



HAL
open science

Territorial opportunities of tram-based systems

Cyprien Richer, Sophie Hasiak

► **To cite this version:**

Cyprien Richer, Sophie Hasiak. Territorial opportunities of tram-based systems. *Town Planning Review*, 2014, 85 (2), pp.217-236. halshs-00993568

HAL Id: halshs-00993568

<https://shs.hal.science/halshs-00993568v1>

Submitted on 6 Mar 2015

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Territorial opportunities of tram-based systems: Comparative analysis between Nottingham (UK) and Valenciennes (FRA)

Cyprien Richer and Sophie Hasiak

Cerema (Center for studies and expertise on Risks, Environment, Mobility, and Urban and Country Planning)
Territorial Division for the Northern and Picardie Regions, 2 rue de Bruxelles CS 20275, 59019 Lille
email: cyprien.richer@cerema.fr; sophie.hasiak@cerema.fr

Abstract

Within the European project « Sintropher », this paper focuses on a comparative analysis between two tramway systems in Nottingham (UK) and Valenciennes (FRA). The aim is to understand how these tram-based systems were successfully integrated in the urban areas. Firstly, we describe the national contexts concerning assessments of urban public transport policies. Secondly, we analyse these tram projects, and especially their territorial dynamics. Thirdly, we have a look at urban transformations that occurred around their terminal stations in Hucknall and Denain.

Key words

tramway, urban planning, transport assessment, urban regeneration, public transport

Introduction

« Sintropher »¹ is an European project whose goal is to promote the development of new tramway services and to improve existing ones located in intermediate or suburban regions of Northwest Europe. It is in this context that the study led by CETE Nord-Picardie, subpartner of the authority in charge of urban public transport in the region of Valenciennes (SITURV), takes place. Based on different European tram-based systems², the work compares decision-making and assessment processes in six different countries: Germany (Saarbrücken), the United Kingdom (Nottingham), France (Valenciennes), The Netherlands (Utrecht), Spain (Velez-Málaga) and Italy (Bergamo). This paper specifically refers to the first modern tramway lines in Nottingham (opened in 2004) and in Valenciennes (opened in 2006-2007). The aim is to understand how these tram-based systems were successfully integrated in the urban area. Specifically, we highlight the territorial opportunities disclosed by tram-based systems and explain how actors seize them.

There is a growing body of scientific researches based on regenerative effects of light rail investment policies (trams in particular). Tramways are usually considered as key tools for sustainable development (Frenay, 2005 ; Stambouli, 2007). However, analysing the impact of this transport service on the territorial economy raises some serious methodological difficulties (Offner, 1993). The mechanism which links the new public transport system to the economic development is not clear (Mackett, Edwards 1998). All the methodologies which try to isolate transport effects, have weaknesses and some of them are quite simplistic and not suitable for an empirical context (Hass-Klau, Crampton, 2005). For several reasons, it has been proved that the effect of a light rail investment on land prices or economic development is generally modest (Boucq, 2008; Hass-Klau and Crampton, 2005). Mackett and Edwards (1998) highlight that urban or economic development is not produced or generated by the transport system, but it simply results from a relocation. "It would be difficult, with the benefit of hindsight,

¹ Sustainable Integrated Tram-based Transport Options for Peripheral European Regions, further information on: <http://www.sintropher.eu/>

² " This term refers to railway passengers transport networks in order to serve cities outskirts. It is quite similar to the English expression « light rail » or the French one « tram-train » because it refers to the interface between metro and tram systems in dense urban environments and regional railway networks.

to conclude that the cities that have introduced such systems would have been better off without them” (Hyllen,Pharoah, 2002). The case of the “Supertram” project in Sheffield is very significant because it shows that the tram system did not lead to urban renewal projects despite the local attempts (Mackett, Babalik, 2003). And one of the reasons is an insufficient integration of both of the two projects (urban renewal project and tram project) (Dabinett and Al, 1999; Lawless, 1999). Besides, some local actors hope that the transport systems will be able to galvanise major regeneration of cities centre and other areas, however we have to say that the evidence of direct causality between transport and urban regeneration is hard to prove (Hyllen,Pharoah, 2002).

Understanding the complex interrelationships between a city and its networks suggests the use of a relevant vocabulary. Therefore we have chosen to use the terms of “territorial effects” or “opportunities” instead of the term of “impact” which refers to automatic relations. Beyond that, the concept of “congruence”, popularised by Offner (1993), refers specifically to the idea of mutual adaptation of transports and urban planning by taking into account preexisting structural trends. Under different conditions, transport investment may have a key role in the territorial organization ; transport investment is alone insufficient, and has to be combined with other pre-existing conditions (Trinder, 2002 ; O’Fallon, 2003, ...). While the exact relationship between transport and economic growth remains ambiguous, Eddington (2006) identifies a number of micro drivers of productivity on which transport project may have an effect (by improving travel time, reliability, cost, connectivity, comfort, safety, and security). Nevertheless, the first “ingredient” for succeeding these transport projects is the political will (Babalik, 2002; Hass-Klau and coll (2000, 2003, 2004), Crampton, 2003). Widely discussed in the scientific literature, the political conditions are a key element in the success of the projects and their territorial integration (Offner, 1998 ; Edwards, Mackett, 1996 ; Hamman, 2011 ; Richer et Hasiak, 2012).

Based on these inputs, we take into account three positions. Firstly, rather than adopting an assessment reasoning uppermost based on the individualization of direct consequences of tram projects, we have adopted the position that tram services could be considered as some opportunities, as political tools for local authorities (Offner 1993). Then, we do not exclude any economic approach of these networks usefulness, but we reject an only economic approach : indeed, single econometric calculations, even updated ones, are not sufficient to analyse transport networks. Thirdly, we consider that the central elements of assessment are public or private actors, institutional or technical actors, who are able to report the risks, the goals and the opportunities of urban transport projects. We make the assumption that the tram is both a transport and an urban planning tool that its opportunity depends on urban policy choices.

This paper is structured in three steps. Firstly, we describe the national contexts concerning assessments of urban public transport policies. This first step allows us to point out quite contrasting decision-making models in these two countries that can allow us to explain the different levels of enthusiasm for tram projects. The method is based on a scientific literature review about transport projects assessments in both countries. Then, we analyse these tram-based systems, and especially their territorial dynamics by using monographic works (Lepers, 2012; Frère, Richer, 2006). In a chronological way, we review the project genesis, its objectives and the obstacles to its opening. Adopting a functional and spatial analysis on both tramways helps us to understand their customary proceedings but also their integration singularities. Next, we have a look at urban transformations that occurred around these tram-based systems. Particularly, we focus on local mutations around the terminus stations: Hucknall (Nottingham tram) and Denain (Valenciennes tram). Both cities are good examples to analyse the local actors role in the integration of these new infrastructures and to try to define what the urban planning tramway is.

