com/aplicaciones/articulo/default.aspx?id=255517&v=4> (accessed 4.11.19).

Figure 21

Urban Divide device and Urban Emptiness types for The Rail Park. De la Lastra, 2019.

Figure 22

A project including three different types of material source. De la Lastra, 2019.

This diagram include the following images:

22.1

The Rail Park [WWW Document], n.d. URL <https://urbanengineers.com/projects/the-rail-park-reading-viaduct> (accessed 7.19.19).

22.2

The Park [WWW Document], n.d. . Friends of the Rail Park. URL <https://www.therailpark.org/the-park/> (accessed 7.19.19).

22.3

The Park [WWW Document], n.d. . Friends of the Rail Park. URL <https://www.therailpark.org/the-park/> (accessed 7.19.19).

22.4

The Park [WWW Document], n.d. . Friends of the Rail Park. URL <https://www.therailpark.org/the-park/> (accessed 7.19.19).

22.5

WORK [WWW Document], n.d. . studio | bryan hanes. URL <http://www.studiobryanhane.com/work> (accessed 7.19.19).

22.6

WORK [WWW Document], n.d. . studio | bryan hanes. URL <http://www.studiobryanhane.com/work> (accessed 7.19.19).

Figure 23

Urban Divide device and Urban Emptiness types for Bajo Puentes. De la Lastra, 2019

Figure 24

Different types of interventions on Bajo Puentes project. Mainly focused on commercial land use. De la Lastra, 2019.

This diagram include the following images:

24.1

Galeana, M., 2018. Restaurantes bajo puentes en la cdmx: cuatro lugares para descubrirlos. Chilango. URL <http://www.chilango.com/comida/restaurantes-bajo-puentes-cdmx/> (accessed 7.19.19).

24.2

Galeana, M., 2018. Restaurantes bajo puentes en la cdmx: cuatro lugares para descubrirlos. Chilango. URL <http://www.chilango.com/comida/restaurantes-bajo-puentes-cdmx/> (accessed 7.19.19).

24.3

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24.5

Público, A. del E., n.d. Programa de Recuperación de Bajo Puentes [WWW Document]. Autoridad del Espacio Público. URL <https://www.aep.cdmx.gob.mx/programas/programa/proyecto-de-recuperacion-de-bajo-puentes> (accessed 7.19.19).

24.6

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Figure 25

Figure 25: Conceptual Framework for empty urban divides strategies. De la Lastra, 2019.

Figure 26

Methodology for empty urban divides strategies. De la Lastra, 2019

Figure 27

Celaya's Municipality analysis, De la Lastra, 2019

Figure 28

Celaya's urban area analysis. De la Lastra, 2019

Figure 29

Industrial archaeology concept. Buildings to support identity conceptualization, Celaya, Mexico. De la Lastra, 2019

This figure include the following images:

29.1

Water Tower, City Centre, Celaya, Mexico. De la Lastra, 2013

29.2

Water Towers. Bernd & Hilla Becher, 1972

29.3

Zempoala Factory, Celaya, Mexico. De la Lastra, 2013

29.4

La Favorita Factory, Celaya, Mexico. De la Lastra, 2013

29.5

La Internacional Factory (1929), Celaya, Mexico. De la Lastra, 2013

29.6

La Harinera Factory, Celaya, Mexico. De la Lastra, 2013

29.7

Thermoelectric CFE, Celaya, Mexico. De la Lastra, 2013

29.8

La Hacienda factory, Celaya, Mexico. De la Lastra, 2013



Figure 30

Industrial archaeology concept. Railway infrastructure in Celaya and ZMLB, Mexico. De la Lastra, 2019

This figure include the following images:

30.1

Line A and Line NB intersection in Celaya, Mexico. De la Lastra, 2013

30.2

Line A Railyard inside Celaya, Mexico. De la Lastra, 2013

30.3

Line NB steel bridge & abutments, Celaya, Mexico. De la Lastra, 2013

30.4

Bridge abutments, Av. Anenecuilco, Celaya, Mexico. De la Lastra, 2013

30.5

Listed train station, Line A, Celaya, Mexico. De la Lastra, 2013

30.6

Line A Rail track, North-west Celaya, Mexico. De la Lastra, 2013

30.7

Family living in a rain car, Line A, Villagrán, Mexico. De la Lastra, 2013

30.8

Empty lands beside Line A, Celaya, Mexico. De la Lastra, 2013

30.9

Listed train station, Line NB, Comonfort, Mexico De la Lastra, 2013

Figure 31

Aerial images of Celaya's railway system Line A and Line NB. Chosen Urban Divide Device to create the strategy.

This figure include the following images:

31. 1

Base map for aerial images of Line A and Line NB rail tracks in Celaya, Mexico. De la Lastra, 2019

31.2

Line A from west to east. De la Lastra, 2013

31.4

Line A, Xochipili I and II, South to North. De la Lastra, 2013

31.5

Line A, Rail yard, Alameda, North to South. De la Lastra, 2013

31.6

Line A - Line NB intersection. La Favorita. North to south. De la Lastra, 2013

31.7

Line A - Line B intersection. Alameda. East to west. De la Lastra, 2013

31.8

Line NB, Adolfo Lopez Mateos Avenue. South to North. De la Lastra, 2013



31.9

Line NB, Honda Motor Company, north to south. De la Lastra, 2013

Figure 32

Sections analysis, satellite view. De la Lastra, 2019

Figure 33

Methodology for site analysis for URS. De la Lastra, 2019

Figure 34

Sections, site analysis, plan. De la Lastra, 2019

Figure 35

Section 1, Line A. De la Lastra, 2019

Figure 36

Section 2, Line A & Line NB. De la Lastra, 2019

Figure 37

Section 3, Line A. De la Lastra, 2019

Figure 38

Section 4, Line A. De la Lastra, 2019

Figure 39

Section 5, Line NB. De la Lastra, 2019

Figure 40

Section 6, Line NB. De la Lastra, 2019

Figure 41

Section 7, Line NB. De la Lastra, 2019

Figure 42

Section 8, Line NB. De la Lastra, 2019

Figure 43

Summary diagrams for strategic proposal applying empty urban divides in Celaya, Mexico. De la Lastra, 2019

Figure 44

Images of intention for strategic proposal applying empty urban divides in Celaya, Mexico.
De la Lastra, E., ed., 2013. Proyecto 01: Celaya / Eduardo de la Lastra, editor. Eduardo de la Lastra Vallejo, Celaya.

Figure 45

Summary map for strategic proposal applying empty urban divides in Celaya, Mexico. De la Lastra, 2019.

■ **Notes**



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THE BARTLETT - SCHOOL OF PLANNING
MSC URBAN DESIGN AND CITY PLANNING**

