

The Effects of the Tramway on Public Spaces in Tours

Case study: Rue Nationale



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Abstract

The purpose of this paper is to determine whether the new tram implementation in Tours city affects public spaces that connected directly to the tram line, particularly Rue Nationale street. This will be examined through a literature review of academic sources into the subject and a personally constructed questionnaire aimed at gaining current public opinion and insight. The key themes drawn upon include; the general characteristics of efficient and attractive public space, the types of uses and activities and how this be affected by the new tram passage, the applicable approaches to evaluate public space functionality, a critical analysis of public life form, a brief analysis into pedestrian behaviour, and research into different navigational methods. One of the key arguments apparent in this paper is the ability of the new study to seize the opportunity and reshape this limited and linear space in a more efficient and attractive manner.

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- Introduction

Behind every name of every city and town around the world there is a certain perception identifies the place, this perception is greatly influenced by public spaces in this city or town and their shapes, image, and development.

Perception of public spaces for almost every citizen in the city is framed with the general understanding of the space as it functions such as places where we meet a friend, where we come with our family at weekends, or where we have dates...etc, but usually it goes through the everyday experience beyond the simple use of the public space to be more an essential factor influences people sensation about their neighbourhoods/districts and forms the memory of the place where people can compose a memorable continued perception about how they lived and grew-up, and in particular through the stayed/converted small details that shape the place identity.

For many years, public spaces have been a central concern of scholars of different disciplines starting from the Greek agora the centre of athletic, artistic, spiritual and political life of the city to the italian piazzas in the renaissance era and the nineteenth century boulevards and arcades of Paris.

Nowadays, public-outdoors spaces have become a focus for planners, sociologists, architects, geographers and many scientists are interested in how these places are built, managed, and how they function socially, economically and politically.

within the different disciplines that studied public spaces, it's possible to recognise three perspectives that tried to identify/explain the concept of public space; The legal-economic, socio spatial, and political perspectives that each seeks different understanding of public space starting with the more initial questions about (what is public spaces and who pays for it) from a legal-economic point of view, to the questions about the physical appearance and function (what do they look like, and how can they be used), ending with the deeper political understanding of the space as an important factor/ milieu where society can express democracy (Neal 2009).

• Preface

This study searches into public spaces efficiency and how they can be activated/re-used under the impact of different changes within the city, in the light of the influential theory published in the beginning of the 1960's and focus on the design of the public space in relation to the experience of the city users by Kevin Lynch, and according to what has been done by Jane Jacobs in her book *The Death and Life of Great American Cities*, and by Jan Gehl in his researches about *Life Between Buildings*.

A literature part first explore their theoretical relevance by addressing reasons, and effects based on environmental psychology.

Afterwards the empirical relevance of these theories are examined to find out whether or not the proposed strategy is still applicable to recent public spaces that can be affected (due to the everyday-variable requirements like services, work opportunities, transportation, housing...etc) by imposing a noticed, sudden, non-gradual change within the urban fabric of the city at both, physical and social context and how this can change people experience about same places.

This is done in one important public spaces in Tours city where a new tramway has been implemented and put in service less than one year ago, the Rue Nationale, which is commercial realm with an intensive pedestrians movement.

• Problem statement

Public spaces in a city mean places where people can move through, meet, interact, walk, run, or sit...etc, they are the places where everyday activities take place giving the meaning of public life in urban areas. Many studies and publications have been done to find out how to make public spaces more welcoming and attractive for people to stay and socialise, and how any change that may occur to the place mutates people behaviour and make it more/ less efficient and active, ranging from the little changes in public space like adding a new seats or change paving ,to the more bigger ones that can change the sense, use, and perception of the space completely, such as implementing a new tramline in the city.

After many years in which different forms of transport systems played a major role in shaping urban public spaces and cars dominated more and more the way people live, move, and socialise, an essential approach emerged in many countries to replace private-mobility means with public transport systems and to limit relying on cars, within this trend, different cities in France besides increasing number of buses and other already-in-use public mobility working in the city, they started to implement tramways as an efficient electricity-base transport system in terms of sustainability and environment protection, and due to this new installation, several changes at different level have been done to the spaces within the city (physically, functionally, and visually...etc), especially those directly connected to the tramline.

This while originally considered as an important shift to enhance public spaces and reduce the negative effects of cars on the quality of life, still not really understandable how these changes affect people use and interaction and whether they forest sociability and create new opportunities for using the public space or this use is still limited to necessary activities and related to the main functions dominate the space.

In rewording this we can summarise the problematic as:

when an existing public space in the city has been reshaped by imposing a noticed, non-gradual shift/ modification, several changes at different levels will occur as a reflection of that; socially, economically, environmentally, physically, and psychologically, and in particular (the scope of interest in this research) the sense of space and the experience of people inside it, and of course how the different types of uses and activities have been changed (the necessary, optional, and social activities).

- **Research question**

As the tramline is considered one of the big changes that can occur in a city, the research question then is: **"How does this tramway affect the public space in the city? And did this new implementation develop a new types of activities that didn't exist before and can enhance the use of the place and increase the attractiveness, vitality and efficiency of public spaces and their ability to respond to the variable aspects of public life in urban areas?"**

- **Hypothesis**

As the tramway in Tours is a new transport system affects the city public spaces at different levels; physically, socially, sensually, and as this trend reflects the desire and necessity in the city to enhance the built environment by encouraging more sustainable transportation means instead of cars, I assume that these effects enhance quality of life and provide a suitable platform to make public spaces more liveable and attractive places. And this relies on several factors such as:

- The expected enhancement by adding a new mean to the transportation system in Tours in terms of connectivity between the different parts of the city.
- The new artistic intervention in designing the tram stations that contribute more in strengthening identity of the place.
- The added value of the modern design of the tramcar.
- Installing new materials and Items increases quality of life.
- The low environmental impact of the new tram as an electricity-based transport system.

• Methodology and research structure

The adopted methodology will take into account the two main approach in dealing with this research which are the city and public spaces as a physical structure had been shaped and reshaped, and will be reshaped again in the future due to the change of urban requirements, services, mobility, building technology, and economical patterns. And secondly, users of the space within their social milieus their needs and utilisations and what they seek by using public spaces, starting with the essential feeling of safety and the necessity to be protected and not ending with comfort and enjoyment requirements (Gehl, 2006).

Within this methodology two approaches will be adopted, a quantitative approach in dealing with the objective aspects in the research, and in particular the case study (Rue National in Tours city) and all related issues such as the physical aspect of the place, transport infrastructure and stakeholders data, and all statistics can be achieved. And a qualitative approach will be used while experiencing and describing different subjective aspects related to how people feel in the space for example.

More specifically, I can address the possible methods I'll follow within this approach:

1. Collect information representing my subject (case study, tramline study and implementation, history of the site...etc) through contact with professional and key stockholders including selected interviews to obtain more information about the site.
2. Physical assessment of the site such as site-visit, promoting site plan and maps, assess physical forms in the place, assess usage (i.e. residential, commercial, educational), and assess transportation infrastructure: including locating pathways and significant points (tram stop for example).
3. Behavioural mapping analysis including observation and personal reflections of space.
4. Survey and questionnaire: to examine the way people use and act in the space, and type of mobility they use to reach the place.

The study will start with the literature review including public space, its definition and evolution, its relationship with the city and type of mobility in public space. The second part is about the protocol will be developed to evaluate the quality of public space which consists of set of criteria and relays on the publications of Jan Gehl including his practical researches within GEHL Architects, and PPS (Projects for Public Spaces) organisation. The third is the empirical part which contains the case study Rue Nationale and collected and analysed data (observation data, survey and questionnaire data and behavioural mapping data). (Figure 1)

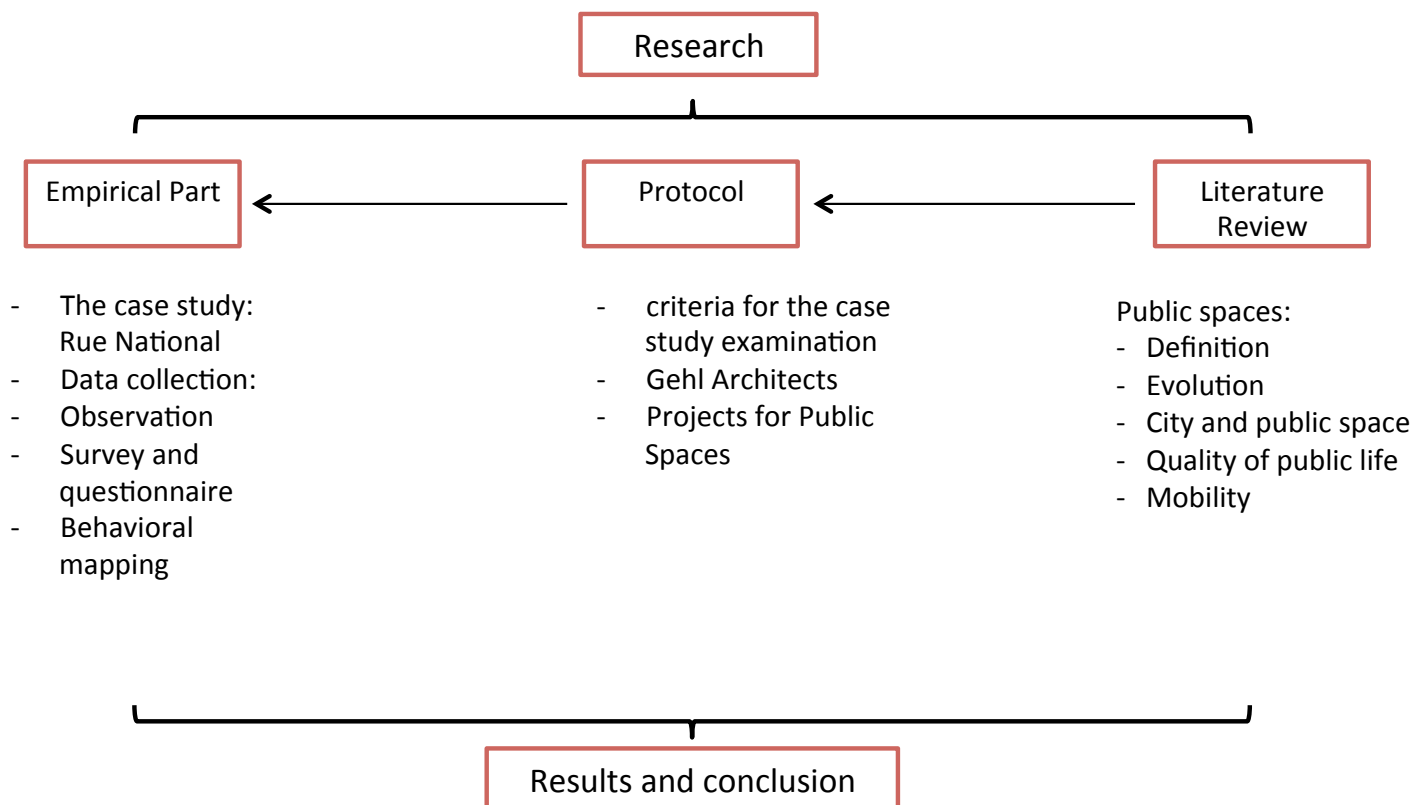


Figure (1): Research structure.

Part 1: Literature review

1.1 Definition of public space

The use of public spaces is a principal issue that has to be considered in any study of the everyday life of people living in cities. But it is an experience that is not the same for everybody, since age, sex, social class and ethnic identity affect the way in which urban life is lived and understood.

In recent years, different disciplines (geography, sociology, planning, architecture, etc.) have studied the ways that people use public spaces, thus, the definition of public space differs according to these approaches that each of them studied it from different perspective and formed a complementary understanding of public spaces.

From the social and cultural standpoint, public spaces are defined as places of interrelation, social encounter and exchange, where groups with different interests converge (Dolors, Ortiz, Prats; 2004).

As public spaces have been designed for various uses including unexpected/unforeseeable uses, and are used by a great diversity of people and for a wide variety of activities, they can contribute to the collective identity of the community (Valle del, 1997; Franck and Paxson, 1989).

Politically, the place that will be defined as a public space must be a space where people can participate in public life and where people's claims can be voiced (Lopez de Lucio, 2000).

The architectural perspective defines public spaces as those that are open publicly accessible place where people go for group or individual activities (Carr et al. 1992).

Definition of public space differs as well to which trend author directs his objectives and perspective about how people use public space, so it's sometimes based on the assumption that "physical space is important to democratic public life" as Kristine F. Miller mentioned in her book "The Private Lives of New York's Public Spaces, Kristine F. Miller, University of Minnesota Press, Minneapolis, MN, US, 2007" that public space is a "kind of hybrid of physical spaces and public spheres" (Gehl and Matan, 2009).

For other perspectives concerned on the social and sensory approach, public spaces must be more open and convivial and locate where "citizens can gather, linger or wander through" as Henry Shaftoe defines the public spaces in his book "Convivial Urban Spaces: Creating Effective Public Places, Henry Shaftoe,

Earthscan, London,UK, 2008" and states that places where people can be "social and festive" are the essential of urbanity (Gehl and Matan, 2009).

The role of public spaces in achieving complementarity and social cohesion in urban areas has been highlighted as a positive quality added to public life in the different open spaces in the city such as streets and squares, and a necessary condition for people to enjoy a high degree of social conviviality (Rogers, 1998), so they have the ability to become key participatory in city landscape and major elements in urban life that reflect people beliefs, culture, and values (Francis, 1989)

Through those previous complementary/integral definitions of public spaces that different authors clarify, it's possible to extrapolate the most important aspects that characterise the efficient, vital and attractive public spaces and to state them as the accessible places in cities that are designed to fit the different uses and requirements for people and offer them a positive and high quality of life, which can be achieved through the contribution of these spaces to enhance place identity and providing people a high degree of safety, comfort, and social conviviality.

1.2 public spaces in the city:

Within this theoretical framework and in order to understand and study how efficient and useful public spaces are and how they may be affected by the different changes of urban context, I have to clarify firstly the relationship between these public spaces and the city as an urban planning approach, and then to understand the evolution of public spaces influenced by two main transformations: city and society, the city as a physical modality, and society as a set of individuals of multicultural backgrounds, traditions and habits. (Figure 2)



Figure (2): City and society as the two main transformations that influence public spaces. (Author)

According to this, those transformations are causing public space to change not just in its physical attribute, but in its social dimensions and thus its role in society, so urban designer can create better public spaces by taking into consideration the way city changes and people living in it perceive and recognise their surroundings.

Moving to cities had been occurred for years, and been accelerated with the big move of our civilisations towards industrialisation within last century. This can justify the huge shift of percentage of population living in cities which increased from 20% a hundred years ago to nearly 50% nowadays¹. And as the relationship between public spaces and city consider a major generator that provides a place for “gathering a society” (C. Bruggeling, 2013), we can understand primarily the reasons that drive people to live in cities, which still about gathering or benefiting from gathering socially and economically, firstly the wide variety of jobs in the city which provides more opportunities cannot be exist in rural areas, secondly cities can fit a broad range of cultural activities that attract people to come, and in the third point the possible large selection of different subcultures that might be gathered in one city and enrich the life in it (C. Bruggeling, 2013). City helps people gathering in one place, which forms during time communities that differ from one city to another. These communities are producing certain rules and liberties and at the same time sharing their habits and traditions, which characterised them differently and form an essential factor that drives people to prefer to live in this city not in another. Thus besides forming the place where people can benefit economically of jobs and opportunities, public spaces also form the proper place in the city where liberties, traditions and culture can easily be expressed.

Whereas within the same context, gathering of buildings can characterise our urban areas as communities milieus and provides different opportunities to live in a city, this means that one building is just one building but set of buildings gathering means space in between them, means streets and squares and other different types of “community ground” for people to meet, interact and socialise forming what known “public space” (Gehl, 2006). (Figure 3)

¹ according to World Health Organisation report, 2012; population in cities increase from 20% in the past to 50% nowadays.

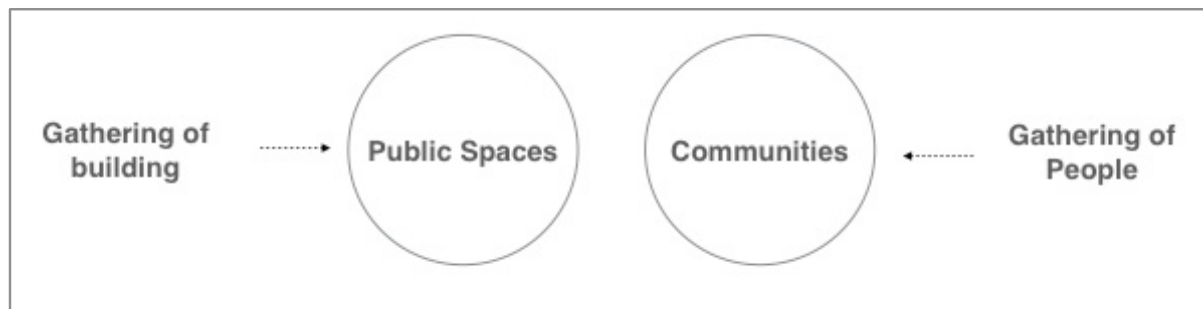


Figure (3): The mutual influence of “Gathering” concept at both physical and social aspects. (Author)

1.3 Evolution of public spaces

Historically, public spaces have represented as an important component of cities through the expanded numbers of traditional types of public spaces such as parks, plazas and streets and more innovative varieties such as community gardens, greenways, and waterfront areas (Ryan 2006). In recent decades, there has also been a rapid growth in research and literature on public spaces including empirical studies of their use, cultural role, and meaning (Francis 2010).

The way public spaces were created and evolved has changed from being formed organically to be planned and designed, and this process was affected basically by how city growth. Changing of the city means changing of its public spaces both functionally and physically (Waldheim 2006), and what can be simply drawn about cities evolution that they grew through three stages:

The first stage cities where they were structured with surrounded high walls that retained the expansions and forces population growth to take place within its borders and so more densified cities.

Second stage where the boundary walls were removed and new room have been created out of city borders allowing new expansions of urban fabric but in more planned way, and this enabled planners and designers to translate their own visions about how urban environment should be.

Thirdly, the city as a consisted-of-pieces place was as different defragmented parts with different visions had been planned and re-connected to each other. (Figure 4)

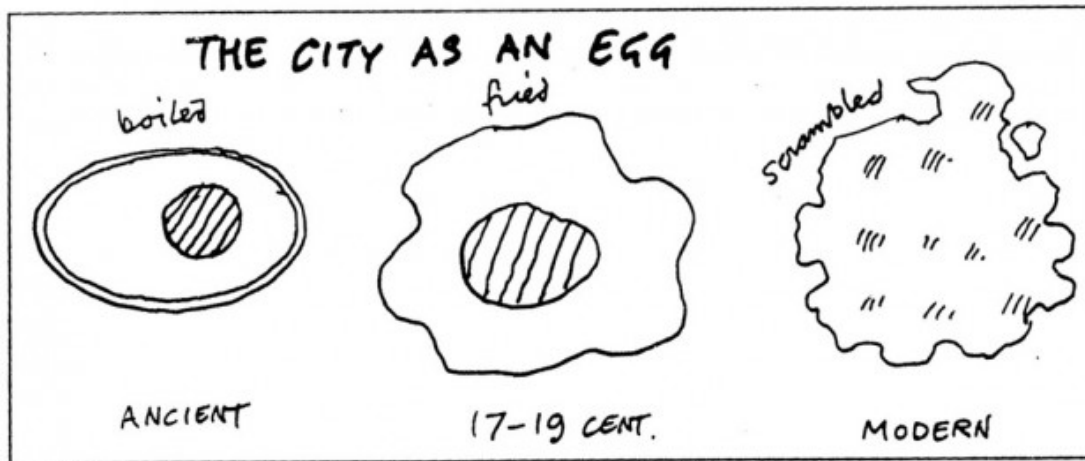


Figure (4): "Three Eggs Diagram" Source: The City and the landscape, Cedric Price, 2011

Modernist movement in planning new extensions and urban parts of the city which had risen after the overcrowded industrial cities of the 1900s, carried out a lot of utopian ideas that influence urban public life (Jacobs, 2010). So new extensions out of old city boundaries as they had been planned and developed according to this movement, they differed from the old layout of the historical core of the city, thus public spaces in turn changed and the formerly known street-shaped places in old cities where most of social and commercial activities took place have been shifted in this urban movement into new forms of public spaces such as the elevated decks and the outstretched green spaces surrounding the new high-rise buildings.

This new vision about how public spaces will be in modern city came against planners and designers expectations where people started to criticise it as an unattractive and undesirable urban trend or "anti-urban" according to Jacobs expression which stimulated by her publications planners and designers to rediscover streets and make an active use of its ground surface by bringing back and re-settling small shops and single family housing.

Generally, the more facilitated, access provided, and memorable public spaces, the more successful ones. However, not every public space contains all these successful components (Whyte, 1980), and this can justify why these modern spaces have been left, especially some of them that emerged as a result of the new-developed real estate projects around cities, and formed the common type of the in-between-blocks undesigned abandoned spaces with less capability to provide most of that successful ingredients that mentioned before (Ghel, 2006).

1.4 Perception of public space:

The perception of public spaces is related mainly to how people realise their urban areas and how they form the perceived image (the individual and macro image) about the public spaces and the city they live in.

This image is product of both the direct sensation for people including what they see, hear and discover sensually through their experience in the space, and their past experience and how they perceived public spaces before, thus people can form their perception through recognising the shapes, colours and elements of the cityscape and organise them into coherent patterns able to be compare between each other.

Generally the individual mental image that every person perceives about the place of living is related to his past experience, while the overlapping of these images form what called the public image of the city where five elements were classified as related to the physical form of the city: (Kevin, L.1960)

1. Paths: are the channels along which the observer customarily, occasionally, or potentially moves, such as; streets, walkways, railways ... etc.
2. Edges: Are the linear elements not used or considered as paths by the observer, they are the boundary between two phrases, linear breaks in continuity, such as; shores, walls, railroads, cuts edges of development... etc.
3. Districts: Are the medium-to-large sections of the city.
4. Nodes: Are points, the strategic spots in the city into which an observer can enter and which are the intensive foci to and from which he is travelling, such as; junctions, places of a break in transportation, a crossing or convergence of paths, street-corner hangout, enclosed square.
5. Landmarks: are another type of point-reference but in this case the observer does not enter within them, such as simple defined physical objects; building, sign, store, or mountain. (Figures 5, 6).

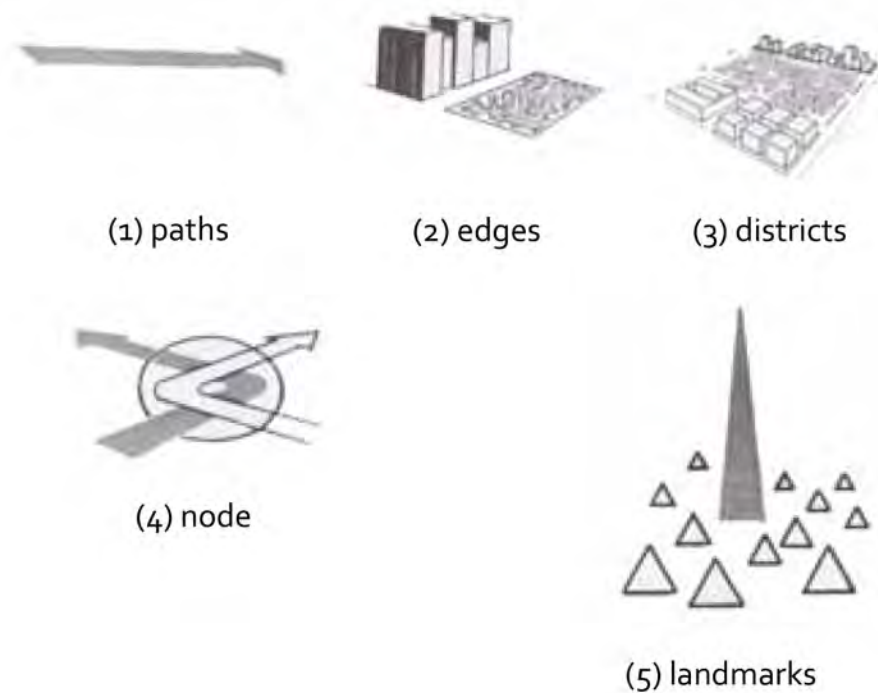


Figure (5): Images Lynch uses to illustrate types of physical elements which form city images. (Lynch, 1960; p. 47-48)

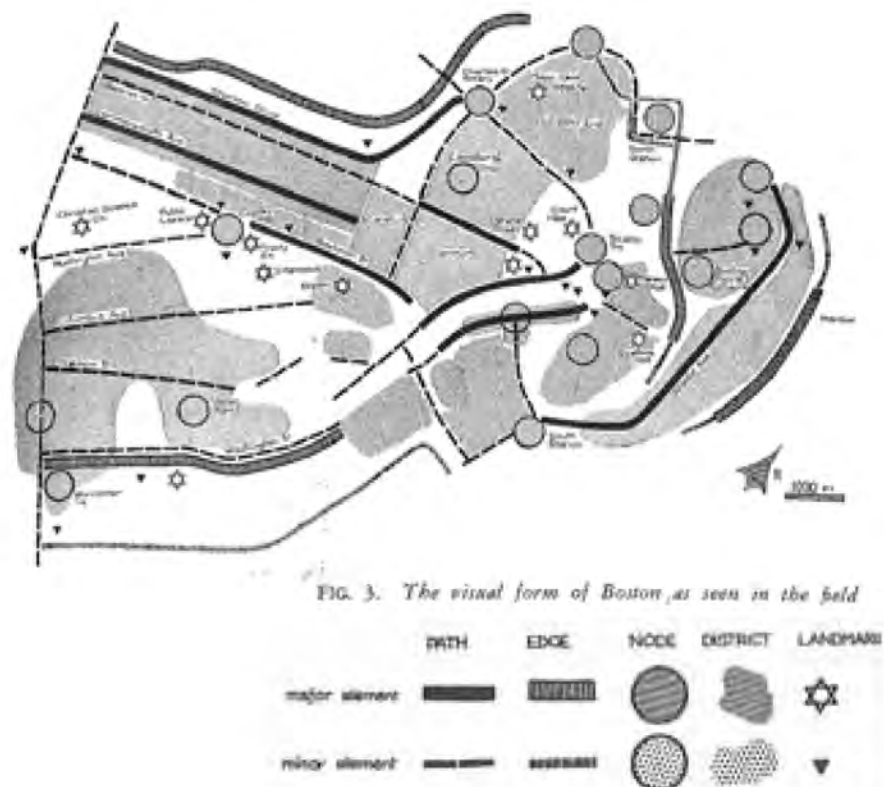


Figure (6): Map made by Lynch indicating the elements which contribute to the cities legibility (Lynch, 1960; p. 19)

1.5 Mobility in public space:

As public spaces work basically as the fundamental milieus that enable connectivity between the different parts of the city, and shape the in-between-city mobility including both; the non-mechanised (walking, cycling, scooter...etc) and the mechanised type (private automobiles, public transportation), then addressing the influence of the different transportation systems on public spaces will be essential.