1/ British and French tramways : two contrasting models

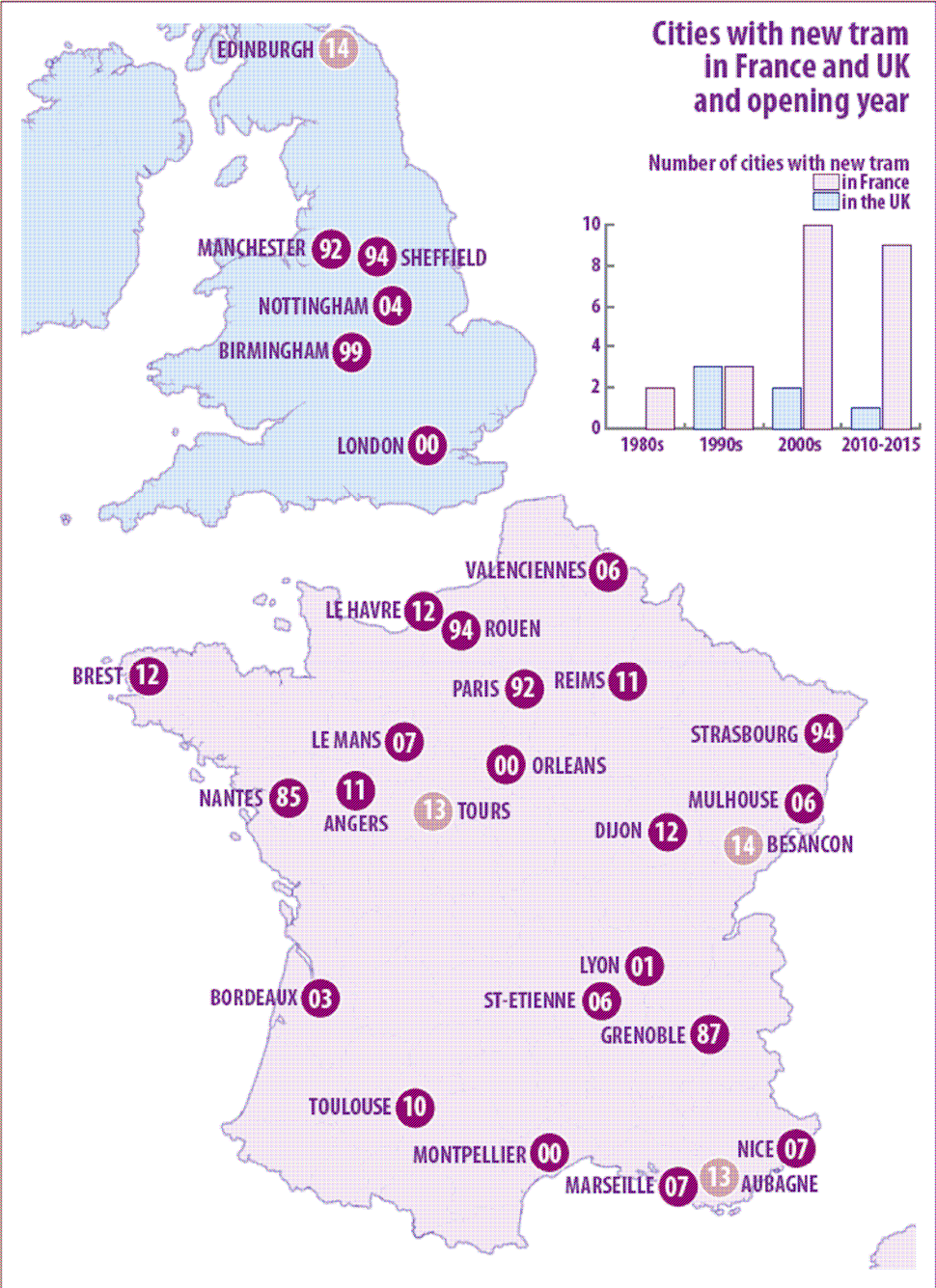
Evolution of cities with tramway services

In the early 20th century, all the big cities in each country implemented one or more tramway lines. This golden age lasted until the First World War that represented a “turning point in tramways history” (Paris, 2011). In the 1920s, dismantling of tramlines thus quickened in France and mainly in the United Kingdom. So, at the end of the Second World War, tramways remained in less than ten British big cities. The “Nottingham Corporation Tramways” network (about 42km) was for good closed in 1936. The trend reached France a few years later. Covering a peak distance of 65 km, the old tram in Valenciennes ran for the last time in 1976. Obviously, trams gradually were removed and made room for cars in the urban planning policy after the war. In both countries, the

disappearance of tram networks was so massive that at the end of the 1970s, it remained only residual tram lines (Emangard, 2011) that had a specific reason to be not dismantled.

The renewal of French trams started in Nantes in 1985, and in Grenoble in 1987. In about thirty years, “France has almost managed to reintroduce the tram in major cities, but with reduced spatial consistencies” (Paris, 2011). Since 1985, only three cities maintained a part of their tramlines, but at present, twenty-four urban areas (highly variable population size) are served by a new tram-based system. This French renewal has no equivalent in the United Kingdom (Figure 1) even if most of the light rail systems in England serve urban and suburban regions while the French tram lines are shorter and serve areas within the city itself. Only five modern trams opened in the United Kingdom (London, Birmingham, Manchester, Sheffield and Nottingham), essentially during the 1990s. In 12 years, only the Nottingham Express Transit (NET) was introduced versus fourteen tramways in France (including Valenciennes one). How can we explain such differences between the British shy comeback and the French major renewal? Comparing decision-making processes in these countries draw up a few answers.

FIGURE 1. Map of trams in France and in the United Kingdom



Two national decision-making models

Relating to the national context, the government strategy of each country is based on the principle of sustainable development. In the UK, the publications of the "Transport Ten Year Plan" (2000), the White Paper "The Future of Transport : A Network for 2030" (2004) and other documents, recognise the need to build a transport system that underpins long-term economic growth and productivity. In France, the «Grenelle» laws (2009-2010) were designed to take long-term decisions on sustainable development and to support the improvement of public transport.

