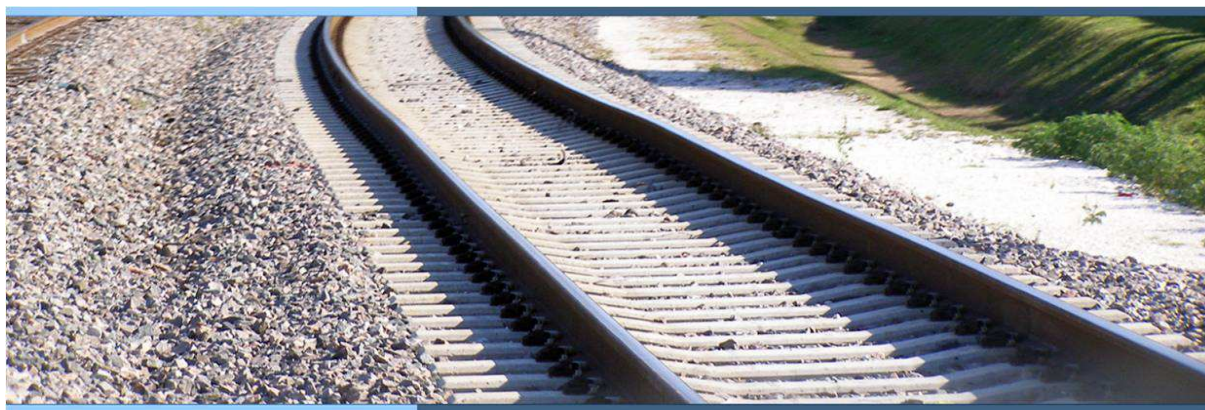


# **PROJECT TRANSFORMING VERSAILLES CHANTIERS**



**14th April 2012**

**Adrian Carrillo- Natalia Kozdra- Boubacar Coly- Fanny Courry- Javad  
Mahmoudi- Aleksandra Ostrovskaia – Collins Ihedioha -Dina Salakova**

## Context

*This report was established by eight students in International Master Management of Eco-innovation during the second semester of the program 2011-2012. The results were also presented in front of a jury composed of Scholars and companies' representatives from Italcementi, SNCF, GDF and Saur.*

*The project was part of the Programme Gare: partnership between the University of Versailles Saint-Quentin en Yvelines, the city of Versailles and the French rail transport company SNCF.*

*Programme Gare has for goal to renovate and modernize the train station of the Chantiers district in Versailles by creating a multimodal pole and more environmentally friendly infrastructures.*

*We, as students, were working on the project as consultants and our objective was to present our propositions for the future train station and its surroundings.*

*In this paper you will find the diagnosis we made of the train station, our objectives and vision as well as where our group was innovative in its approach.*

# 1 – EXECUTIVE SUMMARY















For many cities around the World, environmental issues related to climate evolution, pollution and resource scarcity have been known as the biggest challenge of the century. Moreover, it is hardly deniable that human activity is highly contributing to this situation. On the one hand, it is perceived as an inexorable decline of our planet's resources; and on the other hand, it is identified as a great opportunity for a transition towards a sustainable and eco-friendly way of life.

This report, created by the Multi-Eco-Innovation group, focuses on transforming Versailles Chantiers train station in such a way that Versailles city will become a worldwide reference for sustainable development and social wellbeing. This approach gives continuation to a previous report dedicated to international and adaptive benchmarking detailed into these key sectors: Eco efficient infrastructures, Multimodal transportation hub, Mixed land use and social cohesion as well as Sustainable Economic platform.

Following the logical evolution of Versailles Chantiers train station renovation project, here, the main goal is to introduce potential scenarios of implementation with a clear emphasis on the most optimized one. The elaboration of scenarios was done in accordance with a combination between high technology orientation and change in life styles. Thanks to relevant indicators of evolution, positive impacts of the scenarios will be forecasted according to timeline and implementing process.

As part of the potential implementation of this project, high importance is given to the economic section and that is the reason why we manage to assess precisely the budget required not only for the global project but also for each step during implementation.

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### 3 – INTRODUCTION

#### *Multi Eco-innovation consulting group*

For centuries Versailles has set the example to the other cities for its cultural sophistication, the stunning architecture and interior design of the castle and beautiful gardens. Times have changed but the castle remains at the centre of the city's identity.