Since the quality of public spaces indicates to the quality of life in cities, public spaces have to offer different opportunities that can forest interaction between people and give them the chance to communicate, to share, to coexist with each other, Within this approach, transport pattern used in urban areas must work as a complementary component that enhance public life quality and vitality not to occupy spaces where previously the urban public spaces took place (Sheller, M., and Urry, J. 2000), and transfer them into transit-corridors between two places.

Mainly, the reason for the loss of public spaces in our cities considers the domination and spread of mechanised transport means and in particular cars. This type of private mobilities besides he affects the way people transfers between places and shrinks this experience to the very term -door to door- (Ciuffini, F. M.1996), which means the move between two private places by using another private mean/ space which reduces the efficiency of public space as a a social and interactive place.

We can divide public spaces in terms of mobility into three main types of uses: For pedestrian mobility, for public transport mobility, and for private mobility or cars. And within these types of uses the third one became to be more demonstrated in the last few decades and led to the emergence of empty spaces in the city (Trancik, R.1986), when cities experienced fast extensions and people preferred to live outside city centres where they can have better quality of life with more privacy conditions of accommodation and transport means.

The result of this was more traffic in cities which exceeded roads capacity, and this led to policies that adopt more public spaces for cars and more constructions of road networks.

The main question still here about how we can deal with the problem of mobility? As insisting on expanding cars networks within the limited public spaces in order to face this will increase the environmental damage and may deepen the

problem because of constructing more roads/ traffic, (Ciuffini, F. M.1996), the solution might be here by reversing the planning approach which means that instead of adopting the city to the car in order to solve the increased mobility problems, we have to adopt mobility and transportation policies to the city planning in order to fit efficient public spaces for human uses and needs. And this is what has been happened through the last few years where transportation policies in many countries clarified the trend of reduction in the number of cars and private automobiles for the benefit of increase in alternative transportation including the public and the non-mechanised transportation.

1.6 Cycling and walking:

As mentioned above that cars influence public spaces uses, the spread car infrastructure has limited cycling and walking opportunities in the city.

There are healthy benefits of cycling or walking because they exercise the body. Using cycling or walking considered an added value to urban life that contribute to enrich public spaces in the city.

Developing new types of streets that can balance between the comfortability and continuation of pedestrians movement and feeling of safety within a public space from one hand, and the existence of the car which becomes more essential in the new urban life in the other hand. An example of those types (VINEX neighbourhood) in the Netherlands; (Woonerve) which are streets where cars can only drive 30km/h and every other mode of transport has priority (Sheller, M., and Urry, J. 2000).

By this trend planners worked more to minimise car use disadvantage by applying new rules for urban layouts to limit car speed or emphasise the priority of other types of movements such as cycling and walking instead of car. And this was an important trend in urban studies that ignored human dimension for decades and focused instead into accommodating car in the urban network (Gehl, J. 2010).

Part 2: Measurement of public spaces qualities

2.1 Qualities of public space

Public spaces have physical and functional qualities that influence social interaction and people comfort and security, these qualities are related generally to several factors such as the physical characteristics, accessibility, liveability, activities and surrounding land-uses that influence in capacity of public space to promote social interaction.

Reading what other authors have found related to physical and functional variables in public space can orientate the methodological approach and provide an understanding of what can be surveyed and investigated in Rue National.

A well-designed public space means a qualitatively functional space that provides a set of physical conditions can encourage people participation in public life. Many studies have shown that the highly dynamic and visited spaces are the most able to engage people passively through providing sitting places in the space to enable users looking and discovering the surroundings, increasing accessibility, and offering public art and natural features. But even as It has been shown that food, retail activities, and programmed events considered a major factors that attract people to urban public space, there are still few factors that influence space vitality and attractiveness such as visibility that increases the sense of security of public spaces and makes them therefor more preferred by people (Whyte, W.H.1980).

These functional and physical attributes are not only identify the characters of public space and influence the comfort and enjoyment levels of people, but also influence user's behaviour, and how success a public space and social life inside it might be.

The following are some findings related to factors that Gehl and PPS have found and influence the vitality of life in public spaces which can be helpful for developing the protocol and guiding the questions that should be asked to Rue National users.

2.2 Projects for Public Spaces (PPS) concept:

(PPS) is a nonprofit planning, design and educational organisation was founded in 1975 to expand on the work of William Whyte². Through its approach "Placemaking", PPS dedicated to helping people create and sustain public spaces that build stronger communities and transform their public spaces into vital places that highlight local assets, spur rejuvenation and serve common needs³.

2.2.1 Principles of Placemaking:

Placemaking In meaning is how to create better spaces in our cities, which was a transformative approach by different authors like Jane Jacobs, Jan Gehl, William Whyte. But Placemaking as the concept have been adopted and worked on by PPS means that urban movement that aims to reproduce public spaces in cities and communities as an essential factor drives to enhance public life.

It is how people collectively shape their public realm to strengthen the connection in-between them, and maximise shared values (PPS, 2000).

As the cornerstone of this concept is community-based participation, it's important to adapt "Placemaking" process to the different contexts such as the economic, the environmental, and the local, and in particular the social one which gives the priority to users perception and behaviour within the space that guide both governance decision making and policies adoption processes to match what really people need of their public spaces and establish a clearly defined partnership between the different stockholders leads to a well-coordinated Placemaking process (Figure 7)

PPS has adopted a set of 11 key elements to transform public spaces into more vital places including the different types of urban public spaces such as parks, plazas, public squares, streets, sidewalks...etc, These elements are:

- "The community is the expert"

Which means the different communities expertises that are considered the starting point in developing public spaces and exemplified by "talents and assets

² William Holly Whyte is an American urbanist, worked and wrote about panning issues, assisted the New York City Planning Commission in drafting a comprehensive plan for the city, he studied the street life in New York and other cities in what became known as the Street Life Project, his most famous books: City: Rediscovering the Center in 1988, Social Life of Small Urban Spaces in 1980.
<http://www.pps.org/reference/wwhyte/>

³ Official website: <http://www.pps.org>

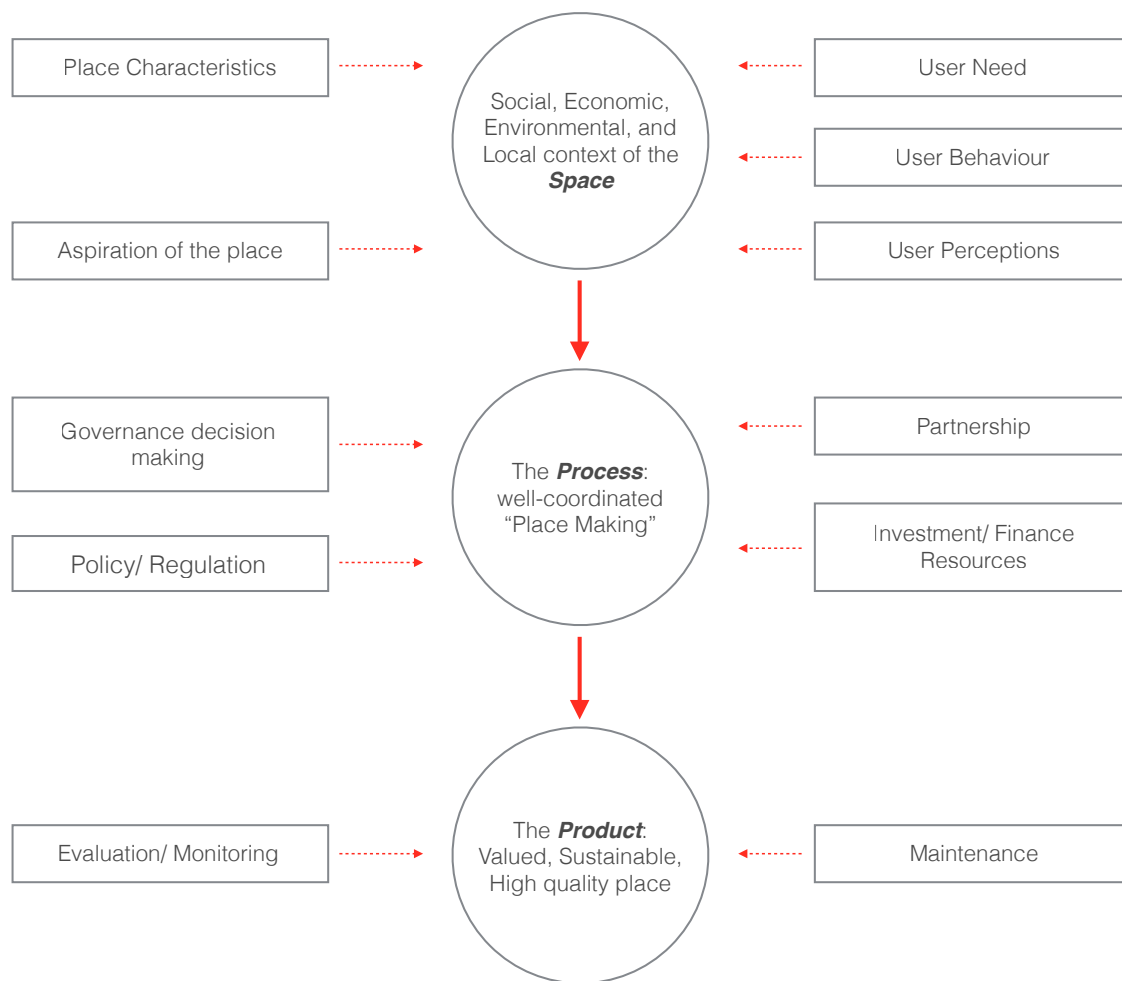


Figure (7): Place making diagram, (Author)

within the community” and people who can add valuable insights and better understanding to the issues related to how people live.

- “Create a place not a design”

Since the goal of Placemaking is to create a public space that can provide the different functional and physical aspects to facilitate using the place and make it vital, comfortable and more attractive for people to come, then just to design it doesn't mean it will be a high-performing place.

This complexity to understand what is required of public space to meet the successful Placemaking standards is difficult to achieve only by the good design process that takes into account the functional and aesthetic factors and the ideal possibilities of using a space as the designer perceives, but the deep understanding of the real needs of people socially, psychologically, and physically.

- “Look for a partners”

During all phases of Placemaking process, partners are important to insure the future success, either at the beginning of developing scenarios and concepts, or through getting the project off the ground.

- “You can see a lot just by observing”

This element emphasise that observing people how they act

This element emphasise the importance of observation process for people how they act and use the space in assessing what makes spaces functional or dysfunctional in terms of making/developing a place, and knowing the certain activities are missing and might by adding them enhance the public space.

- Have a vision

Different understanding of people requirements of the place and Different activities that might be efficient for each community, characterise the vision that must be drawn individually for each public space to give it the successful approach.

- “Start with the “Petunias”: Lighter, Quicker, Cheaper”

This simile says that building public space needs a kind of continuos developing process that consists of short-term improvements are proposed due to experiencing the space that can be tested and refined over years of using the different elements within the place (seatings, cafes, public art and pedestrian paths...etc).

- Triangulate.

Triangulate is “the process by which some external stimulus provides a linkage between people and prompts strangers to talk to other strangers as if they knew each other” (Whyte, 1980).

This process is an arrangement of different elements in the place that can promote a linkage between people using the space and stimulate strangers to interact to each other.

- “They always say: It cant’t be done”

Referring to the many obstacles that may come your way while creating the good public spaces, because of the undefined work title of “creating places”

neither in public nor in private sectors, add to that the narrow definitions of the several disciplines that influence public space making process such as urban planners, architects, traffic engineers and transit operators whom have the ability to facilitate traffic or creating planning scheme for cities or designing buildings which are all together shape public spaces, but no one has a concrete responsibility about the “Placemaking”.

- “Form support function”

All previous elements together provide the perception of the future vision of the space or the “concept for the space”.

- “Money in not the issue”

This statement can be applied in different ways such as firstly; the not-expensive-works within the space such as seatings, cafes and vendors which can add a significant value comparing with their costs specially after finishing the basic infrastructure. And secondly the involvement of community and other partners and stockholders in programming and making public space that would reduce costs as well.

- “You are never finished”.

Because of the frequent need to do some modifications, maintenances and replacements which is required due to ongoing changes of communities and people needs, so being able to do it and flexible to enact these changes is what guarantees the sustainability of efficient Public spaces and Placemaking concept.

2.2.2 Key qualities of the place:

According to PPS, places that are great for people have four key qualities: sociability, uses and activities, access and linkage, and comfort and image.

- **Sociability:**

Within this sorting , PPS consider that better places should have the ability to foster social interaction or sociability, and despite the difficulty to achieve this type of qualities, PPS deem it's possible to enhance interaction within the space through

achieving some intangibles that summarise the simple interacting between people like meeting a friend, speaking to strangers, greeting neighbours, which make them tend to feel a “stronger sense of place or attachment to their

community". These intangibles are: Cooperation, Neighbourliness, Stewardship, Pride, Welcoming, Diversity, Interactivity, Friendliness, Storytelling, Gossip. such as : Cooperation, Neighbourliness, Stewardship, Pride, Welcoming, Diversity, Interactivity, Friendliness, Storytelling, Gossip; which summarise the simple interacting between people like meeting a friend, speaking to strangers, greeting neighbours, which make them tend to feel a "stronger sense of place or attachment to their community" (PPS, 2002).

- Uses and activities:

Is the cornerstone quality in building-the-place process. Using the space is the main goal behind making the place, so for PPS, to create a good place means to give people a reason to come and to use it.

Activities in public spaces avoid users the feeling of emptiness that is generally generated where is nobody in the place and nothing to do with it, so the more activities taking place, the more opportunities for people to participate in public life.

Designing better places is not just providing activities, but make these activities matching the different sorts users; men, women, singles, groups, children, students, adults, elders and retirees; and consider the different times of uses between day and night and during the day itself as well.

For PPS this quality can be achieved through a set of intangibles that summarised the sense of better space using, which is: Fun, Active, Vital, Special, Real, Useful, Indigenous, Celebratory, Sustainable. (PPS, 20002)

- Access and linkage:

For PPS, accessibility is an important indicator of how successful a public space is, and it can be evaluated by the place connections to its surroundings visually and physically. Favourable public space is easy to get in from the different parts of the city, which means more parking spaces, and more connection to public transportation systems in the city.

A successful space also is the easy to get through, and this can be achieved by adding some visually-attractive elements such as rows of shops instead of blank wall, or some trees or water elements inside an empty lot.

Generally PPS consider active spaces these are more **Connected, Readable, Accessible, Walkable, Convenient**, with more **Proximity** and **Continuity** with surroundings. (PPS, 20002)

- Comfort and image:

This quality is related to how public space is physically arranged and creates the perception people have built depending on the place characteristics.

According to PPS successful places that have a “good image” reflects positively how users perceive community life, attractive places with recognisable identity can easily engage greater amount of people and provide them varied choices for sitting or walking.

If image is the perception about aesthetic characters and identity, comfort considers the perception about safety, cleanliness, and availability if a place to sit (PPS, 20002).

For PPS this quality can be achieved through a set of intangibles such as: Safe, Clean, Green, Walkable, Sit-able, Spiritual, Charming, Attractive, Historic.

Public spaces which are created depending on visual and aesthetic standards might be attractive and beautiful, but will not necessarily insure comfort and efficient use.

But generally the main characteristics that clarify the failure of some public spaces are possible to summarised with the lack of sitting and gathering places as playgrounds or bus stations, poor accessibility visually and functionally and the unwelcoming entrances of the space, uncomfortable pedestrian's pathways (different levels or undesirable directions), traffic influencing the space in a way that restrict users movement, and lack of activities and place identity (PPS, 2000).

2.2.3 PPS concept in application:

PPS works on analysing public spaces through two integrated approaches; behavioural/ activities mapping and questionnaire.

- Behavioural mapping (Figure 9)

The first one can be summarised in the question: What people DO in public space (PPS, Studying Time Square), and to answer this question two main aspects have to be analysed: first the comfort level in the place which is related to several points such as; the places-to-sit are provided in the space, the percentage of different ages using the place, where PPS claims that healthy public space has at least 60% women participation in stationary activities. (Figure 8)



Figure 8: Behavioural mapping for stationary activities, A Guide to Neighbourhood Place Making in Chicago, 2008

one more thing refers to comfortable level in public space, it's weather this place is inviting all people and can achieve a balanced percentage of different ages users.

The second aspect is the percentage of the group activities occur in public space which can be analysed through observing different types of activities in the place such socialising, resting/ waiting, talking, window-shopping and eating etc..., and compare their percentages.

Group #	SEX		AGE					ACTIVITIES													NOTES	
	Male	Female	0-6	7-14	15-20	21-40	41-6	Over 60	Sitting - on bench	Sitting - on grass	Talking/Socializing	Watching sports	Eating	Sleeping	Reading	Soccer	Basketball	Handball	Baseball	Biking/roller blading		Playing - not in playground
1																						
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						
13																						
14																						
15																						
16																						
17																						
18																						
TOTAL																						

Figure 9: Behavioural mapping for stationary activities, A Guide to Neighbourhood Place Making in Chicago, 2008

- Questionnaire

This approach consists of several surveys including four categories:

- Comfort and image

To examine comfort level in a public space PPS orients this survey to explore few points that affect directly the feeling of comfort and the perception of people about the public space such as; if the place provides good places to sit, or if it is clean and well maintained. the third point is about the feeling of safety from crimes in the place, and finally this survey aims to discover the attractiveness level in the public space.

As an example about the type of questions PPS asks under this category we can find the following:

Does the place make a good first impression?

Are there more women than men?

Are there enough places to sit? Are seats conveniently located? Do people have a choice of places to sit, either in the sun or shade?

Are spaces clean and free of litter? Who is responsible for maintenance?

What do they do? When?

Does the area feel safe? Is there a security presence? If so, what do these people do? When are they on duty?

Are people taking pictures? Are there many photo opportunities available?

Do vehicles dominate pedestrian use of the space, or prevent them from easily getting to the space?⁴

- Access and linkage

As the accessibility to the place can be judged by its connections to its surroundings, PPS include several points to this survey in order to examine if the public space has a clear links to destinations or provides the feeling of safety (from traffic), is it has a clear access to transit, and if it contains a clear sufficient information and signage system.

Of questions that PPS listed in its documents under this category there are:

Can you see the space from a distance? Is its interior visible from the outside?

Is there a good connection between the space and the adjacent buildings, or is it surrounded by blank walls? Do occupants of adjacent buildings use the space?

Can people easily walk to the place? For example, do they have to dart between moving cars to get to the place?

Do sidewalks lead to and from the adjacent areas?

Does the space function for people with special needs?

Do the roads and paths through the space take people where they actually want to go?

Can people use a variety of transportation options - bus train, car, bicycle, etc. - to reach the place?

Are transit stops conveniently located next to destinations such as libraries, post offices, park entrances, etc.?⁵

- Uses and activities

To analyse different uses and activities in public space PPS explore the types of uses in the place (commercial, cultural, restaurants ...) and evaluate the space as it contains more mixed uses and activities such as stores, services, and food. The second point is if the place hosts regular events and activities, so more events

⁴ What Makes A Successful Place, PPS: <http://www.pps.org/reference/grplacefeat>

⁵ What Makes A Successful Place, PPS: <http://www.pps.org/reference/grplacefeat>

means one successful public space, thirdly the destinations of public space that can attract people and give them a reason to come to the place, and lastly if the public space can host unique events.

The questions that PPS listed to explore how uses and activities influence public space are:

Are people using the space or is it empty?

Is it used by people of different ages?

Are people in groups?

How many different types of activities are occurring - people walking, eating, playing baseball, chess, relaxing, reading?

Which parts of the space are used and which are not?

Are there choices of things to do?

Is there a management presence, or can you identify anyone in charge of the space?⁶

- Sociability

As sociability is about meeting people, seeing a friend, or interacting with a stranger at the bus-stop, PPS tried to discover the capacity of the place to attract people in groups or if it can provide interactive opportunities that allow people to contact each other. Also PPS concerns about the presence of kids and seniors in the place because of more people-of-different-ages means efficient public space.

As an example about the questions PPS asks under this category we have:

Is this a place where you would choose to meet your friends? Are others meeting friends here or running into them?

Are people in groups? Are they talking with one another?

Do people seem to know each other by face or by name?

Do people bring their friends and relatives to see the place or do they point to one of its features with pride?

Are people smiling? Do people make eye contact with each other?

Do people use the place regularly and by choice?

Does a mix of ages and ethnic groups that generally reflect the community at large?

Do people tend to pick up litter when they see it?

⁶ What Makes A Successful Place, PPS: <http://www.pps.org/reference/grplacefeat>

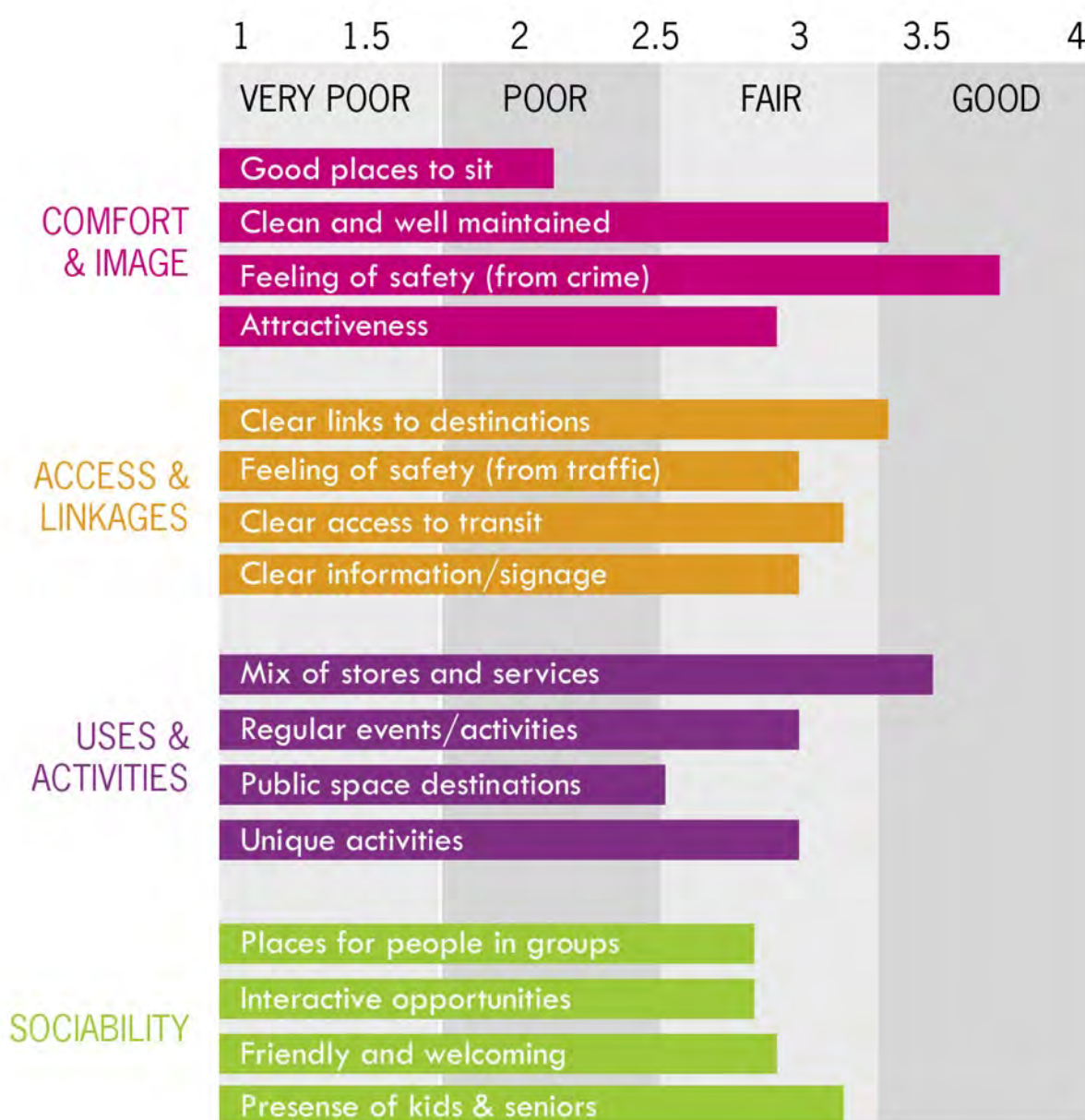


Figure 11: Sample of the measurements and results of questionnaire , A Guide to Neighbourhood Place Making in Chicago, 2008the

2.3 Jan Gehl concept:

GEHL Architects

Gehl Architects is Urban Quality Consultants, founded in 2001, allowed Jan Gehl and his colleagues to put their ideas into practice more directly. Much of Gehl's recent writing, therefore, has been in the form of reports tailored to the needs of particular cities.