Concerning the local context, urban transport policies are organized by the local government : Unitary authority in England and local authority in charge of urban transport in France. The main tool for local transport planning is respectively the Local Transport Plans (LTPs) and the "Plan de Déplacement urbain" (PDU). Beyond these similarities, Hylén and Pharoah (2002) underlines the main differences between urban transport policies in these two countries : in England, the bus transport system is unregulated and the most part of the public transport market is outside of government planning while the french situation is the other way round . Indeed, we can talk about a strong French local government with local resources of public transport funding. Conversely, in England, the local government initiatives are limited because of few financial freedom and mostly depend on a financial assistance from the central government

On the one hand, this transport political context influences the decision-making process and, on the other hand have an impact on the various constraints for the development of tram project. In the United Kingdom, we can note a well-centralized decision-making process based on an economic reasoning. As tram projects funding mainly depends on central government's subsidies, local authorities may have some difficulties to implement such projects by their own resources. Even if the funding does not completely rely on governmental subsidies, financial resources, provided by local authorities are very limited³. Since 1968, Section 56 of the "Transport Act" defines the method to obtain subsidies from the government. According to the cost-benefit analysis, the cost of a public service concession has to be covered by non-users benefits (e.g. reduction of road congestion and pollutant emissions, saving time, reduction of car accidents). All these benefits are highly dependent on assumptions such as time or life values that are difficult to measure. Since the implementation of a new assessment method in 1998 (called the "New Approach To Appraisal NATA") by the Ministry of Transport, several tram projects (Liverpool, Leeds, London, Bristol and Portsmouth) that would have had many social advantages had been rejected (Mackett, Edwards 1998).

In France, the situation is different because it refers to a decentralized model based on political enthusiasm. We can say that local public transport policies have in general the means of achieving their ambitions. With the successive laws related to the decentralization (since 1982), French local authorities whose do not have yet a tramway, have technical and financial means, such as the possibility to increase the transport tax⁴ when a public authority commits to implementing a tram project. This mode is really appreciated in local policies depending on the leader role of a powerful mayor (Offner, 1998; Hamman, 2011). The French assessment model of tram projects is often reduced to get a validation of political choices (Richer, Hasiak, 2012). This process is quite an efficient tool: almost all urban areas of more than 200,000 inhabitants in France have one or several modern tramways. Over and above the local political support, the role of the State in these countries also differentiates the decision-making process. The French Ministry of Transport has a more incentive role (by legislating, by giving financial means) rather than a coercive role (regarding assessment for example). The national policy about the Grenelle of Environment clearly states that it considers the tram as a flagship of sustainable development policies. Such differences may result from different social and political cultures, but also from contrasts of public transport aims (Hylén, Pharoah, 2002). In the United Kingdom, the challenge is to reduce car traffic congestion by implementing a more efficient mode of transport with limiting public spending; though in France, the objective is more to develop a sustainable city with stakes about intermodal transport practices in multilevel public policies. However, we have to keep in mind that every boundary is permeable and that other national, regional or local contexts may lead to complex adaptation of these models. These hypotheses will be compared to more practical cases.

³ A local tax on car parking can be introduced by a County or an Unitary Authority to finance improvements of the transport system

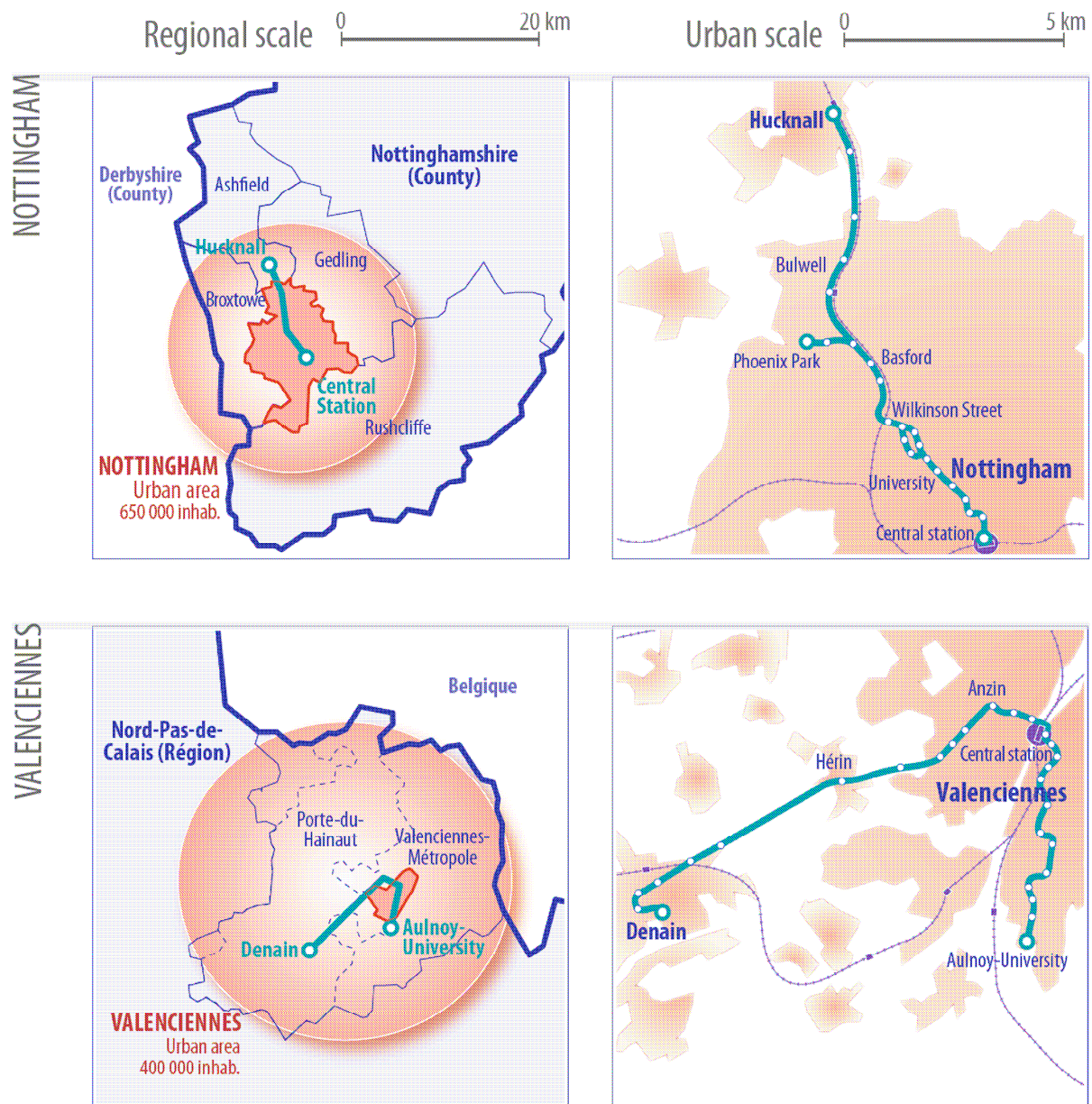
⁴ The "Versement Transport" is a local tax paid by firms with more than 9 employees in order to fund urban public transport. Its basic rate is 1% of payroll costs. It can be raised to 1,80% when public transport authorities want to implement a first tram-based system line.

