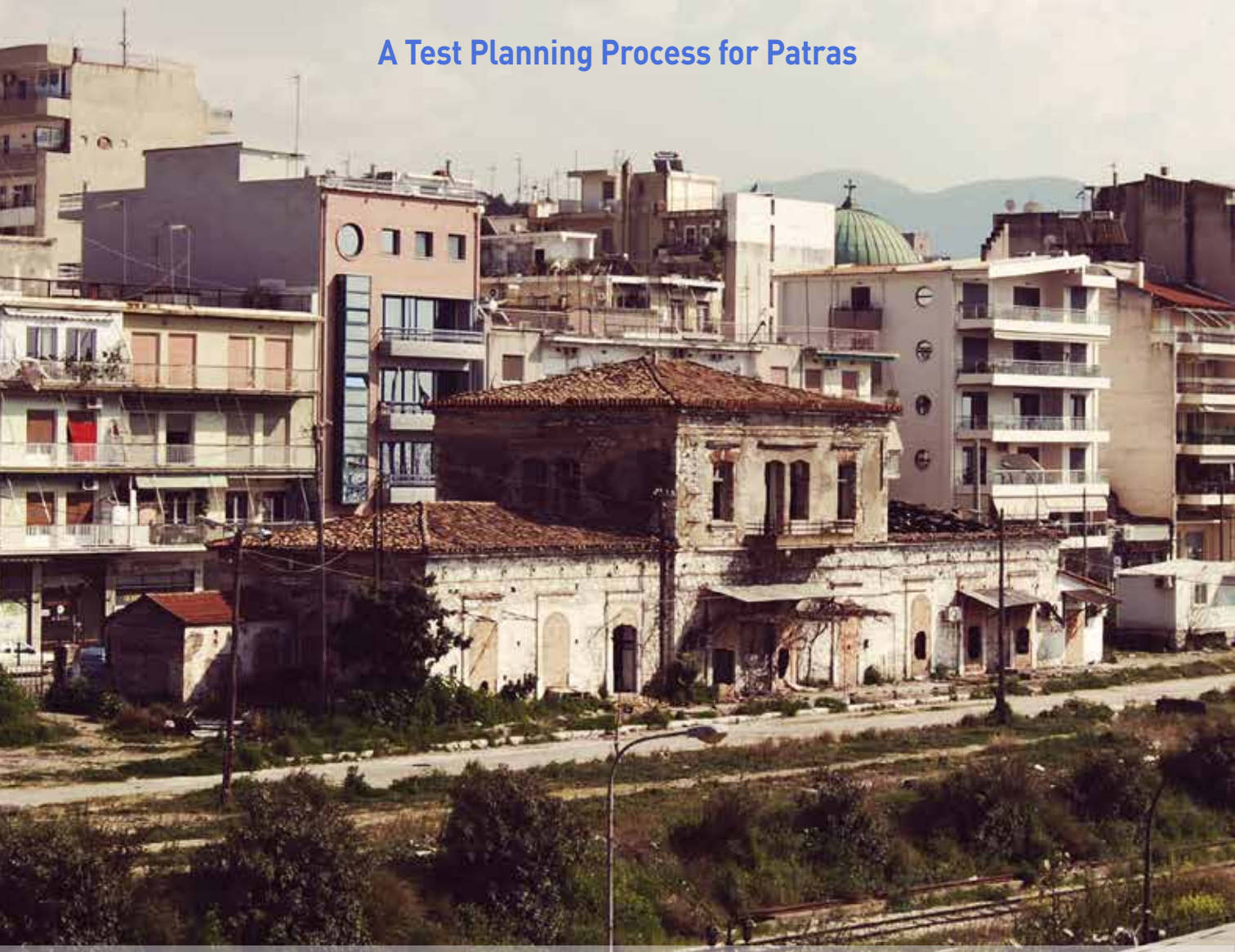
CODE PATRAS

RAIL & CITY

A Test Planning Process for Patras



IRL- Institut für Raum- und
Landschaftsentwicklung
Professur für Raumentwicklung

ETH Zürich

in collaboration with

National Technical
University of Athens

Commissioned and created by:

ETH Zurich
Institute for Spatial and Landscape Development (IRL)
Chair for Spatial Planning and Development
Prof. Dr. Bernd Scholl

In cooperation with the University of Patras and the National Technical University of Athens

ETH Support Team:
Dr. Rolf Signer
Irini Frezadou

Design and layout:
Theodora Papamichail

English text preparation:
Beverly Zumbuehl, *WordsWork*

November 2015, Zurich

Systematic evaluation and representation of the results of the Test Planning Process by the Steering Committee:

Prof. Dr. Bernd Scholl, ETH Zurich
Prof. Dr. Vassilis Pappas, University of Patras
Prof. Dr. Kostas Moraitis, NTU Athens
Irini Frezadou, Architect & Spatial Planner, ETH Zurich
Dr. Rolf Signer, Planner, ETH Zurich
Peter Noser, Architect & Planner ETH/SIA, Zurich
Hans-Peter Vetsch, Former Head of Operation & Safety for the Gotthard Basetunnel
Nicos Milionis, Transport Engineer, MScEng

Teams of the Test Planning Process (in alphabetical order by shorthand symbols):

Team ASTOC, Cologne – ASTOC

Team Feddersen & Klostermann, Zurich – F&K

Team Io Carydi, Athens – iocarydi.com

International University Team (NTU Athens, TU Patras, ETH Zurich) – Uni

CODE PATRAS

RAIL & CITY

A Test Planning Process for Patras

November 2015 | Patras, Zurich

IRL- Institut für Raum- und Landschaftsentwicklung
Professur für Raumentwicklung
ETH Zürich
in cooperation with
ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΑΤΡΩΝ
National Technical University of Athens

CONTENTS

Agios Andreas railway station, 2011 | photography: Theodora Papamichail

Preface

Greece is facing major challenges. The current economic crisis has deeply affected the nation and brought concerns about its future. In such a situation, seminal investments take on a prominent importance. Investments in the transport infrastructure, especially railway infrastructure, are a critical part of Greece's future. Transport infrastructures are needed to form a central nervous system for the country and to create the preconditions for an economic recovery.

Reliable and efficient railway connections can provide a strategic backbone for the nation's spatial and transportation development. With an environmentally friendly transport system, a network of cities and sites can emerge that will create better prerequisites for the improvement of the Greek economy, contribute to the desired decentralised development of the country, and open new and interesting markets for tourism. The railway connection from Athens to Patras is a component of the European core network, the Orient/East–Mediterranean Corridor, making it important not only for Greece, but also for the development of its eastern neighbours.

Greece has completed railway connections from Athens to Thessaloniki in the north, to Pireaus as the major southern port and to Kiato. What remains is the 170 km section to connect Athens to Patras via Kiato. Patras is on the Adriatic, making it the main port in western Greece and the best connection to European shipping. Completing the connection to Athens would provide a boost for Greek economic development. However, several serious problems continue to hamper finding a reasonable solution, not least the price of such endeavours.

Upon considering the importance of the situation, the University of Patras, the National Technical University of Athens and ETH Zürich decided to take the initiative and proposed a seminar to re-open the search for a solution. With the support of the City of Patras and the OSE Railway Association, the first seminar week was conducted in June 2013, using advanced students from the three universities to form interdisciplinary teams. Experts in settlement, landscape, and transport planning were selected to oversee the seminar. In the resulting contributions, possibilities for cost-efficient alternative solutions were suggested. The results were both creative and practical.

This encouraged the City of Patras and the OSE to take it further. It was agreed to implement a full Test Planning Process, a proven method in spatial planning for solving difficult tasks. The means for this step was provided by ETH Zurich as part of a special research project that wanted to obtain valuable experience for the further development of this method. This support also guaranteed that the test planning would be conducted independently and without prejudice.

In the first half of 2015, highly qualified teams, both local and international, worked on making suggestions and recommendations. This report introduces the results of the Test Planning Process for the Patras RAIL&CITY project. The documentation on the Test Planning Process for Patras, including the recommendations of the Steering Committee and the contributions of the teams and their evaluations, demonstrates the spectrum of possible solutions and presents the key conclusions of the Steering Committee for the participating actors, organisations and the interested population of Patras.

We would be pleased if this initiative helps to smooth the way for a quick realisation of this very important railway connection linking Athens to Patras and the European railway system.

Prof. Dr. Bernd Scholl, ETH Zürich
Prof. Dr. Vassilis Pappas , University of Patras
Prof. Dr. Kostas Moraitis, NTU Athens

Patras, November 2015

Introduction

Central railway station in Patras, 2015 | photography: Theodora Papamichail

1 Introduction

Greece is facing major challenges. The economic crisis has deeply affected the nation and in this state of affairs, seminal investments take on a prominent importance. Investments in the transport infrastructure, especially in the railway infrastructure, are a part of this process. Transport infrastructures form the central nervous system of the country and create the preconditions for an economic recovery.

Reliable and efficient railway connections can become a strategic backbone for the nation's spatial and transportation development. With an environmentally friendly transport system, a network of cities and sites can emerge that will create better prerequisites for the future challenges of economic development, contribute to the desired decentralised development of the country, and open new and interesting markets for tourism. The railway connection from Athens to Patras is a component of the European core network as part of the Orient/East–Mediterranean Corridor.

Originally, and after decades of discussions, it was planned that Patras would build an urban tunnel and an underground station using the normal track gauge railway for the connection to Athens. This means the meter gauge system would have to be replaced. The high cost of over 700 billion € blocked this solution. Other alternatives did not exist.

Upon considering the situation, the University of Patras, the National Technical University of Athens and ETH Zürich decided to take the initiative and proposed a seminar to re-open the search for a solution. With the support of the City of Patras and the OSE Railway Association, the first seminar week was conducted in June 2013, using advanced students from the three universities to form interdisciplinary teams. Experts in settlement, landscape, and transport planning were selected to oversee the seminar. In the resulting contributions, possibilities for cost-efficient alternative solutions were suggested. The results were both creative and practical.

This encouraged the City of Patras and the OSE to take it a step further. It was agreed to conduct a Test Planning Process, a proven method in spatial planning for solving difficult tasks. The means for this step was provided by ETH Zurich as part of a special research project that wanted to obtain valuable experience in an especially challenging environment for the further development of this method. This support also guaranteed that the test planning would be conducted independently and without prejudice.

Based on a carefully prepared task statement, highly qualified teams, both local and international, worked up their suggestions over the first half of 2015. They were accompanied by a Steering Committee (StCo) made up of high-ranking independent experts in spatial planning, transport and railway development and landscape planning. The Steering Committee's task was also to evaluate the teams' contributions on this basis and recommend solutions that would carry the work forward.

This report introduces the results of the Test Planning Process for the Patras RAIL&CITY project. It demonstrates that a quick, effective and cost-efficient railway connection with a new railway station in the centre of Patras is possible. Beyond that, the urban development of Patras could gain a far-reaching stimulus from this approach.

Solutions cannot be realized against the will of those affected by the changes, i.e. the participating actors and the population. First, the advantages and disadvantages can only be weighed fairly when they are founded on an intensive discussion of the various solutions under investigation. Second, the orientation of further development can only be established when processes and institutions are planned.

The documentation on the Test Planning Process for Patras, including the recommendations of the Steering Committee and the contributions of the teams and their evaluations, demonstrates the spectrum of possible solutions and presents the key conclusions of the Steering Committee to the participating actors, organisations and the interested citizens of Patras.

1.2 The Test Planning Method

The Test Planning method belongs to the group of cooperative, scientifically based planning methods and is especially suitable for difficult and complex tasks that involve many interest groups.

The core concept of test planning is to set the solution process in motion through the exchange of ideas and a discussion of their advantages and disadvantages in a framework organised according to specific principles and then to draw conclusions from this process. Through testing various ideas in an exchange of suggestions and criticism, basic pointers towards their solution and the reasoning behind them will crystallise out. Test planning processes (TPP) thus deliver an organisational and communication framework for exploratory learning.

In recent years, the test planning method has established itself in Switzerland, (Scholl, Staub 2013), Germany and Austria. Experiences have also been made through EU projects, PROSIDE in Italy (Milan) and Hungary (Budapest). The method actually goes back to proposals made in the 1970s for the area around Vienna. It belongs to the category of cooperative planning processes and is especially suitable for difficult and complex problems (Scholl 2010, 2011).

In the very beginning of a process, difficult planning tasks need a variety of possible solutions. To explore this variety of different planning tasks in Patras, four teams were selected, all working on the same task simultaneously from different perspectives (Signer, 2015). Therefore, the core of test planning is the competition of ideas.

The teams are guided by a Steering Committee. This is a high-ranking group of experts from the fields of town, regional and landscape planning, as well as spatial and railway development. The critical discourse among the participating teams and the members of the Steering Committee can lead to a qualified rejection of ideas that are out of the question, while clearly leading to the qualification of ideas that are worth following up. Qualifying both the suggestions and the rejections of an approach is indispensable in a transparent and comprehensive planning discussion and decision-making session.

In order to generate the desired results, one important aspect is using three cycles of going through the material. This allows an exploratory approach and promotes cooperation as well as uncovering potential problems in a stepwise progress of the ideas and discussions with the Steering Committee.

1.3 Organisation of the Test Planning Process

The process is organised into seven steps ranging from composing the Steering Committee up to presenting the final set of recommendations. This format has filtered out of many processes to ensure that no aspects or important steps are left out and the teams have the same basis for working on their solutions.

Step 1: Composition of the Steering Committee (10.10.2014)

In this case, the Steering Committee comprised the three initiators of the TPP, two organisers of the practical requirements and support functions and three experts from related professions.

The early formation of the Steering Committee gives its members time to get acquainted, to discuss the task mission and its formulation, create a schedule, decide the content of the rest of the seven steps to a ultimately create a set of recommendations.

Step 2: Start-up event for the teams (6.2.2015)

The start-up event for the teams includes presenting the task and the goals, taking a look at potential 'neuralgic points' in the process and agreeing on an organisational structure for working and presenting the outcome.

Step 3: Workshop discussion (27.2.2015)

The Workshop Discussion took place approximately three weeks later with the purpose of presenting the first ideas and results from the teams as well as offering an opportunity for the Steering Committee to answer questions.

The teams were free to conduct more site visits before and after the Workshop Discussion. The teams were also recommended to bring any special questions that could not be worked out among the team members to the Workshop Discussion and present them to the Steering Committee.

Step 4: Interim presentations (27.3.2015)
At the interim presentations, the areas for further study are introduced. Each team selects one main direction for a possible solution.
Step 5: Final presentations (29.5.2015)
At the final presentation, the teams introduce their results to the Steering Committee.
Step 6: Document submission to the Steering Committee (31.5.2015)
After the submission of the team contributions, the Steering Committee support team organises the contributions of the teams into an overview as a basis for a comprehensive discussion of the results. Together with the team contributions, this forms the central foundation for the final two-day meeting of the Steering Committee.
It should be noted at this point that the outcome of a Test Planning Process is not about selecting one solution out of those presented. Experience from comparable processes shows that it is more useful to take the various elements that are worth pursuing from the solutions of the individual teams and combine them in an appropriate way.
Therefore, a comprehensive compilation of the work was placed before the Steering Committee at their closing meeting. This session also served to develop further recommendations to be presented to the various stakeholders.
Step 7: Final Steering Committee meeting (29–30.6.2015)
The final two-day session of the Steering Committee is to evaluate the teams' contributions and to develop additional follow-up recommendations to give to the various stakeholders.
The documentation of this process and its results were prepared during July and August 2015.

1.4 Presentation to Client

When all the reports and documentation are complete, they are presented to the various stakeholders by members of the Steering Committee.

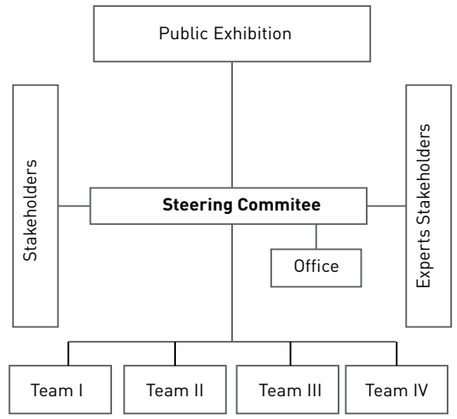
References

Signer, R.: Test Planning Process for Patras. Task Mission. Patras 2015.