GEHL Architects is an urban research and design consultancy has advised cities both large and small, from Stockholm, Sweden to Melbourne, Australia to London.

It was founded in Copenhagen, Denmark in 2001 by Architect Helle Soholt and Professor Jan Gehl who had the opportunity then to put his ideas into practice more directly and promote much of his recent writing in the form of reports tailored to the needs of particular cities.

It works to address global trends with a people-focused approach, utilising empirical analysis to understand how the built environment can promote human flourishing and applying this to strategic planning and human-centred design to empower citizens, decision makers, company leaders, and organisations.

Gehl Architects.⁷

GEHL Architects works are carried out on the basis of Dr. Jan Gehl studies and publications and in particular “Life Between Buildings” which considers as a humanistic approach to urban planning where the human dimension within designing-the-place process will produce more durable and high quality outcomes in terms of creating public spaces. (Aps, G. A. 2002)

2.3.1 Purpose and methods

The main focus area of GEHL architects work for many years is public spaces and public life in cities and urban areas. The surveys and recommendations included in the study reports serve as guidelines for politicians, decision-makers, planners and people Interested

⁷ Official website of GHEL Architects: <http://www.gehlarchitects.com/#/159108/>

In order to provide sustainable knowledge of how cities and public spaces is used and how they can be improved, GEHL Architects structures its studies structure within main three parts:

2.3.2 Public Space:

Analysing of the existing physical conditions equipped for pedestrians descriptively, for instance how the public space is composed, the areas are available for pedestrian traffic and their location, What the major obstacles for pedestrians movement are and the walking conditions through the public space. Pedestrian traffic and activities are the most important factor that affects public space and make it more lively and safe, and according to GEHL Architects the arrival to public space will happen through 6 ways of traffic: On foot, By car, By train or tram, by bus, or by bicycle, and after that pedestrians will leave their mode of transport and enter the public space on foot. So in order to enhance the quality of public space GEHL Architects focuses on how to make the traffic be more dominated with by walking and cycling more than vehicular traffic to reduce the sense of emptiness and unattractiveness when the space is too dominated by vehicles.

Generally more people will walk in the place and more activities will take place in case of good conditions are been provided for walk within the space and for life on foot, along with possibility for staying, for take a break for lunch and experiencing the city, and GEHL Architects considers those conditions are the main key of how to make public space more lively and attractive.

- Public space analysing methodology:

Mainly, GEHL Architects does a comparative analysis for the studied zone or space by analysing it through several points and then comparing it with similar previous studies it has done before with the same size (the same city size for example) and same type of space (street or square).

GEHL Architects adopts a process with several steps to examine the efficiency of the studied public space:

1. Determining the areas of high pedestrian use, by mapping people movement through certain different hours during the day and between the different seasons as well.

To achieve more rich and diverse public life we need pedestrian areas that provide spaces with more safer and calmer urban environment, so one of the essential notions to increase the quality of urban environment is to extend pedestrian network and provide more wider and comfort footpaths that can connect the different places within the city and public spaces and enable users to walk through.

2. By calculating the total amount of car-free space and compare it with the previous studies, GEHL Architects can find out how city public spaces are working and whether they are more convenient for pedestrians movement and public life or not according to the car-free spaces area percentage to the percentage of total public spaces area in the city or the studied zone.
3. Physical Analysis of the space, which means studying the actual section of place (dimensions, heights, and the different elements in the space), to explore three main point influence the public life and vitality of the place: Location and numbers of planting and trees within the space and their effects of how people use the space in different times; secondly the location and number of sittings; and thirdly the sun angle and direction and the affected sunny/shaded areas in the space.
4. Traffic analysing, which includes analysing connections between parts of the urban studied zone, to explore the flowing and connectivity through number, width and viability of streets connect between them.

One of the considerable issues in today's cities is the conflicts between automobile traffic and pedestrians movement which increase usually with the frequent expansions in the street's network to meet city needs, thus lead to unfavourable public environment for people.

within this trend, it's important to explore the undesired junctions and avoid them in the proposed solutions.

Heavy traffic analysis is essential then for vehicle's paths that influence pedestrians flow in the place. This traffic can be mapped through calculating the number of passed cars through certain street per one working day.

Another important factor in traffic analysis is public transport system in the city which can give users in case of well-organising the flexibility to move around among city's parts and spaces without using the car, and limit the undesirable effects arise of conflicts between motor traffic and pedestrians and public spaces occupied of the different types of vehicles except people.

Related to the previous points, numbers and location of car parks are also essential to be mapped and indicated in order to explore their impact on the increase of traffic jam in city centre close to public spaces, and to find out whether they function the space efficiently due to the increased number of people are able to reach the place, or they hinder the accessibility to it because of the traffic they create around.

5. Cycling, As an important alternative mode of mobility, with no environmental footprint and more friendly effects about how people feel the space.

In this point, GEHL Architects focuses on two important things, the first is the number of cycle lanes within the public space and their continuity to other parts of the city, and the second is rating of cycle lanes and testing the cycling experience

in order to find out whether the public space provides a poor or more good and fair cycle routes.

6. Conditions for pedestrians:

The car-oriented character of today's cities considered the essential factor that discourage people to walk around through the interruption in the walking system caused by the previously referred point about the conflicts between pedestrians and motor traffic, and the increased demand for vehicles and it's effects of transforming public places such as squares into car parks and footpaths to become less width.

Within this perspective, GEHL Architects defines several problems considered generally the most responsible factors for turning walking into an unpleasant experience such as the waiting time at crossing junctions which become longer with the increasing of motor traffic presence, and the footpath interruptions within urban public areas.

In order to evaluate the opportunities for walking through the city, GEHL Architects developed the Test Walks which can be done by recording the walking time and the waiting time at traffic intersections in case of ordinary walking speed.

7. Evaluating the street frontage and ground level activities:

Interesting ground floor façades with window shopping and varied visual effects provide the tendency for walking around and spending time in the public space.

Space quality at eye level is determined to a great extent by the quality of the building frontages facing pedestrian walkways at the ground floor level. And good ground floor façades as defined by GEHL Architects are these rich in details, have the ability to attract people to walk by, look at and sit/ stand beside, and façades that propose different and attractive activities inside.

GEHL Architects considers narrow units along the street are better for walking mode as they make distances feel shorter and turning streets to more vital and attractive places to walk through because of different doors, different uses, different exhibits to look at, so different possibilities of visual experience. GEHL Architects in its approach to evaluate the effect of street frontages on public space emphasises the influence of what called the "Edge Effect" which is the place that located directly in front of street façades where pedestrians can sit or stand beside and watch people.

The better edges that attract people can be achieved because of the lively, varied, human-scale façades. (Figure 12)

8. Evaluating the evening activities.

Evening activities such as restaurants, cafes, clubs, cinemas, culture activities... etc, are considered another important factor that increases the vitality of city and its public spaces and avoids feeling of unsafety and the deserted empty places .

Through mapping the concentration of evenings activities that are open during the evening nights (at 10 pm) at summer weekday, GEHL Architects can explore the most spaces that host evening activities of different types and their effects of improving the perception of safety and attracting people to use the space.

Besides the steps previously mentioned necessarily in the process of making better public spaces, there are few other points according to specific cases must be examine and analyse such as the existence of a considerable mall or

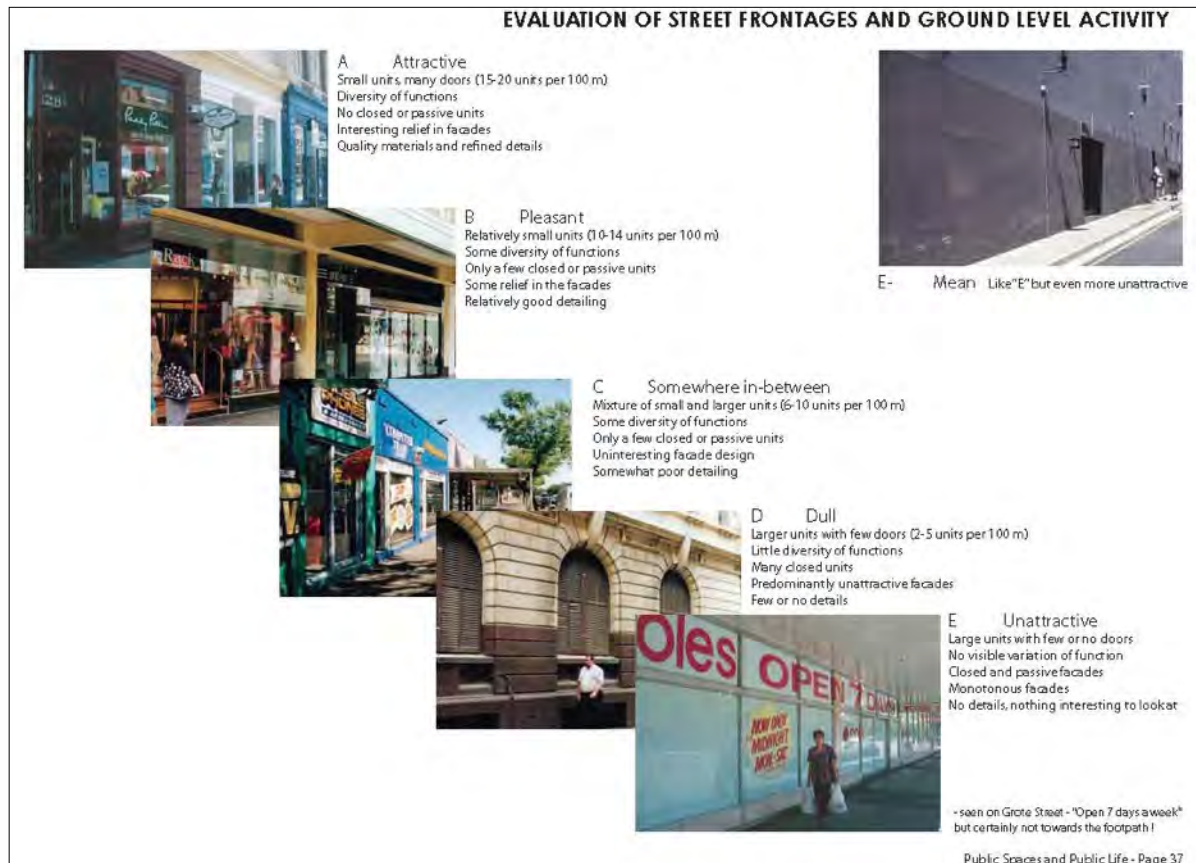


Figure 12: Evaluation of street frontage in city of Adelaide, Public Space and Public Life, GEHL Architects, 2002

hospital that might change the usage pattern and capacity of the space, or even the possible connection of the studied area with a remarkable natural area as riverside or forest which can give the designers and planners various ideas of how to enhance the space by using this new opportunity.

Special studies of some activities that existed in the studied area (mall for example).

2.3.3. Public Life:

This part of the study aims to examine how the public spaces are used through presenting survey of users and activities going on in the public space, for instance number of people walking or sitting in the space, what the facilities that offered in the place are, How people are using the place for and at what time, how many activities are taking place and whom the groups using the space are. This analysis can be the base for any proposed solutions about which area or place needs to strengthen and to maintain its activities to improve the quality of life.

To collect these data, GEHL Architects has developed a method that has been used in its previous studies in different cities like Perth, Melbourne, Riga, Stockholm and Copenhagen. The method includes mainly pedestrian traffic counting carried out in selected areas for 15 minutes every hour between (10 am-12pm), and surveys of stationary activities in the space through the behavioural mapping analysis. (Figure 13)

STUDY AREA - public life studies



Figure 13: Recording public life in city of Adelaide, Public Space and Public Life, GEHL Architects, 2002

2.3.4 Recommendations:

Sort out all the problems and potentials in the studied area depending on the analysis and survey resulting from the first two parts, and outline suggestions and strategies aimed to improve quality and functionality of public space.

2.3.5 Characteristics of a good public space:

To achieve a qualitative analysis of public spaces, GEHL Architects applied a yardstick for evaluation process where the quality of the place is viewed from the users perspective. The good public space is defined through a set of terms:

- **A good city to walk in and to stay in for a while:**

Good public space that provides pedestrians room to walk without overcrowding in as much as possible convenient climate conditions through creating for example sunny and shaded areas in proper places into the public space so they can be used according to season's changes.

Making the place capable to serve pedestrian movement functionally as providing room for walk or protection from the weather is not efficient enough without creating some attractive elements can provide more enjoyment and vitality like setting, pleasant façades along the pathway, well-situated cafes and outdoor restaurants, and Beautiful and effective lighting.

It's important for people to understand the structure of pedestrian system within the place to find out their ways and correct directions through the space. pedestrian structure for a certain space is necessary to be connected to important destinations such as a transport station, a parking area, a natural zone like garden or river, an important square or plaza...etc.

- **A good city for social and cultural exchanges:**

Where public space can serve the cultural communication and activities such as street theatre, jesters, carnival or music concerts.

Commercial activities in a small scale can be useful within the public space and allow the social and cultural exchange between people as well.

- **A good city for talking, watching and experiencing**

Spaces with lower level of noise and less disturbances can allow better opportunities for communicating and talking between people.

It's important that public space can provide also a positive environment allows people to watch and experience the surroundings through setting fine views and good details in the place and designing an interesting façades.

- A lively, diverse and safe" city to move around in

To give vital, diversity and safety for public space, a wide variety of activities must be applied during both day and night in addition to providing different uses around the place such as: residential areas to ensure the 24 hour life, an education institutions to ensure vitality, commercial evening activities with window displays to provide the sense of safety.

2.3.6 Activities in the public space:

People's outdoor activities in urban areas are essential indicators to the vitality and efficiency of a public space and how it can play the correct role in public life through encouraging people to connect and socialise.

In order to find out and characterise what people do in cities, GEHL Architects defines three categories of activities carried out in public space which are: Necessary activities, Optional activities and Social activities. (Figures 14, 15)

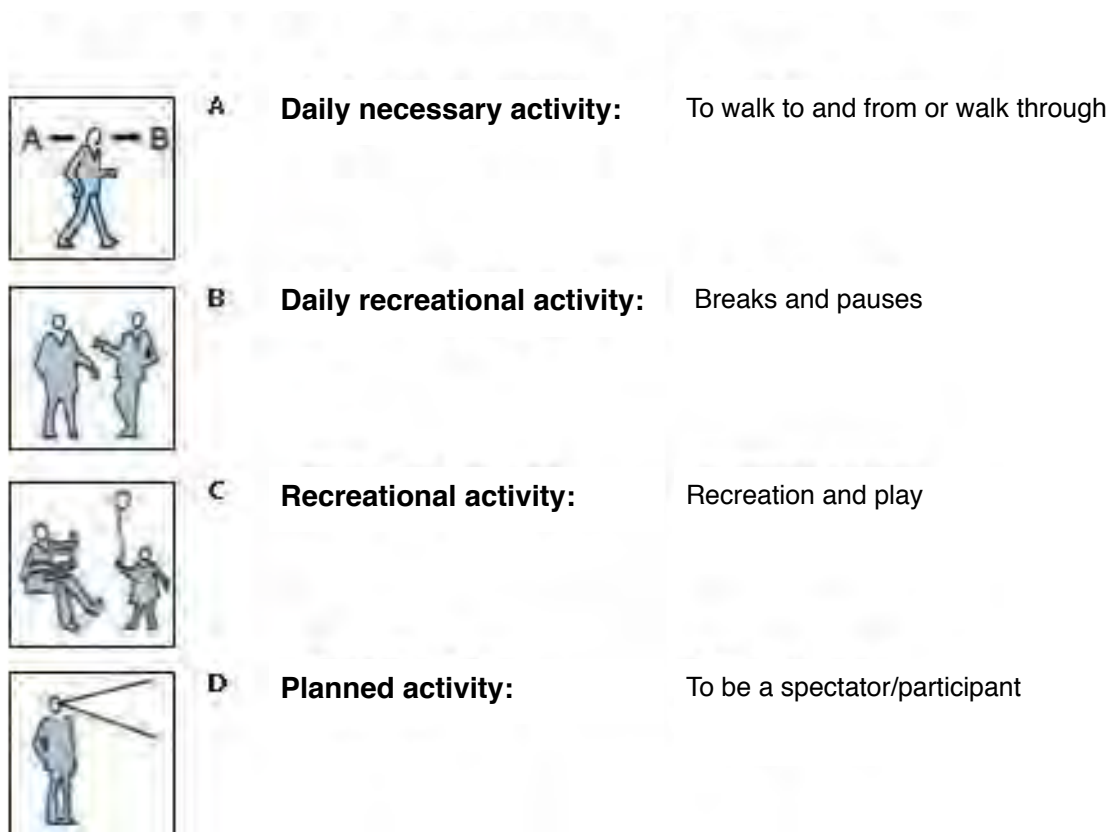


Figure 14: Expected activities in the public space, Public Space and Public Life, GEHL Architects, 2002

- Necessary activities

This category includes activities people have to do usually regardless the circumstances surrounding or the quality of the physical environment such as weather conditions or if the place is attractive or not.

GEHL Architects refers to good public spaces these can provide a positive environment for doing the necessary activities.

Generally necessary activities refer to the things that have to be done such as: Going to school, waiting at bus station, going and coming back from work

- Optional activities (Urban recreation)

In this category we can find activities people are attracted to do when circumstances surrounding like climate conditions and physical environment are optimal and inviting (Gehl, J, 2006)

This type of activities is related generally to the quality of public space, so they can occur more frequently in a place with high quality.

For GEHL Architects the good city is characterised by the big amount of optional activities where people can find attractive places to spend more time interacting with the surroundings.

- Social activities

Depending on presence of others in public space, this category contains a wide range of activities such as children at play, greetings and conversations, and generally all communal activities including the passive contacts like seeing and hearing other people in the place.

These activities can be also considered as "resultant" activities because they evolve often from activities linked to the other two types of activities (Gehl, J, 2006).

Social activities occur as a direct consequence of people being together in the same place, which means that social activities are taking place and be enhanced indirectly when necessary and optional activities occur more.

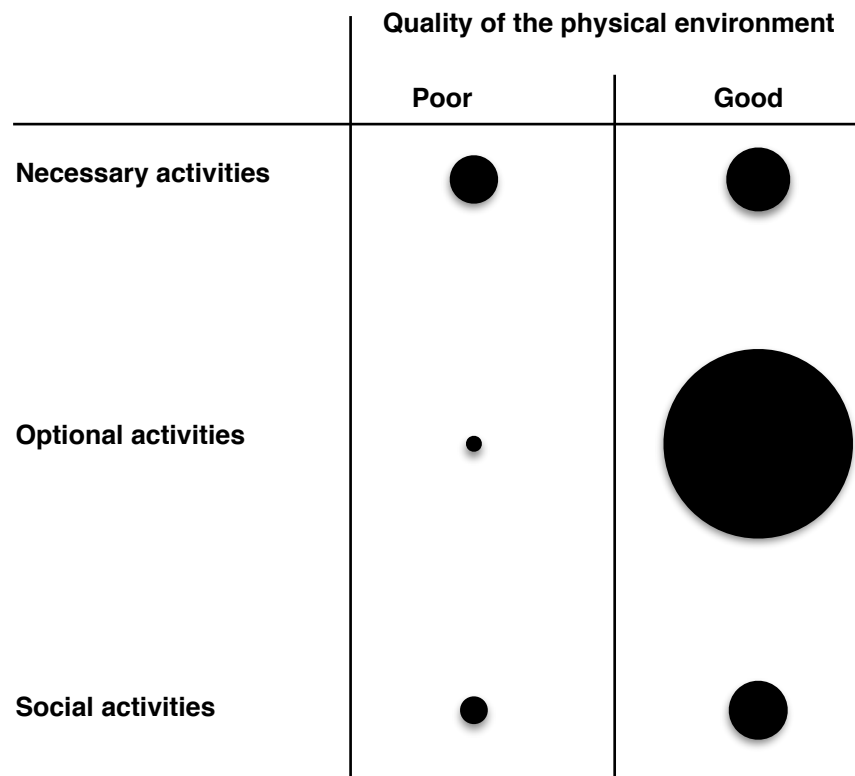


Figure 15: Activities that take place in public spaces according to Jan Gehl, 1996.
 The graphic shows the relationship between good physical qualities of public spaces as a condition which will not allow necessary and resultant-social activities but will invite more optional activities which encourage liveability in urban settings.

2.4 Developed protocol:

The methodology of this protocol bases mainly on Jan Gehl studies and analysing the two concepts of GEHL Architects and PPS that have been previously reviewed.

Methodology will depend on two scenarios in referring to the two periods that this study is going to examine: the Before-tram-scenario (B), and the After-tram-scenario (A), which will be tested through three approaches; behavioural mapping that can applied for (A), the questionnaire for both (A) and (B), and direct observation and photo analysing for (A) and (B).

But it's important to notice that verifying the functionality and efficiency of public space with a new tram system passes it doesn't mean necessarily that there is only one method to explore that, which is the comparison between (B) and (A), but it can be examined by measuring the actual capacity of the space in responding to public life requirements and providing an attractive and welcoming environment for people to stay. Thus, implementing a new tramline in a public space is must be evaluated not only in the sense of its capacity/ efficiency as a public transport system, but its ability to develop a better public space can provide all comfort, enjoyment and positive aspects that forest identity and enhance social cohesion in the city.

In reviewing the previous studies and concepts of how to test and evaluate the quality and attractiveness of a public space that Gehl and PPS did, several issues come to mind about them, for instance some points that might be missed in one of the two concepts can be found in the second, and how one complies to the other, or even issues related to each of them separately.

One of these issues is the duplication of how each of the key qualities that Gehl proposed can be perceived in relation to other indicators that sorted in the other key qualities, for example the aesthetic quality that may be contained in a public spaces is not necessarily restricted only to the enjoyment level in the space but the sense of comfort as well, in the same manner the possibility to do different activities in the space can be considered an attractive factor causes enjoyment for people as much as it is considered a comfortable indicator within the "comfort" key quality listed by Gehl.

Accessibility as an important factor that indicates interactivity between public space and it's social surroundings and refers to the success of a public space, is

not focused on within the three key quality list in Gehl approach, while we can see it as one of the four main keys in PPS approach.

PPS Also when reviewing the “place diagram” in their concept and the four key qualities for public spaces they identify: Sociability, Uses and Activities, Access and Linkage, and Comfort and Image, it is clear that sociability of the space can be measured according to this diagram by several indicators including the evening use and the street life which are both related directly to the activities and uses in the public space, the thing that reflects the area of the overlapping and influence of each on another and makes the measurement approach related to four key qualities as a whole more than referring to one specific key quality. By analysing the two concepts of how Gehl (through his theory and application) and PPS analysing the quality of public space in the city, The study concluded a criteria composed of three key-qualities each of them includes several indicators to evaluate the quality of public space, and this criteria can be considered as a protocol to examine Rue Nationale the case study in this research.

The three key-qualities the protocol contains are:

1. **Protection:** which includes the sense of protection for users from the exterior factors that may affect people in the place, and this key-quality is composed of several indicators such as the feeling of safety in the public space (against traffic, accidents, violence and crimes) and the evening use that refers to efficiency of the space and the feeling of security as well, and the ability of the public space to provide a protection against the unpleasant different weather conditions such as hot sun in summer or snow, wind and rain in winter. Figure (16)
2. **Ability:** which means the (Ability) of the space to act in an efficient way in terms of how people use the space and feel more comfortable for being in it. This key-quality is contains different indicators refer to the efficiency of a public space such as: Walkability which is the ability of the space to provide room for comfortable walking comfortably and safely with no obstacles, Sit/ Stay-ability which means if this public space able to provide suitable places for people to stay or sit (sittings, benches, or edges) to take a rest or to enjoy the atmosphere, Sociability which is also the ability of public space to provide un attractive zones for people to contact and socialise, and Accessibility which means how public space are accessible or can be reached from different parts of the city.