2/ Tram comeback in Nottingham and Valenciennes conurbations

Geographic and institutional context

Nottingham is the 20th city of the United Kingdom (300 000 inhabitants) located in a metropolitan urban area which is approximately 666,000 inhabitants within a radius of 15 km around the central town (about 700 km²). Valenciennes is a small central town of 45,000 inhabitants (15 km²) in an urban area of 400,000 inhabitants (757 km²). It is the 26th largest urban areas in France. Nottingham's urban area is characterized by a higher level of population and a higher density (approximately 1000 inhab/km² versus 550). In spite of this disparity, those two conurbations can be seen as intermediate cities in both countries cities ranking (Figure 2). Besides, they have quite similar characteristics. In fact, both urban contexts are inherited from the industrial era in these coal-mining regions. Their industrial history has left many physical (brownfield), social (high rate of unemployment) and demographic stigmas (significant population decline until 2000).

FIGURE 2. General situation of case studies



Regarding to the institutional organization, both conurbations have different functioning. In Valenciennes, local competencies (urban planning, housing, roads, parking) are shared between two recent intercommunities (created in 2000)⁵ but for transport policy, they transferred their competence to a same local transport authority (SITURV, acronym for “Syndicat Intercommunal des Transports de la Région de Valenciennes”). SITURV manages Local Transport Plan called “Plan de Déplacement Urbain”(PDU) and the urban public transport network called Transvilles that serves 82 municipalities located in the urban area. In Nottingham, the city is an unitary authority since 1998 and has larger local competencies in public services. The County of Nottinghamshire, an important political subdivision in the United Kingdom with a local government, handles Nottingham in an independent manner. Although it is a non-metropolitan County, the Council of Nottinghamshire obtained a transport competency in 1974. The Nottingham City Council and the Nottingham County Council became the tram project promoters. By composing the Local Transport Plan for Greater Nottingham, a document that plans transport policies for five years, both authorities guaranteed that the tram project would achieve the objectives set up.

Genesis of tram projects

Like most European cities, buses gradually replaced the old tramway in Nottingham and Valenciennes cities. But the bus system quickly revealed its limits facing the automobile development. Typically, it is in a context of a public transport crisis and an increasing road congestion that local authorities question for best solutions to resolve these difficulties. In both cities, modern tramway projects were initiated by local actors, more precisely by an association of public and private stakeholders in Nottingham, and by public actors driven by the transport authority and its operator in Valenciennes. Though the cars traffic growth is seen as a major problem in both countries, they do not share the same conception of the risk. Indeed, local authorities in Nottingham are really worried by cars threat to the economic situation, while authorities in Valenciennes are rather worried by the public transport network efficiency.

In the British city, the city and the County decided to collaborate with private stakeholders (controlled by the NDE – Nottingham Development Enterprise in 1987) in order to carry out a feasibility study about an evaluation of the best mode of transport in this case. A tram-train system using one of the old “Robin Hood” railway tracks was studied and dropped for security reasons and excessive costs. In Valenciennes, even though the President of SITURV (Jules Chevalier) was convinced of the usefulness of a modern tramway, one study (INRETS, 1991) concluded that Valenciennes could have a structuring Public Transport system. Several rolling stocks were considered and the best solution seemed to be the tram. The project called “Transvilles” targeted the reorganization of public transport network in the urban area of Valenciennes by implementing a modern tram-based system and by a redeployment of bus lines.

Although politicians already decided these two tram projects in the early 1990s, the start of works did not occur until the early 2000s (from 2001 to 2004 in Nottingham, and from 2003 to 2006 in Valenciennes). Why did it take a decade to set off their implementation? The temporality of the decision-making process is quite similar in the two cities but the reasons for their length of time are different: a British complexity due to the setting up of an innovative public private partnership versus an important weight of local political negotiations with mayors in France (Frère, Richer, 2006). After a long decision-making process, the success of Nottingham's tram project seems to be the consequence of the choice of original governance based on a strong involvement of public sector and a partnership with economic actors through the Greater Nottingham Light Rapid Transit (GNRLT). In the 1990s, the only way to progress would be to raise funding through a Private Finance Initiative (PFI). That is to say the main financial risk would have been borne by private sector (i.e. the Arrow Consortium). In the end, the final green light for the project was given on 3 April 2000, some 8 and a half years since the original Bill was submitted to Parliament⁶. In France, difficulties in trams implementation seem to be more related to political aspects. Each municipality (5 municipalities were concerned in the first phase of implementation, 4 for the second phase concerning Denain) had to approve the tram route on its municipal perimeter and this approbation could

⁵ The “Communauté d'agglomération de la porte du Hainaut” (CAPH) in the West and the “Communauté d'agglomération de Valenciennes Métropole” (CAVM) in the East, are administrative structures that consist in a partnership between different municipalities in order to initiate integrated urban development plans.

⁶ Nottingham Express Transit: The Background to the Project. Article Posted Sunday 7 March 2004 <http://www.britishtramsonline.co.uk/net-background.html>

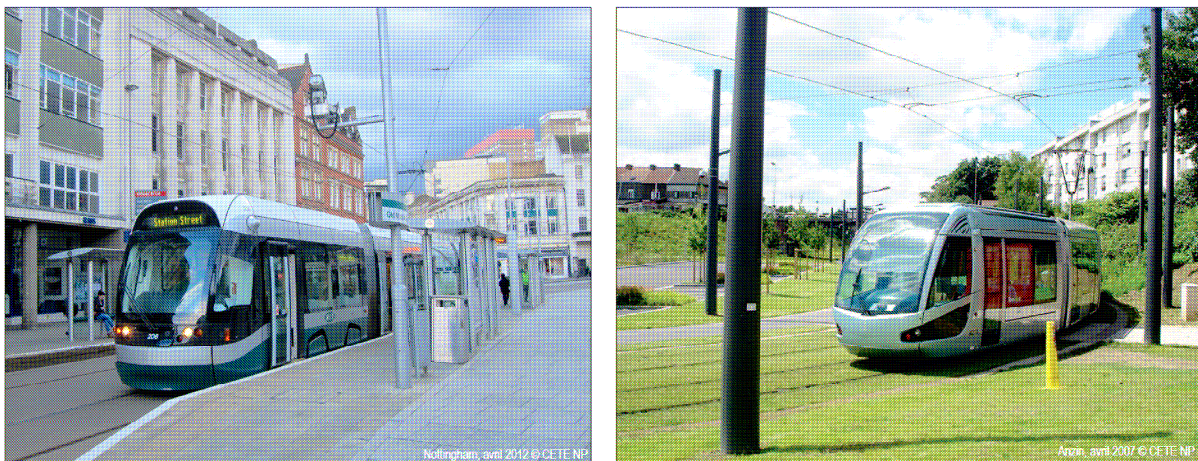
take time such as the city of Valenciennes who was the last city that approved the route after more than one year of bargaining. As compared to the national model, Valenciennes tram project followed the same practices regarding the project packaging and its legitimisation. The only difference is the time spent in local political negotiations that could have been reduced with more cohesion in the political support.