Scholl, B.; Staub, B. (eds.): Test Planning – A Method with a Future. Main features and information on the practical application of the test planning process using Riedholz/Luterbach as an example. Zurich 2013.

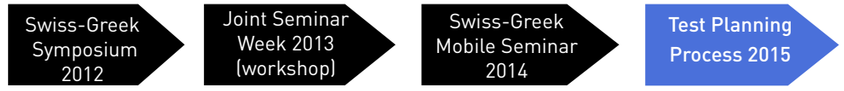
Scholl, B.: Die Methode der Testplannung. Exemplarische Veranschaulichung für die Auswahl und den Einsatz von Methoden in Klärungsprozessen (Methods of Test Planning. Exemplary illustrations for the selection and use of methods in clarification processes). In: Grundriss der Raumentwicklung. Publisher: Akademie für Raumforschung und Landesplanung, Hannover, 2011.

Scholl, B.: Testplanungen als neue Methode (Test planning as a new method). In: TEC21, Nr. 29–30 / 2010. Fachzeitschrift für Architektur, Ingenieurwesen und Umwelt, Zurich 2010.



Organization of the Test Planning Process in Patras, 2015.

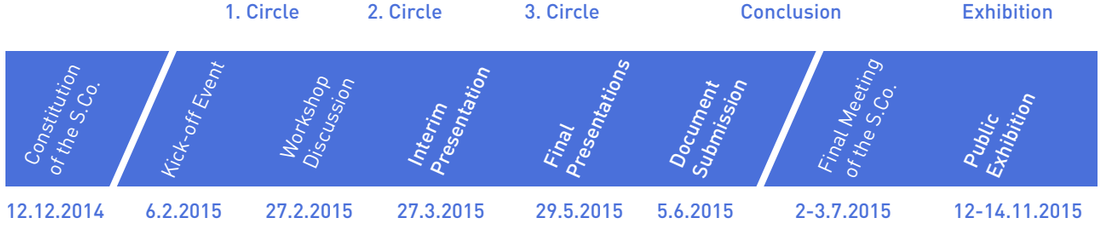
Overall Process in Patras



Communcation with the Public

Continuing communication: press release/publication, invitation and information of the stakeholders

Steps of theTest Planning Process in Patras



Overview of theTest Planning Process in Patras since 2012.

Preparatory Meeting, Zurich 2012 | photography: ETH Zurich

Joint Seminar Week , Workshop, Patras 2013 | photography: Vassilis Pappas

Inter-regional Swiss-Greek Mobile Seminar, Switzerland 2014 | photography: Vassilis Pappas

At Patras central railway station during the Test Planning Process, Patras 2015 | photography: Vassilis Pappas

Recommendations of the Steering Committee

Former Agios Dionyssios staion, 2015 | photography: Theodora Papamichail

Recommendations of the Steering Committee

2 Steering Committee's Role

The main tasks of the Steering Committee are to guide the teams, evaluate the teams' suggestions and make recommendations for spatial and railway development to the relevant actors in Patras.

2.1 General summary

The Test Planning phase of the Rail&City CODEPATRAS Project was carried out between February and June 2015 with a particular focus on the recommendations formulated during and after the Steering Committee meeting held on 29 and 30 June 2015.

The recommendations were developed by two work groups of the Steering Committee each on a separate theme:

- Railway and transport development and mobility
- Urban development, public spaces and landscape development

During the review of the recommendations, the Steering Committee focused on the principles of sustainable, integrated spatial and transport development. This mainly concerned the promotion of public transportation, thus relieving the street network of Patras from excessive motor traffic. The recommendations are to be understood as the spatial concretisation of these principles.

2.1.1 Background

Earlier, the city and region of Patras were connected to the Greek railway network only by the meter gauge system of the Peloponnese Peninsula. Today, the connection from Athens to Patras, including the harbour facilities of Patras, belongs to the TEN-T Corridor: the Orient/East-Med Corridor (Hamburg/Rostock–Istanbul–Athens–Patras) and the conversion to a normal gauge track has begun. Once established, the Ten-T Corridor will connect the southeast EU Member States with the main north–south railway axis. It will serve both passenger and freight transport and, due to an improved infrastructure for mobility, will also contribute to cohesion between the Balkan countries and the northern countries of Europe. One result of being part of the TEN-T Corridor and the OSE's (Hellenic Railway Organisation) 2009 decision to replace the meter gauge system with a double-track, normal gauge railway network, was that a new connection to Patras had to be set up, and has been intermittently under construction. At the present time, there is a direct connection from Athens airport to Kiato (ca. 109 km east of Patras), which is part of the total distance of 230 km from Piraeus/Athens to Patras. The distance from Kiato to Patras (Old Railway Station) is being served by bus until construction is completed.

After decades of discussion about how to integrate the new railway line into the centre of Patras, a solution was found that used a tunnel for the central area, which included a lower level for the central train station. This was the basis of the city's master plan. The financing for this project was approximately 700 million € (or more, if complex problems in mastering ground water conditions are considered). In 2011, the project was declared financially unsustainable.

As alternative solutions did not exist, the Universities of Patras, Athens and ETH Zurich took on the initiative to identify feasible alternative solutions and to pave the way for new ideas in this complex situation. In coordination with the city of Patras and the Hellenic Railway Organisation (OSE), a suggestion was submitted at the beginning of 2014 to use a Test Planning Process (TPP) to inves=tigate possible solutions. A Test Planning Process is a well-developed method that uses four professional teams of high-ranking experts, all simultaneously working on the same task of exploring the spectrum of possible solutions.

As part of the coordinated process, a Steering Committee guides the teams through the process, based on a task description prepared by the Steering Committee after consultations with the stakeholders. The Steering Committee then defines a set of recommendations based on the teams' contributions. In January 2015, the four teams, gathered from home and abroad, started on their task and presented their first results in a series of one-day workshops, with the final presentations taking place in early June 2015.

2.2 Main task and basic conditions

The main task was to open the subject of the possibilities for railway and urban development in Patras within the framework of the four-month Test Planning phase. The coordination fell to the Steering Committee, while the four planning teams made suggestions, all of which would be explored in discussions – without prejudice. The areas of urban development and urban design, public spaces and landscape development, as well as railway and transport development and mobility, were used as foundations for the work in an effort to make the results well-founded and more precise.

The Steering Committee saw that the contributions of the participating teams, with their different approaches and suggestions, were extraordinarily fruitful and that through such integrated examinations, an important area of discourse could be opened up for the railway and urban development of Patras.

Without this foundation, it would not have been possible to obtain the final results or the progressive recommendations in the relatively short Test Planning phase of this project.

2.3 Recommendations of the Steering Committee

After the teams had presented their final suggestions, the Steering Committee reviewed and discussed the suggestions as possible solutions, discarding some, combining other and finally choosing what they considered to be genuine courses of action. The recommendations are presented first in summarised form, followed by a more detailed report in the next section.

2.3.1 Summary of the recommendations

The Steering Committee had already established that an effective and reliable railway connection to Patras, the third largest city in Greece, would not only be of central importance for the social, economic and environmental development of the city, but also of the region and the nation. A railway connection would make the desired decentralisation of the nation possible. In addition, the consolidation of public transport,

namely, the railway connection to Patras, could make a considerable contribution to relieving traffic in a critical section of the top-level road network and thus lead to an improvement of the traffic and transport situation.

A widespread network of cities and other locations would provide access to new and additional opportunities for potential tourism in the Peloponnese. The special globally important archaeological sites of Mycenae, Sparta and Olympia, in particular, could be connected to Athens by rail as well as to the large cities of the Peloponnese.

The best possible integration of railway service and the strengthening of public transport could bring a revaluation of the public spaces in Patras and provide a far-reaching stimulus to urban development in the central area of the city.

2.3.2 Transportation, railway development and mobility

In relation to this topic, the Steering Committee recommends:

Strengthening the areas of transport, railway and mobility development quickly and effectively, along with an efficient, step-wise implementation and upwardly compatible measures.

Finishing the railway section from Kiato to the City of Patras as quickly as possible.

Developing Agios Dionysios as the new main railway station of Patras using a split-level solution and a step-wise process. Trains arriving from the north have a four-track, normal gauge, long-distance station on the upper level. Tracks going south continue on the lower level with a maximum of two tracks. Keeping a 12 m corridor to the new main station, and further south, free for arriving and departing trains. The corridor will allow a two-track operation with mixed gauges.

Connecting the harbour of Patras by a branch line

that uses a mixed gauge on southbound routes with the option of a future second track installation.
Ensuring the continuous operation of the currently available commuter railway line (Proastiakos) between Agios and Vassilios and Agios Andreas during the entire construction period of the railway system. Offering the terminals of the current Planning and Construction phases as a temporary solution with limited capacity until Agios Dionyssios is completed.

2.3.3 Anatropi: Reversing the lack of an existing train culture, new branding and urban development

The Steering Committee sees the introduction of a new urban mobility culture as a key element. The very expensive, due to special topographic and ground water conditions, tunnel solution would not have contributed to a new urban mobility culture. By-pass solutions can also be eliminated because they carry a price tag of over 1 billion €, would not reach a major portion of the population and would not offer any incentives for urban development.
Long-term, this is about anchoring the railway as a daily part of the city's image, much as the Proastiakos is already a very popular and well-used form of public transport. The city 'knows' that the commuter line has created a green corridor in many places, which can be used for further development.
Ground-level railway solutions in Patras are feasible with the expected train frequencies and, based on the first cost estimates, the relatively low cost, with an expenditure of around 200 million €, including a simple station with good services.
Therefore, the Steering Committee recommends the following:
To bring the parts of the city together through appropriate measures in the field of railway development and the city's public transport, rather than to divide them.To develop a high-quality public transport system using the stops and stations as focal and orientation points.
To design the new main station at Agios Dionyssios as a multi-modal hub and create a new urban point of attention.
Putting the planned bus terminal, the commuter rail line and the possibility of using the terminal for cruise ships together will yield quite special opportunities.
In addition, the size of the site will allow new and interesting urban design developments.
The recommendations are presented in more detailed form following this summary.

2.4 Suggested additional procedures

Based on experiences in other cities and countries, an intensive collaboration and commitment among the responsible actors for railway and urban development is essential if a constructive solution for the railway and urban development of Patras is to be found.
Therefore, the Steering Committee recommends that within the next year the main actors develop an overall concept for railway and urban development in the near future.
Solutions cannot be found without the support of the citizens of Patras. An intensive communication with the citizens should be established as an important factor in every phase of the process. The Steering Committee is preparing an exhibition with the results of the Test Planning Process, which could be the starting point for further exchange and progress.

2.5 Acknowledgements and Final Thoughts

The initiators and the Steering Committee are pleased with the results and the knowledge and insights gained from the Test Planning Process. The Steering Committee thanks the participating teams for their tremendous commitment and effort.
In particular, the Steering Committee thinks that the valuable contributions of the participating planning teams with their different approaches and suggestions were extraordinarily fruitful and that an important area of discourse would be opened for the railway and urban development of Patras through such an integrated examination.
Thereby, it is especially noteworthy that the respective test planning teams in the desired interdisciplinary combination, with experts from the fields of urban planning and design, landscape, transport and railway technology, have worked so well together. Without this readiness to participate, it would not have been possible to achieve the targeted results in this short span of time.
The Steering Committee also wants to thank the representatives of the Hellenic Railway Organisation (OSE) and the Patras Harbour Authority, who took part in some of the proceedings, as well as the City of Patras, which decided to participate only in the preparation phase of the Test Planning Process.The Steering Committee thinks that an intensive collaboration and commitment among the responsible actors in railway and urban development and among the population is essential if a constructive solution for the railway and urban development of Patras is to be found.
The results of the Test Planning Process could, according to the Steering Committee, therefore be a valuable foundation and hopefully initiate further steps. With all the work that has been done, the Steering Committee wants to present the process and the results to the stakeholders and interested citizens at an appropriate time.
The railway connection to Patras is a component of the European Railway Corridor: East/Med Orient. Right now, investments in the transport infrastructure are of major importance in a situation that is so critical for Greece, and for cohesion and stability for continental Europe. Integrated, low-risk, quickly effective and economical solutions can only be found through collaboration and mutual commitment.
For the actors responsible for following through on this plan for railway and urban development, the Steering Committee wishes them a positive experience and much success.

And, we thank the actors and stakeholders for the trust they have placed in us.

For the Steering Committee,
Prof. Dr. Bernd Scholl

Patras, Greece, 30 June 2015

Detailed Reports of the Steering Committee

3 Detailed Reports

The Steering Committe was divided into two groups that were each dedicated to a specific topic. The groups gleaned all the useful information from the teams' contributions and organised them into specific categories and projects, which are presented in the following sections.

3.1 Transportation, railway development and mobility

One working group of the Steering Committee concentrated on all forms of mobility.

3.1.1 Basic principles

The Steering Committee's recommendations are based on the following principles:

- Make better use of existing corridors and facilities in order to discover clever and practical arrangements and to improve and enrich the existing urban green areas. The city's development historically follows this corridor and the city is in accordance with that: 'The city knows that the corridor is there.'
- Planned measures and interventions should be applicable within a reasonable period of time, i.e. within the next few years, and should contribute to the economic feasibility and sustainability of the system.
- Any measure should cost as little as possible and support economic feasibility.
- Priority must be given to assuring the uninterrupted operation of Proastiakos during the time of construction; the current line runs between Agios Vassilios and Agios Andreas.
- The railway system must be upgraded towards functioning as the backbone of the transportation system and interoperability should be improved.
- Within the inner Patras areas, especially along the waterfront, a reduction and reorganisation of automobile traffic is necessary.
- The different transportation systems must be treated as a whole unified system with dependencies and interoperability.
- In the next construction phase, the train terminal must be a temporary railway infrastructure with minimum capacity until the Agios Dionyssios station becomes.

3.1.2 Basic goals

The following goals were gleaned from the ideas of the Test Planning process for rail service.

- An efficient connection between Patras and Athens is vital for the decentralisation of Greece.
- A well-integrated city traffic system, including a hub, connection points, interchange facilities, scheduling, common information systems, mobility management, etc. Overruling pending administrative issues that restrict the potential of joint operations is critical to achieving this goal.
- All southbound tracks arriving at the hub at Agios Dionyssios must be electrified by the final phase.

3.1.3 Railway passenger service

The following items reflect the various positions taken up by the population in relation to railway passenger services:

- Keep the existing alignment: We stay here!
- The Proastiakos is a functional and well-established system.
- It is a corridor of its own.
- The Proastiakos line runs through the most densely populated areas.
- It is an existing element of the city with a big potential for improvement.
- It is more valuable and productive to invest in the existing corridor and not elsewhere (concentration principle).

Keep the Proastiakos with the existing timetable running, but take emergency measures where necessary.

Save the existing corridor and keep it free; secure at least a 12 m wide corridor throughout the city.

'Play' with the corridor:

- Create new stations, i.e. close the gap from north to south and vice versa.
- Connect the stations with buses, improve the park-and-ride service and bicycle facilities. Develop certain stations to connect the University/Regional Hospital Introduce half-hourly service for Proastiakos; a short double-track section will be needed to ensure this service as well as minimum safety installations.

Extend metric services to Kato Achaia:

- This is an official plan for the next 10 years, the Steering Committee recommends following through on this.
- More rolling stock is needed, as well as some rehabilitation measures on the alignment.

Extend the northern standard gauge tracks to Agios Dionyssios:

- Extend the electrified tracks at surface level to Agios Dionyssios.
- The station has a maximum of four normal gauge tracks on the upper level and two metric/mixed tracks on the lower level (split-level solution).
- Four normal gauge tracks will allow handling at least 16 trains per hour.
- Keep the station simple: make it function in the first phase and add a roof over the platforms in a second step.
- Improve the local traffic situation around the station gradually.
- Initiate a joint planning procedure for the station area with OSE, the City, the KTEL, a new bus station close to Agios Dionyssios, and the Port Authority.
- Reorganize the level crossing (Othonos–Amalias and Norman Street) with traffic lights. Trains and buses (new bus station) must have priority. at this intersection.