Versailles Chantiers current problems make this an excellent opportunity to implement changes.

KEY FACTS	
Last remodeling was made in 1932, which is the current building.	Departing from the train station, inefficient and unpleasant interiors, structures that contribute to climate change, pollution and congestion, are only a few of the issues blighting the station. The planned redesign of the station by SNCF and the council is a first step to tackle some of the current problems of Versailles Chantiers, but we, the Multi Eco-Innovation Group strongly believe that more can be done. And we prove it with the vision we develop for the station in this report.
64000 travelers/day in the station	

#### *Project scope: Versailles Chantiers*

The aim of *this project* is to render Versailles Chantiers city area into a European leader in eco-innovation by 2030. The global objective is that Versailles Chantiers develops as (1) a “Multimodal Pole” – an hub for combined means of daily persons and value exchanges-, and (2) one of the development cores of the City of Versailles, and thence a Global reference on the matter. The project's success depends on the ability of the managers to retain focus against all odds, therefore the Multi-Innovation Firm resources and commitments will be dedicated on gatekeeping everything else out of the scope of Versailles Chantiers Train station and the City of Versailles.

This project is based on two axes, **influence on lifestyle and technological solutions**, where the characteristics of the deliverables are the different. In our project we combine technologies needed to compete in the race of eco-innovating leaders in the world and processes that deal with how people interact with eco-innovations and how eco-innovations can generate a conscious and better lifestyle.

KEY FACTS
<b>Energy production systems</b> in the train station must be changed to accomplish any change.
If the lifestyle of the citizens is pretended to be improved, <b>Educational programs</b> at all levels are required.

## 4- DIAGNOSIS of Versailles Chantiers

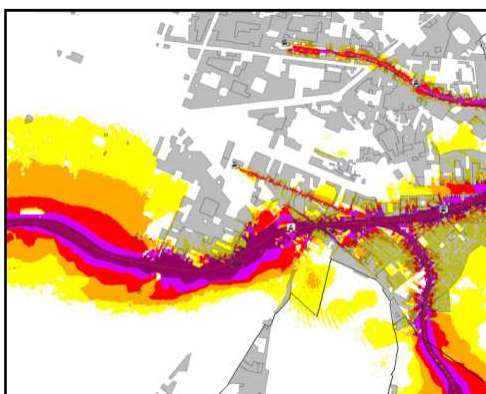
### A- Problems faced by a user of the station in Versailles Chantiers

This project derives from the acknowledgement of an ineffective transportation system in and around the Versailles Chantiers station and inefficient infrastructures in terms of accessibility, aesthetics and energy use as well as low level of social and diversified touristic activities. People's comfort and wellbeing are at the center of our project, therefore we will use the perspective of a

KEY FACTS
8,280 cars commuting every day in only 4 streets
Transport represented 19,6% of GHG in EU
64000 travelers/day in the station

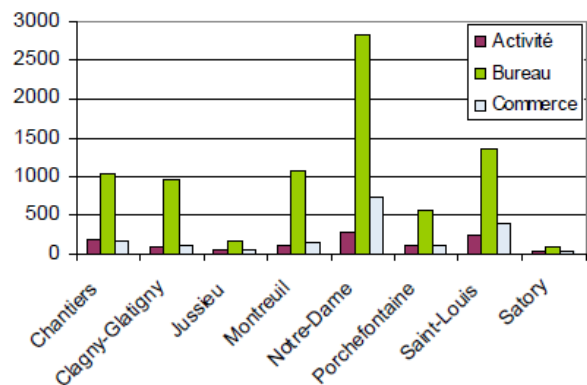
user to, based on concrete data and information, illustrate the real problems of the station. We look at an average user, Louis who uses the station to commute to his work every day. He comes to the station around 8:30am and often gets stuck in congestion. Later, he loses time finding parking space for his bike or car before actually being able to enter the station. Indeed, according to a survey conducted in 2005 (Pôle d'échange multimodal, 21 avril 2010), during

rush hours on mornings and evenings, about 8,280 cars commute through only four streets around the station and this number will not decrease without the implementation of innovative transportation networks and new sustainable alternatives. Moreover, according to the European Environment Agency, transport represented 19,6% of total GHG emissions in Europe in 2008 which constitutes a direct threat to the environment and quality of air (The European environment – state and outlook 2010: Synthesis, Chapter 2: climate change) (When entering the station, he bumps into many people because of a lack of space, a high



number of users (64000/day according to V.C. Multi Modal Exchange Pole, Public Survey- July 2010) and no waiting areas. Moreover, the information about transportation schedules is only in French and there are no maps of the city or information about touristic activities. Louis feels cold during winter because of inefficient heating system and bad insulation and has no entertainment points to go to such as cafés, shops, book shop etc.