The NET was the first UK light rail system to be wholly implemented under the Government's Private Finance Initiative. The first line opened on 9 March 2004, cost 250 million euros to implement (about 17 million euros per km). Compared to the systems currently in operation in the UK, as highlighted in the National Audit Office report (2004), the NET is slightly more expensive than the average cost of a light rail scheme (approx 14 million euros per km). However, it is less expensive than the average cost of a French tram (approx 25 million euros per km) because in England, urban regeneration costs are not included in the overall figure. In Valenciennes, the first tram line cost is 340 million euros (19 million euros per km). But there are strong differences between the first phase implemented in the urban area (28 million euros per km, opened in 2006) and the second phase in an interurban section (8 millions euros per km, opened in 2007). For the first phase of implementation, the increase of the local transport tax in 1997 provided a "self-financing" of about 90 M€ while the government had awarded a grant of 42 million euros.

Trams with two territorial facets

Tramway spatial characteristics are the reflections of project goals and could be considered as a result of the way to express powers. The two tram systems are entirely based on new railway infrastructures, respectively on 14 km (24 stations) for Nottingham and 18 km (28 stations) for Valenciennes. Both trams have similar technical characteristics (Nottingham has 15 Incentro trains built by Bombardier; Valenciennes has 21 Citadis trains built by Alstom), but the French tram has a more sophisticated design (Figure 3). Based on a tramway system which links two major cities, the several facets along the route give us the impression of a tram-train system even if we can note a traditional urban section with short distance between two stations (about 500 meters) and a rather modest commercial speed (less than 20km/hour) on a railway platform which is opened and integrated in the road network.

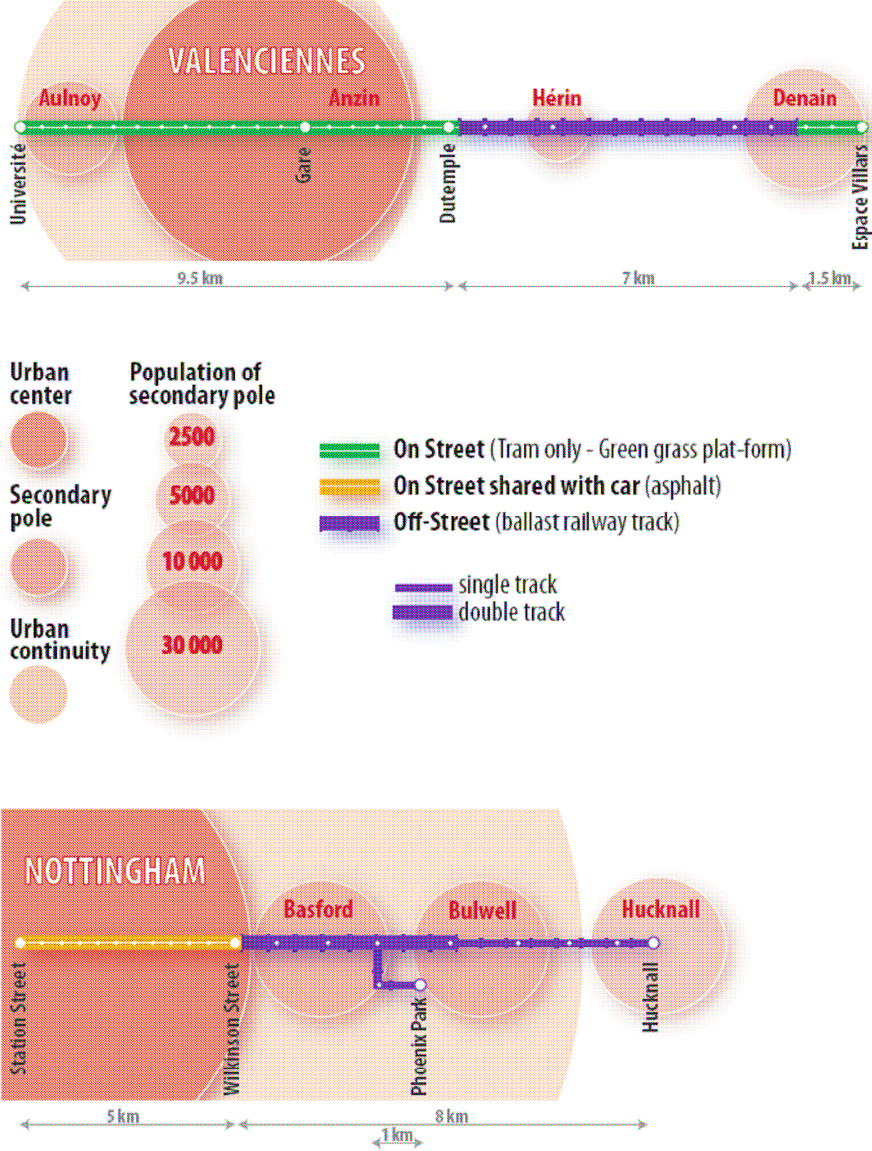
FIGURE 3. Picture of tram rolling stock near city center



After 5 km through the centre of Nottingham, the tram line is inserted along the "East Midlands" railways (Robin Hood Line) from Wilkinson Street to Hucknall (9 km). On this section, the tram can be considered as a "light rail" with an insertion principle like a railway track (ballasted and closed platform), long distance between two stations (900 m even 1,6 km between Moor Bridge and Butler's Hill) that allow higher commercial speed (39 km/h on this section, with a peak speed of 80km/h). The aim was to provide very competitive travel time and to minimize the platform insertion costs by implementing a single track on nearly 5 km. In Valenciennes, long distance between two stations in the suburban section between Valenciennes and Denain characterize the first line as it goes through unbuilt areas (3 stations on a 6 km distance). By reusing former railway corridors that belonged to the Anzin Mining Company, the tram is like an interurban transport system with a commercial speed close to 35 km/h. In both cities, transport authorities decided to adopt a tram-train function. Why has the conventional railway network not been fully enhanced? In Nottingham, we can say that the relation between the tram and the

conventional rail network consists in cohabitation between two networks (it might even be considered as a competition between Hucknall, Bulwell and the Nottingham station). In Valenciennes, we can talk about indifference, as there is no connection between tram and train. Both cities wanted to support the tram legitimisation by avoiding any mix up with the traditional railway system. In England, the commercial service's visibility was targeted, whereas in France, an institutional visibility was rather aimed. In fact, the French tram could be considered as a showcase of the local authority that supported this project.