Upgrade southbound tracks to Faros:

- As long as the suburban trains are the only ones running, the existing single track is sufficient (see also 3.1.5). If more trains and trams are underway, two tracks are needed; check safety and capacity.
- Old Patras station stays unchanged.

Upgrade existing tracks to standard electrified tracks from Agios Dionyssios via Agios Andreas southbound.

Faros is the decision point:

- Keep the old alignment via Agios Andreas, at least for the Proastiakos service.
- Serve the port via Peiraiki-Patraiki if necessary, depending on the needs and decisions taken by the port, because this is also an established corridor.
- The Port Authority is the owner of the Peiraiki-Patraiki site.
- If the Port Authority decides not to use Peiraiki-Patraiki, then create an alignment along Akti Dymaion Street up to the new port, without a southbound extension.
- Initiate a joint planning process for the Peiraiki-Patraiki area with OSE, the City, KTEL and the Port Authority.

3.1.4 Maintenance centre

Maintenance of rolling stock and infrastructure and the shunting services have to be located in Drepanon.

3.1.5 Railway freight services

Connections to and from the new port are diesel-operated because electrification is not

3.1.6 Tram

- The Test Planning Process showed a connection of the University/Regional Hospital with the city centre is necessary, as well as TEI/Ag. Andreas Hospital, using high-capacity urban transport means, such as trams, cable cars, etc.
- The feasibility and applicability of this proposal can be considered a very early phase of a supporting addition to the Proastiakos line, thus taking advantage of the rail corridor as a backbone.

3.1.7 Bus

- In order to develop a unified urban network, a redesign of the urban bus system is required in order to bring the passengers to the 'sub-hubs' on the railway corridor.
- By coordinating timetables and tariff schemes between train and bus companies, the large potential for passengers could be exploited.
- Long-distance bus services have their hub in Agios Dionyssios.

3.1.8 Individual traffic

- The development of the railway corridor and the hubs make it necessary to implement comprehensive municipal traffic management schemes in cooperation with OSE and the harbour in order to improve traffic safety and minimise bottlenecks and delays.
- Increasing the value of public transportation creates a potential for reorganising street traffic, including pedestrians and bicycles.

3.1.9 Cruise ships and seaplanes

- Passenger services will be handled in Agios Dionyssios.
- Ferry services to Italy will be handled in the new port.
- Future cruise ship and seaplane activity should be handled in the old harbour (north basin), with an optimal distance to/from the railway hub.

3.2 Urban and landscape development

The other working group of the Steering Committee concentrated on spatial (urban and landscape) development as related to all forms of transportation development.

3.2.1 ΑΝΑΤΡΟΠΗ: Reversal – Towards a new railway culture

The entire Test Planning Process was stimulated by the idea of creating a new railway culture, thus reversing the 'railway phobia' that characterises the current attitude in Greece. Thus, the Steering Committee emphasises the fact that underground and bypass solutions do not add extra value to a city. In fact, it is usually the opposite, they create more costs, and at the same time, they separate the city from the railway network. Therefore, this Test Planning Process focused on city-level solutions for a railway service that will not only be functional but also offer a new city identity.

3.2.2 Economic and cultural orientation of the projects

The assumption that this is an opportunity for new attitudes and a new urban identity means that, in addition to the economic and geopolitical necessity of railway development in Greece, we can propose a new cultural orientation for railway transportation in the country. The projects submitted refer to the coexistence and a mutual respect between transport means and the city, an important condition for the integrity and identity of urban life, without contradicting the landscape and building elements of the city. On the contrary, we may use trains or trams as catalysts, creating urban hotspots and gates for the city neighbourhoods. It is from this perspective that we use the motto, 'Crossings are not just functional', as they also offer the potential for new meeting points and small business development.

3.2.3 The new Patras city branding

In fact, the entire new branding image of the city and region of Patras is related to the railway network and its functional elements. A new identity for all the stations, major or minor, is needed: station design, urban furniture, light fixtures, waste baskets, timetable and daily cleaning are very important so that 'taking the train' is not only a pleasant and memorable experience, but also an attractive and reliable transportation alternative. This could lead to a higher share of public transport and, respectively, relieve the street network from car traffic.

3.2.4 Important station zones; Agios Dionyssios as Patras's main station

In addition to the multiple minor urban points related to the railway, the central nodes related to railway station zones need to be mentioned. As a preliminary remark, we emphasise that the station planned for Bozaitika will generate urban expansion in a peripheral location of minor importance as well as creating the need for more infrastructure development, e.g. new streets and road connections. Therefore, when the intention is to bring the railway network to the very centre of Patras, a new station in Bozaitika will endanger the success of the new Agios Dionyssios main station.

Agios Dionyssios is par excellence such a multimodal urban node, a place of historic value that can be reactivated as the main station of Patras. It is related to the economic invigoration of the city and its new railway branding identity because it offers a valuable extended site, free of buildings, close to the attractive coastal zone in an advantageous central part of the city. However, its current condition needs an upgrading and a remodelling intervention. Could the city of Patras create incentives for building owners around the station area to promote remodelling and restoration works?

As far as it concerns the development of the Agios Dionyssios station buildings and the surrounding area, an upwardly compatible treatment is recommended. 'Kleine Brötchen backen' (Bake small loaves of bread means to keep to what is possible e.g. during bad times) could be an excellent motto for explaining the proposed step-by-step methodology and acknowledging the existing elements that should be kept and upgraded.

Regarding the central city aspect, it is important to mention that the area of Agios Andreas could be developed for a variety of mixed uses, i.e. as a farmer's market, a packaging district or other relevant activities.

The possibility of a second important station, such as the one proposed at the University Campus would seem to be a strategic potential for a distant future.

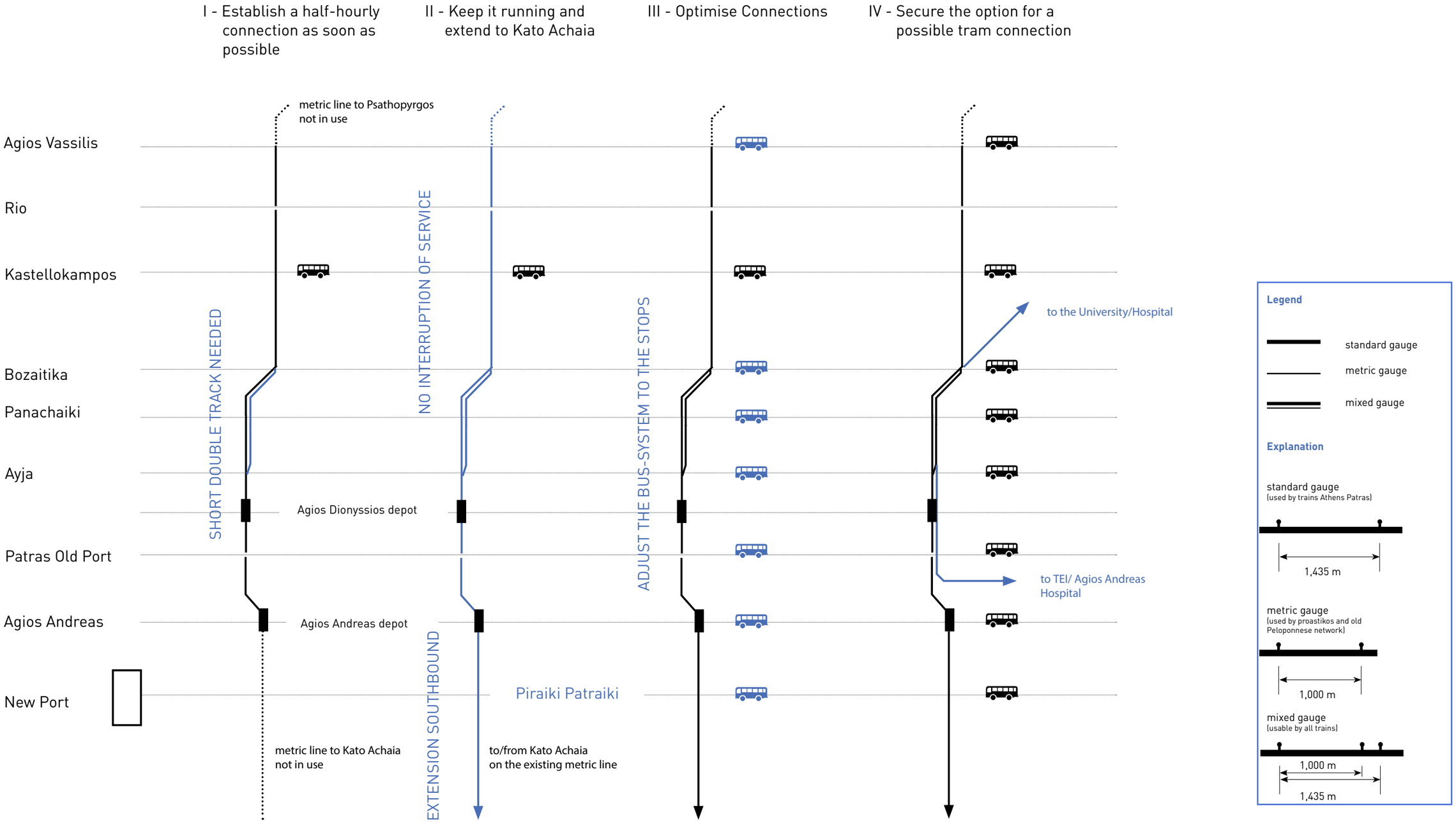
3.2.5 Extended planning proposals

In addition to the focused urban proposals, the projects submitted also referred to extensive planning strategies that augment train reactivation in the largest part of the northern and northwestern Peloponnese. According to these proposals, an integrated multi-operational regional network, involving seaplanes, boats, buses, trams and trains could be established. These would offer new travel possibilities in a zone of highly valued landscapes and historic value. The train corridor could act as a 'knowledge corridor' connecting the universities and technical education institutes in the area of Western Greece by creating innovation centres specifically related to the fields of the primary economic sector.

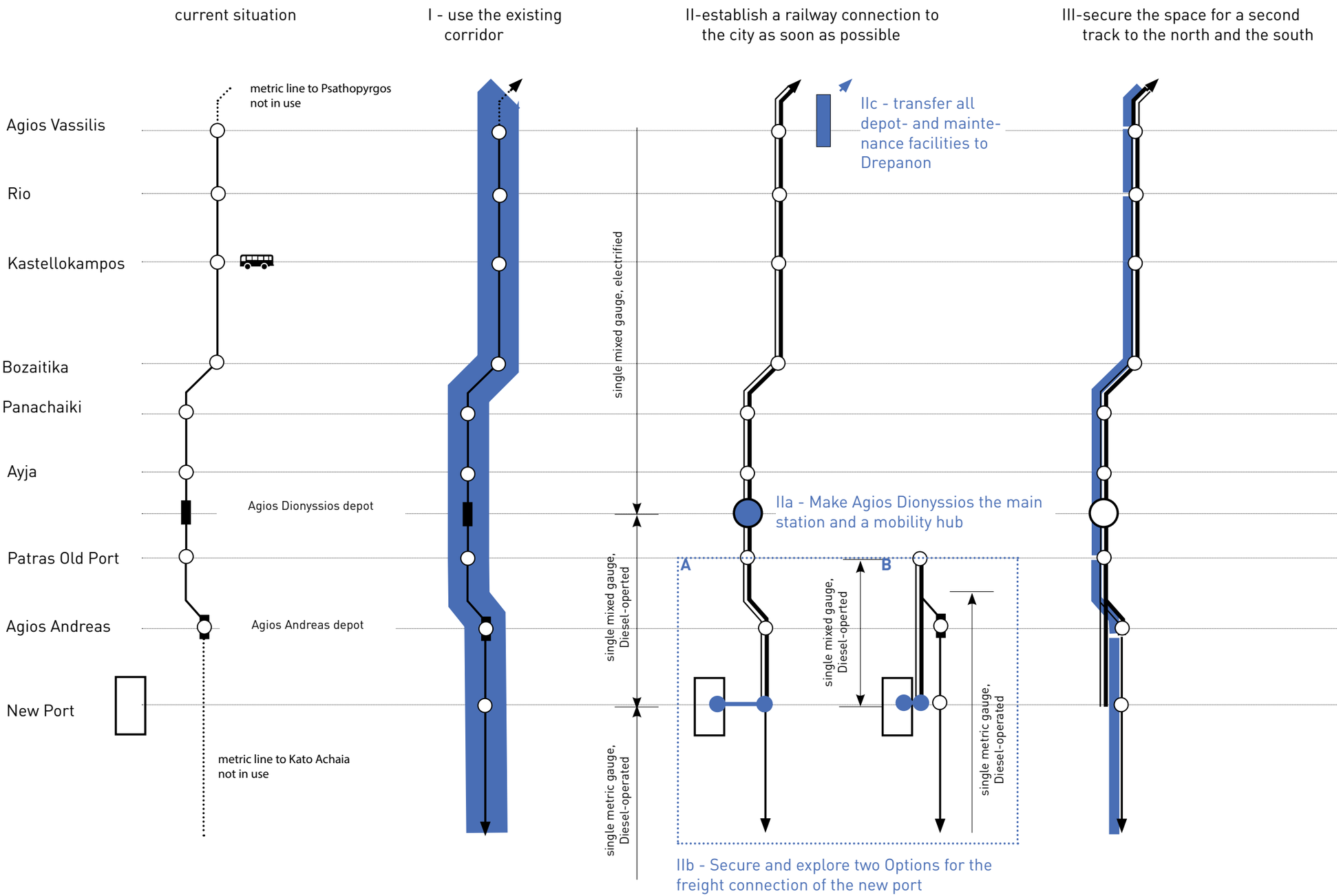
3.2.6 Green strategies and active, functional landscape urbanism'

The existing railroad corridor presents a landscape of valuable biodiversity, connecting the city with the peri-urban nature reserves. As all the teams stated, the integration of existing 'green' elements into the urban grid and the generally sustainability-oriented design along the train corridor is of crucial importance. We refer to additional elements, such as furthalso er urban vegetation and greenery, water management measures, use of solar devices, etc.