3. **Attractiveness:** and the positive scene experience including several aspects that attract people to come to this space such as the good design, beautiful maintained façades and surfaces with new and high quality finishing, details, materials and lighting quality, the different artistic interventions that can be added to the public space and increase the beauty of the place (street arts, statues and sculptures or other colouring studies...etc), the clean beautiful streets with fertile views of trees, plants and water, and the suitable space and buildings dimensions that match human scale. The Image of the place is another important aspect can be sorted in the Attractiveness key-quality and what are the specific factors that influence people perception of their public spaces. The type of uses and activities that take place in the public space and how much they match people needs are considered an essential aspect that can attract people in medium and long terms.

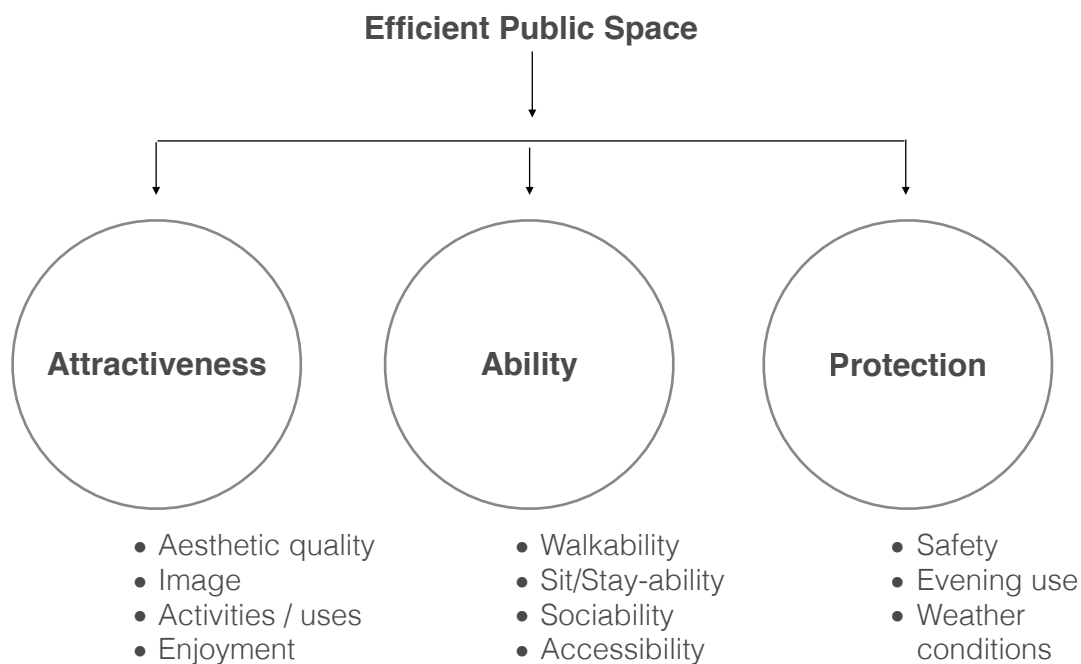


Figure 16: Diagram of the three key qualities of the proposed protocol clarifies the several indicators for each of them that can be measured in order to examine and evaluate Rue National public space. (Author)

2.4.1 Measurement approach for the protocol key qualities

In order to apply this protocol on the case study Rue Nationale, the adopted key qualities must be verified through one or more of the three approaches have been mentioned before: the direct observation and behavioural mapping, the questionnaire and the photo analysing.

A. Protection

- Safety (protection against traffic and accidents):

The first point is to find out weather the tram implementation decrease or increase the feeling of safety for people walking/cycling in the space, and this can be achieved through:

- A comparison of cars numbers between (B) and (A), and as there are no statistics clarify the numbers in (B), the fact that cars and most of the buses were operating in Rue National have been neutralised in the new study of the tram, could give us a clear conclusion about the decreasing of cars numbers in Rue National.
- A comparison of numbers of the crossing roads with pedestrian's paths in Rue National between (B) and (A), which can reflect the possibility of occurring accidents.
- Explore the cycling possibility in Rue National in both periods (B) and (A), and find out weather the new urban design of the space affords better environment for cyclists to move with more safety, and by comparing the two situations (B) and (A) through using photos of the space, and it can be obtained within the questionnaire as a question about if there are any improvements have been done to facilitate cycling in Rue National and make it easier and safer. (Table 1)

Do you think it's safer for you to cycle in Rue Nationale now than before tram implementation	
Answer -1-	Yes it's more safer to me now
Answer -2-	No, It was more safer to cycle before the tram
Answer -3-	There is no difference for me between both situations

Table 1: Sample question about how to test the safety degree in cycling in Rue Nationale (researcher)

- Evening use

As there are no specific statistics about number of crimes or violent accidents occur in Rue Nationale space, and as this point is related directly to activities happen in Rue National and how people are using the place, so this point can be investigated through comparing number and time of activities, and the last journey/pass of public transport in the street.

- Weather conditions (Protection of unpleasant experiences: wind, rain, sun, pollution)

On the basis that this study has been worked on within the four months of spring-summer period, and the specific observation actions have been done during May, so it's difficult to find out weather the space provides an acceptable protection of rain and wind which required a winter-time observation or of sun which required a summer-time observation as well, so this type of protection will be limited to pollution levels caused by vehicles passes in the public space, and since cars passage have been prevented in the street and buses were replaced with electricity-based transport system, so it's obviously that pollution levels have been declined in Rue National after implementing the tram.

B. Ability

- Walkability:

Which can be explored through three points:

- Room for walking, and the fact that public spaces must provide enough free space for pedestrians to walk through comfortably. So to discover weather the new implementation has made this possible and in a better way than before, the study proposes to investigate this through the questionnaire about the better place to walk through if it is (B) or (A), (Table 2)

Do you feel more comfortable to walk in Rue Nationale after or before tram implementation?	
Answer -1-	Yes I feel more comfortable now
Answer -2-	No, It was more comfortable to walk in before the tram
Answer -3-	There is no difference for me between both situations

Table 2: Sample question about how to test the comfort degree in walking in Rue Nationale (researcher)

- No-obstacles, that may make pedestrians feel uncomfortable while walking, and this can be measured through a comparison of these obstacles (number, position, and type of them in the public space) that hinder pedestrian movement such as intersections, paths crossing streets, signs, paving, trees or plants, and level differences. This comparison can be figured out through the present observation by mapping locations and numbers of the different types of obstacles in the Rue Nationale and then comparing them with what can be found in the previous photos of the place before the tram.

- Sit/Stay-ability:

Which can be explored through two main points:

- The existence of sittings, benches and attractive edges (the edge effects) in the space. For (B) scenario this can be done by photo-analysis (counting and mapping seats and bunches that can be appear in photos), and for (A) scenario by direct observation and mapping all elements in public space.
- The existence of a clear and defined spots for staying that are protected from people flow effects in the place, which can be analysed through mapping the resent pedestrians movement and find out if there are an applicable zones for seatings that can be developed in further studies, or the tram-corridor directs the general movement within the street in a way that's hard to provide more seatings.

- Sociability:

Since the social interaction is considered an important factor that makes public space more attractive for people to participate and socialise, it's essential then to evaluate the space through its ability to provide potentials of social interacting such as talking and hearing, and to achieve such an evaluation two things must be explored:

- Whether this new modification has reduced the noise level in the public space: to have an accurate outcomes about this point, it's essential to do some specific measurements of the noise level in the street and compare them with the what it was before the tram existence, but as it is difficult to conduct those tested before the tram, we can extrapolate the reduction of noise level in Rue National through the shrink of the number of vehicles and buses pass in the street.
- The second thing If the public space provides a possibility to create a "talk space": through some benches arrangements which can be explore

through mapping sittings that are located along Rue National and discover whether these benches/sittings are located in a way that creates a possibility to start a talk between people there.

- Accessibility:

To test Rue Nationale accessibility, a map analysis must be done that clarifies possible accesses to the place and the type of transport systems available.

C. Attractiveness

- Aesthetic quality:

Which can be discovered through several elements within the space such as:

- the aesthetic quality of façades and surfaces (if it's new with high quality finishing, have a rich design or historical value...etc).
- The clean and frequently maintained public space have a better aesthetic quality.
- The artistic interventions that can be added to the Rue Nationale space and increase the beauty level such as street art, colorimetric studies or statues and sculptures, and in our case it's the artistic intervention that have been done by Daniel Buren⁸ at the tram-stations

The aesthetic quality of Rue Nationale can be examined through observation and photo analysis, and the questionnaire as well.

- Image:

To discover people perception of Rue Nationale space and what can form their image about it the most efficient way beside recognising the landmarks that exist in the place is to poll what users perceive through the questionnaire.

- Activities/uses:

Good public space is the one that afford an appropriate ground to promote different types of activities for people from different ages to participate in, so this can be discovered through doing a behavioural mapping in order to find out types, number and frequency of these activities that take place in Rue National.

- Enjoyment:

The fact that the more and varied areas we're able to see in a public space the more feeling of comfort we feel can be related mainly to the potential of seeing distances in the space, potential of seeing interesting views and the degree of lightening in the space that gives the ability to use it at different times. So to explore that, a photo-analysing will be done for the space from different

⁸ Daniel Buren, a French artist, the official website: <http://www.danielburen.com>

perspectives and views to clarify the visual potentials have been mentioned previously.

In order to enable the actual measurement and evaluation of the public space, the study summarises the three approaches that the protocol can be applied through:

I. Behavioural mapping:

This approach can help in mapping the different elements exist in the public space and in understanding and analysing the way people act while being there, and to do a behavioural mapping for Rue Nationale a counting at different times during the day and the week must be done which can enable us to make a comparison the numbers of pedestrians, people sitting, cars and bicycles that have been counted at different times (day and night time, weekend day and working day, and summer and winter...etc) (Figure 17).

PEDESTRIAN COUNT FORM					
Date: <u>11/1/86</u>		Duration of Count: <u>12 MIN.</u>			
Location: <u>MAIN STREET</u>		Observer: <u>SD</u>			
TIME	DIRECTION EAST		DIRECTION WEST		TOTAL
9:00		24		11	35
10:00		26		11	37
11:00		25		11	36
12:00		27		13	40
1:00		26		12	32
2:00		12		8	20
3:00		21		13	34
4:00		20		12	32

Figure 17: Pedestrian count form clarify the counting method that's followed by PPS, Source: Technique: Counting, PPS website: <http://www.pps.org>

Besides doing these comparisons counting enable us as well to map the flow of people/cars in the space.

In applying this approach to Rue Nationale, a counting form has been developed to fit the space requirements like the two main zones of movement in the street (the tram corridor in the middle and the sides zones). (Table 3)

Behavioural Mapping in Rue Nationale		
Counting	Number of people and bicycles passing through (B) section within 20 minutes	
Date	Thursday, June 5, 2014	
9:20 - 9:30	Middle	Sides
Men		
Women		
Bicycle		
Total No.		

Table 3: Counting form to be used in Rue National, Author.

II. Questionnaire:

Including the different questions that will be asked to Rue National Users, and will complement mainly the (B) period⁹

in this research due to the lack of some important information and statistics related directly to the subject (such as previous studies about public space quality in Rue National before the tram, statistics clarify necessary points for comparisons such number of vehicles and traffic accidents in the street, number, type and frequency of social activities in the place...etc), and also to spotlight the unreachable data that related to quality of public space in recent such as comfort and enjoyment indicators for instance.

The questionnaire consists of the following questions:

A. Questions related to Protection key-quality:

1- Do you think it is safer for you to cycle in Rue National at present than before tram implementation? (Safety question)

- Yes it's more safer to me now
- No, It was more safer to cycle before the tram
- There is no difference for me between both situations

2- At which time you be in Rue National usually? (Evening use question)

- At different times of the day
- Between 9 am to 3 pm
- Between 3 pm to 9 pm
- Between 9 pm to 3 am

3- Why you do not prefer to visit Rue National at night (after 10 pm)? (Evening use question)

- No usually I go there after 10 pm.
- There are no activities such as bars, restaurants, clubs...etc.
- I feel unsafe to visit Rue National after 10 pm.

⁹ (B) period in the study refers to the period before implementing the tram in Rue National, see page ?? (author).

B. Questions related to Ability and Attractiveness key-qualities:

4- Do you come to Rue National more frequently after the tram implementation?
(Aesthetic quality, enjoyment, activities, accessibility and sociability question)

A. Yes, Now I come more:

- Because it is more faster and accessible to come in with the tram now.
- Because I enjoy walking and spending some time here with the new design and finishing.
- Because there are more activities in the street than before.
- Because I have the opportunity to meet and speak with more people now.
- Other reasons:

B. No, I used to come more before:

- Because I preferred the space as it was before with previous elements and materials.
- Because I had the opportunity to meet and speak with more people before.
- Because it was more easier for me to come in by my car or by bus.
- There were more and various activities in the place than now.
- Other reasons:

C. The same for me

5- Which one you prefer, to walk in Rue National before or after the tram?
(Aesthetic quality and walkability question)

A. To walk in Rue National after the tram implementation

- Because there is room for walking
- Because of the attractive environment (beautiful façades and finishing materials)
- Because of the comfortable pathways with no obstacles (steps, signs, intersections)
- Other reasons:

B. To walk in Rue National before the tram implementation

- can you explain why:

6- Do you usually sit / stay in Rue Nationale? (Ability question)

A. No, i don't.

- Because there are no benches to sit.
- Because all the space is occupied for pedestrians and there are no designated zones for people to sit and stay.
- Other reasons:

B. Yes, I used to sit/ stay when visiting Rue National.

- Can you explain why:

7- What attracts you more in Rue National? (Aesthetic quality question)

- Interesting façades and beautiful surfaces.
- New finishing and materials for paving and tram-stop.
- The new artistic design of the tram-stop.
- Other reasons:

8- How do you prefer to come to Rue National? (Accessibility question)

- By tram
- By car
- By bus
- Cycling
- Walking

9- How did you come to Rue National before the tram? (Accessibility question)

- By car
- By bus
- Cycling
- Walking

10- If I said Rue National, what is the thing that comes to your mind? (you can tick more than one box) (Image question)

- The stores.
- The cafes.
- Walking and enjoying the weather.
- The cathedral.
- The tram-stations.
- The museum.
- The beaux arts school.
- Other things (please write):

11- Which type of activities in Rue National you participate in more, before the tram? (you can tick more than one box) (Uses and activities question)

- Shopping
- Walking
- Reading

- Sunbathing and enjoying atmosphere.
- Drinking a coffee
- Waiting for tram
- meeting a friend
- Attending music concert.
- Playing your children.
- Visiting a museum/ library.

12- Which type of activities in Rue National you participate in after tram? (you can tick more than one box) (Uses and activities question)

- Shopping
- Walking
- Reading
- Sunbathing and enjoying atmosphere.
- Drinking a coffee
- Waiting for tram
- meeting a friend
- Attending music concert.
- Playing your children.
- Visiting a museum/ library.

III. Direct observation and photo analysis:

Direct observation at regular intervals gives a clear understanding of the place functionality and vitality and how people act at different time of the day or year, so it's easier for the actual use of the space to discover the various activities that attract people to participate or the different facilities and installations that make the place more comfortable and more safer. And it's the same for photo analysis that enables to test the different potentials that visual aspect of the space landscape offers such as the possible perspectives of the landscape (big garden, forest, river or levels differences) which gives an attractive value and adds a different dimension of the space sensually and visually.

Part 3: Empirical Study

3.1 Public space in Tours city

3.1.1 History of public space in the city:

- Tours city

Historically, Tours city had an east-west extension along La Loire river where it consisted of two different centres; to the east the ancient Roman city, and the other one in the west which is the town of Chateauneuf that is located around the abbey and the basilica of Saint-Martin. (Figure 18).

By XIV (fourteenth) century and after the Hundred Years War, the two centres became one by the influence of protection necessities and the construction of the large enclosure that surrounded the two urban centres, so an east-west axis had been structured to facilitate/connect the movement and commercial activities between the two parts; Colbert street which bound/ connected Saint-Gatien Cathedral to the Basilica of Saint-Martin.

Besides of the new urban focus which was emerged as the “the junction/ the new centre” that connected the two medieval parts, two other things that helped to the emergence of the new north-south axis; the first one was the increased interesting of the north bank of the river hillside of St- Symphorien, and the other important factor was the trend to build a road connects Paris to the south-west part of the country leading to Spain in the eighteenth century. (AUAT, 2010).

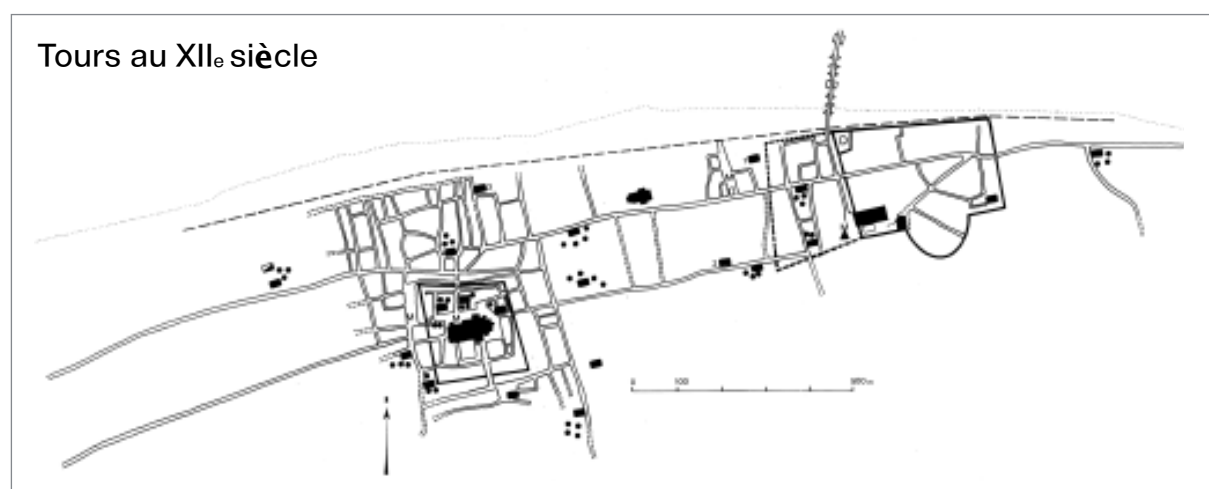


Figure 18: Map of Tours in the twelfth century clarify the two old centres. Source: Le Haut de la rue Nationale, Deux ou trois choses que nous savons de lui, Tome 1 Histoire de place, Agence d'Urbanisme de l'Agglomération de Tours, Avril 2010

Even the north-south axis was built in stages, it was considered with the last completion part that connected the north part (Rue Royal) with the south part (Grammont) in the eighteenth century as a big urban development in the city not just as a new road connected Paris to the south west part of the country leading to Spain, but because it was a major road crossing the city and creating new opportunities as an urban and public space development had farther effects on urban and social life and the city growth as well.

- Rue National

Rue Nationale in Tours was always as a meeting place between the city and the river, and then became the door-entrance of the city.

Rue Nationale is located in the centre of Tours city, it's about 700 meters long and extended over a flat land between La Loire river in the north and Place de Jean Jaures in the south.



Figure 19: Map clarifies the tram network in Tours city in 1930. Source: <http://letramdetours.net/avant.php>

Rue National belongs to the main north-south axis in the city which includes the Avenue de la Tranchée, the Pont Wilson, Rue National, and the Avenue de Grammont.

Historically Rue Nationale forms main axis of the transport system in the city, and has seen with the beginnings of the nineteenth century the first tram line in the city. (Figure 19)

3.1.2 The study of tramline proposal

Mr. Olivier Schampion an engineer at ATU (Agence d'Urbanisme de l'Agglomération de Tour) and one of the team worked on the tram project explained the criteria adopted in the design process and how they studied the different possibilities of the tram line in Tours city in order to serve the maximum number of people.

The team proposed at the beginning two lines can serve the city more efficiently (actually they were four segments, two start at north of Tours and two start at the south to connect in the centre forming the two main lines possibilities) (Figure 20), and then decided the best options among them through studying the population density within the city, and existed bus-lines before the tram, they



Figure 20: The two options for the tramline proposed in ATU study. Source: Agence d'Urbanisme de l'Agglomération de Tour

worked then to match the most efficient bus-lines with the highest densities within the whole city, so they could choose the more appropriate tram line which fits the highest percentage of people living in Tours and the efficient compensation of the pre-existed buses lines as well.

Next step was studying the urban integration components within the different sectors influenced directly by the tramline, so ATU team determined 14 sectors that must be taken into consideration in the study because of certain issues/problems existed. (Figure 21)

Selection process has been done depending on a criteria developed to examine the urban integration components along the tramline which consists of five points:

- urban intensity
- Liaison (Connectivity) / Permeability / Crossing-platform
- Quality of urban areas and public spaces
- Urban functions / mix
- Image and Identity

And the 14 sectors resulted are:

1. Centre de maintenance
2. Monconceil
3. Carrefour de la Marne
4. Gentiana
5. Christ Roi/ Pilorget
6. Place de la Tranchée
7. Coiseul/ Wilson/ haut rue National
8. Ilot Vinci (la gare)
9. Place Tulasne
10. Station tram-train (mail Suzanne Valadon)
11. Pont sur le Cher
12. Pont Volant
13. Joué centre
14. Rabiére

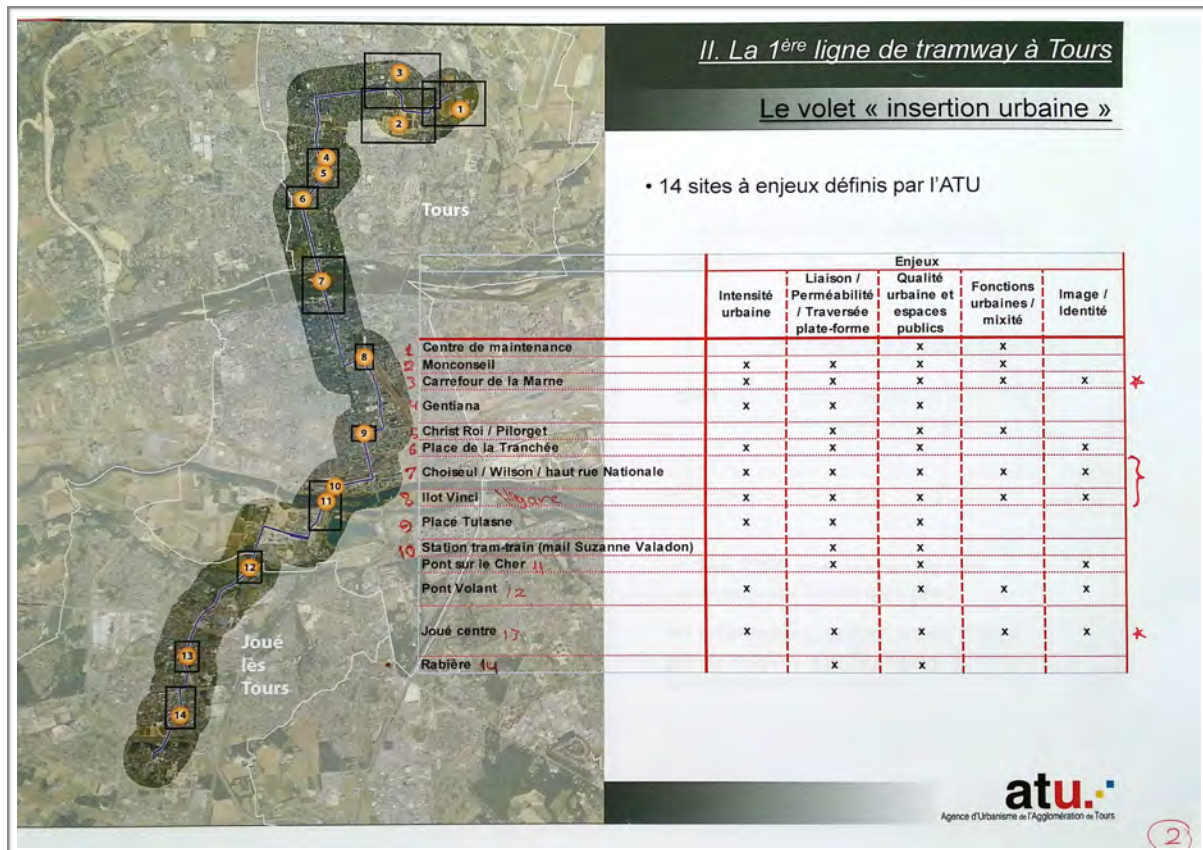


Figure 21: The 14 sectors in Tours determined by ATU to be focus on in the study. Source: Agence d'Urbanisme de l'Agglomération de Tour

The team at this stage studied in more details all the 14 places and determined the most three in need-cases along the tramline which are: La Gare, Rue Nationale and Place De La Tranchée.