FIGURE 4. A tram route in Nottingham and Valenciennes



In spite of these common aspects, both models differ from their networks urban insertion. As any classic French tramway, the French line is well integrated in the landscape with an opened track covered with grass. Furthermore, the tram platform is separated from the road network but shared with pedestrians. However the situation is different in Nottingham because the tram platform is shared with car traffic (Figure 4). The French tramway is part of the urban public transport network and put together with the bus network. In England, road public transport is unregulated and the connection between bus and tram is considered on a case by case basis. However, when local bus companies have a significant role in the light rail operating consortium, such as Nottingham City Transport, the integration is better conceived. the success⁷ of the NET is presented as a

⁷ After six years of operating (2004-2010), the Nottingham Express Transit (NET) has obtained a 92% satisfaction rate, is used by more

consequence of its integration with other transport modes. Indeed its integration had been thought with the heavy rail services via the tram terminus at Nottingham Station, the provision of over 3,000 Park and Ride spaces along the route and the operation of frequent circular bus services in the north of the City as a feeder for the tram. Finally, we can denounce the weakness of a policy to limit car uses (roads and parking). In both cities, the tram implementation seems to go along with plenteous compensations regarding cars in a competitive or a complementary manner (Frenay, 2005).

3/ Tramway and urban renewal : similarities and differences between Denain and Hucknall

Presentation of Denain and Hucknall

At both tramway terminus, Hucknall (30,000 inhabitants) and Denain (20,000 inhabitants) can be considered as two interesting examples to compare urban mutations subsequently to the tram opening. These two cities are in similar situations: old mining town, demographic decline, high unemployment rate ... Hucknall (since 2004) and Denain (since 2007) are served by modern tram (frequency is about 10 minutes and time to reach the city centre is about 30 minutes). The mutations approach relies on visits of the network, on a spatial analysis based on aerial photographs taken at different steps of the tramway implementation, and studies of several transport planning. The aim is to analyse urban transformations as a result of the tram implementation in a qualitative way.

The tram and public spaces quality

Qualitatively speaking, the tram's arrival played very different roles in Hucknall and Denain. At the Nottingham Express Transit terminus, as along the 9 km tracks going along the railway, the tram integration in the urban landscape is very superficial with ballast tracks as it is on the conventional railway infrastructures. The tram station and the railway terminal station are put side by side, and can even be mixed up. The railway terminal station has no station building and there is no "signal" and no square in front of the tram station that would announce the new modern tramway. More generally, the quality of surrounding public places did not change after the tram's arrival. The only transformation would be a pavement going to the town-centre by crossing the huge parking near Hucknall station. The city's masterplan (2009) gives priority to the layout of a finer connection between the town-centre and the tram station. To conclude, the tram project integration in public space has been shy and nowadays local authorities have to make efforts in order to fit the tram in the city.

In Denain, the impression is totally different because along the tram, the tracks have been extremely neatly integrated in the landscape. The tram enters the city of Denain by using an old railway corridor. Nevertheless, its route does not stop at the end of the railway corridor but is extended in the main shopping street (Villars Street). The tram implementation was the opportunity of a complete renovation of the concerned streets and roads. It included the perimeter defined by the built fronts but also the underground networks and any aerial equipment (any street furniture, plants, lightning...) (Frenay, 2005). In a very French style⁸, it led to a deep renovation of surrounding public space. It is seen like an "urban planning tool" in order to rethink the city. As evidenced by the intermodal hub located at Villars Place, at the terminus station that is covered by a huge glass ceiling and decorated with an impressive architectural signal. Qualitatively speaking, the "introverted" Hucknall tram and the "extroverted" Denain tram are opposed (Figure 5).

than ten million passengers per year (NET has exceeded the most optimistic predictions) and has contributed to a 20% uplift in public transport use at peak times from the northwest corridor into the city.

⁸ "In France, all new systems also involve improvements of the cross streets with the laying of new road and pavement surfaces and new street furniture and the cleaning of the fronts of buildings. The overall effect is to provide a significant facelift along the route to match the modern vehicles being introduced, although at an additional cost" (NAO, 2004).

FIGURE 5. Terminal station in Hucknall and Denain



The tram and urban projects' intensity

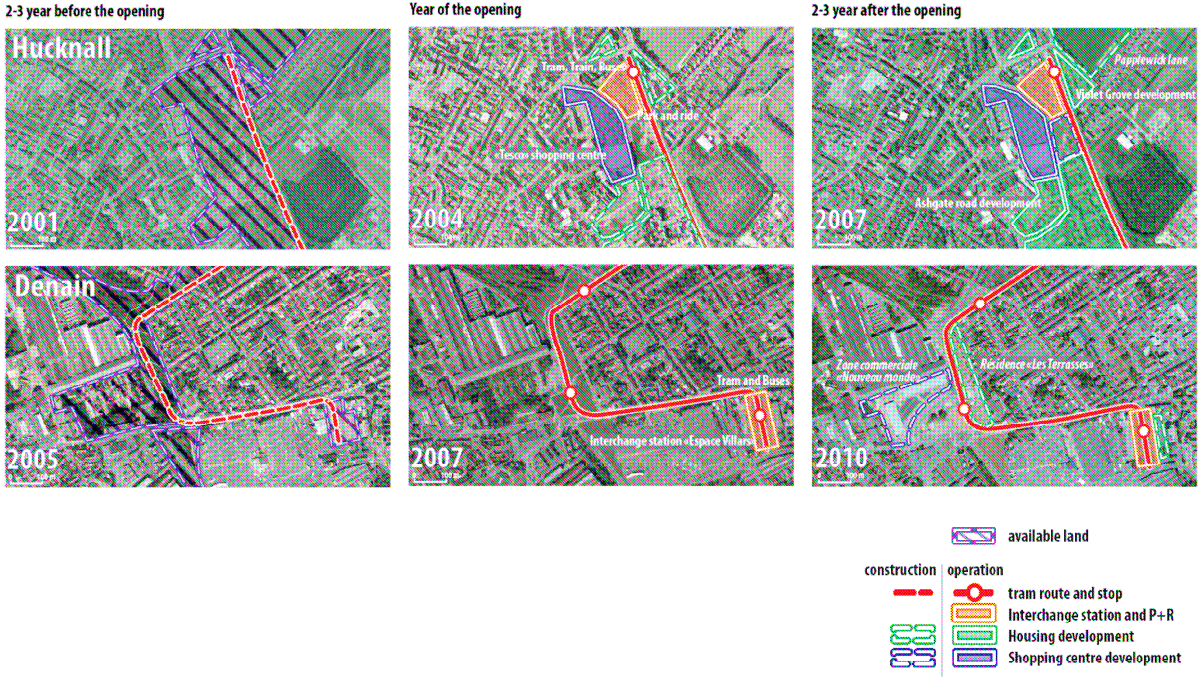
Quantitatively speaking, the observation of urban transformations is based on the analysis of aerial photographs taken at three stages (two or three years before the tram line's opening; at the tram line's opening; three or four years after the tram's implementation). Before the tram (in 2001 in Hucknall and 2005 in Denain), both cities were characterised by an important real estate potential coming from brownfield areas and other railway ones. These several and well located plots could be the support of urban planning policy.. In Hucknall, the west close areas of the NET terminus were fallow lands (except a parking of about a 100 car parks). In Denain, the available real estate for further urban renewal is also significant. However, the parcels seem to be hardly transformed because the aged industrial buildings and their pollution or contaminants have not been removed. At the tramway opening in both cities (in 2004 in Hucknall and 2007 in Denain), we can note some different urban changes. In Hucknall, despite layouts for the transport service (transformation of the parking area in front of the railway station into a Park-and-ride with a capacity of 450 car places), plots next the tram station will rapidly support new urban projects. Near the city-centre, the Ashgate area is quickly urbanized: a new road connecting the North to the South is opened, a Tesco supermarket is built in front of the Park-and-ride and next to the tram station, and new residential areas are engaged (under construction, but some of them were completed). In Denain, the noticeable layouts at the tram opening were essentially made in a qualitative manner as explained before. Except road and tram stations works, there is not even the beginning of the implementation of an urban intensification around the tram in 2007.