Proastiakos and Urban Transport System in Patras:



Development of the Railway infrastructure in Patras



Legend

standard gauge

metric gauge

mixed gauge

Explanation

standard gauge
(used by trains Athens Patras)

1,435 m

metric gauge
(used by proastikos and old Peloponnese network)

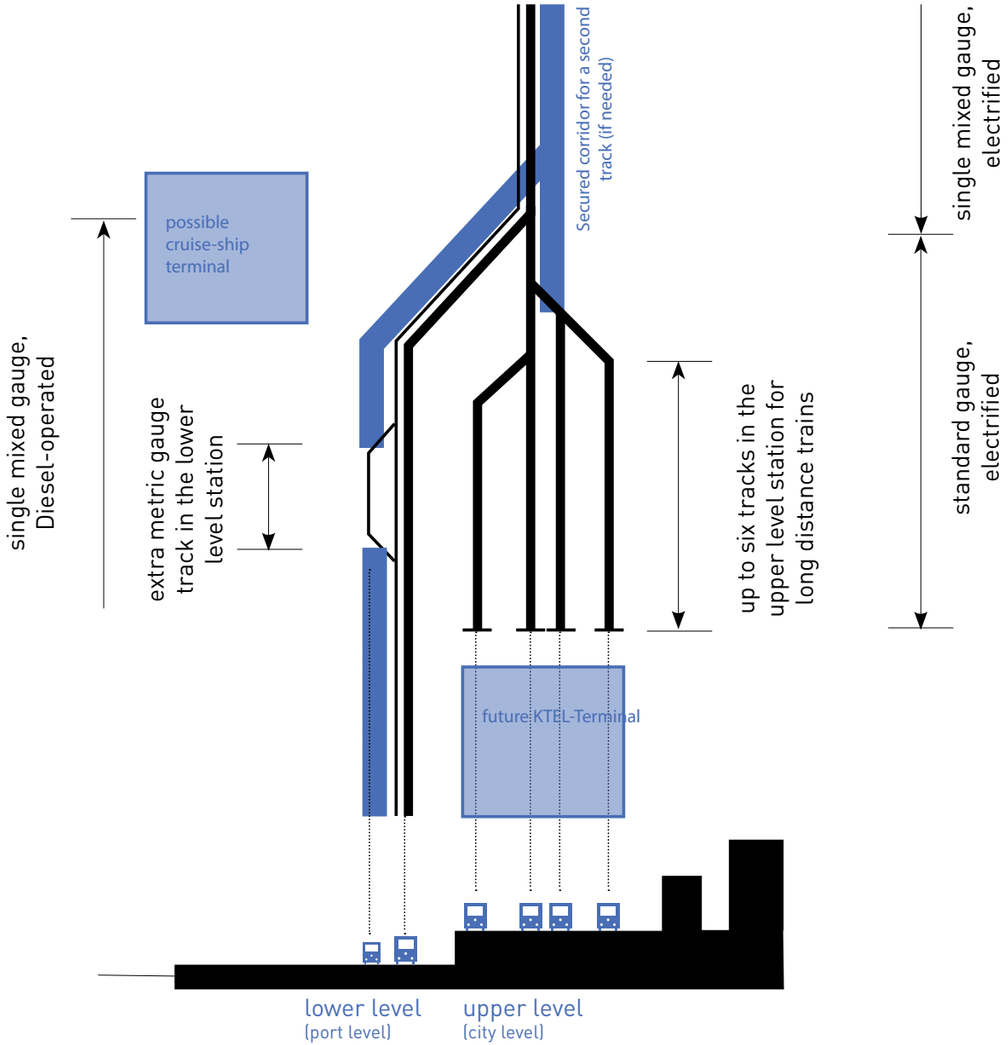
1,000 m

mixed gauge
(usable by all trains)

1,000 m

1,435 m

The new hub: Agios Dionyssios



Agios Dionyssios depot, Patras, 2015 | photography: Theodora Papamichail

Review of the Teams' Contributions

Railway station in Rio, 2013 | photography: Theodora Papamichail

1

Project: GATE TO PATRAS
Team: ASTOC/ARGUS/BJP/MESS
Cologne, Germany

4.1 Report on the project suggested by the ASTOC/ARGUS/BJP/MESS

To begin with, we have to mention that it proposed a number of alternative planning options concerning the future railway track that constitutes the 'spinal cord' of the project.

The first three were rejected after a multifactor evaluation disqualified them. As a comparative result, the project finally accepted a fourth proposal that consists of a central railway proposal and offers a (Railway) Gate to Patras.

General recommendation

The ASTOC/ARGUS/BJP/MESS group seems to have taken in account all important points of reference. However, the most important part of their proposal concerned the construction of a railway station in the vicinity of the University Campus, plus the very interesting idea for a second hub for a bus, train, tram, taxi, and park-and-ride (P+R) installation in the northern part of Patras because of a lack of necessary space in the interior of the city, i.e. in the the urban area of the Agios Dionysios station.

City development

An important railway station in vicinity of the University appears to be extremely important for the future development of the academic life of the city.

However, it must be clear that the creation of a second city centre as the new main city station, comparable to the importance of the existing historical centre of Patras, would be rather damaging for the identity as well as for the economic balance of the city. This proposal could probably be an urban solution in the distant future, as the development of the University's territory seems to be promising for the future. In addition, we may remark, and clarify our remark later on, that the development of University land could be related to the development of other minor means of transportation, not necessarily that of the main railway connection.

In addition to the urban upgrade of the University's land, a second urban design proposal of the project refers to the development of the Agios Dionysios zone. Our previous remark has to do with the minimal elaboration of this second proposal and with the limited surface of the surrounding area, which cannot support a satisfactory automobile traffic proposal.

Landscape proposals

This group offered some interesting proposals concerning green corridors that would reach from the mountainous area down to the coastal zone, 'combing' down through the housing territory of the peri-urban area of Patras.

Open public spaces

The team also proposed public spaces near Agios Dionysios as well as in the vicinity of the new University station. However, in both cases, the design proposals were not sufficiently elaborated to provide a convincing image. Moreover, in the area of the proposed University Station, the articulation of the public spaces with the station itself was not clearly organised, even though the team saw the station as an important public centre.

Transportation proposals

One of the significant ideas for the project was to 'split' city traffic into three different corridors; the first at the edge of the coastal zone, the second in n the interior across the national road axis and the third in an intermediate position.

In relation to the above proposal, the construction of a railroad connection between the University Campus and the rest of the city presents economic and technical disadvantages. Looking at the section of the railroad line in question, we may find that in at least two positions, the bridge proposed would have to be constructed at a height of 10–12 meters above the earth's surface. It crosses over the river and a highway, thus creating a critical construction that is over-dimensioned and also expensive.

In addition, the railroad line passing through the housing area of Bozaitika would be related to an extensive demolition of the existing houses, which seems to create a rather important administrative problem. Thus, it seems more appropriate to support the importance of a traffic connection of the University through minor scale traffic interventions, such as those that could be related to tram or cable-car connections.

As far as it concerns railroad transportation programming, we have to remark that too many single track sections, as proposed by the team, may create a reduction in timetable flexibility.

Concluding thise transportation proposal, we may add that a new port at Drepanon (rather than at the picturesque coast of Psathopyrgos) as proposed by the team, could be of significant future importance. It could eliminate the need for intermodal container railway transport through the city of Patras.

Phasing and stepwise realisation

The entire proposal has a long-term value, in relation to time estimation, of probably 50 years.

Thus, the realisation of the proposal would be feasible only in a long-term programming strategy; however, it insists on a short-term University Station construction, postponing the parallel construction of Agios Dionysios station in the meantime, or the reverse, insisting on Agios Dionysios construction and postponing the University Station realisation.

Probably the most viable solution could be a traffic connection to the University through a minor scale traffic interventions, such as a tram or cable-car connection, in relation to a realisation of the construction of the Agios Dionysios new station.

2

Project: "YAPI AND ANATROPI"
Team: Feddersen & Klostermann
Zurich, Switzerland

4.2 Concept: Definition

Yapi is a Turkish word that means an upwardly compatible development for building structures. ***Anatropi*** is a Greek word that means to reverse a situation. These two words form the slogan for the team's concept of the new railway line. The main idea of using the slogan is to consequently integrate the new railway line using a modular stepwise development of a tram-like train system.

To this end, the team will create a flexible system of four different types of railway corridors with two additional tram branches. The corridors are: the north corridor, the city corridor, the sea corridor and the south corridor. In addition to this, they propose a northern tram branch that will connect the University and the City Hospital with the new railway system and a southern branch, which will connect the Pampelloponissiako Stadium and the Technical Institute of Patras with the new railway system.

This concept is convincing and respects the diverse character of each part of the city with sensitive solutions, while also respecting the character and scale of local urban elements.

Transportation System

An essential part of the concept is the reduction of over-dimensioned street lanes in order to create a 12 m corridor that would allow the existing railway line to be expanded to a double track. The concept also includes a mixed gauge system with two metric branches and a new railway hub at Agios Dionyssios.

This system is easy to understand and allows quick steps that have a short-term impact to be taken to improve the quality of public transport. It creates new public spaces and hot spots and inaugurates a new urban mobility culture for Patras.

One consequence of the tram-like train system, which gives public transport a new face in the city, is that there are no cost-intensive tunnels or underground constructions necessary. The team showed examples of already realised surface crossings, which could be adapted specifically for the City of Patras at various crossings, which were indicated by the team.

One exception would be the new railway hub at Agios Dionyssios Station, where an underpass for slow traffic is provided using the given topography. The concept also includes a platform with four tracks that seems to be an optimised, but suitable size for the prospective number of trains and trams. Additional space for a fifth and sixth track should probably also be provided. One open question that should be mentioned here concerns the interruption of rail service during the construction phase of the new railway station.

The solution for access to the harbour between the seaside and Akti Dymaion Street looks very promising. This solution allows fewer level crossings and offers good access for freight trains.

One criticism is the alignment of the new railway system at the Main Station in Patras. It is not obvious why train tracks are moved to the back of the station building.

City development

As mentioned, with its railway solutions, the team has created great opportunities to improve the current situation of public spaces at the nodes of public transport in different scales. Investments in the train system could be used as a catalyst for investment in the urban fabric. In this respect, the new main hub at Agios Dionyssios could be a focal point for urban renewal, combining different modes of transport and an upgrade with green elements. The idea of green corridors leading to both major and minor nodes supports the concept of the team. As the concept plan is missing a legend, it is not clear if the greening upgrades in the existing roads should lead to a pedestrianisation of the indicated roads. Although this idea is supported, it has to be balanced with existing and proposed traffic flows and existing ideas for green corridors leading from the hills to the city centre.

In general, the team developed a very pragmatic, but nevertheless city sensitive concept, which allows a stepwise, integrated and upwardly compatible development of public transport, the urban fabric, open spaces and green elements. All of it could lead in the long run to a new mobility culture in Patras.

Agios Dionyssios depot, Patras, 2015 | photography: Theodora Papamichail

Existing central station , Patras, 2015 | Photography: Theodora Papamichail

3

Project: "TRAIN, BY ALL MEANS!"
Team: io.carydi.com
Athens, Greece

4.3 Main context

The proposal's central point is a development of the rail network in northern Peloponnese and Patras enabling it to act as a catalyst for establishing a series of synergies across scales, from the metropolitan, Patras, to the intraregional, N. Peloponnese, and across all three economic sectors: primary, secondary, and tertiary. Focusing on new connections between trains and boats, the contribution of the team consists in a strong idea that enhances the value of existing ports and train lines.

The restructuring will enrich the dynamic of the rail line, mainly in North Peloponnese, by connecting central nodes with emblematic tourist destinations, Delphi, Olympia, etc. via other means, e.g. boats, buses, instead of only proposing a linear connection from Athens to Patras. The team has tried to create a comprehensive network emphasising the local level.

The proposal suggests an alternative to the dominant contemporary paradigm of infrastructural restructuring that aims at the creation of 'lean' and specialised infrastructural networks. As the team states, the proposal is structured on the basis of complying with the 'carrying capacity' of the city of Patras.

Very plausibly, the team presents a stepwise operational railway track upgrade concerning not only the building stages of tracks, but also the differentiated use of adapted rolling stock. It is a coherent strategy that covers different time-frames and promises reasonable costs.According to the proposal, the trains should run in an integrated corridor of tracks, streets, public spaces and parks matching the given situations and the needs of the city of Patras. So there is a variety of pedestrian crossings along the corridor, connecting the city with the attractive shoreline. The train not only functions as a 'spine' for transportation, but also starts to create a network of cultural and economic synergies.

The proposal emphasises the interoperability of the railway network and the sea transportation system. This combination with the existing knowledge infrastructure leads the team to propose the 'Knowledge Corridor' (Patras–Amaliada–Pyrgos). The train as a 'Knowledge Corridor' is an interesting approach – although one has to question if every small city can maintain an institution. More reasonably, we see the University of Patras as the centre, leading a network of regional outposts with specific research interests in connection with production zones. It also seems to be an important link towards an innovative regional branding of the agricultural products that are the vast capital of the Peloponnese farming community. And last, but not least, the customer is to be found in the local markets as well as beyond in Greece and abroad.

Proposed additional connections, e.g. the link to Aigion port vs. a container-terminal in Drepanon, would have to be evaluated for their feasibility. We believe that a standardtheir feasibility. We believe that a standard gauge track for freight trains through the old part of picturesque Aigion would destroy the qualities of the newly remodeled promenade with adjacent cafes and restaurants.

Beside those remarks, the idea of a multimodal network is well developed over the different timeframes and offers much potential to 'set synergies on track' as the authors state.

Inside Patras

The proposed line follows the existing alignment on the ground and suggests a stepwise upgrade of the railway tracks and rolling stock, with a main train station in Agios Dionyssios and a small farmers' rail-market in Agios Andreas territory. This 'green corridor' shows a variety of ideas concerning solar energy panels, rainwater collectors or wastewater reuse cisterns – all of them contributing to an enhanced quality of the city fabric. Today, some of the proposed floodplains are built over, so their potential as green spaces still has to be developed.

Agios Dionyssios

Agios Dionyssios is presented as the central hub for trains, buses, ships, cars and even seaplanes. The proposed leisure and cultural hub seems somewhat overstated, considering the very basic needs of an upgrade of the existing railway structure. Is the scale of the proposed station compatible with the scale of the city? To make this into a public space with urban qualities will require more research on several aspects: generating finances, realisation in stages, functional relationships between the different transport means on the city level, in particular, regarding the topography and individual traffic situation and the surrounding fabric of the city that needs urban repair.

The connection of the existing street network with the main station is logical and the idea of the 'city balcony' to watch the sea is very attractive and feasible. It should be tested if this idea could be incorporated into the existing passenger terminal building (Kanelopoulos).

To build over the tracks is a very costly solution, therefore, we suggest the development of a light shed structure (PV panels included) to meet the needs of the train and bus passengers.

The proposed allocation of the new bus terminal on the attractive location of the pier is questionable. We see certain conflicts with the image and function of the proposed green sea shore park.

Agios Andreas

To develop Agios Andreas as a small farmers' rail-market is a very appropriate and realistic proposal that refers on the local level to the overall concept on the larger scale. It is a project idea that reflects the identity and the character of the city as a trade hub and the region as its feeder.

4

Project: "RAILSCAPE"
Team: International University Team
Zurich, Patras, Athens

4.4 Preliminary Remarks

The team consists of six experts from the universities of Athens, Patras and ETH Zurich. Many of them hadn't met before. It was a kind of experiment that had great success. We appreciate the creativity, perseverance and enthusiasm of all the participants.

According to the team, Patras can and should play an important role in supporting the decentralisation process in Greece. This requires a fast and comfortable connection between the centres of Athens and Patras.

Railway Approach

As a long-term solution, the team proposed a standard double-track solution, with a mixed track from Psathopyrgos to the Agios Dionyssios hub, where a standard gauge track will connect the new port of Patras and suburban (Peiraiki-Patraiki) and regional (Peleponnese Express) trains will run southbound on metric tracks. There are no underground sections, but in Patras, there is a 600 m section of a cut ramp of 550 m between Kastellokampos and Agios Dionyssios. No stepwise development is possible for this section. The cut is required by the alignment characteristics, as the hub should be located on the ground floor level.

The electrified section extends to Agios Dionyssios and the new port of Patras. Freight trains can run from the new port, but according to the team, Patras will not be a major rail or shipping node. Instead, cargo trains will carry goods over a distance of more than 400 km only.

Drepanon will have an intercity and suburban train depot, a cargo centre (rail&road) and a container-ra/ra port (rail, road, ship). Instead of a trimodal hub, the team also showed a bimodal hub, i.e. without port activities.

The team wants to save the existing alignment in Patras. During the construction phase of the cut, the Proastiakos line can be in service.

City Development

The team sees the main developments taking place in the Agios Dionyssios and Agios Andreas areas. Agios Dionyissios is the teams's choice for a multimodal hub. It can be seen as the most important area for the integrated development of the railways and urban landscape, where the train is the vehicle for positive change. The area around Agios Andreas cathedral should be re-evaluated as a place of multiple historical memories.

Furthermore, the Agios Nikolaos pier and the Peiraiki-Patraiki plot are also important. The area of the old port station is an open space of great importance for the public life of Patras. The Ag. Nikolaos pier plays a strategic role as a public space of multiple uses.

Peiraiki-Patraiki is seen as a core for the creative economy: A place where local manufacturers can coexist with younger generations, thus creating new synergies for innovative entrepreneurship and grow into a contemporary creative hub.

A lot of visualisations concern the hub at Agios Dionyssios and the area around the old port.

Landscape Development

The concept diagram of the team shows four major intervention areas along the waterfront: 1) Peiraiki-Patraiki, 2) urban park around Agios Andreas church, 3) reclaiming the public park along the waterfront in the old port area and 4) the restitution of the natural Ayia ecological park.