- Rue National in the study

The main focus in this area was on three sections, the first one is the bridge on the river “Le Chair” which was before a car road (two directions with four lines; two lines for cars and two for buses) with two very tight side-walks at the both sides (1.5m for each).

The first proposed option was to replace the two inner lines of the road (the buses lines) into the new tramline and keep the rest of the road untouched. But to provide a bicycle line into the study it was essential to replace on of the two carline, and this step will be continued in the future by replacing the last carline in order to widen the pedestrian pathway along the bridge.

The second part was the narrower section along the street (section between Pl. Jean Jaurés and Rue Emile Zola)

The third part was the wider section along Rue National (section between Rue Emile Zola and Pl. Anatole France)

Within those two parts, the main concern was how not to affect pedestrians flow through the road, what justifies indeed why there are no benches or sittings areas along Rue National (at least within the narrower section).

3.2 Case study analysis:

The analysing process within this section will follow the previous approaches mentioned before: The behavioural mapping, the questionnaire and the direct observation and photo analysis, then conclusions of these outcomes will be sorted according to the main protocol criteria (Protection, Ability, and Attractiveness) in order to evaluate the efficiency of the public space.

3.2.1 Scope of work:

The study addresses Rue Nationale in Tours city as a case study which extended between Place Jean Jaurès (H. de Ville) and La Loire river (Figure 22), and the scope of work include the whole street divided into three sections due to the width differences along it, so there are three sections, section (A) with width of about 18.5 m and extended between Place Jean Jaurès and Rue Emile Zola, the second one is the section (B) with width of 23.5 m and extended between Rue Emile Zola and Rue Colbert, and the section (C) between Rue Colbert and Place Anatole France with width of 40.5 m (Figure 23)

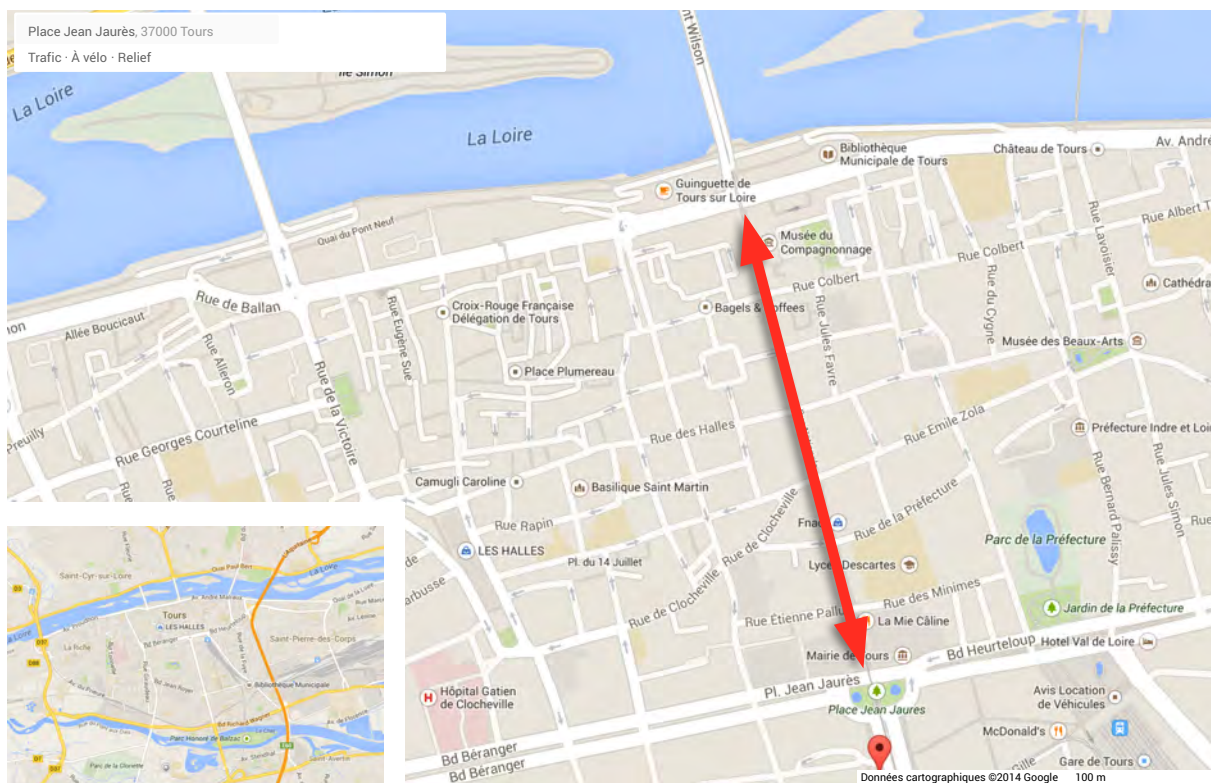


Figure (22): Location of Rue National

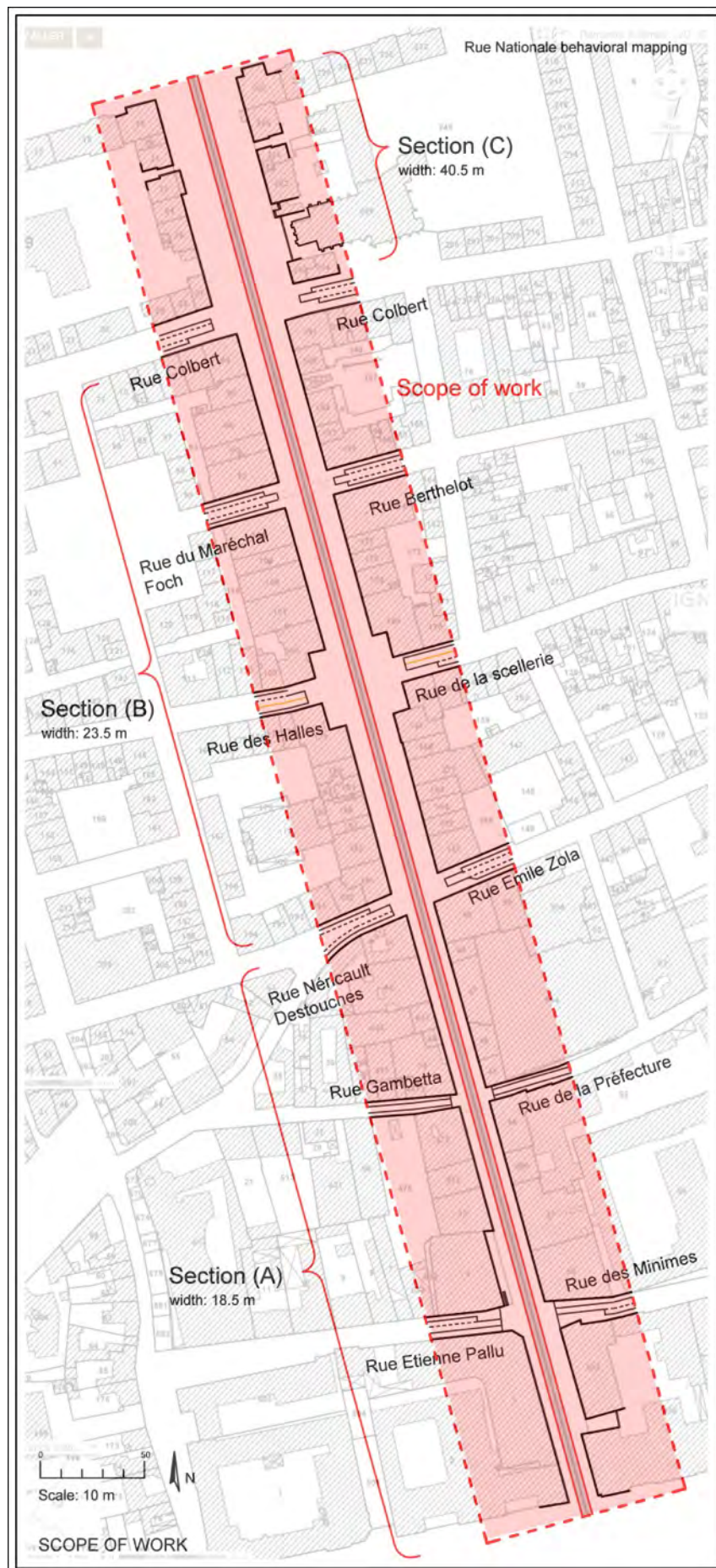


Figure (23): Scope of work in Rue Nationale.

3.2.2 Behavioural mapping:

A map that presents uses, activities and different elements exist in Rue Nationale is important to analyse the space functionality and understand factors that influence people behaviour in Rue Nationale, so each section of the three have been mapped and analysed.

I. Section (A):

The length of this section is about 300 m with fixed width about 18.5 m, most of activities at ground floor level are commercial (shops and stores) with only one small bakery with 4 tables outdoors and one bank branch (Figure 24).

The big differences in activities percentage along this section reflects the unbalanced uses in the street where there are about 1% for eat and drink uses, 6% H. de Ville side elevation which includes one private small entrance, 6% of the ground floor facade for bank usage are blind with one door, 4% is totally blind, and more than 80% in this section as stores and shops (Figure 25).

The previous percentages accompanied with the fact that there are no sittings and benches along section (A) and the narrow pedestrian space due to the tram corridor creates domination activities and uses such as walking and window shopping with less ability to provide another patterns that can increase comfortability in the space and enhance the sociability and interaction between people.

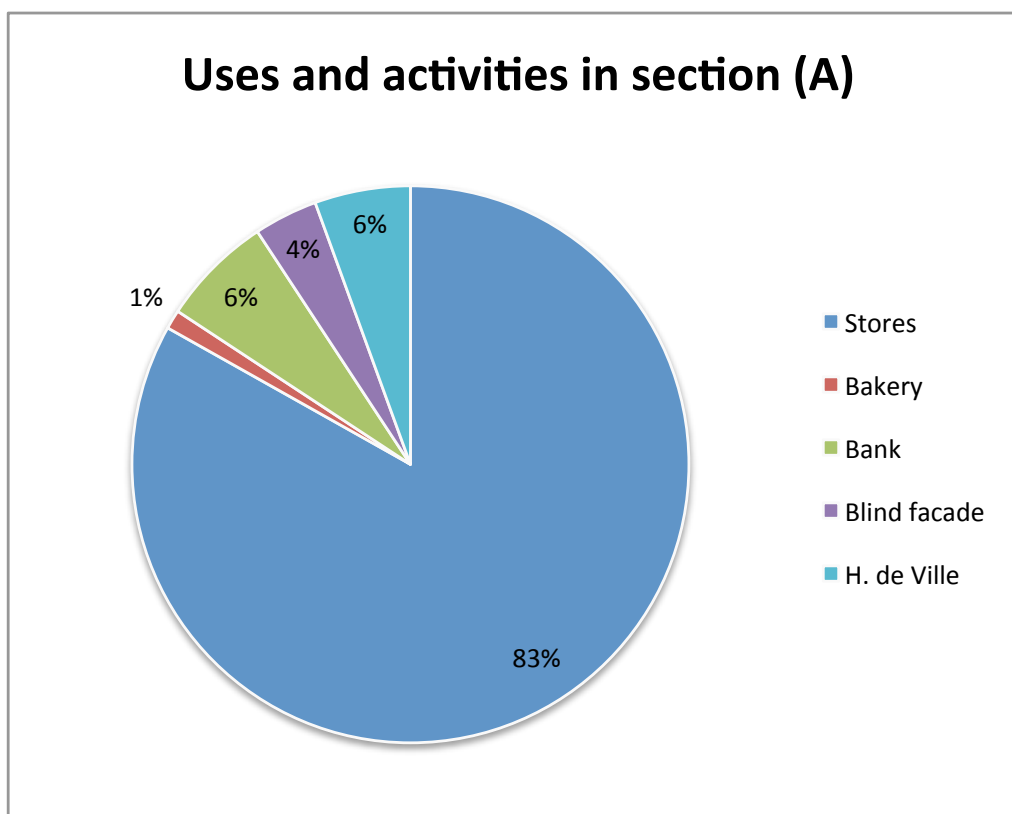


Figure (24): Activities and uses in Section (A), this chart clarify the huge differences in percentages between activities along section (A).

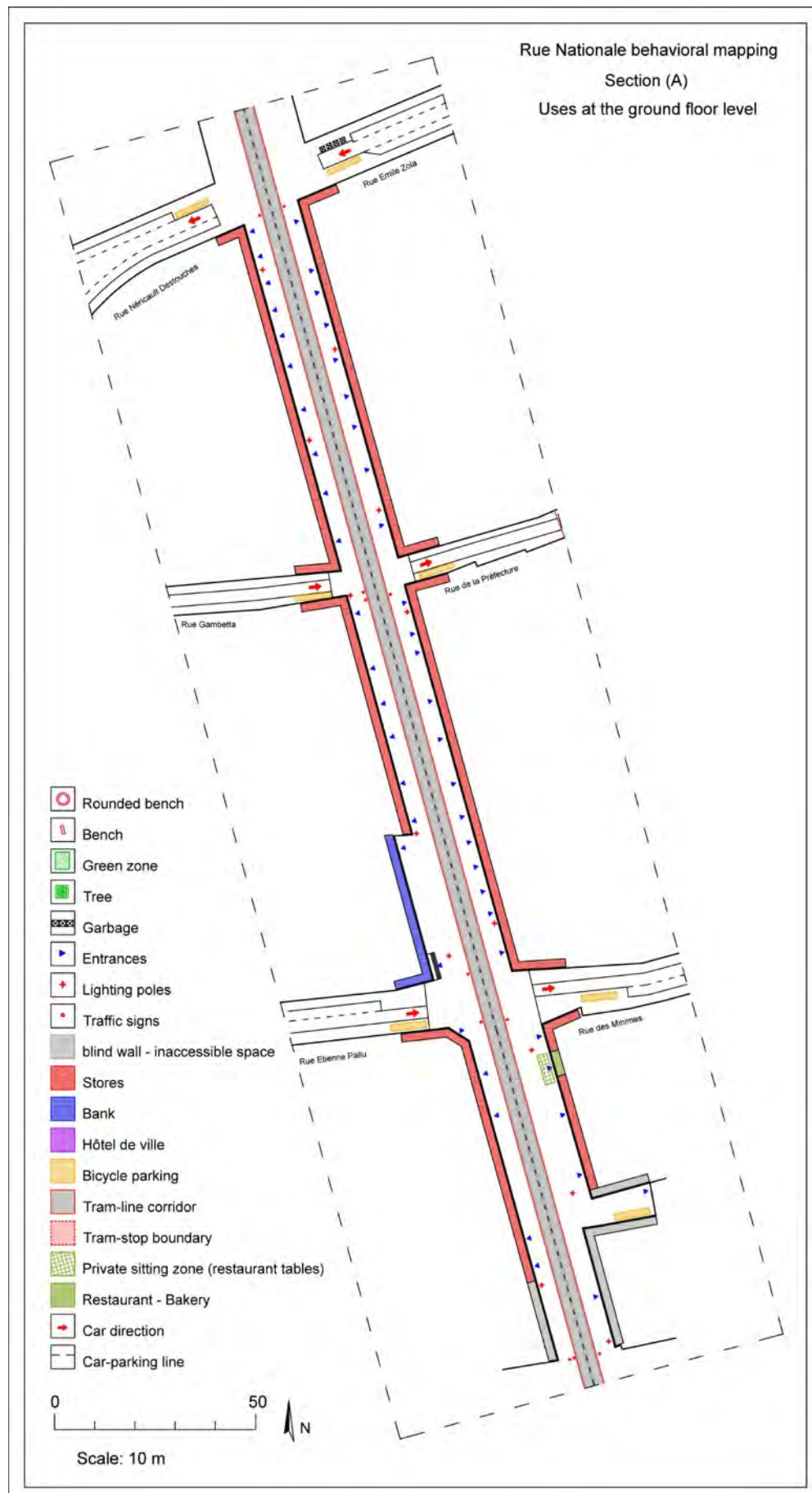


Figure (25): Activities and uses in Section (A).

In this section it's obvious that tram implementation helps creating more room for pedestrians and cyclists as it removes obstacles and barriers and creates the sense of one space for walking with cancelling all levels differences and using finishings that match each others in terms of colours and material texture. And also this implementation creates kind of flexible space use that gives people the freedom to use the space for walking or cycling in times between tram passage. (Figure 26)

Before tram implementation



After tram implementation



Figure (26): Two photos show entrance of Rue Nationale from Place Jean Jaurès before and after tram implementation, source: Google Map.

II. Section (B):

Its length is about 280 m with fixed width about 23.5 m expands slightly at the middle at the confluence with Rue des Halles forming a sort of square-intersection.(Figure 28)

Besides of the commercial activities which have the lion's share (about 86%) of total activities and uses in section (B), there are two banks (5%), one cafe (6%), one bakery (2%), and one small restaurant (1%) (Figure 27).

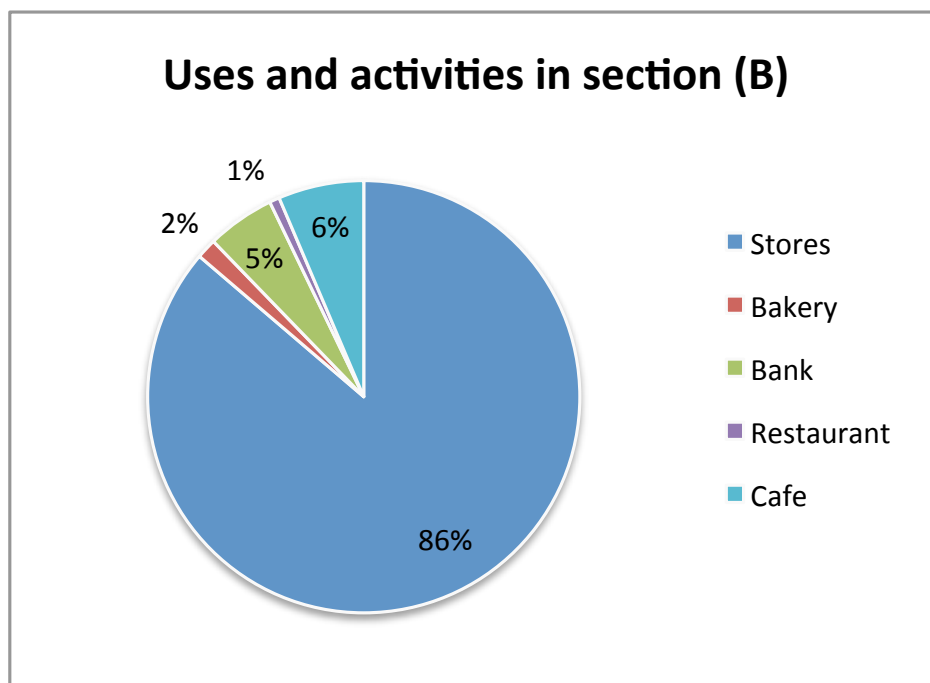


Figure (27): Activities and uses in Section (B).

Although this place is characterised by the tram-stop: (Rue Nationale) which increases accessibility and gives the space more vitality, it's obvious that uses in section (B) are still shaped with linear pattern of activity that influences how people act in the space. And even this section is 5 meters wider than section (A) but still the space is inefficient to host another types of activities because of the lack of sittings/ staying zones for users to take a rest and have a small conversation with other people especially if we know that there are just 4 benches in the whole section (excluding benches in tram-stop) which are situated individually in parallel and facing the tramline(Figure 29).

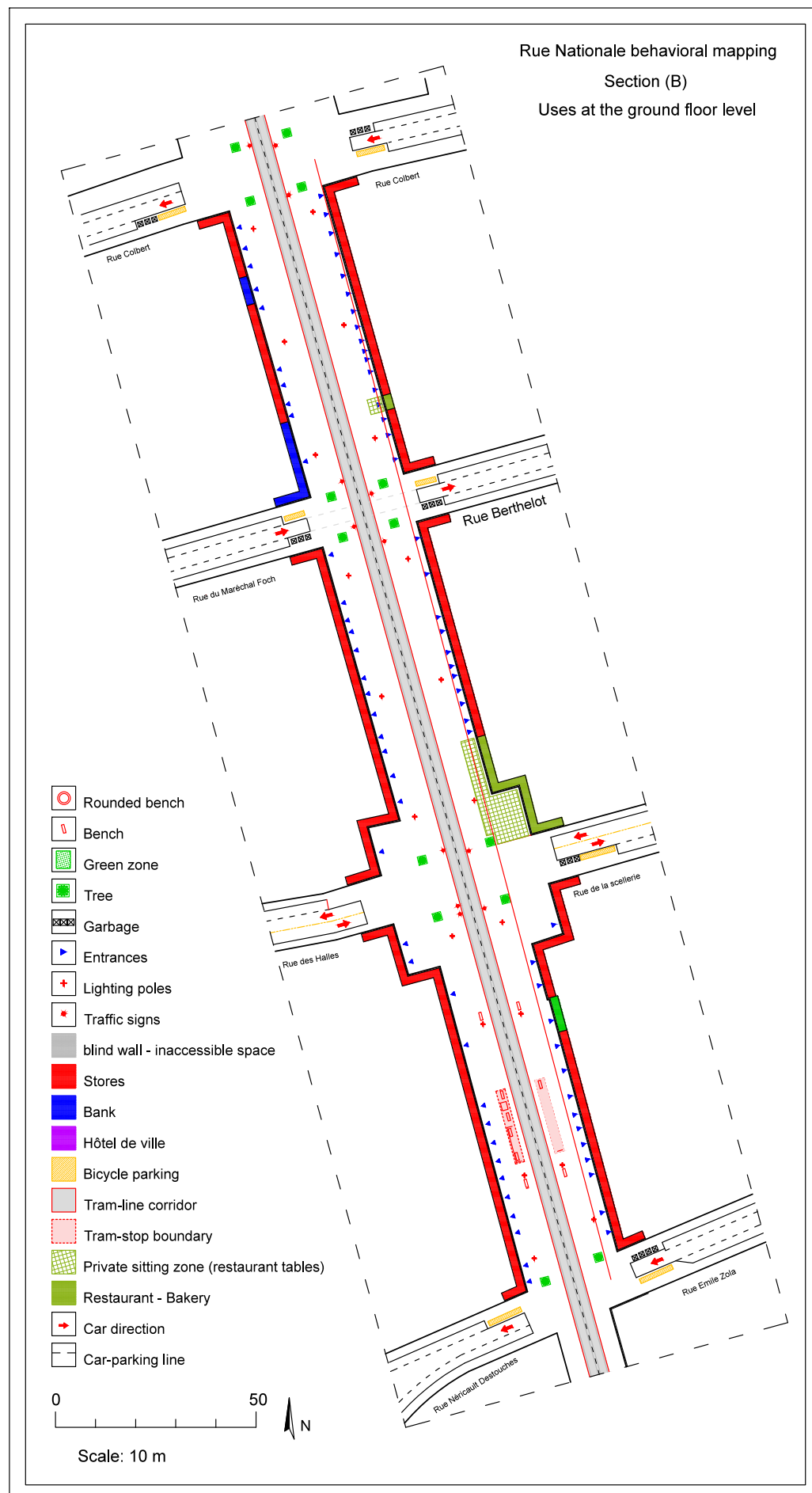


Figure (28): Activities and uses in Section (B).



Figure (29): Photo shows the way benches were installed in section (B)

Even the tram implementation in this section helps as the section (A) to create more flexibility in using the space and gives in general the priority of movement for pedestrians and cyclists at intersections, we can see that the new space design didn't use the emergence ability to change certain parts such as the junction of Rue Nationale and Rue des Halles from being an area where two car streets intersect into a public square that can host an attractive zones for pedestrian to socialise and feel comfort or have a break while doing the window-shopping activity. So instead of doing that, the study locates four tree boxes in a symmetrical way at the four corners of the old intersection and cuts out the four quarters of the new square-shape resulted because of the new study and turns them into inefficient separated spaces. (Figure 30)

Within a very linear public space like Rue Nationale where it is rare to find a gap that physical aspect and existed buildings allow, it's important to use the opportunity of studying the new tramline in order to stop the flow of the space and recreate the sense of stability in it.

Before tram implementation (2008)



After tram implementation (2013)



Figure (30): Two photos show section (B) in Rue Nationale before and after tram implementation, source: Google Map.

III. Section (C):

This section differs from the other two sections with its dimensions where it has a length of 110 m and a width of 40.5 m. (Figure 33)

Activities at the ground floor level are similar to those in the other parts put with differences in percentage for each one, the stores is more than 60% of the total use in the ground floor, three restaurants with about 12%, one bar and cafe with 6% and facades block two inaccessible parts with about 19%, the first is in front of Église Saint-Julien, and the other blocks an empty space. (Figure 31)

What sets this section apart from the rest is its physical aspect with dimensions closer to a rectangular stable shape separated partially from the continuous linear effect of Rue Nationale. And in addition to this, the low elevation with one story height (excepting the Église) gives the sense of space openness more than the other two parts that bounded with three stories buildings.

Another important aspects are the balanced presence of activities, 8 benches and the existence of trees (11 trees) and green areas which count about 180 m². (Figure 32)

Figure (31): Activities and uses in Section (C).