Three years after the tram opening, the enhancement of real estate opportunities is quite different in Hucknall and Denain. At the NET terminus, housing estates have been built at less than 500 meters away from the tram station. There are various types of housings and they mainly target the upper middle class. Most plots are urbanised or will soon be. The tramway proximity is promoted in the promoter's advertising leaflets :« *believe in an easy commute* » is the advert written by estate agencies and pasted in the tram. In 2007, the urban planning project of the Papplewick Lane area (located in the East of the station) was initiated in spite of high tensions concerning the residential area development on green spaces and agricultural parcels (adopted on March 2004). At the end, Hucknall has 3,000 more housings than before the tram. Despite the green belt, the studies confirm that "some residential and employment growth in this area is suitable and desirable, and should support the role of Hucknall as a sub-regional centre" (tribal urban studio). At Valenciennes tramway terminus, the development seems to be slower with some desynchronization with the tram project. In 2010, some evolutions can be noted with the first works relating to new shops on the activities area of "Nouveau Monde" (Figure 6).

The first residential developments occurred in 2011 and have been strengthened since this date because we can see in 2013 that the two side areas are fully urbanized. Urban changes around these two tram terminus have been occurred at different time scales. Are they the image of a more spontaneous anticipation effort in Hucknall? The analysis of the tram project genesis in Valenciennes shows that this project, from its upstream thinking (early 2000s), had to adapt itself to the urban plan projects and especially to the urban renewal project for the "Nouveau Monde" area in Denain. The initial political wish, based on the idea that the tramway may be an accompanying tool of the important renewal project on this fallow land area, did not happen in terms of time.

Instead, the tram got ahead so that in September 2007, during the tram opening inauguration, the mayor of Denain considered this tram as an opportunity to make "a major boost" to all projects in the urban renewal programs. This discourse shows a change in the strategic point of view of a tramway. Indeed, from now on, the tramway is seen as a leading role in the implementation of urban projects. This change may be the result of a complex governance required for the maturation of urban projects which were yet planned when the tramway project was under discussion.

FIGURE 6. A map of the urban projects supported in Denain and Hucknall



Tramway and urbanism: modest links?

In Hucknall, gentrification is widely promoted, in order to stabilize real estate prices at a satisfactory level and to attract wealthier families. In France, this strategy is quite feared. In Valenciennes, actors rather prefer to provide housing for social classes through their urban densification policies. In both Hucknall and Denain, the implementation of commercial areas in the suburbs and near tram stations leads to doubt about a phenomenon of real estate costs' increase. In Hucknall, a pet shop was set up on the last land adjacent to the Park-and-ride and it turns its back to the tramway. In Denain, different shops were built just close to the tram but they rather seem to be a way to implement a new commercial area than to seize the opportunity offered by the tram to set up proximity stores. In both cases, the added value of these new commercial activities seems to be weak for the tramway. We may even say that, without the tram, the urban dynamics of both municipalities would have been the same.

Finally, in Hucknall and in Denain, the tram urban planning seems to be representative of both national models. In Nottingham, the tram improved the accessibility of more than 70 recent building projects and also future ones. More precisely, it seems that the policy of land anticipation urged on the tram's implementation on this axis. In Denain, we have the opposite situation. The tram got ahead urban projects for political reasons (balance of investments between two communities, agreements on projects) and social reasons (need to change the city image). As a result, the current challenge is to implement new urban projects around the tram by an ambitious urban planning process.

FIGURE 7. View of new urban development around the tram



Conclusion: to a cross-fertilisation of models?

This paper points out the differences between the English tramway of Nottingham and the French one in Valenciennes. At the national scale, decision-making processes in these two countries follow different logics. For the British case, the decision comes under the national level, and local tram projects must comply with a long and complex social and economic assessment process. For the French case, the decision relies on local authorities that have financial levers, while the government appears to be rather an accompanying partner than a control role. Putting two theses projects into perspective, we can work out in detail these contrasting models. In Nottingham, the tram project was completed thanks to a successful public-private partnership packaging, while in Valenciennes, the process had to achieve political negotiations with every mayor involved. Both trams also differ regarding their urban integration. The landscape quality is not the same in the two cities, especially when we compare the tram's specific role in public spaces at the terminus stations. Such differences tend to prove that an infrastructure with same characteristic can be conceived, implemented and governed in different ways. Consequently, local authorities can seize differently territorial opportunities given by the project.

But nowadays, in these two countries, one can observe continuity in the tramway enthusiasm. Thus, the Tramlink Nottingham consortium obtained in 2011 the contract to implement and operate the two new tramlines to Chilwell (10 km, to the West of the central station) and to Clifton (7.5 km, to the South of the central station). The Nottingham tramway network will expand by more than the double until the end of 2014. In Valenciennes, the second line that will connect Valenciennes to Vieux-Condé (16 km, 25 stations) will open at the end of 2013. With more than 30 km tracks in a few years, those two conurbations may be classified among the major European cities served by a modern tramway.