Stepwise Development

The team used comprehensive diagrams for track development and timetable schemes to show the development in four steps with the immediate implementation until 2020 and a long-term implementation up to 2040. Among the immediate measures are a new train station in Bozaitika and the reactivation of the line section Agios Andreas–Peiraiki-Patraiki. The upgrading of the metric line to a mixed gauge is optional.

Compliance with the OSE Project

The section of the Psathopyrgos-Kastellokampos railway is 100% compliant with the OSE project, whereas the southbound plans of the team with metric operation are not.

Cost estimates

The cost estimates seem reasonable.

Risks

The team's proposals have no technical risks.

Overall Evaluation

The team offers a sound long-term perspective that can be realised in steps. It comprises the view between Psathopyrgos-Drepanon and the western Peloponnese as well as the most important areas in the city centre of Patras, such as the new hub in Agios Dionyssios, the Agios Andreas area and Peiraiki-Patraiki, and the landscape and open space related areas in Ayia or the old port.

All these places together would allow a revaluation and a reinvention of the mental map of inner Patras.in Ayia or the old port.

Agios Andreas depot, Patras, 2012 | Photography: Theodora Papamichail

Railway tracks through the post-industrial area of Piraiki-Patraiki, Patras, 2015 | Photography: Markus Nollert

Team Contributions

Piraiki-Patraiki, post- industrial area, 2015 | photography: Markus Nollert

01 Gate to Patras

ASTOC
ARGUS/ BJP/ MESS

Cologne/ Dortmund/
Manheim/ Hamburg

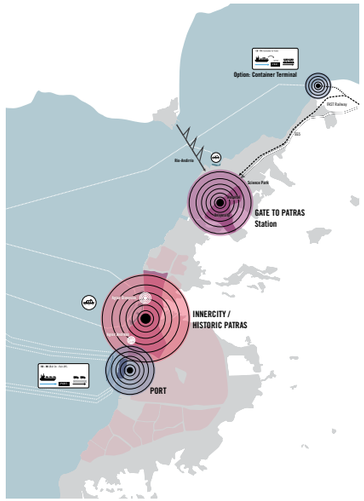
GERMANY

Participants

Prof. Markus Neppl, Dipl.-Ing. Architect BDA
Dipl. Ing. Sebastian Hermann, Urban planner AKRP
Dipl. Ing. Daniel Bläser, Urban planner AKNW
Dipl. Ing. Hendrik Jansen, Urban planner AKNW
Konrad Rothfuchs, Grad. Eng.

PLAN 1 TESTPLANNING PATRAS - RAIL & THE CITY

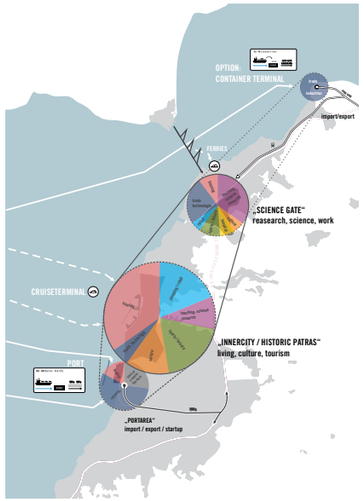
BASIC CONCEPT



POLES

By establishing a second big pole - additional ly to the existing city center - at the area around the university gatestation, this area receives the necessary importance for the future development of Patras to be competitive in Greece but and in an international competition as well.

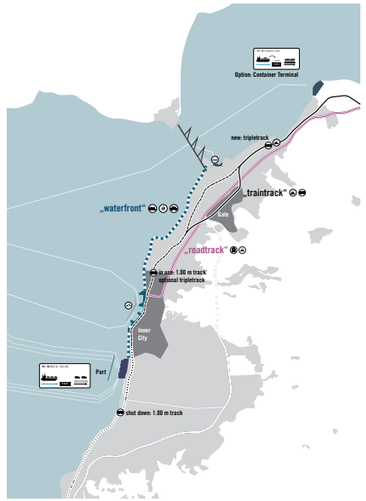
The localization of the new main station at this point can provide a development boost & dynamic to the whole northern part of Patras which is marked by suburbanization processes and heterogenic uses by now. By this it can become the new Gate to Patras - coming by bridge or by coastline.



INTERACTION

The two new poles are meant to complement each other, rather than being rival centers. The new „Gate-Spot" around the university is seen as the new area for a knowledge society cluster, which will become more and more important in Patras' future. The uses located in the north are characterized by the university (research & science) and by the high accessibility (trade, commercial) Also (student-) housing and complementing uses will help transforming the campus into a vivid and urban location.

The brownfields around the new port in the south are meant to be industrial & commercial and could be occupied by the creative and start up scene, while the inner city with areas such as Dionysios and Andreas can be developed in its central and touristic character - without being disturbed by freight trains if the container terminal will be located in the north.

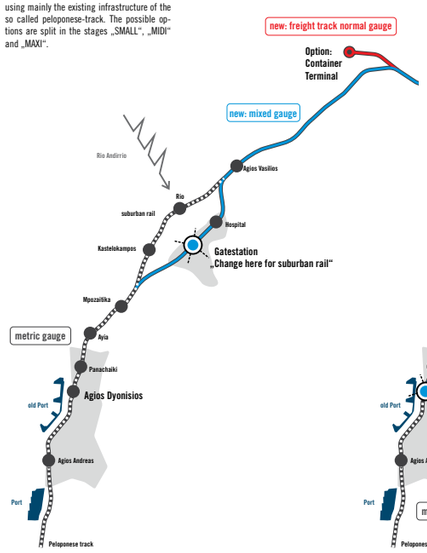


CONNECTION: 3 AXIS

To connect the poles also spatially and make the arriving in Patras more comfortable and experienced, a system of three axis is conceptualized. The interaction of the existing rail track with the new loop of the Gatestation and the improvement of stops at the suburban line defines one axis. The second axis is the mainroad, which is divided in different sections: from being a highway to a suburban access-road and finally to an innercity road. The third axis is the coastline, that has a lot of potential for tourism and as an attractive connection for pedestrians & bicyclist. The new gate to Patras station and Agios Dyonisios station serve as the main new Mobility hubs between these three axis.

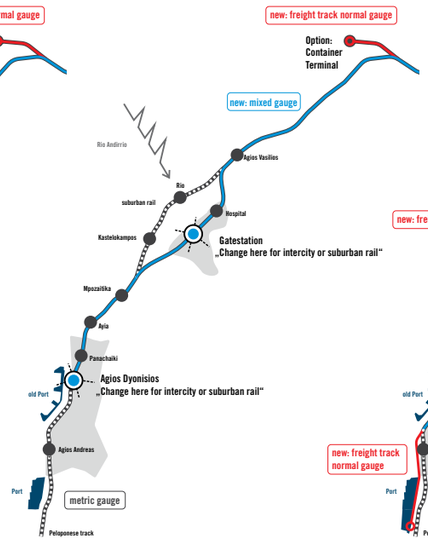
KEEPING OPTIONS

The proposed development-option has the potential to be extend flexible towards the south, using mainly the existing infrastructure of the so called peloponese-track. The possible options are split in the stages „SMALL", „MIDI" and „MAXI".



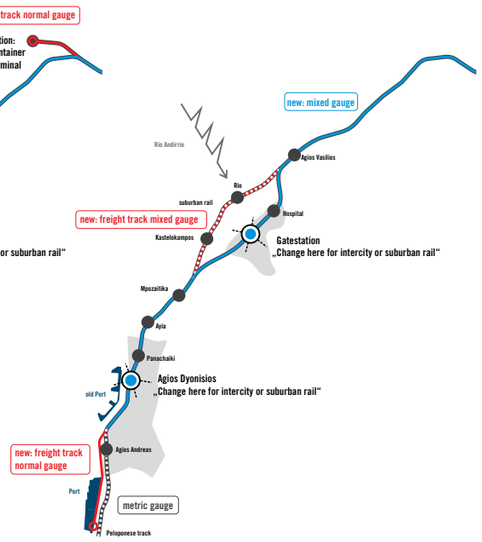
option 1 „small"

The SMALL-Version represents the two described milestones container Port I and Mainstation at the University.



option 2 „midi"

The MIDI-Version represents an additional extention of the high-speed track based on the peloponese-track as a so-called triple-track, adding up a third track to the existing trackline until todays mainstation, which is the current mobility hub of the city.



option 3 „maxi"

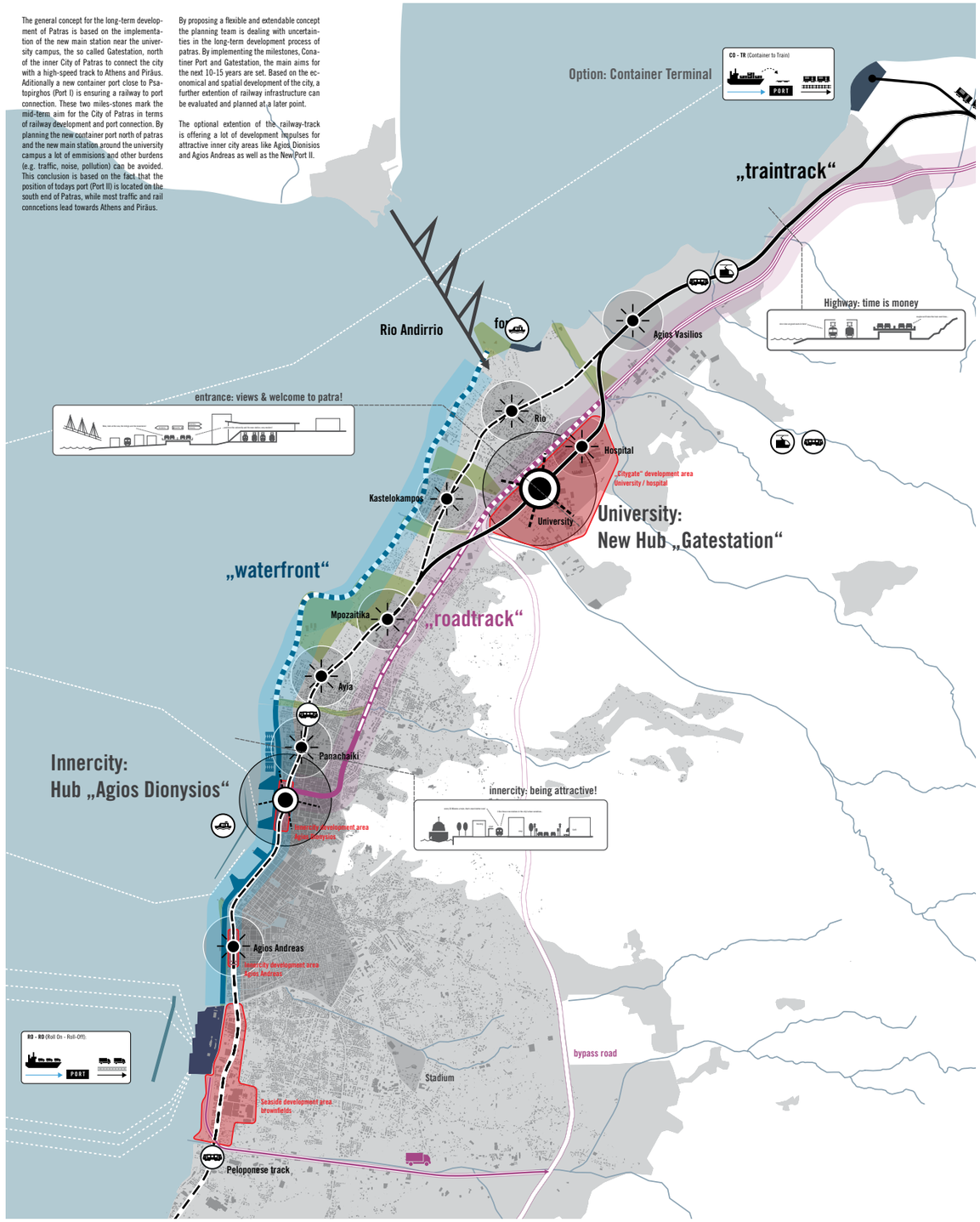
The MAXI-Version represents an even further extention in the triple-track-style until the New Port II, which serves today as Patras main harbour.

CONCEPT PROPOSAL 1 : 25.000

The general concept for the long-term development of Patras is based on the implementation of the new main station near the university campus, the so called Gatestation, north of the inner City of Patras to connect the city with a high-speed track to Athens and Piräus. Aditionally a new container port close to Psatopirghos (Port I) is ensuring a railway to port connection. These two miles-stones mark the mid-term aim for the City of Patras in terms of railway development and port connection. By planning the new container port north of patras and the new main station around the university campus a lot of emmisions and other burdens (e.g. traffic, noise, pollution) can be avoided. This conclusion is based on the fact that the position of todays port (Port II) is located on the south end of Patras, while most traffic and rail conncetions lead towards Athens and Piräus.

By proposing a flexible and extendable concept the planning team is dealing with uncertainties in the long-term development process of patras. By implementing the milestones, Conatiner Port and Gatestation, the main aims for the next 10-15 years are set. Based on the economical and spatial development of the city, a further extention of railway infrastructure can be evaluated and planned at a later point.

The optional extention of the railway-track is offering a lot of development impulses for attractive inner city areas like Agios Dionisios and Agios Andreas as well as the New Port II.



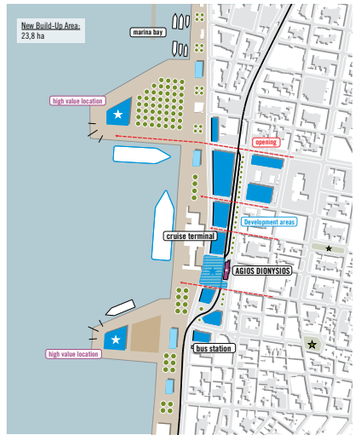
PLAN 2 TESTPLANNING PATRAS - RAIL & THE CITY

SIDESTEP: INNERCITY DEVELOPMENT AREAS

AGIOS DIONISIOS

The Area of Agios Dionisios offers a space of approx. 20 ha of development area. Additionally the waterfront offers attractive development areas at the piers.
The concept for this area is proposing a development of 5 building sites in a prime location on the former train station with orientation towards the coastline. The historical building of the old station is kept and redeveloped as the new innercity station where the intercity could stop in the future. In front of the station a representative public space is proposed.

The piers will be developed with representaive buildings like hotels or cultural uses to give a stronger adress and identity to the waterfront



AGIOS ANDREAS

The Area of Agios Andreas offers a space of approx. 6 ha of development area. The concept for this area is proposing a development of 6 building sites on the former train station with orinetation towards the street.
the historic station is redeveloped and serves as the new station building with a public space in front of it. The Waterfront is developed mainly by green areas and pocket parks, which are adding up the existings structures of waterfront-green in this area. The blockade due to the depot use at the moment will be canceled.

This arera could serve the needed social housing offers combined with innercity uses in the ground levels to create a good influence for the sourrounndings.