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Catching a train in Versailles Chantiers is not easy or safe for him, considering the lack of space in the stairs and escalators, as often he has to avoid people carrying their bikes on their shoulders or mothers struggling with their trolleys. Once in the platform, Louis feels uncomfortable for many reasons: the station looks old because of poor maintenance, people are close to each other because of the lack of space on the platform and finally the noise of trains is not pleasant. ([Map of the level of noise in Versailles Chantiers, BruitParif, Observatoire du bruit en Ile-de-France](#)).

After a long day of work, Louis comes back to the station around 6:30pm and is again forced to face congestion. He wants to buy food and flowers because of a dinner planned in the evening with friends, as well as medicine for his children; unfortunately, there are no retails, pharmacy or flower shops in or around the station. Disappointed, Louis goes out of the station to get his bike, take his car or take the bus. If we consider that Louis has to wait outside, he has no possibility to wait in a nice park or a pleasant restaurant or café and faces cars and buses coming from different directions. While Louis is waiting outside, he is constantly asked by tourists “which way to go to the castle?” since there is no information, maps and visibility about it in and near the station. In the discussion, he always asks the tourists “what else would you like to see?” but the only answer will be “the castle!” because the tourists are not aware of any other touristic points or districts in the city. Going back home, Louis wanders: ... will it ever change?

According to the diagnosis we made and the information we gathered, we defined **four main criteria** that were the basis for our project as for the choice of solutions and their integration:

These four dimensions are relevant to Versailles Chantiers because specific issues were identified for each of them. The integration of our best solutions will respond directly to those current and future problems.



*For more details about data and graphs used in the diagnosis, please refer to Appendix 1*

## *B- Generic functions of a railway station*

A railway station was defined as “a **node** in the transport network & a **place** in the urban system” (Bertolini, 1999) and therefore implies a relationship between transport and land use. Nowadays, railways stations become a centre of focus in urban planning and are at the heart of redevelopment of cities and the way people move inside. ([Reusser D.E. & al, Classifying railway stations for sustainable transitions- balancing node and place functions, 2007, Journal of transport geography](#)).



According to literature review, we want to use the five generic functions that a train station should have to fulfill the needs of all stakeholders to introduce our project.

**The five generic functions of a train station:** (Zemp S. & al., Generic functions of a railway station- A conceptual basis of the development of common system understanding and assessment criteria, 2010, Transport Policy.

- 1- Link catchment area and transport network**
- 2- support transfer between modes of transport**
- 3- Facilitate commercial use of real estate**
- 4- Provide public space**
- 5- Contribute to the identity of the surrounding area**

Versailles Chantiers train station already has some of those functions but not well developed. Indeed, the station is supposed to have the function of linking catchment and transport network but because of a **high level of traffic** and too many non-optimized interactions between different transport modes in a **restraint and non-secured area**, this function is not fulfilled. Moreover, the station and its surrounding do not provide real-time information on different supports, comfortable waiting spaces adapted to weather variations or even secured bike parking areas. Considering the three other functions present in the diagram, we can say that **Versailles Chantiers lacks important functions in order to fully meet the current and future needs of its users**. Therefore, we carefully studied those functions in order to match them with eco-innovative solutions that will fulfill the needs of users and be resilient to future and unpredictable changes.

Our set of solutions tackles each functions defined previously. Indeed,

- For the function of **providing public space**, we propose the creation of pocket parks which link different areas together and offer green spaces for people
- For the function of **facilitating commercial use of real estate**, we provide thanks to the multifunctional centre space for services and shops as well as companies near the train station
- For the function of **contributing to the identity of the surrounding area** we suggest the redesign of the station using natural lightning and therefore creating a reference to the mirror gallery in the castle. Moreover, the combination of the renovation of the station and the urban development of its surroundings will enhance the districts esthetic identity.
- For the function of **linking catchment area and transport network** we propose the integration of different transport modes (bikes, cyclotaxis, electrical cars, buses and trains) in one multimodal



pole that will be easier to access by users and will be adaptable to increase in the number of users over time.