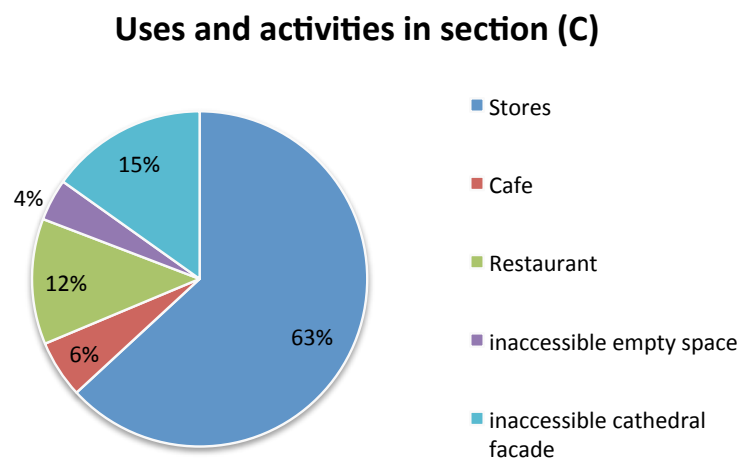
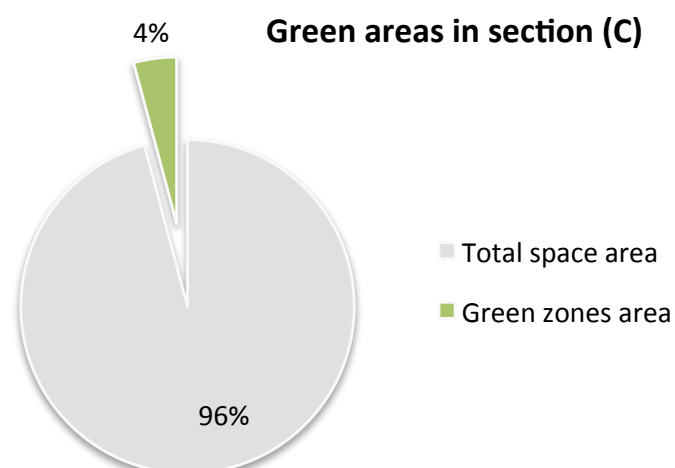


Figure (32): Green areas percentage in section (C).



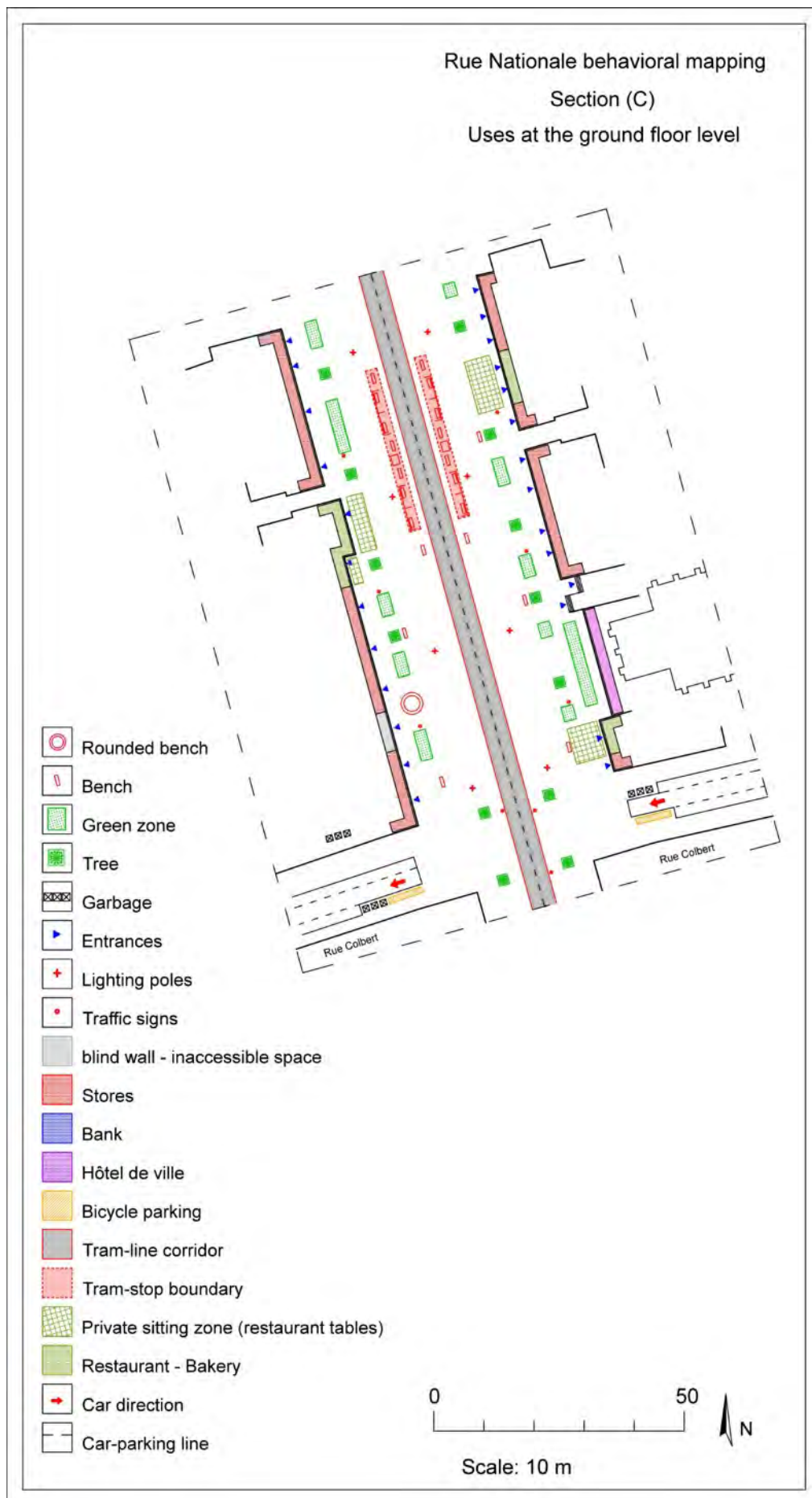


Figure (33): Activities and uses in Section (C).

3.2.3 Pedestrians traffic:

the pedestrians traffic counting has been done in section (B) and partially in section (A) during two days: a week-end day which is the Saturday the 17th of May 2014, and a working day Monday the 19th of May 2014.

this counting includes pedestrians and cyclists passing in Rue Nationale in two places: in the middle where the tram passes, and on both sides.

This counting aims to compare pedestrians numbers and cyclists at different times during the day and at the same time but different days as well. And also aims to examine the way people are using the space in both places (middle and sides) and discover whether the new tram implementation accompanied with new paving and finishing materials could change people perception about the typical divisions of uses in the street (the car-path and the sides-walk) and lead to re-perceive the space as a whole, enabling people to move freely with the frequent ability to make room for the tram passage.

The counting has been done at four different times during the day that match the peak-time periods where the possibility of presence of people is greater, at 9:00 at the morning (counting always for 20 minutes from 00:00 to 00:20), at midday 12:00, afternoon at 17:00 and 21:00 at night.

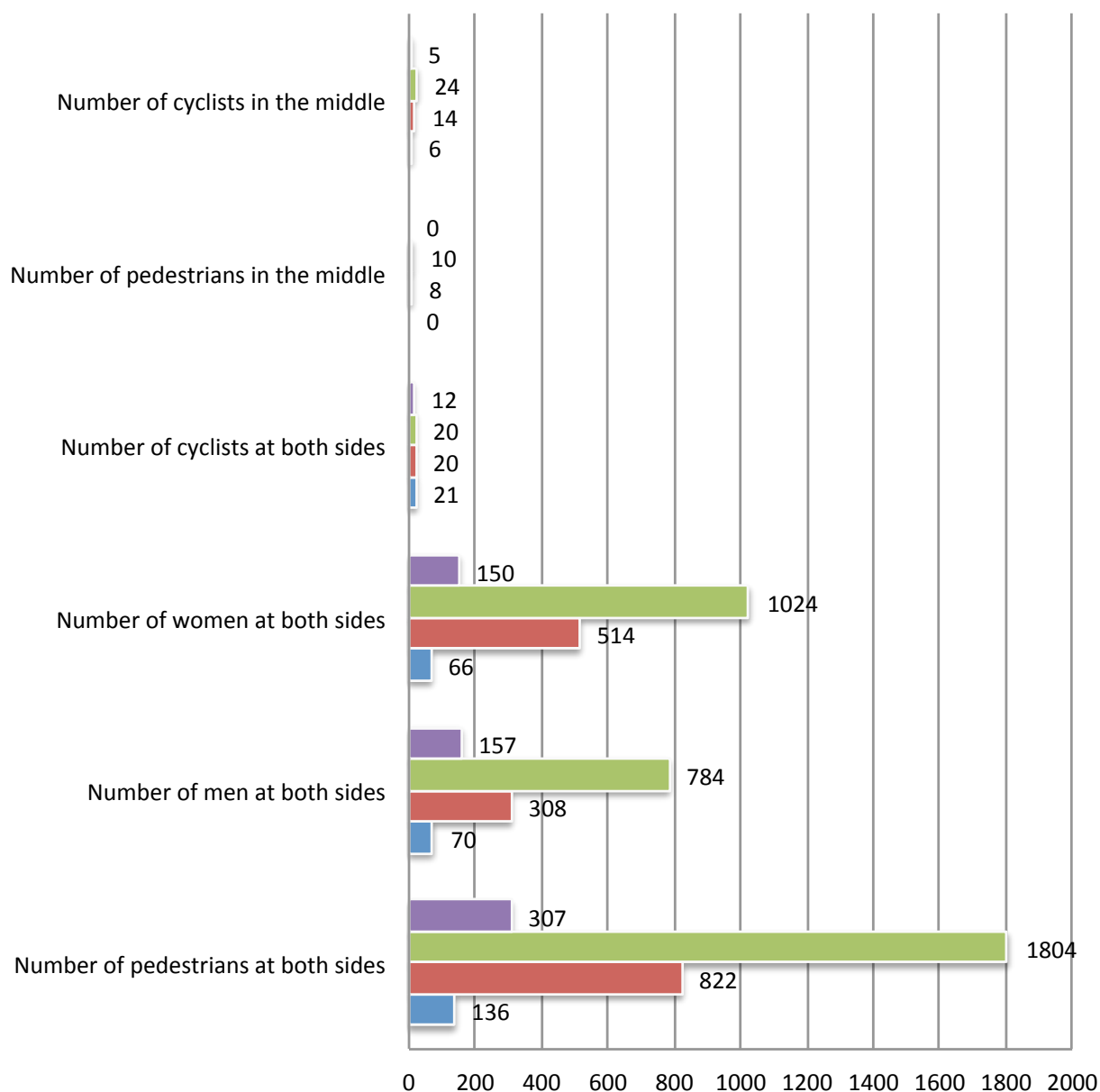
I. During a week-end day:

The counting of people during a week-end day shows a massive passage for pedestrians (men and women) at the sides specially at afternoon time (between 17:00 and 17:20) where about 1840 persons passed during the 20 minutes (Figure 34), while this passage decreases in the morning (9:00) and at night (21:00) when the stores are closed.

Direct observation and numbers of pedestrians in the middle refer to a sort of compulsory behaviour for few persons to avoid the massive passage at the sides which cannot make room for walking especially during the day (at 12:00 and at 17:00).

Cyclists movement doesn't appear it is influenced by the activities in Rue Nationale and this can be inferred through almost the equal number of cyclists passed during the day especially at the first three times (9:00, 12:00 and 17:00), while the movement of cyclists in the middle increases at times congestion using the unoccupied space between the passages periods of the tram.(Figure 35)

Pedestrian and cyclist Traffic in Rue Nationale



	Number of pedestrians at both sides	Number of men at both sides	Number of women at both sides	Number of cyclists at both sides	Number of pedestrians in the middle	Number of cyclists in the middle
■ From 21:00h - 21:20h	307	157	150	12	0	5
■ From 17:00h - 17:20h	1804	784	1024	20	10	24
■ From 12:00h - 12:20h	822	308	514	20	8	14
■ From 9:00h - 9:20h	136	70	66	21	0	6

Figure (34): Pedestrians and cyclists traffic recorded in Rue Nationale in a week-end day,

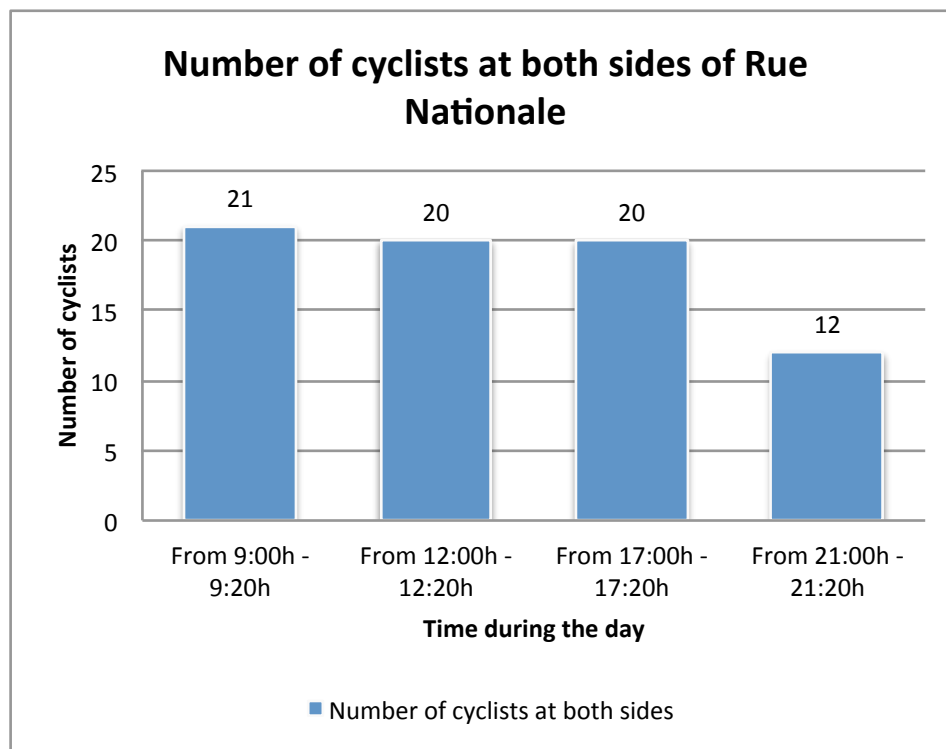


Figure (35): Number of cyclists passing at both sides of Rue Nationale during a week-end day,

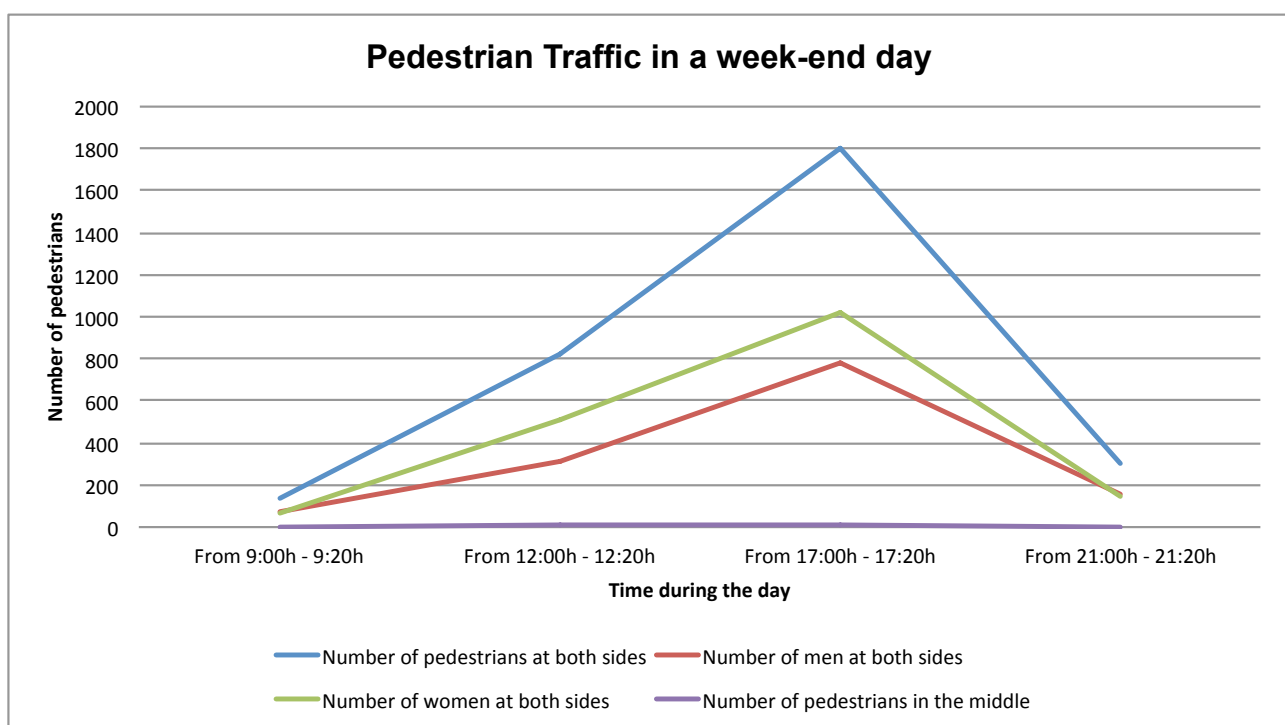


Figure (36): A comparison between pedestrians numbers at both sides of Rue Nationale during a week-end day.

Figure (??) presents a comparison between numbers of men and women pass in Rue Nationale during a week-end day that shows an almost equal numbers out of hours (at morning and night) and an obvious difference with a preference for women during the day (at 12:00 and 17:00). And this indicates somehow that the passing-through activity takes place clearly at morning and night records a balanced numbers of users of both sexes while women show greater attention of window-shopping activity. (Figure 37)

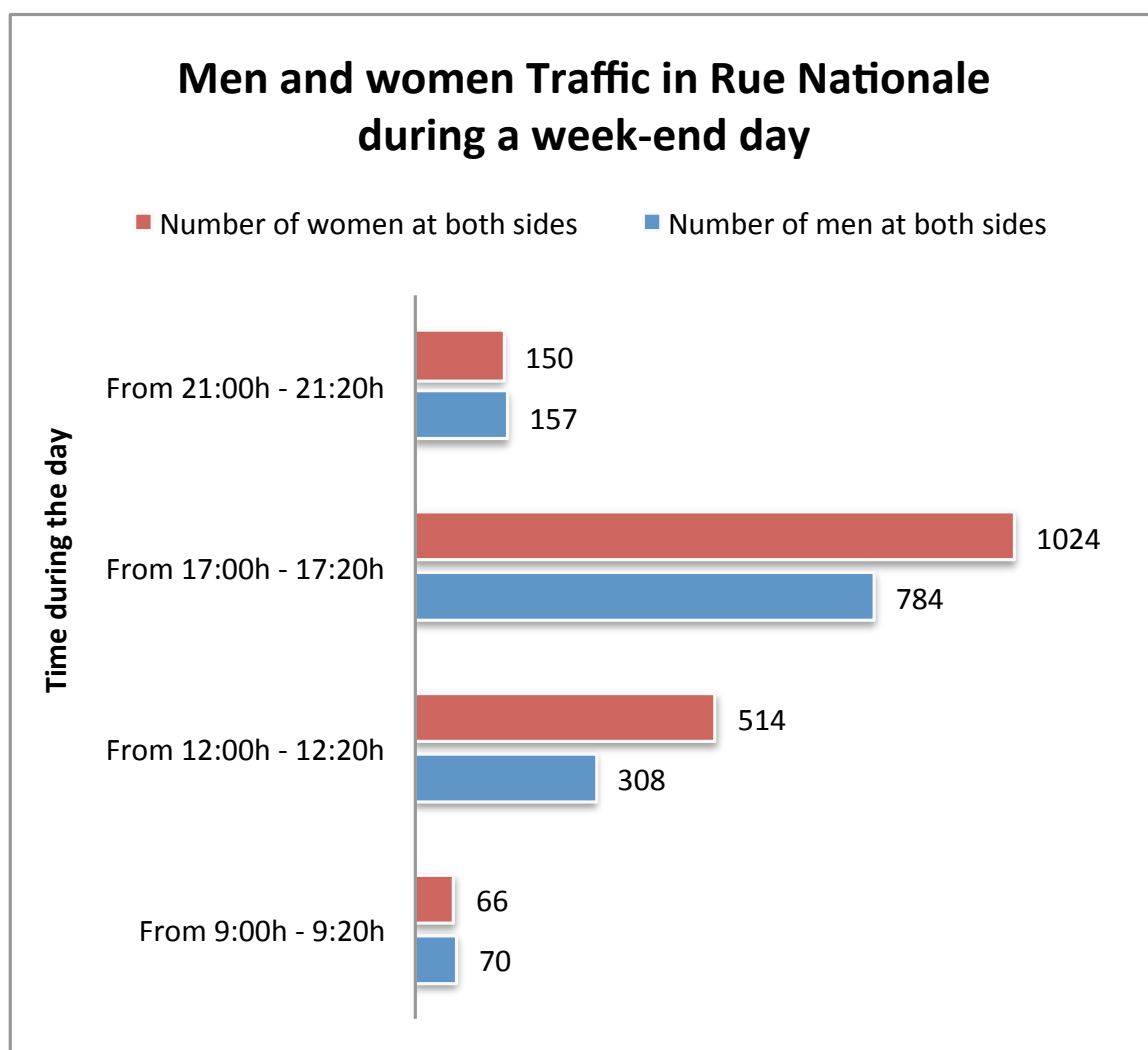


Figure (37): A comparison between number of men and women walking at the both sides of Rue Nationale during a week-end day,

The way people use the two spaces (middle and sides) in Rue Nationale are different according to the time of passage, walkability and the width of the section. The highest rate of pedestrians passing in section (B) was recorded in the week-end day afternoon (17:00 to 17:20), so another counting has been done at the same day and time for pedestrians in section (A) where the width is less than other parts and the most portion of pedestrians are moving between the two sections directly.

The results show while the numbers at both sides have changed slightly (between 1804 persons in section B and 1790 in section A), numbers of pedestrians in the middle increased hugely from 10 persons in section (B) to 232 persons in section (A), and this refers to the massive traffic at peak times that causes people to seek empty spaces that make room for walking in places with narrow width like section (A), and in the other hand shows flexibility that allows to switch the way space is used from one pattern to another and reflects the ability of the Rue Nationale space after tram implementation to provide a good example for using the space with high efficiency. (Figure 38)

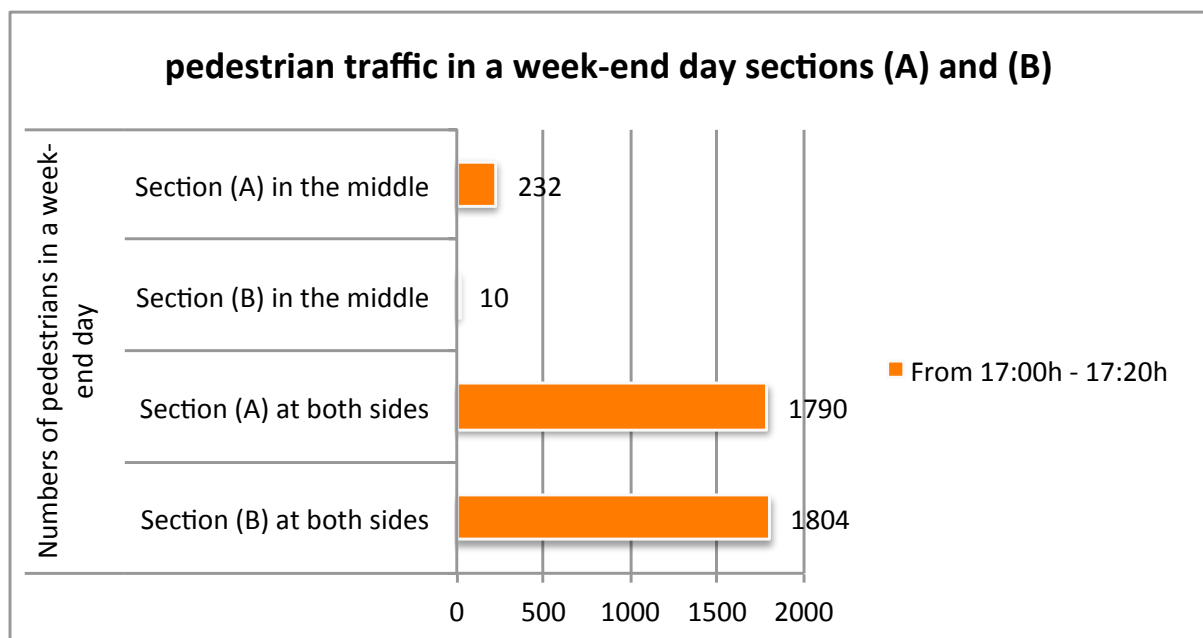


Figure (38): A comparison between numbers of pedestrians in a week-end day in sections (A) and (B) at peak time.