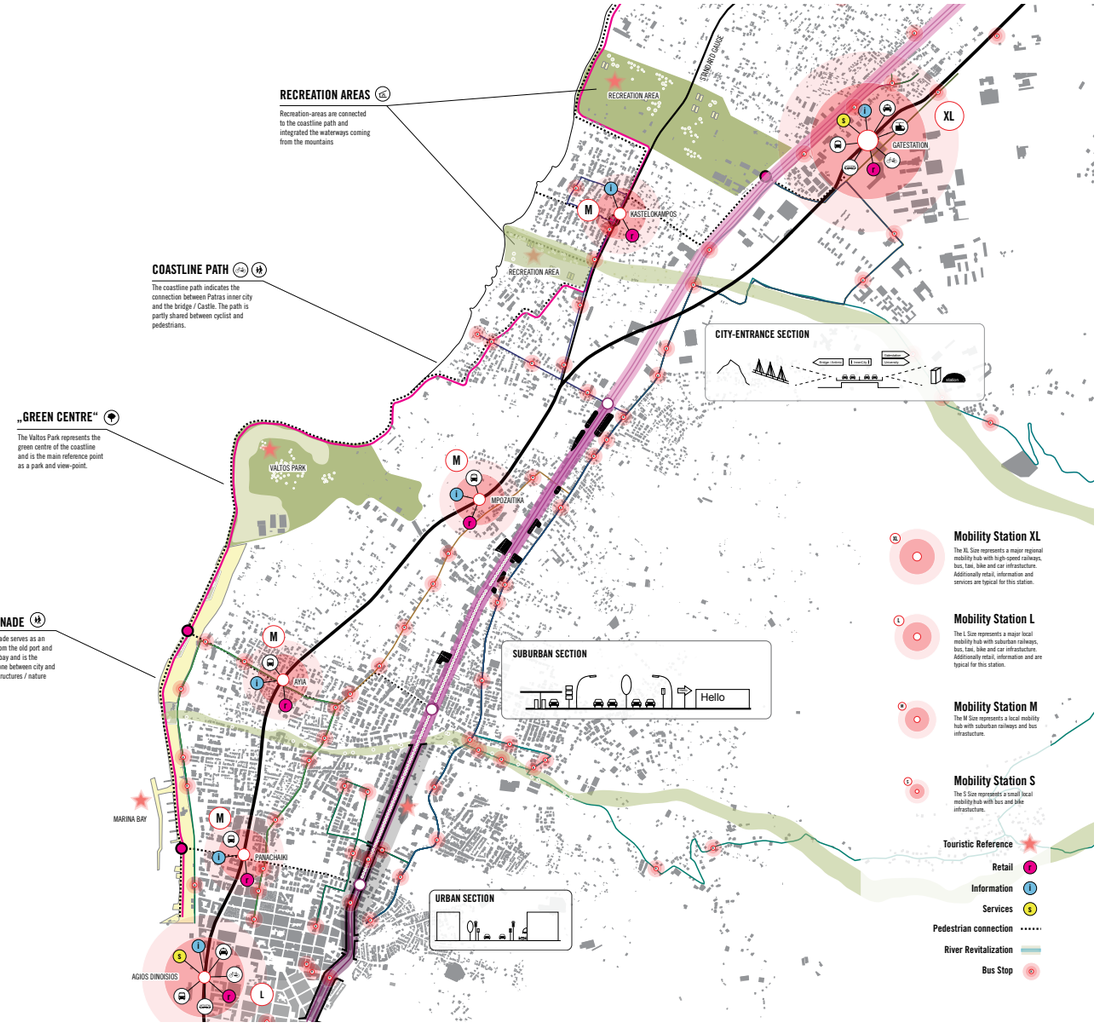
NEW PORT

The Area of the new Port is offering more areas and space than is really needed at the moment. So it has to deal with the Port development in the west as well as with the housing and mixed areas in the east.

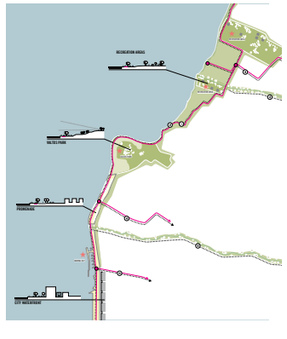
The concept is proposing to keep the main elements of the Masterplan Harbour development in this area. Additionally the concept is working with two „belt-structures". A first one along the street with industrial and trade uses and space for start ups and creative business in the existing industrial buildings. A second one is proposed east of the existing peloponese-track with a mixed use of housing, retail and offices. Combined these area offers a redevelopment area of 76,8 ha. This is a long-term perectivity.

CONCEPT „THREE AXIS"

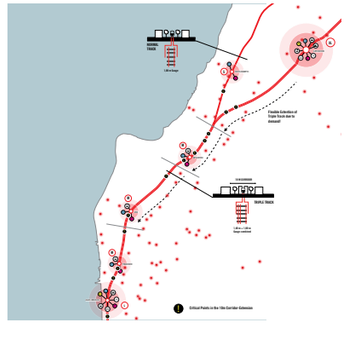
1 : 10.000



PRINCIPLES: WATERFRONT



PRINCIPLES: TRAIN TRACK

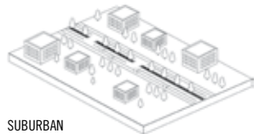


PRINCIPLES: MAIN STREET

PRINCIPLES MAIN ROAD

CITY ENTRANCE

- Gatearea as a viewable sign coming from north
- using the mainroad for adress forming
- special architectural area
- point of slowing down



SUBURBAN

- arrangement of and rules for entrances, parking space, crossings, signs
- speed reducing measures
- streetlayout with plantings and walkways
- more and better opportunities for crossing

URBAN

- reducing parking spaces alongside the road
- giving space back to walkways and uses in the ground level
- reducing the numbers of lanes
- streetlayout with plantings and walkways
- more weight to pedestrians

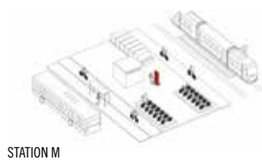
PRINCIPLES HUB CATEGORIES

STATION XL

- main trainstation (intercity and suburban)
- park and ride, kiss and bye
- busstation, taxi
- carsharing, e-mobility, bike
- addintional uses like retail, entertainment

STATION L

- trainstopp (suburban, intercity as longterm option)
- kiss and bye
- busstation, taxi
- carsharing, e-mobility, bike
- close to innercity uses

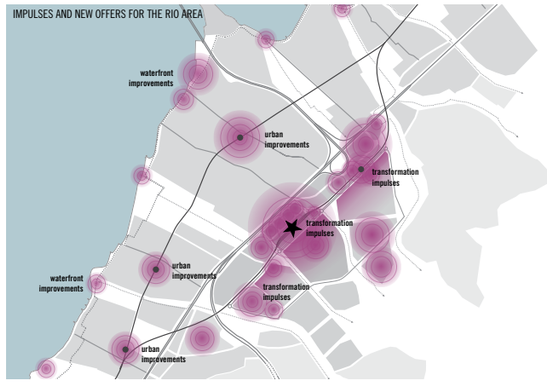


STATION M

- trainstop (suburban)
- connection to bus if possible
- bike

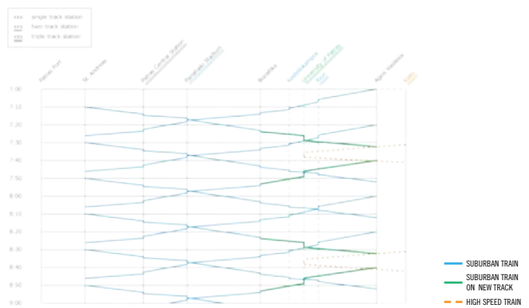
PLAN 3 TESTPLANNING PATRAS - RAIL & THE CITY

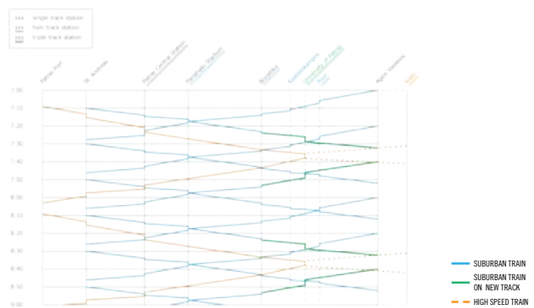
CONCEPT PLAN - UNIVERSITY AND SURROUNDINGS



CONCEPT PLAN - UNIVERSITY AND SURROUNDINGS 1:10.000

TIMETABLE





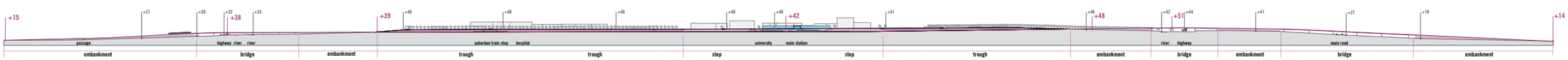
TRACKLINE AND PROFILE

The new loop passing the Gatestation leaves the existing track south of Kastlocampos an gets back north of Panachaiki. The crossings of the main street and the bypass road are solved by bridges and embankments, while the track passing by the hospital and the university are lowered in a through. This helps reducing noise pollution for the surrounding uses on the one hand and on the other hand the sloping terrain between university and main road can be put to a good use. In addition to that crossings can be easily implemented.

The station itself makes a step from the upper level to the lower level and creates an attractive entrance and adress on each side.

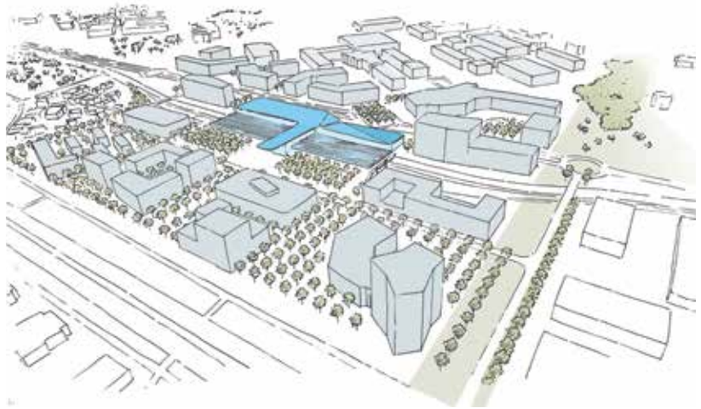
The gradients are defined between 3,5 % in the north up to 0,8% in the central area at the station and up to 3,4 % in the most complicated situation in the south. This is feasible for the intercity (in the second expansion stage) as well as the suburban line which meet at the Gatestation.

SECTION (NORTHEAST TO SOUTWEST)



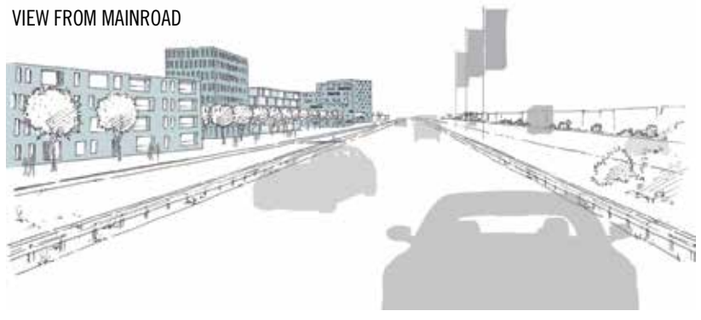
PLAN 4 TESTPLANNING PATRAS - RAIL & THE CITY

GATE TO PATRAS



NEW BOULEVARD WITH STATION

VIEW FROM MAINROAD



CAMPUS MEETS STATION

USES

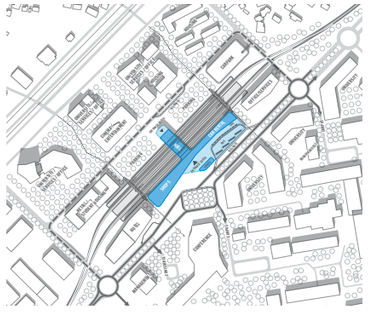
The New Main Station is representing the biggest urban development area for the next 10 - 15 years and is highly improving the area around the campus and hospital of Patras.

The Gatestation is constructed as a light building complex opposite of the convention centre of the university campus. By forming a new green axis between the campus and the gatestation with a central plaza area both parts can be connected to form a new quarter. Additional buildings for leisure, entertainment, housing and services are developend around the new Gatestation to diversify the mixure of uses in this area. The big infrastructural investments in the new train station are giving strong incentives for further private and public investments in the area. Beside its functions as an urban incubator for the university area, the Gatestation serves as the new main mobility-hub of Patras with regional relevance. The high-speed train is conneting Patras to Athens and Piräus hourly and is improving the acessibility of the city significatly. Additionally the station is the new exchange and transit point for regional bus and taxi connections. A new parking house is offering Park+Ride options and new sharing systems for car and bike traffic are supporting a more sustainable traffic behaviour.

The gatestation is also the main connection point between the existing suburban train and the newly established high-speed connection. As described before the extention of the high-speed track to the inner city of Patras is a premanent option.

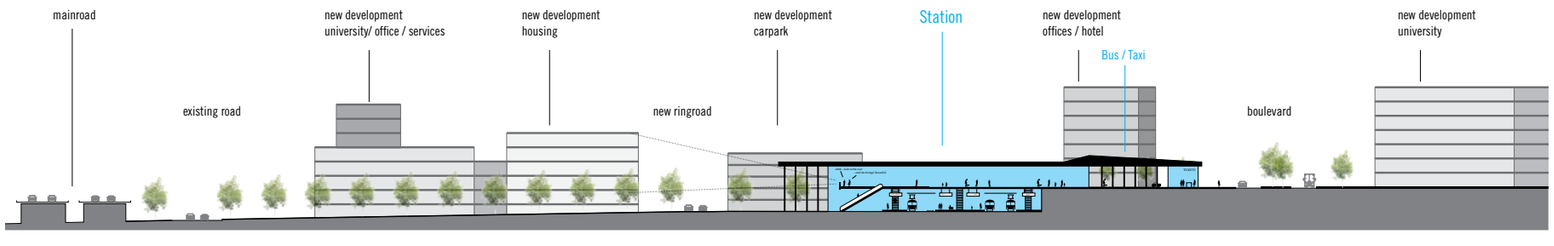
The boulevard between the campus and the Gatestation is forming the new central public space that is incorporating several different functions. As it is strongly designed with landscape elements and green structures it can represent much higher amenities than todays boulevard.

Although the gatestation will have a strong impact towards the development dynamics of the area, the whole process is exspected as a 30 - 40 year process with permanent adaptions accoring to changing spatial, political and economical conditions.