- Finally, for the function of **supporting transfer between modes of transport**, the implementation of waiting spaces including real-time information in and outside the station, secured and practical bicycles parking spaces and pedestrians paths as well as a more secured environment (no cars or buses circulating in front of the station) will enable users to access more easily a wide choice of transport modes according to their needs.

## 5 - GUIDING PRINCIPLES

The problems that we see in Versailles Chantiers and its surroundings, but also in the way economy works call for a change in paradigm in the way we humans do things. At Multi-Eco-Innovation, we believe the concept and practice of sustainability are the answer and the way change should be introduced in the world. Being sustainable means following certain concrete principles ([Basel](#), [GEB](#), February 2012 | [André Schneider](#)):

- ***Prioritising Environmental values,***
- ***Giving importance to social and cultural values and***
- ***Not forgetting about Economic values***

***For the details of every guiding principle go to the Appendix 2.***

By underlying our vision, the guiding principles inform every step of our strategy for Versailles Chantiers.

## 6 – VISION

*We want to turn Versailles Chantiers and its surroundings into a memorable and inspiring innovative platform that triggers sustainable economic development of the area and changes people's lifestyles into more environmentally friendly.*

## **7- GOALS AND OBJECTIVES**

In order to realize the vision we have for Versailles Chantiers, we established goals and objectives that we want to achieve with our innovative strategy.

### **Main goals**

- Sustainable lifestyle
- Efficient and environmentally- friendly transportation
- Community cohesion
- Pleasant green environment
- Economic development

### **Main objectives:**

#### **In the Versailles Chantiers station:**

- Replace the station energy sources with renewable ones by 2017.
- Replace 50% of network water consumed in the station with rain water by 2017,
- Intermodality and transport optimization

#### **In the city:**

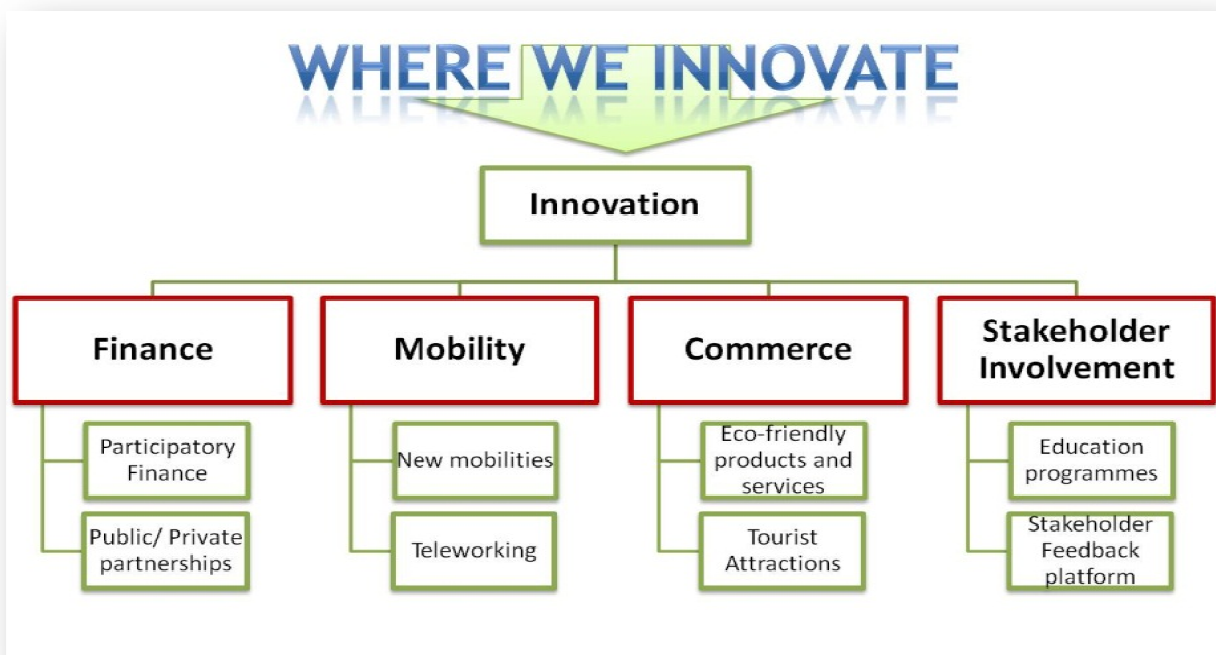
- Reduce car-usage in the city by 75% of total mobility by 2030,
- Reduce transport GHG emissions by 80% by 2030,
- Create 2000 jobs by 2030,
- Increase the bicycle usage to 40% and walking to 20% of total city mobilities by 2030

- Increase vitality, attractiveness and recognition of Versailles Chantiers area,
- Improve social cohesion,
- Create new tourist attractions to encourage visitors to stay longer in Versailles.