II. During a working day:

The counting of people during a working day as the previous one in week-end day shows big differences of passage percentage between the two times at morning and at night (9:00 and 21:00) and between the other two times during the day (12:00 and 17:00) which show a massive passage especially at the both sides. (Figure 40)

generally the counting results show similar behaviour for both pedestrians and cyclists at the different times during the day where pedestrians prefer to use the middle area in order to find a less crowded space to move through which increases at peak times.

Cyclists usage of the middle area is continuous and doesn't seem affected by the time differences during the day, so for example it counts 4 cyclists in the middle for each three first periods morning, midday and afternoon. (Figure 39)

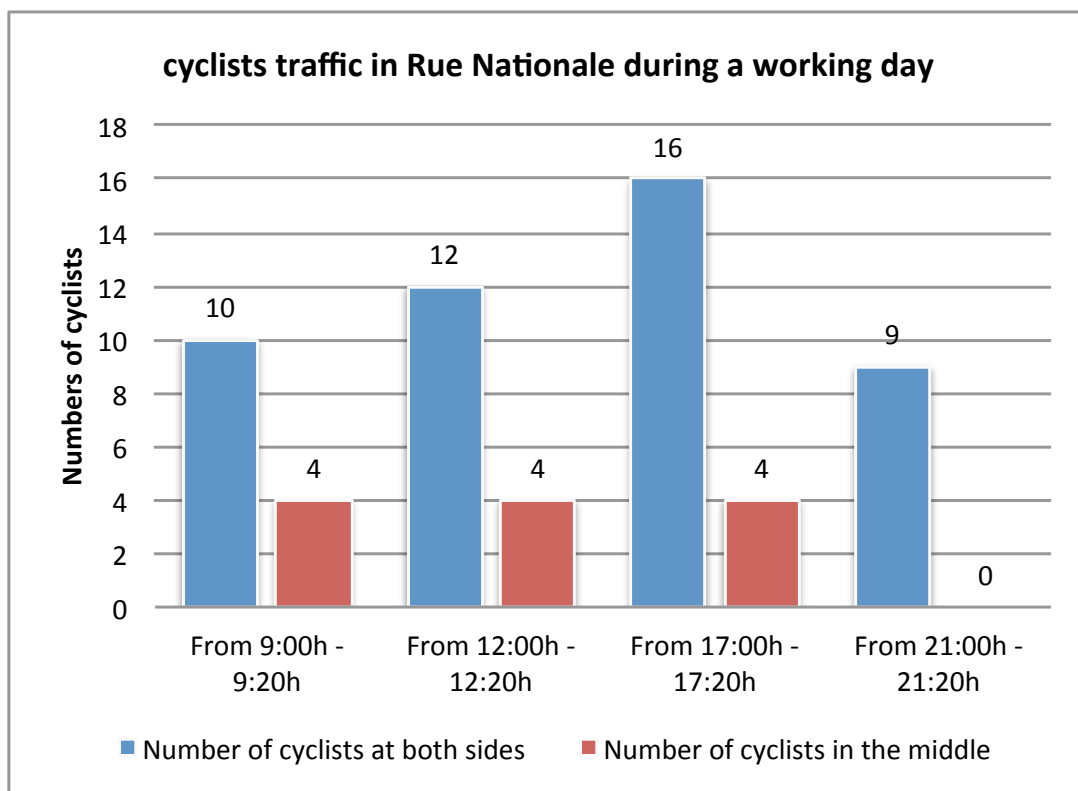
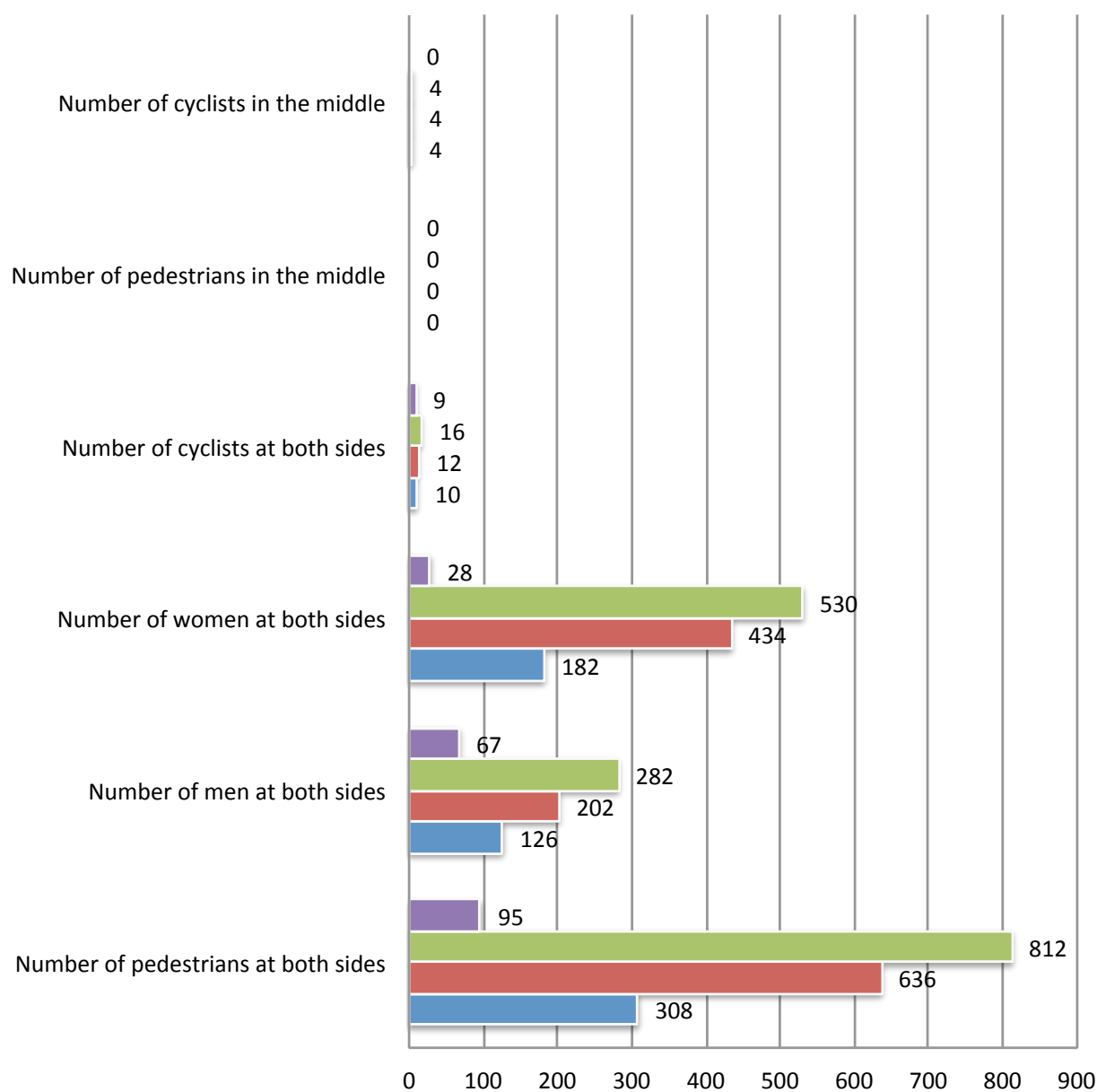


Figure (39): Number of cyclists passing in Rue Nationale during a working day,

Pedestrian and cyclist Traffic in Rue Nationale



	Number of pedestrians at both sides	Number of men at both sides	Number of women at both sides	Number of cyclists at both sides	Number of pedestrians in the middle	Number of cyclists in the middle
From 21:00h - 21:20h	95	67	28	9	0	0
From 17:00h - 17:20h	812	282	530	16	0	4
From 12:00h - 12:20h	636	202	434	12	0	4
From 9:00h - 9:20h	308	126	182	10	0	4

Figure (40): Pedestrians and cyclists traffic recorded in Rue Nationale in a working day,

The huge differences between women and men numbers passing through Rue Nationale during a working day (Figure 41) that sometimes up to double reflects the unbalanced usage between the two sexes and indicates the certain types of activities in Rue Nationale that generates this inequality in using the space.

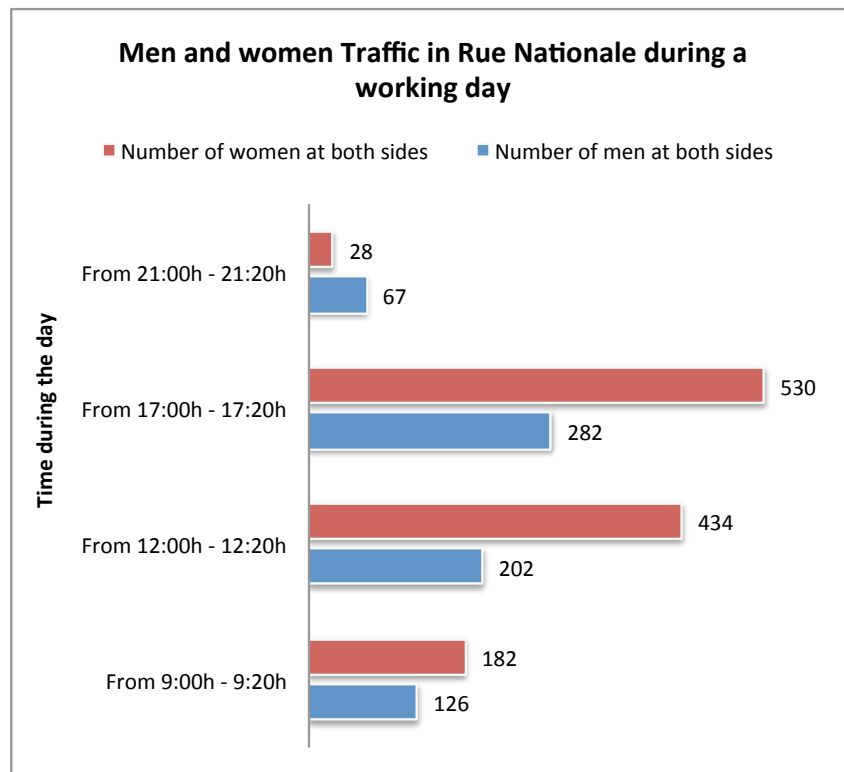


Figure (41): A comparison between number of men and women walking at the both sides of Rue Nationale during a working day,

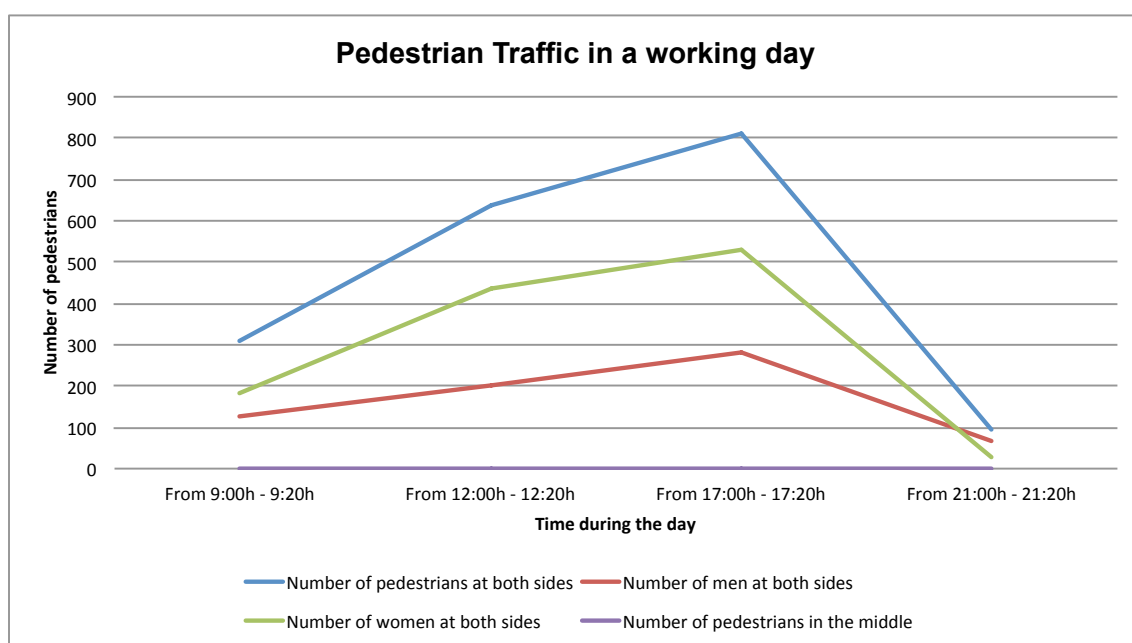


Figure (42): A comparison between pedestrians numbers at both sides of Rue Nationale during a working day.

As an important result of traffic counting in Rue Nationale the comparison between pedestrians numbers at different times during a working day and those during a week-end day shows significant increases in a week-end days than in working days at times of midday 12:00, afternoon 17:00 and night 21:00, but an obvious decrease in the morning 9:00 where numbers of pedestrians in a working day up to double the numbers in a week-end day.

These differences indicate that dominated activity in Rue Nationale the window shopping that influences the manner people are using the space in terms of time and density, and leads to heavy traffic when stores are opened and less when they are closed, and this occurs precisely at two times 12:00 and 17:00. Night counting shows that even stores and shops are closed still the traffic increases in a week-end day more than a working day which refers to the ability to use Rue Nationale to pass-through for another activities such as bars and restaurants situated at Rue Colbert and Place Plumereau. (Figure 43)

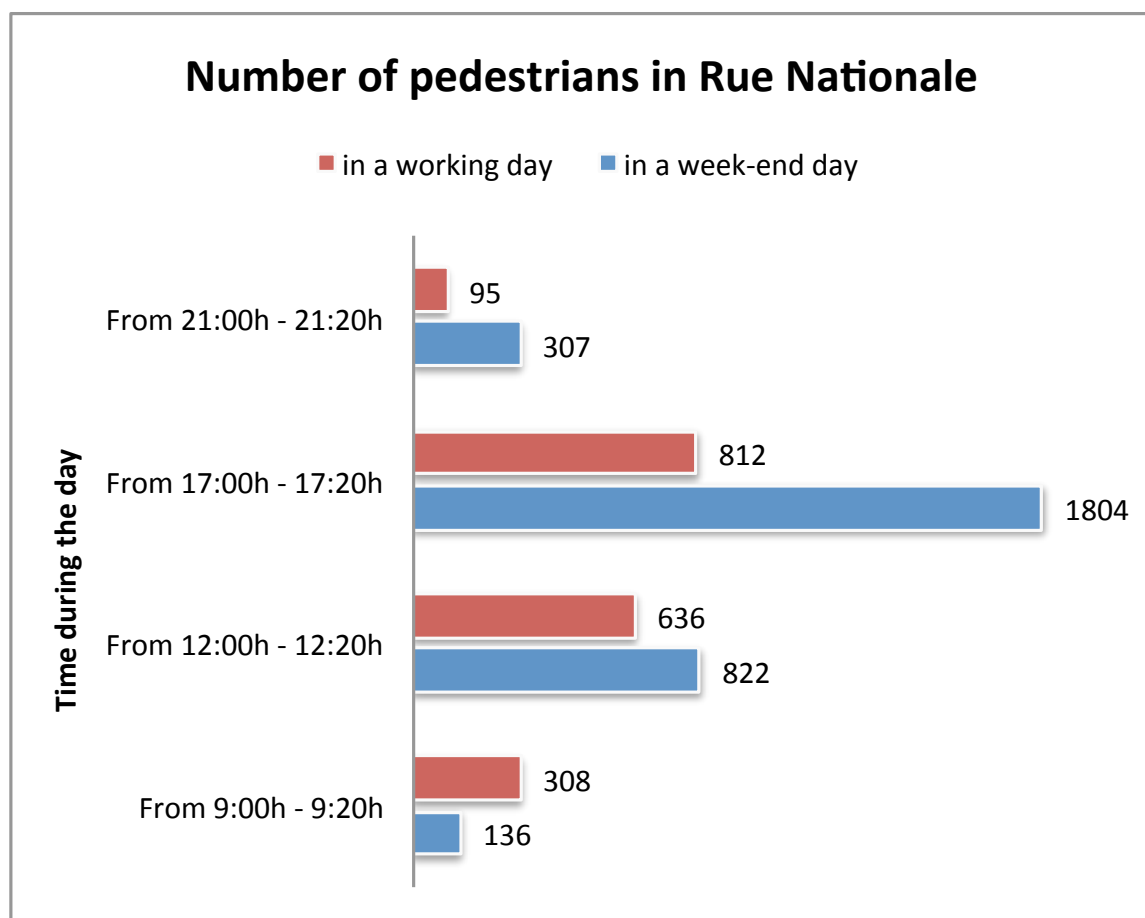


Figure (43): A comparison between pedestrians numbers in a working day and a week-end day in Rue Nationale.

3.2.4 Questionnaire:

This questionnaire has been built by using Google Docs and sent by email and through social networks to people who lives in Tours since more than three years in order to be able to answer the questions. 44 persons who answered and the software generated several charts that clarify visually and per percentages people choices.

Questions within this survey were of multi-choices type or that must be answered even by even Yes or No. questions that need descriptive answers have been curtailed as much as possible in order to avoid the unspecified incomprehensible explanatory answers that may hard to be transformed to adapt our criteria.

1. Question No. 1: “Do you think it is safer for you to cycle in Rue National at present than before tram implementation?

- Yes it's more safer to me now
- No, It was more safer to cycle before the tram
- There is no difference for me between both situations”

This question has been answered with 41% of people who think it's more safer now to cycle in Rue Nationale while 32% prefer to cycle before implementing the tram and 27% the new installation doesn't make any change for them. (Figure 44)

These percentages with the little difference between the first two choices didn't reflect the positively perception that have been expected after the new design and the obvious enhancements in materials and removing all obstacles from the space, and the most important preventing cars from passing through the street which is an important point that encourages more people to cycle.

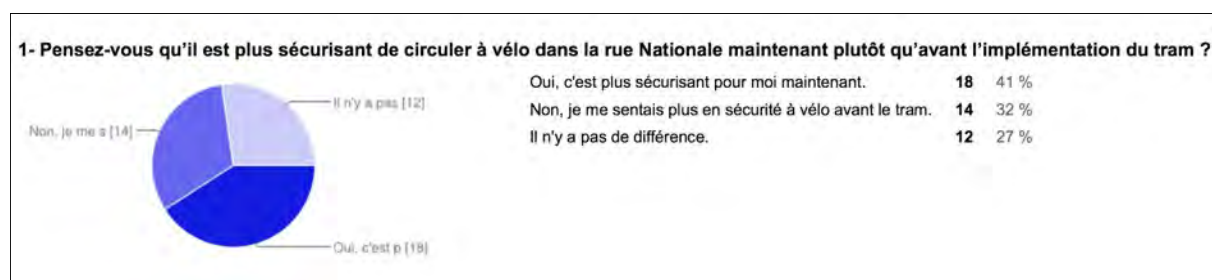


Figure (44): Answer of question No.1 if the questionnaire.

2. Question No. 2: "At which time you be in Rue National usually?"

- At different times of the day
- Between 9 am to 3 pm
- Between 3 pm to 9 pm
- Between 9 pm to 3 am

50% of persons whose answered they used to be in Rue Nationale between 15h to 21h where they can participate to evening activities while only 5% who exist at night time (between 21:00 and 3:00) and 5% who go to Rue Nationale at before-noon period (between 9:00 and 15:00). (Figure 45)

this indicates that half of people prefer to participate to evening activities like window-shopping which of course reflects the one type activity domination that exist in Rue Nationale public space.



Figure (45): Answer of question No.2 if the questionnaire.

3. Question No. 3: "Why you do not prefer to visit Rue National at night (after 10 pm)?"

- No usually I go there after 10 pm.
- There are no activities such as bars, restaurants, clubs...etc.
- I feel unsafe to visit Rue National after 10 pm.
- For other reasons"

This question examines the evening use in Rue Nationale where the answers refer that 43% of people visit Rue Nationale after 10 pm while 57% don't.

12% of people who don't prefer to visit Rue Nationale at night due to safety reasons and 68% because there are no activities at Rue Nationale which indicates that the inefficient use of Rue Nationale at night related to the lack of

night activities such as bars and restaurants, and not because of the sense of insecurity. (Figure 46)

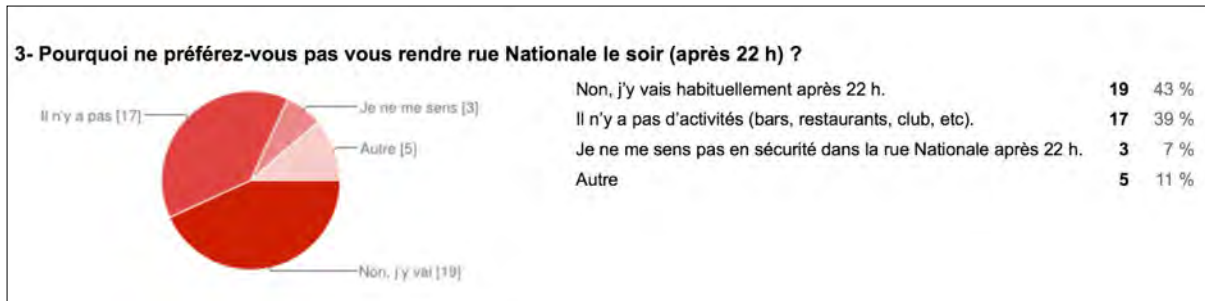


Figure (46): Answer of question No.3 if the questionnaire.

4. Question No. 4: "Do you come to Rue National more frequently after the tram implementation?

A. Yes, Now I come more:

- Because it is more faster and accessible to come in with the tram now.
- Because I enjoy walking and spending some time here with the new design and finishing.
- Because there are more activities in the street than before.
- Because I have the opportunity to meet and speak with more people now.
- Other reasons:

B. No, I used to come more before:

- Because I preferred the space as it was before with previous elements and materials.
- Because I had the opportunity to meet and speak with more people before.
- Because it was more easier for me to come in by my car or by bus.
- There were more and various activities in the place than now.
- Other reasons:

C. The same for me"

(, question)

This composite questions examines the Ability (accessibility and sociability) and the Attractiveness (aesthetic quality, enjoyment and activities) of public space.

25% of people come to Rue Nationale more after tram implementation comparing with 11% used to come more before the tram, while for the big portion (64%) the new tram does not change anything for them.

this result indicates that more than half of surveyed people used to visit Rue Nationale in order to do more compulsory activities than optional ones such as going to work or for shopping which are not affected by the quality or the attractiveness level of the space though those factors can make the necessary activities more enjoyable.

But it's important when asking about reasons make people come more to Rue Nationale to know that 60% of persons answered with yes say that new tram makes it easier and more accessible to come to Rue Nationale, while just 27% of them are attracted with the new design theme and come to enjoy this (optional activity).

Among who answers No, the highest percentage (67%) comes less because it was easier for them to access before to the place with bus or using their cars more than the tram, which may be related to preventing busses and cars from entering the street. (Figure 47)

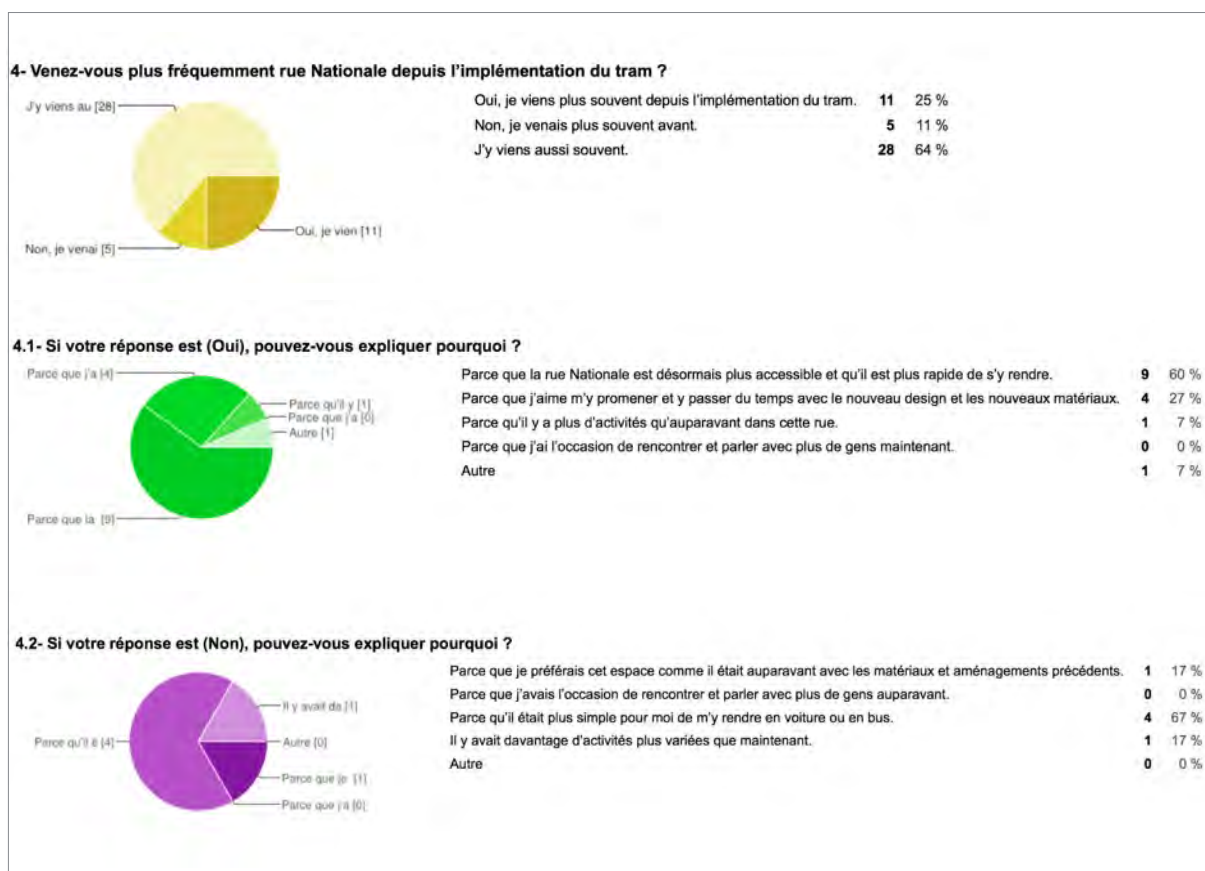


Figure (47): Answer of question No.4 if the questionnaire.