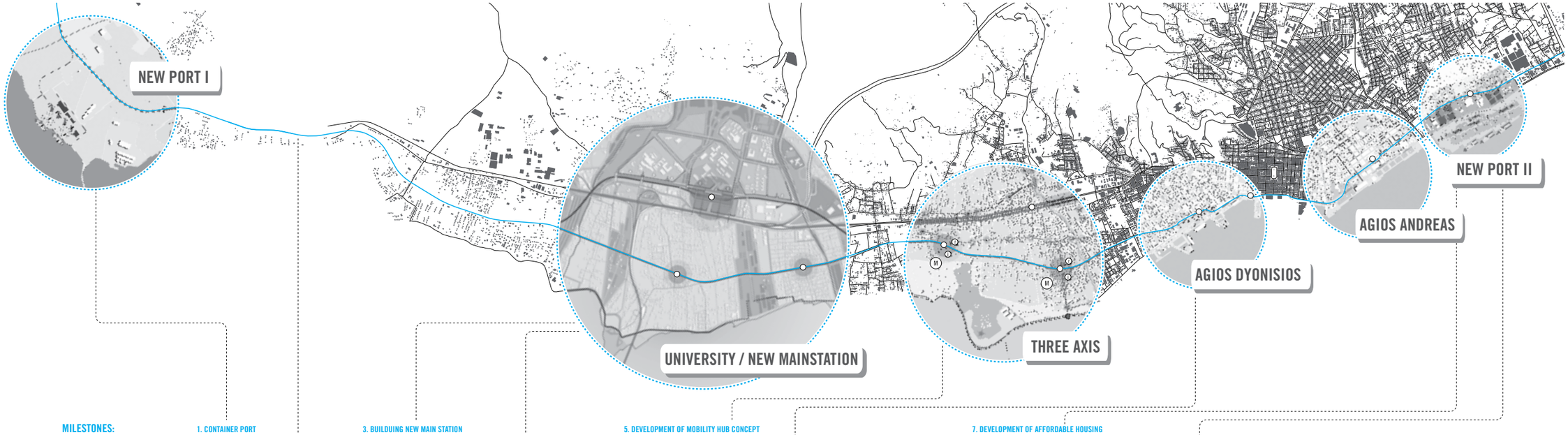


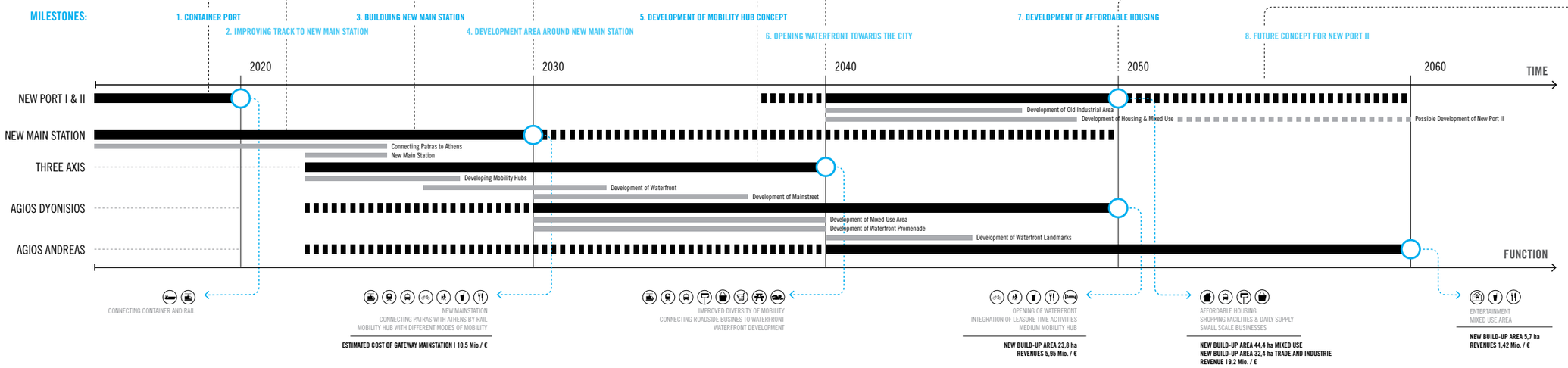
ZOOM IN DEPTH ANALYSIS 1:2.000

SECTION 1:500



PLAN 5 TESTPLANNING PATRAS - RAIL & THE CITY

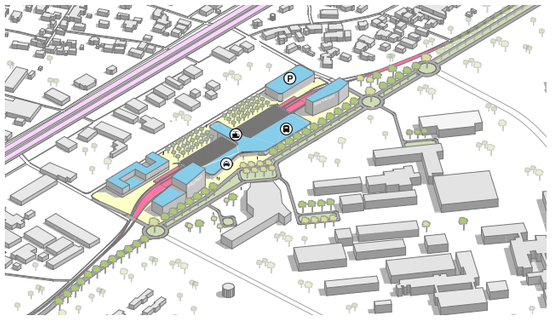




GATE STATION DEVELOPMENT

2020

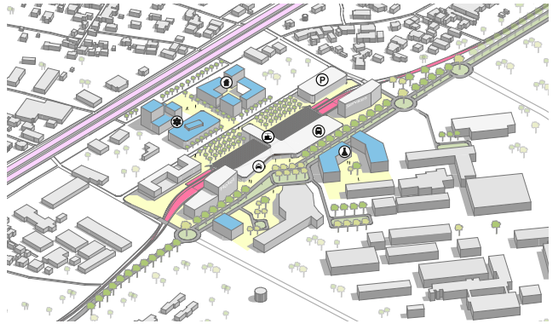
By 2020 the Gatestation is the new major mobility Hub in Patras has been completed. Here the high-speed train, bus, taxi, bike, pedestrian and sharing systems are combined in one central spot. Facilities like a hotel, parking house and space for retail, trade and services are created around the station. Additionally the University Boulevard has been built and is forming the a new centre between the university campus and the new train station. It is reshaping the existing street and can connect the two urban spaces spatially, which have hardly any connection today. The central space in front of the gate station is forming the nucleus of the new campus area.



2030

By 2030 the gate station has been established and can attract further development towards the north. Two buildings sites are being developed with housing, retail, services and entertainment offers. These developments are forming a public space connection towards the coastline and housing areas.

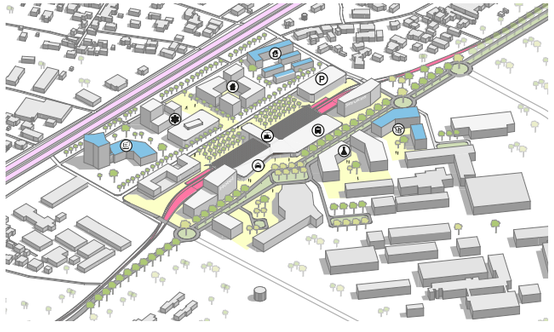
Additionally the campus is benefitting from the station development and can diversify by adding up research facilities and university extentions towards the new boulevard. The campus is extened systematically to give options for a stronger mixed-use structure.



2040

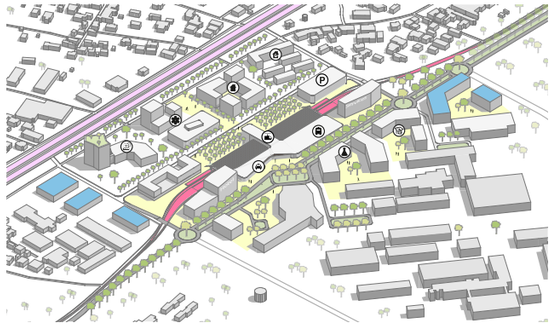
By 2040 the gate station has become the new „second centre" of patras and has created a vibrant spot for the citizens of Patras as well as tourists and students. The north side of the gate station is extended by an additional two building sites containing student and low-income housing as well as services and offices.

Also the university campus is extending and strengthing the character of the central boulevard by street-side oriented buildings. The new campus blocks are forming inner courtyards with high amenities.



2050

By 2050 the major development process of the gate station has been completed. Additional building sites at the campus are being developed and finish the structure towards the boulevard. The existing industrial structures north of the gate station are extend with trade, industries and retail, which are making use of the highly improved acessibility of the area. the High-Speed train commutes hourly to Athens and is also serving the suburban train connection to Patras inner city.



02 Yapi and Anatropi

Feddersen & Klostermann

Zurich

SWITZERLAND

Participants

Feddersen & Klostermann, Städtebau Architektur Landschaft
Studio Vulkan, Landschaftsarchitektur GmbH
Brühlmann Loetscher, Architektur & Stadtplanung ETH SIA
Roland Kobel, dipl.Civil Engineer SIA

THE VISION

a flexible rail corridor integrated into the urban structure as a positive development impulse for Patra

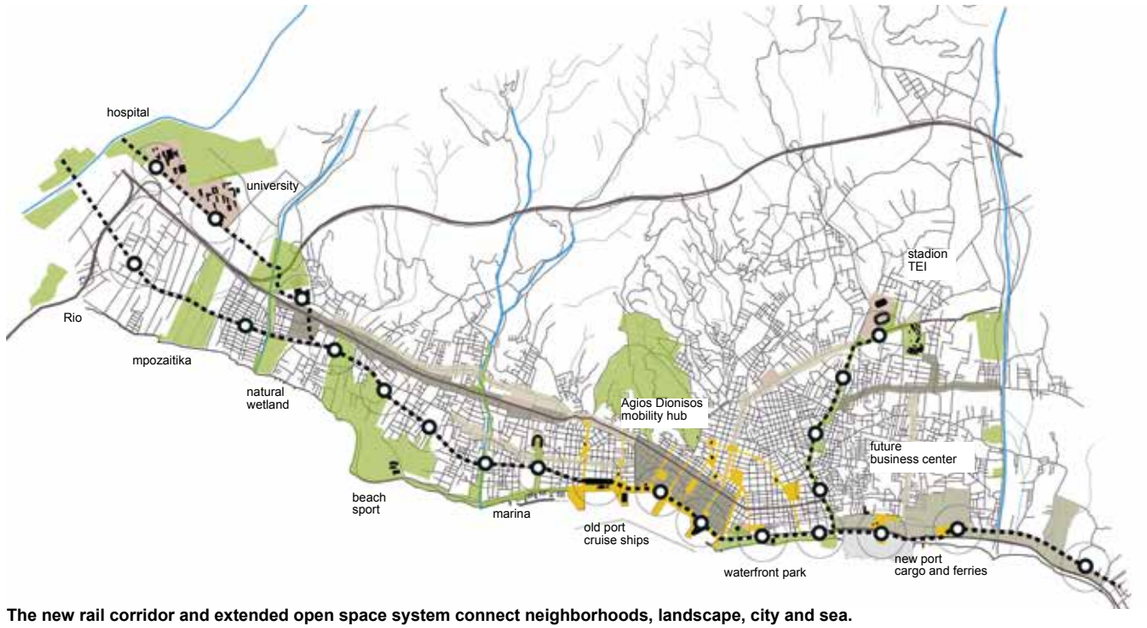
1. yapi

A flexible system ready to integrate all possible future scenarios.

Visionary proposal for the Peloponnese ail system.
C.Trikoupis, 1882.

Ship connection of Patra and the Western region of Greece with eu.

„Yapi“: a new vision for a flexible rail corridor which meets the complex and changing conditions of the Patra und the Peleponnese train systems today.



The new rail corridor and extended open space system connect neighborhoods, landscape, city and sea.

2. anatropi

Branding the rail as a positive impulse for development and quality of life. The rail is integrated into the urban fabric.

The yapi rail corridor responds flexibly to factors such as > specific urban context > available space > train scheduling > phasing > available finances > changing connections to other modes of public transportation.

The rail in the city has a positive connotation and a variety of positive influences on the quality of life in Patra. Urbanistically Patra is > reunited with it‘s waterfront > the city is a viable touristic portal to western europe and Peleponnese > the historic system of public space is extended > train stations and tram stops become lively urban spaces.

«yapi» respects existing corridor elements.

Branding the rail as a positive impulse for quality of life.
Glattal, Zürich, Switzerland

Branding the rail as a positive impulse for quality of life.
Glattal, Zürich, Switzerland

The rail influences positively the quality of the city.
Arosa, Switzerland

Transparancy: visually connecting the waterfront, the rail and the city.
Badalona, Spain

Rail stops become lively urban spaces. Historic city is extended.
Nice, France

THE RAIL

**rail and city are conceived
maximize positive social,**


Patra historic plan.


Patra's grid focuses views to the sea.


Crossings connect important use corridors.

The Historic Patra Grid is extended to create corridors of movement from the city to the sea.

Patra at the Sea

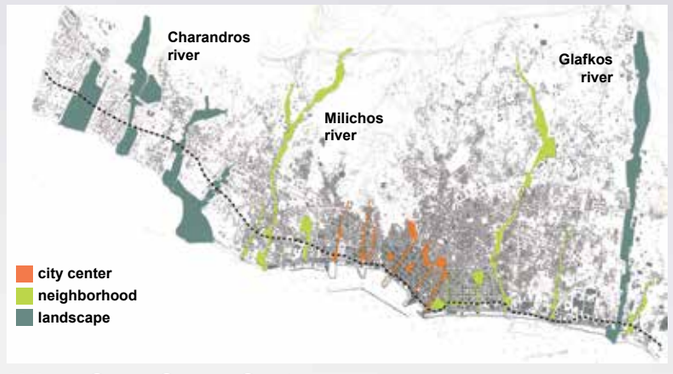
An urban coastline of high quality becomes an important element of Patras' identity. A wide variety of uses including new parks enliven the coast. Buildings facing the seafront gain in value and must contribute to the image of the waterfront and it's liveliness.

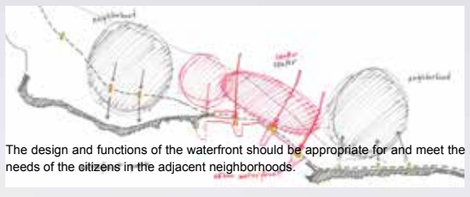
The rail and it's stations and stops become an impulse for development and connect the city to the waterfront.


Crossings à niveau are safe and assure physical connections to the sea. L.A, USA


Design, such as fencing, becomes a new image for Patras based on existing high quality structures.


Historic buildings tell the h the city and it's port and sh protected and restored.




The design and functions of the waterfront should be appropriate for and meet the needs of the citizens in the adjacent neighborhoods.

Urban Open Space System

Corridors leading from the city to the coast form a hierarchy of green open space connectors between the various neighborhoods and the landscape.

The Central Station, Train + Tram Stops

gather people, become lively places and attract public facilities, restaurants and other businesses.


Central rail station. Lyon


Alicante, Spain


Bus station. Chur, Switzerland

AND THE CITY

of in synergy with each other to urbanistic and financial results.

agios dionissos central station
mobility hub:
train-bus-taxi-tlt-ship

old port stop

potential new
uses on ships

old port
cruise ships

city line:
train corridor
marked on the
ground. crossing
everywhere

faros stop

agios andreas
church

option depot

fish market

agios andreas stop

south port line:
fencing both sides

pratsika

skagiopoulio stop

skiagiopoulio

400m

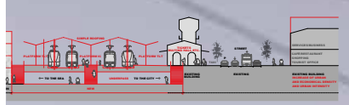
300m

100m

el. venizelos stop

faros

waterfront park



A new Central Stations Agios Dionisos will play the link between city and waterfront

istory of
hould be

Crossing over the rail assure physical connection to the sea. Valencia, Spain

Schematic illustration „old port station“ of the waterfront crossing at „plateia trion simachon“.

Circulation

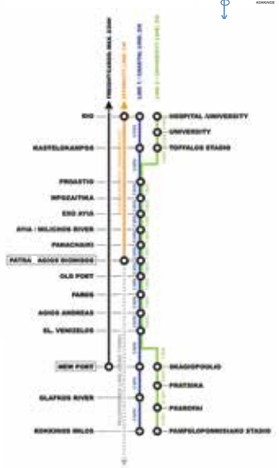
Waterfront boulevard: reduced width of car lanes.

A network of bikepaths connects the city and it's neighborhoods with the rail.

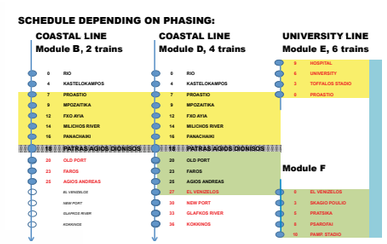
THE RAIL

the corridor responds flexibly to diverse and changing needs

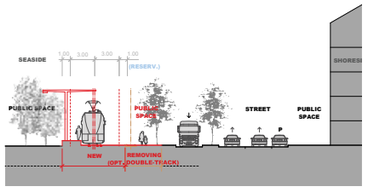
OPERATION
lines / schedule



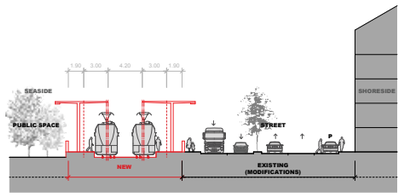
SCHEDULE DEPENDING ON PHASING:



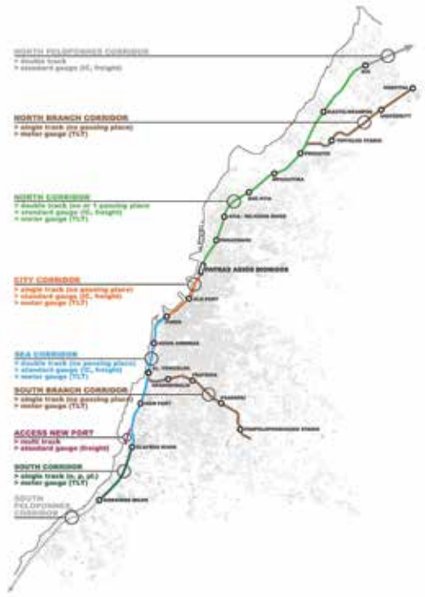
CONSTRUCTION
corridor infrastructure

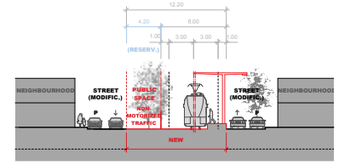


CITY CORRIDOR
(FREIGHT / COASTAL LINE / UNIVERSITY LINE)

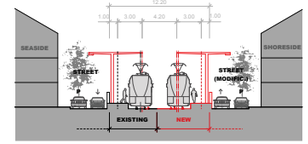


SEA CORRIDOR
(FREIGHT / COASTAL LINE / UNIVERSITY LINE)