With the goals and objectives in mind we developed a strategy for Versailles Chantiers that will enable us to realize our bold vision for the station and the city of Versailles.

## WERE WE INNOVATE

The creation of the strategy required high level of integrative thinking and multidisciplinary innovations. And this is exactly what our group's specialization is. Indeed, innovation is in the core of our identity. We are a multi-eco-innovation consultancy which means we pool together the experience, creativity and knowledge of 8 international experts with diverse backgrounds to simultaneously innovate in four key sections: Finance, Mobility, Commerce and Stakeholder involvement.



## 14- Conclusion

Versailles City is home of a world-class site Versailles castle. We strongly believe it is the time to add another world-class dimension to the city's identity: sustainability. With our project, centered around the Versailles Chantiers but also impacting the whole city, we will turn it into an inspiring eco-innovation platform and a leader in urban mobility.

The challenges associated with the current ecological and economic crisis require solutions that address both at the same time. This is why we propose **Multifunctional Centre**, which will concentrate 'green' products, services and offices and promote environmentally friendly solutions to daily problems in an economically sustainable way. It will generate jobs, while promoting the sustainable living. Its location close to the station and an **office-sharing system for teleworking** that it will have will reduce the travel demand, as people will be able to satisfy their needs in the close vicinity of their homes/ train station, making it an important part of a mobility strategy for Versailles. A mix of solutions for bicycles: **Bike Pods, I-GO bikes and 'Versailles à Vélo program'** will encourage the inhabitants of the city to cycle more, reduce congestion and transport pollution in the city and contribute to building a healthier, happier community. At the same time, **Intelligent Transportation Systems** will enable the better use of existing infrastructures and contribute to the reduction of car usage in the city, while the **Sustainable Transportation Centre** performing research and testing of new transport modes will be the transport eco-innovation engine of the project. The reduction in the consumption of resources and CO2 emissions are also high on our agenda. The proposed **Biomass plant** will produce a sustainable energy for the station and its surroundings in an environmentally friendly way using the locally sourced material. We will also reduce the network water consumption using the **Rain Water Collection tank** and a system of sensors in the station. We will increase inhabitants' living comfort by dotting the city with **Pocket Parks** and we will also remember about tourists. Without challenging the importance of the Castle of Versailles for the city, **Eco-Museum** and **Eco-Hostel** will provide additional magnets for visitors, encourage them to stay longer in the city and enrich their experience. The tourists will leave Versailles with the image of the city that is not only charming and a world-class historical site, but also leading the way in urban sustainability.

As our project is for the people and the users of the transportation, we will integrate the inhabitants of the city into our project. Through an **Interactive web platform and a physical meeting space** stakeholders will be able to participate in choosing the direction of the project and influence the shape of the solutions put in place. Monitoring and constant feedback from the platform participants will ensure project's adaptability to future changes in the context but also in the needs of the people concerned, and hence increase its resilience. Getting people on board means not only involving them in the interactive platforms and collecting feedbacks, but most of all convincing the

inhabitants of Versailles about the need to become more eco-friendly in their daily life. Starting with a model **Eco-kindergarten**, through the **projects for Eco-schools** up to **green offices** and **car sharing schemes for work places**, a whole range of programs that we propose will educate people to live more sustainably and hence increase the sustainability of the city as a whole. Having in mind the current financial situation in the world, we have come up with a variety of ways to finance the project. **Estate developer and venture capitalism involvement, crowd funding and investment, carbon bonds in exchange for infrastructures** will enable a cost-effective implementation of our solutions and bring the needed change to the city, while reducing the financial burden on the city's administration.

We believe our project for Versailles Chantiers and the city of Versailles is the answer to the city's problems and a necessary step for its transition to sustainability.