5. Question No. 5: "Which one you prefer, to walk in Rue National before or after the tram?"

A. To walk in Rue National after the tram implementation

- Because there is room for walking
- Because of the attractive environment (beautiful façades and finishing materials)
- Because of the comfortable pathways with no obstacles (steps, signs, intersections)
- Other reasons:

B. To walk in Rue National before the tram implementation

- can you explain why

This question aims to test walkability and how the space and the new elements attract people to walk in the street.

80% of surveyed people prefer to walk in Rue Nationale after implementing the tram, and most of them (72%) because the place gives more space for walking and provides comfortable pathways with no obstacles while 19% motivated by the aesthetic quality of the place and the attractive environment.

These results indicate that the new design associated with the tramline succeeds to make most of the people using the place enjoy the walking experience because of mainly the more comfortability in moving through and also but with less effect because of the added value of the aesthetic quality of the new design.

It's important to mention that some surveyed people who preferred to walk in Rue Nationale before the tram refer in their answers for some important issues, some are related to the sense of insecurity such as the possible accidents with others in the space where people are moving through different directions, and the stressful tram horn and the unsafe paving material that creates unclear limits with the tram rails which decreases the (non-hazardous) areas for pedestrians. (Figure 48)



Figure (48): Answer of question No.5 if the questionnaire.

6. Question No. 6: "Do you usually sit / stay in Rue Nationale?"

A. No, i don't.

- Because there are no benches to sit.
- Because all the space is occupied for pedestrians and there are no designated zones for people to sit and stay.
- Other reasons:

B. Yes, I used to sit/ stay when visiting Rue National.

- Can you explain why"

This question examines the sit/stay-ability in Rue Nationale.

86% of people don't sit or stay in Rue Nationale because mainly there are no benches or designated zones for sitting and the whole space is occupied for pedestrians.

People who answered with B, they described that they are used to sit in the street while waiting for the tram or they attract with the beautiful street, and in both cases the tram implementation considered of the main reasons that make people sit or stay in Rue Nationale. (Figure 49)

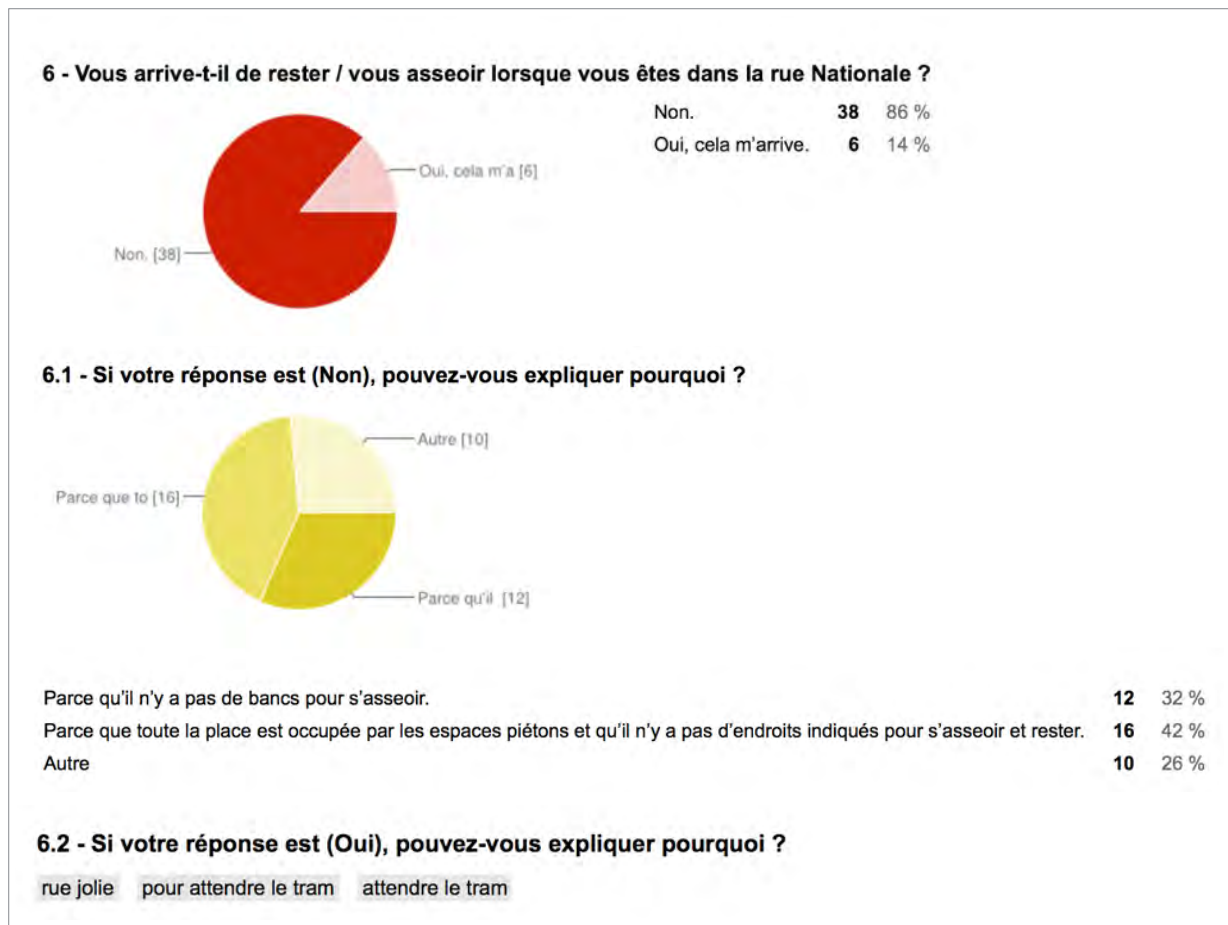


Figure (49): Answer of question No.6 if the questionnaire.

7. Question No. 7: "What attracts you more in Rue Nationale?"

- Interesting façades and beautiful surfaces.
- New finishing and materials for paving and tram-stop.
- The new artistic design of the tram-stop.
- Other reasons"

An aesthetic quality question aims to explore what factors that accompanied with the tram implementation attract people more in Rue Nationale, and the results came in favour of the second option where 45% of surveyed people say that the new finishing and materials used for paving and tram-stops attract them more comparing with only 2% of people considered the artistic design of the tram-stops are distinguished and attractive in the street. (Figure 50)

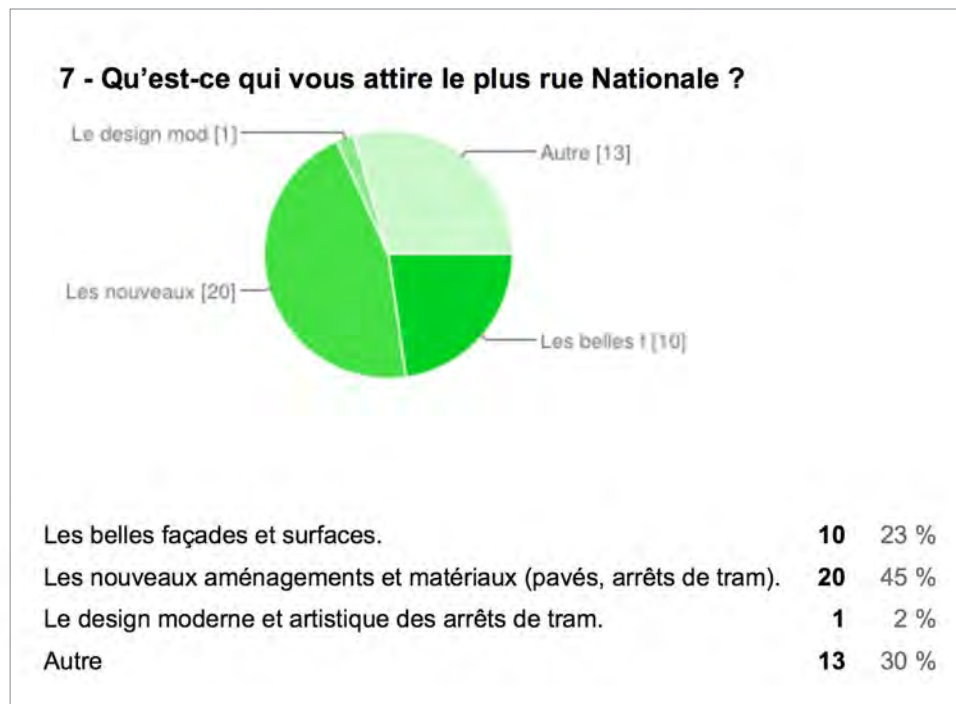


Figure (50): Answer of question No.7 if the questionnaire.

8. Question No. 8 and 9: "How do you prefer to come and How did you come before the tram to Rue National?"

- By tram
- By car
- By bus
- Cycling
- Walking

These two questions aim to discover the which means of transport people prefer or use to access Rue Nationale in the both periods before and after the implementation.

Comparing with 20% of people who used bus to come to the place before the tram there are 7% who still using bus after the tram which obviously attract people who used public transport to use it with a portion of 20%.

The new implementation caused to decrease percentage of people using their cars from 14% to 5% and cyclists as well from 27% before the tram to 25% while percentage of people who reach the place walking increase from 36% before the tram to 43% after.

cyclists from 27% before the tram to 25% after the tram. (Figure 51)

Within these results we can notice that walking and cycling are still the two main patterns of accessibility to Rue Nationale with slight differences the tram caused on their percentages. And regarding the public transport means the surveyed data shows that buses percentage of the total number of people access Rue Nationale has been shifted to the tram, while it's obvious that the new implementation reduced reliance on the car.

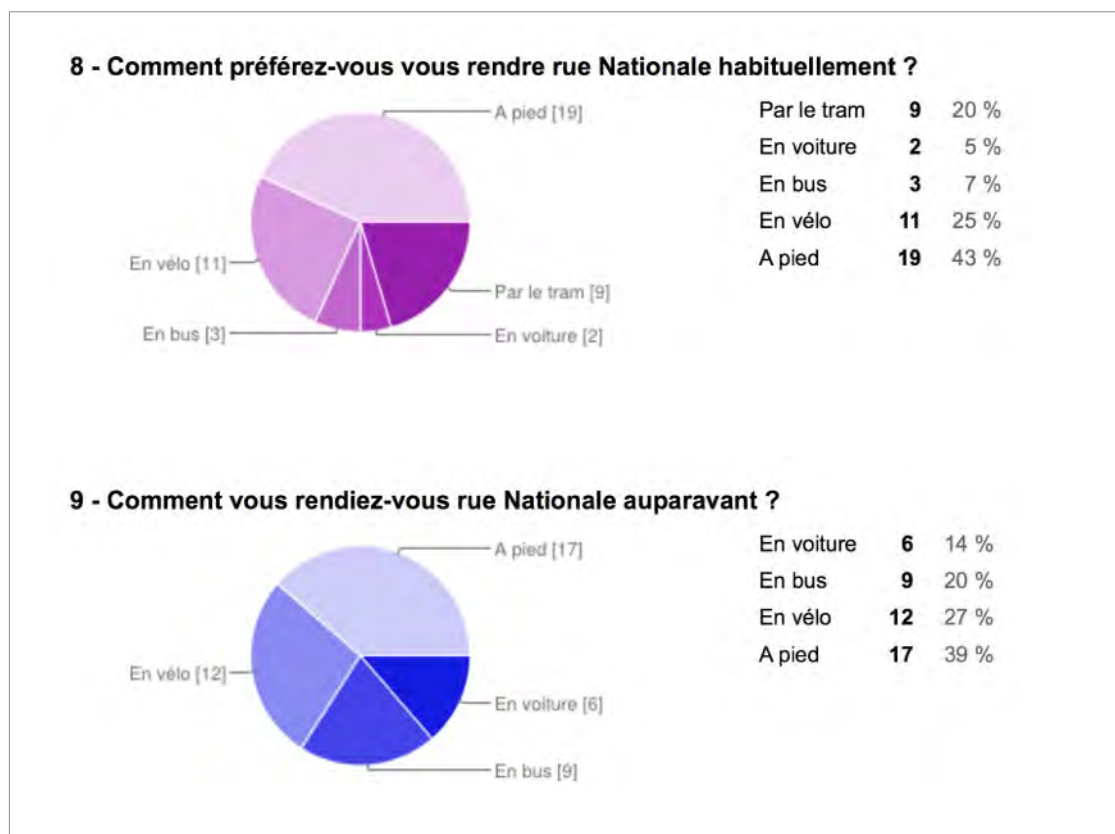


Figure (51): Answer of questions No.8 and 9 in the questionnaire.

9. Question No. 10:

If I said Rue National, what is the thing that comes to your mind?

- The stores.
- The cafes.
- Walking and enjoying the weather.
- The cathedral.
- The tram-stations.

- The museum.
- The beaux arts school.
- Other things

This question is to explore what are the elements that form people perception about the place.

Within the 7 options given that include the different uses and activities and the most distinguished and historical buildings located in Rue Nationale in addition to the tram-stop as a new element in the space, 56% people chose the stores comparing with 11% who chose the tram-stops, while the effect of the historical and cultural buildings seems to be minimum where the cathedral (Église Saint-Julien) considered for 3% of people the main element that form the image of the space, Le Musée du Compagnonnage 4% and L'école des Beaux-Art 1%.

Within these percentages, it's obvious that most of people perceive Rue Nationale based on its functionality as a "place for shopping" rather than the physical and aesthetic aspects. (Figure 52)



Figure (52): Answer of questions No.10 in the questionnaire.

10. Question No. 11 and 12: "Which type of activities in Rue National you participate in more, Before the tram and After the tram ?

- Shopping
- Walking
- Reading
- Sunbathing and enjoying atmosphere.
- Drinking a coffee
- Waiting for tram
- meeting a friend
- Attending music concert.
- Playing your children.
- Visiting a museum/ library."

This question aims to discover which types of activities take place in Rue Nationale people more before and after implementing the tramline, and it contains 10 main activities that include the necessary, optional and social activities.

By reading the chart of answers before implementing the tram (Figures 53) we can see shopping which is more necessary activity still dominating with 38% while 23% of people visit Rue Nationale to have a walk as an optional activity. For other optional activities it important to notice that some of them that indicate the quality of public space are not practiced at all among persons included in this survey such as sunbathing and enjoying the atmosphere and playing the children, and in the same manner but with very little percentage, the reading activity with 1% of the total.

Social activities remained at low, such as drink a cafe or meet a friend (less than 10 percent for each) and even attending a music concert which is only 2%. After the tram the general scene of activities stays almost the same where shopping still dominating with a slight increase of people who walk in Rue Nationale.

Other types of activities also stay the same with a slight increase in social activities like meeting friends or having a drink, while other optional activities stayed at the same percentage. (Figure 54)



Figure (53): Answer of questions No.11 in the questionnaire.



Figure (54): Answer of questions No.12 in the questionnaire.

• Results

- The fact that there are no benches and no staying/sitting zones in section (A) of Rue Nationale besides of the narrow space section due to the tram corridor and the massive pedestrians movement turns this part of the street into a crossing or a transit area with certain activities such as walking and window-shopping and no ability to add another pattern of uses that can increase comfortability in the space and enhance the sociability and interaction between people.
- The tramline implementation helps to make room for pedestrians and cyclists as it removes obstacles and barriers and creates the sense of unity in the space in terms of walkability with cancelling all levels differences and using the finishings that match each others in colour and texture.
- The new implementation of the tram with cancelling all other types of transports passing through Rue Nationale creates sort of flexibility in using the space that gives people the ability to move through all parts freely by walking or cycling and sometimes occupying the middle space that dedicated for the tram passage when the street is overcrowded.
- The existence of the two tram-stops in Rue Nationale increases the accessibility to the space and gives it more vitality and efficiency.
- The two tram-stops in Rue Nationale create new and unique sit/stay zones that didn't existed in other places along the street or even before, and as these stops considered efficient spots where different people and strangers can meet each 7 to 10 minutes (the tram span), they are able to create a positive environment that strengthens the different types of social activities as the passive contact like listening and seeing other people, or the typical interaction of having a short conversation with a stranger.
- Section (B) in Rue Nationale are still shaped with linear pattern of activity that influences how people act in the space which is the window-shopping, and even it is 5 meters wider that section (A) but still the space of section (B) inefficient to host another types of activities because of the lack of sittings/ staying zones for people to take a rest or socialise with others.

- The fact that there is only 4 benches in the whole section (B) situated individually in parallel and facing the tramline minimises the ability of the space to provide different activities can encourage people to contact and socialise or enjoy the environment.
- Even the tram implementation in section (B) helps to create flexibility in using the space and gives the priority of movement for pedestrians and cyclists at intersections, the new space design didn't use the emergence ability to change certain parts such as the junction of Rue Nationale and Rue des Halles from being an area where two car streets intersect into a public square that can host an attractive zones for pedestrians to socialise.
- The physical aspect of section (B) represented by dimensions closer to a rectangle wider than other sections in the street with low elevation envelope, gives the place the sense of openness and creates more stable interactive space allows and encourages people to stay/sit there which gives this section the ability to reduce the continuous and linear effect of Rue Nationale.
- The balanced presence of activities that includes more restaurants and cafes, more benches numbers, trees and green areas, helps to create vital and interactive space that can attract more people.
- The movement pattern of Pedestrians in the middle area of Rue Nationale refers to a more compulsory behaviour to avoid the massive passage at sides which cannot make room for walking especially during the day (at 12:00h and at 17:00h), which can be investigated by the statistics resulted of the counting and shows noticeable increase and decrease of pedestrians numbers in the middle during and off peak and hit zero when there is no traffic.
- The window-shopping activity influences the number of people of both sexes passing in the street, so where counting statistics recorded almost an equal numbers of both sexes out of hours (at 9:00h and 21:00h), an obvious difference with a preference for women have been noticed during the day (at 12:00h and 17:00h). And this is due to the passing-through activity in Rue Nationale that takes place clearly at morning and night and the window-shopping activity that takes place during the day and attracts much more women to come to Rue Nationale.

- The possibility of using the middle and the sides areas in Rue Nationale by people indicates the high flexibility that was created with the new design and allows to switch the way of using the place from one pattern to another and reflects the ability of the Rue Nationale space after tram implementation to provide a good example for using the space with high efficiency.
- Differences in pedestrians numbers at different times during a working day/ week-end day indicate that dominated activity in Rue Nationale which is the window-shopping influences the manner people are using the space in terms of time and density, and leads to heavy traffic when stores are opened and less when they are closed, and this occurs precisely at two times 12:00 and 17:00.
- Even stores and shops are closed at night, the location of Rue Nationale and its accessibility from different areas of night-activities such as Rue Colbert and Place Plumereau give the ability to pass through in order to reach these places, and this can justify the presence of people after 21:00 especially in the week-end days.
- the intense shopping activity caused by domination of shops and stores along Rue Nationale and in particular in section (A) and section (B) creates a heavily pedestrians traffic at different times during the day, what requires the provision of other facilities and assistant elements such as sittings, benches, rest zones with green and water elements or even artistic interventions like street art or sculpting works that can provide people a comfortable environment and enhance the quality of the place by creating an attractive ambience can help to reduce the poor effects of linearity at the functional level of Rue Nationale.
- As the space is generally occupied by pedestrians and people shopping and moving in different directions, cyclists tend to use the middle part of the street which provides them broader and safer space to cycle through between the passages periods of the tram which can be noticed through the increased numbers of cyclists passing in the middle at times of congestion.
- the new design accompanied with the tramline implementation and the obvious enhancements in materials and removing all obstacles from the space in Rue Nationale did not succeed enough to encourage people to cycle

more in the place even with cars and busses removal, and this is due to intensive crowds of people that occupied the space and don't make room for cyclists.

- peak times in Rue Nationale are related directly to the types of activities such as shopping that dominates the functionality of the street and attracts people in certain times during the day which justify the increase people presence between 9:00 morning and 19:00 evening.
- The inefficient use of Rue Nationale at night related by a large margin to the lack of night activities such as bars and restaurants more than the sense of insecurity.
- As a transport system installed recently the tram succeeded to facilitate and accelerate accessibility to Rue Nationale but as a public space development this installation with the accompanied enhancements did not succeed significantly to attract a greater number of people to come to the place, while it succeeded to provide a positive environment that makes the compulsory necessary activities more enjoyable.
- Even the new design associated with the tramline succeeds to make most of people using the place enjoy the walking experience but still the sense of insecurity because of possible accidents may happen because of the overcrowding and the unclear limits with the tram rails which decreases the (non-hazardous) areas for pedestrians.
- Tram-stops in Rue Nationale considered the only spots form a sitting/staying zones that provide the opportunity for people whose waiting the tram to participate to social activities, but the way they are located in parallel to and facing the tram corridor with a complete separation from the rest of street space minimises the possibilities of interacting with pedestrians and other people using the space, and converts the volume of the tram-stop to a kind of obstacle that hinders movement and visibility instead of the possibility to be an attractive spot for Rue Nationale users.
- Due to counting statistics that shows slight changes on percentages of people are walking and cycling to the street before and after implementation comparing with an obvious shift of people have been using buses to use the

tram, then It is better to say that the new tramline facilitates and accelerates accessibility to Rue Nationale rather than increases it.

- Even it contains several historical and cultural buildings and activities, and even the new tramline implementation has been associated by broader enhancements of the space, the overwhelming image which people perceive about Rue Nationale still based on its functionality as a “place for shopping” rather than any other aspects

• Conclusion and recommendations

Implementing a new tramline in Tours city doesn't mean only an installation for a new transport system serves the city and increases connectivity between urban areas, but also a broader urban development that includes all other sectors related to planning and city management, economically, socially, and environmentally.

Public transport considered an essential part of this system and any change/ addition for a new transport mean can cause a significant effect to the structure of the city including its public spaces connected directly to this transport line. Within this perspective, the influence of the new tramline through Rue Nationale exceeds the matter of connectivity to the social and physical aspects that affect public life and how people act in the space.

The study shows that what characterised Rue Nationale the most is the certain types of uses and activities like shopping which exist massively and shape a general perception about the space that has not changed after implementing the tram.

The aim in developing Rue Nationale public space is not necessarily attracting more people to use the space (which is already crowded) but to create a functional balance with the existed activities and uses in order to enhance the surrounding circumstances that helps people to act in the space in more comfortable and enjoyable manner. So with more than 4000 thousands pedestrians passing through Rue Nationale per hour at peak times, we do not need to further increase this number within a physically limited space, but to facilitate their movement and requirements and make them more safer, comfortable and enjoyable.

In this context, the new implementation of the tram with the associated works (the new space design, the new materials and finishings), accompanied with preventing cars and busses from entering the street, cause noticeable enhancements for pedestrians in terms of walkability and facilitating their movement, but with missing for important elements in the design such as benches and sitting/staying zones which have a great influence on comfortability level for people who are using/ walking through the street for long periods.

Rue Nationale with the tram implementation succeeds to function as a space for pedestrians by hosting/facilitating people activities, but due to lack of some important elements (green, sitting and aesthetic elements), the obviously imbalance in activities, and the linear and hard envelop that limited optimisation

possibilities, it is difficult to judge Rue Nationale efficiency as a typical public space achieving all conditions of a liveability, sociability and sustainability.

- Recommendations

Considering that some modifications can change significantly the sense of the public spaces activate them more efficiently, the study sets/states few recommendations that can enhance the public life in Rue Nationale space.

1. increase numbers of benches and arrange them in order to form a sitting/ staying zones that encourage people to socialise, and it is better if this accompanied with Increasing the numbers of trees, green areas and water elements if the space dimensions allowed.
2. add artistic interventions such as paintings, sculptures, or street art works that create an attractive events and increase vitality of the space.
3. set a new rules that can manage the cycling activity through Rue Nationale in order to avoid the possible accidents in congestion areas.
4. develop a strategy that aims to create different types of activities in Rue National and helps to achieve a balance by replacing part of shopping stores with other required facilities (more cafes and restaurants for example).
5. Redesign the tram-stops in order to make them more open to the street space so their benches can be used for tram waiting and as public sittings for other people as well.

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