To conclude, these new implementations show that there is some kind of hybridisation of French and English models. The tram expansion project in Nottingham seems to be "frenchified" (infrastructure, rolling stock, new local resource of public transport funding⁹). Firstly, the presence of French companies (Alstom, Kéolis, Vinci) - who are involved in French tram implementation - in the Tramlink Nottingham consortium will have some influence. Then, the community reaffirms its commitment to set up a whole multimodal network with a single operator for all the tramlines that will be complementary to buses. Finally, one can discover a new kind of argument for the tram: the image of Nottingham city that is widely used in France. In France, the current debate focuses on issues about costs control and land effects. In Valenciennes, the new line under construction is different from the first one because of its controlled cost (approximately 10 million euros per km) thanks to a single track that is less implemented in France than in the United Kingdom. Finally "more beautiful" and "less expensive" are a shared model, but a challenge to implement.

⁹ Based on the model of the "versement transport" tax, Nottingham City Council is developing a "Workplace Parking Levy" (WPL) scheme to invest on some local transport improvements (future extensions to the Nottingham Express Transit). The WPL is a charge on employers that provide workplace parking. The money raised from Nottingham's WPL increases financial freedom of local government.

Bibliography

- BABALIK-SUTCLIFFE E. (2002), « Urban rail systems: analysis of the factors behind success », *Transport Reviews*, Vol. 22 (4), 415–447.
- BOUCQ E. (2008), Assessment of the real estate benefits due to accessibility gains brought by a transport project: the impacts of a light rail infrastructure improvement in the Hauts-de-Seine department, *European Transport*, n°40, décembre
- CRAMPTON G. R., « Development Impacts of Urban Rail Transport », ERSA 2003, Finlande, Papier 295, 2003.
- DABINETT G., GORE T., HAYWOOD, R., LAWLESS, P., 1999. Transport investment and regeneration, Sheffield: 1992–1997. *Transport Policy* 6, 123–134.
- DI COMMIO, F. (2005), 'Le tramway en France, un symbole de la modernité urbaine', *Pouvoirs locaux*, 66, 84-88.
- EDDINGTON, Sir Rod (2006). The Eddington Transport Study, Main report: Transport's role in sustaining the UK's productivity and competitiveness, UK Dept. for Transport, London
- EDWARDS M., MACKETT R.L. (1996), Developing new urban public transport systems. An irrational decision-making process, *Transport Policy*, Vol. 3. No. 4
- EMANGARD, P. (2011), 'Le contraste des politiques européennes en matière de tramways', *Rail Passion*, 26-27.
- FLYVBJERG, B., HOLM, M. and BUHL, S. (2002), 'Underestimating costs in public works projects Error or Lie ?', *Journal of the American Planning Association*, 3, 279-295.
- FLYVBJERG, B., HOLM, M. and BUHL, S. (2005), 'How (in)accurate are demand forecasts in public works projects ? The case of transportation', *Journal of the American Planning Association*, 2, 131-146.
- FRENAY, P. (2005), 'Le Tram, outil en faveur d'une ville durable ?', *Transport Environnement Circulation*, 185, 2-8.
- FRÈRE, S. and RICHER, C. (2006), 'Structuration intercommunale et rôle des politiques de transports publics dans le Valenciennois', *Recherche Transports Sécurité*, 92, 245-261.
- HAMMAN, P. (2011), *Le tramway dans la ville. Le projet urbain négocié à l'aune des déplacements*, Presses Universitaires de Rennes, coll. Espace et territoires.
- HASS-KLAU C., CRAMPTON G. (2005), Economic Impact of Light Rail Investments : Summary of the Results of 15 Urban Areas in France, Germany, UK and North America, *Urban Transport Development*, Section 4., pp. 245-255
- HASS-KLAU C. et al (2003), « Bus or Light Rail : Making the Right Choice – Second Edition », *Environmental and Transport Planning*, Brighton.
- HASS-KLAU C. et al. (2004), « Economic impact of light rail: the results of fifteen urban areas in France, Germany, UK and North America », *Environmental and Transport Planning*.
- HYLÉN, B. and PHAROAH, T. (2002), Making tracks– Light rail in England and France, VTI – Swedish National Road and Transport Research Institute, Linköping.
- LAISNEY, F. and GRILLET-AUBERT, A. (2006), Tramway, espaces publics et mobilités, Rapport de recherche IPRAUS "Architectures du transport".
- LEPERS, G. (2012), Nottingham Express Transit : le(s) rôle(s) du tramway en milieu urbain et périurbain, Mémoire de Master de l'Institut d'Aménagement et d'Urbanisme de Lille (IAUL), 83 p.
- MACKETT, R. and BABALIK, S.E. (2003), 'New urban rail systems : a policy-based technique to make them more successful', *Journal of Transport Geography*, 11, 151-164.
- MACKETT, R. and EDWARDS, M. (1998), 'The impact of new urban public transport systems: will the expectations be met ?', *Transportation Research A*, 32, 231–245.

NAO-National Audit Office (2004), Improving public transport in England through light rail. Report by the comptroller and auditor general, HC 518 Session 2003-2004: 23 April 2004, 47 p.

O'FALLON C. (2003) *Linkages Between Infrastructure and Economic Growth*. Pinnacle Research, Prepared for Ministry of Economic Development, 16 p.

OFFNER, J.-M. (1993), 'Les effets structurants du transport : mythe politique, mystification scientifique', *L'Espace Géographique*, 3, 233-242.

OFFNER, J.-M. (1998), 'Le tramway Saint-Denis–Bobigny entre enjeux et usages la décision à l'épreuve du territoire', *Les Annales de la Recherche Urbaine*, 80-81, 153-179.

PARIS, D. (2011), 'Désiré, puis haï, et enfin adulé : les tribulations du tramway dans les villes de France', *Rail Passion*, 8-24.

PICKRELL, D. H. (1992), 'A desire named streetcar : fantasy and fact in rail transit planning', *Journal of the American Planning Association*, 58, 158-176.

RICHER, C. and HASIAK, S. (2012), 'Des tramways contre-nature ? Regards croisés sur les processus de décision des projets de TCSP de l'arc Sud de l'aire métropolitaine lilloise', *Revue de Géographie de l'Est*, 52, <http://rge.revues.org/3547>

STAMBOULI J. (2007), "Les territoires du tramway moderne : de la ligne à la ville durable", *Développement durable et territoires*, Dossier 4 : La ville et l'enjeu du Développement Durable, mis en ligne le 11 juin 2007. <http://developpementdurable.revues.org/3579>

TRIBAL URBAN STUDIO (2008) *Appraisal of Sustainable Urban Extensions*, Final Report Roger Tym & Partners, CampbellReith, 199 p.

TRINDER D. (2002) *Economic Growth and Transport Infrastructure Appraisal* in McQuaid RW, Greig M, Smyth A and Cooper J (2003), *The Importance of transport in business Location Decision*, London-Departement for Transport