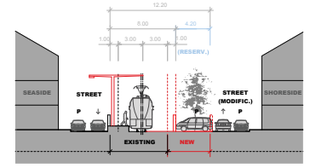




NORTH BRANCH CORRIDOR
SOUTH BRANCH CORRIDOR
(UNIVERSITY-LINE)



NORTH CORRIDOR
(INTERCITY-LINE / FREIGHT / COASTAL-LINE / UNIVERSITY-LINE)



SOUTH CORRIDOR

PHASING
lines / corridor infrastructure

MODULE A
SHORT TERM (NEXT 5-7 YEARS)

IC (intercity):
• no steps
• protection measures for corridors

FREIGHT (to new port):
• no steps
• protection measures for corridors

TLT (tram-like train):
• maintenance of existing TLT system
• protection measures for corridors

MODULE B
SHORT TERM (NEXT 5-7 YEARS)

IC (intercity):
• upgrading to double track up to «Patras Agios Dionisos»
• new mainstation «Patra Agios Dionisos» (mobility hub)
• EU-funding (1st phase access new port)

FREIGHT (to new port):
• no steps

TLT (tram-like train):
• upgrading/constructing «line 1» between «Rio» and «Patras Agios Dionisos» (line 1 / coastal-line)

MODULE C
MID TERM (WITHIN 15 YEARS)

IC (intercity):
• no steps

FREIGHT (to new port):
• upgrading to singel/double track up to new port / freight terminal
• EU (funding (2nd phase access new port)

TLT (tram-like train):
• constructing «line 1» between «Patra A. D.» and «Agios Andreas»
• new stop «Faros» (poss. in D)
• preinvestments «line 1» between «Agios Andreas» and «New Port»

MODULE D
MID TERM (WITHIN 15 YEARS)

IC (intercity):
• no steps

FREIGHT (to new port):
• no steps

TLT (tram-like train):
• upgrading «line 1» between «Agios Andreas» a. «Glafkos River», or further
• new stops «Faros» (poss. in C), «Agios Andreas», «New Port», «Glafkos River», poss. «Kokkinos Milos»

MODULE E
MID TERM (WITHIN 15 YEARS)

IC (intercity):
• no steps

FREIGHT (to new port):
• no steps

TLT (tram-like train):
• north-branch of «line 2» («University-line»)

MODULE F
LONGTERM (LATER THAN 15 YEARS)

IC (intercity):
• no steps

FREIGHT (to new port):
• no steps

TLT (tram-like train):
• south-branch of «line 2» («University-line»)

MODULE G
LONGTERM (LATER THAN 15 YEARS)

IC (intercity):
• extension «Peloponnes Railway» to Pyrgos, Katakolo, Olympia etc.

FREIGHT (to new port):
• no steps

TLT (tram-like train):
• no steps

03 “Train, by all means!”

iocarydi.com

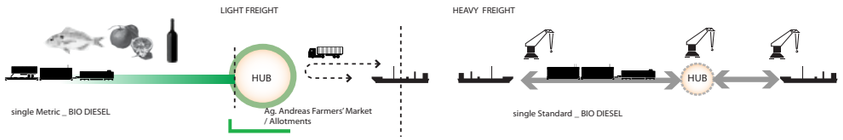
Athens

GREECE

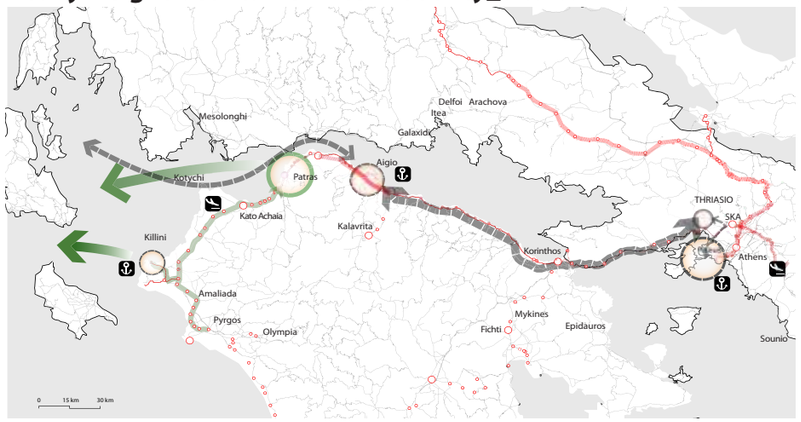
Participants

Dr. Io Carydi, Doctorate Architect NTUA Landscape Urbanist MA AA
Dimitris Karidis, Professor of Urbanism, School of Architecture, NTUA
Nikolaos Katsikis, Instructor in Urban Planning and Design, Harvard GSD
Fanis Kafandaris, Architect – Researcher NTUA –PhD Candidate School of Architecture NTUA
Ioannis Nikolaidis, Transportation Engineer D.E.A.

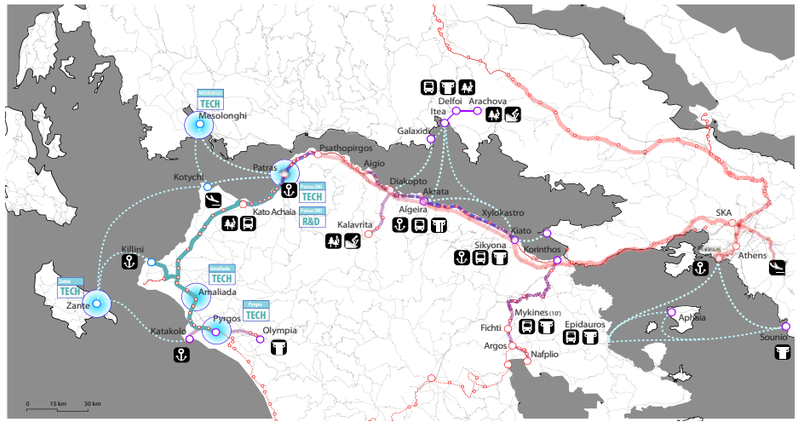
TRAIN, BY ALL MEANS! _ SITUATION EVALUATION & CONCEPT PROPOSAL

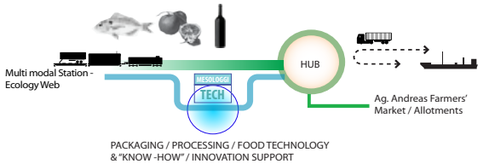


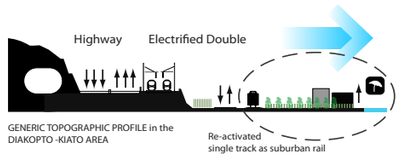
Heavy freight /Container Intermodality_Observation Perimeter I : Small scale farming exports



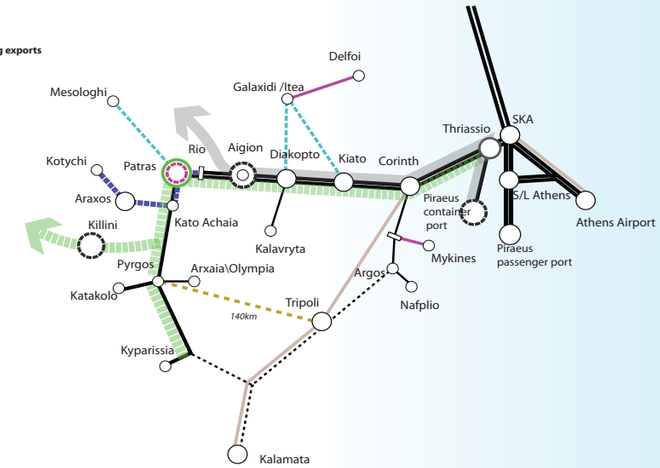
"TRAIN BY BOAT" _Observation Perimeter III : The sea as an asset for OSE's diversified economy / Train as Knowledge Corridor







CREATING A MULTI-MODALITY NETWORK_ Long-Term (20 years & later)



OSE by BOAT
OSE by BUS
OSE Suburban Railway on Single Standard track
Heavy FREIGHT rail (Container)
LIGHT FREIGHT rail (Box /Palette /City Cargo)
Poor quality Road Infrastructure
Good quality Road Infrastructure
Single Metric Track re-operated
Double Standard Track
Single Standard Track
Single Metric Track Inactive

FREIGHT INTERMODALITY

Intermodality
Freight train <<->> Port

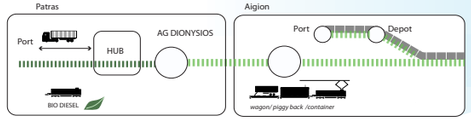
Combined Transport
Port <<->> Motor vehicle <<->> Freight Train
Motor vehicle <<->> Freight Train

Wholesale market -Logistics Hub
Motor vehicle <<->> Freight Train

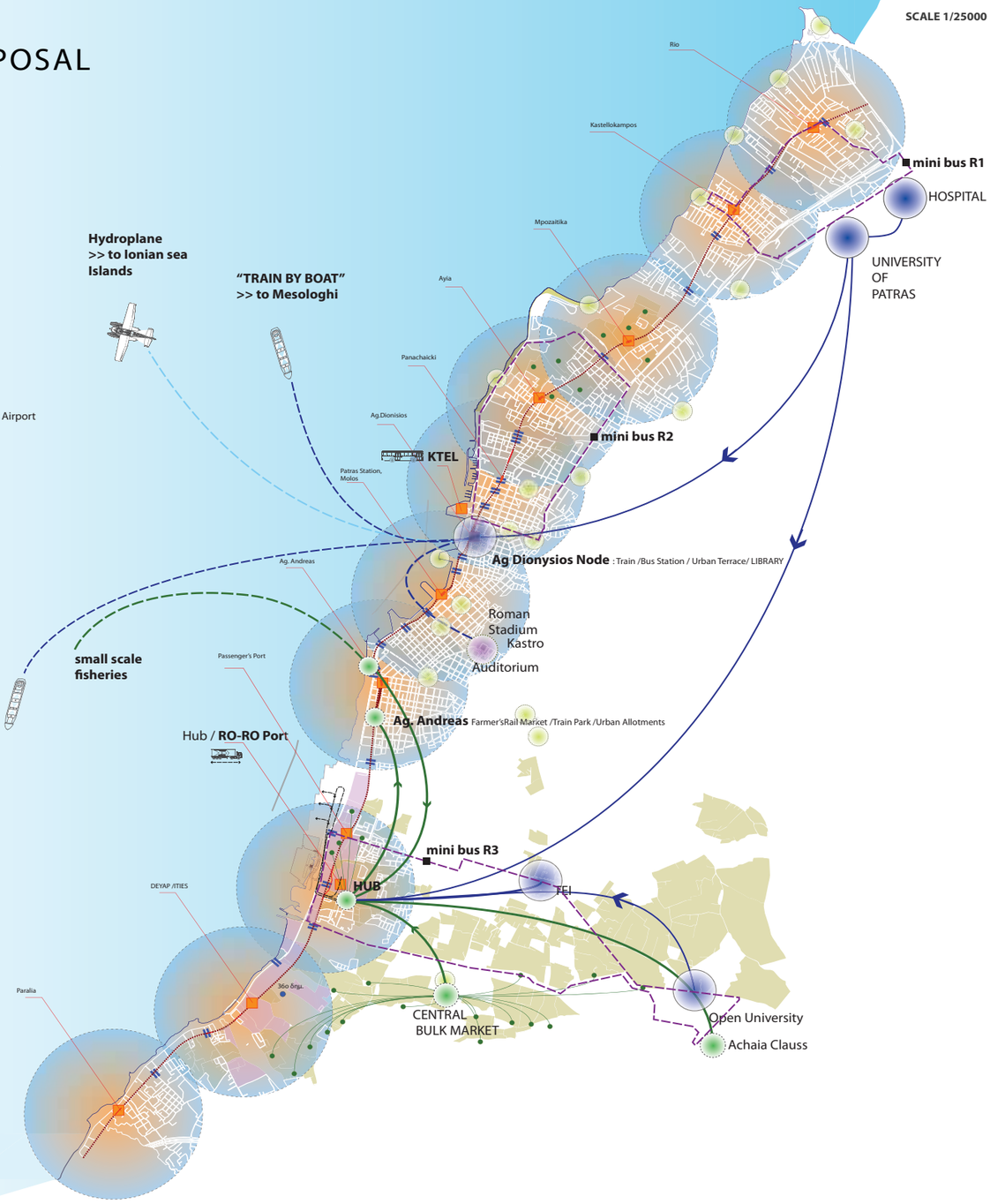
Connection /Changes

Intercity ATH >PATRAS _Passenger Change in Psathopyrgos

Suburban Train
Vintage train operation
Double track
Single track Re-Activated
Single track Inactive
Multi modal Station - Ecology /Knowledge Web
Multi modal Station - Culture /Leisure Web



What crosses the city of Patras?



Train, by all means! **Towards feasibility**

The central suggestion of the proposal is that the restructuring of the rail network on northern Peloponnese and Patras can act as the catalyst for establishing a series of synergies across scales (from the metropolitan - Patras to the intraregional – N. Peloponnese) and across all three economic sectors (primary, secondary, tertiary).

The proposal suggests an alternative to the dominant contemporary paradigm of infrastructural restructuring that aims at the creation of 'lean' and specialized infrastructural networks. These optimized and largely dedicated systems, although internally efficient in their operations, tend to become increasingly detached from their surrounding territories, creating fragmented, splintered urbanization patterns. This condition opens up questions for the unequal diffusion of benefits of infrastructural investments to their surrounding economies and communities.

Framework: Service Ecologies

The feasibility and potential success of our proposal does not rely upon the optimization of a single infrastructural element (ie rail) or territorial scale (ie the city of Patras), but rather on the creation of a synthetic landscape of potential 'service ecologies' across scales.

A 'service ecology' can be envisioned as any activation or coordination of material and immaterial actors in order to achieve a particular function. Service ecologies could be a way of understanding functions of the economy (eg the broader landscape of every commodity chain and every production network can be envisioned as a service ecology), of environmental management (eg the hydrological cycle and the irrigation of a region), etc. Service ecologies are dependent upon the orchestration of several elements of natural geography (1st nature), the equipment of the land (2nd nature) and of course the coordination of a multitude of social and economic actors and regulatory frameworks.

Feasibility Strategy

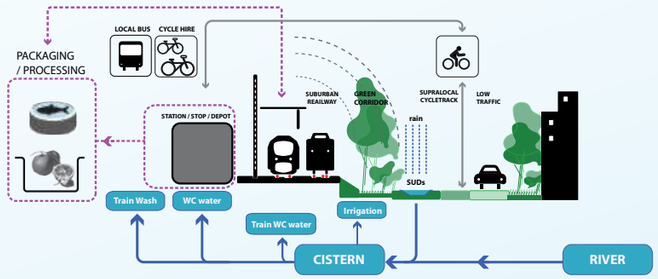
The purpose of the study is not to design the service ecologies themselves, but rather to plan for a landscape that will facilitate them and allow them to emerge in creative and even unpredictable ways. Catalytic element of this landscape is the rail infrastructure. This eventually bottom up strategy of selective and piecemeal equipment of the ground in order to create a meshwork of potential activities instead of a rigid network of predefined functions has four main pilars:

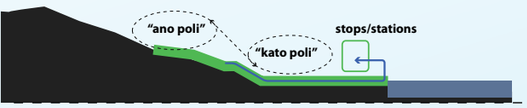
1. Uncertainty / Risk
2. Maximization / adaptation of existing structures and infrastructures
3. Multiple sources of direct and indirect investment
4. Activation of inert market potentials

LEGEND

landmark places
knowledge economies
cultural synergies
small scale farming / trade
productive land/urban farming
brownfields /greenfields
pedestrian/vehicle crossings
rail stops /stations
1km radius
rail as integrated corridor
small scale fisheries
"train by boat"
hydroplane
minibus

TRAIN, BY ALL MEANS! _ CONCEPT INTRODUCTION

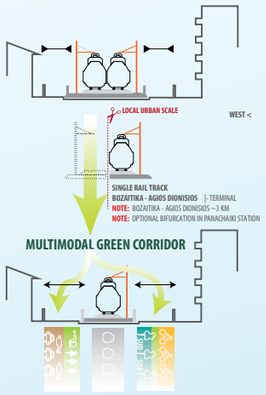


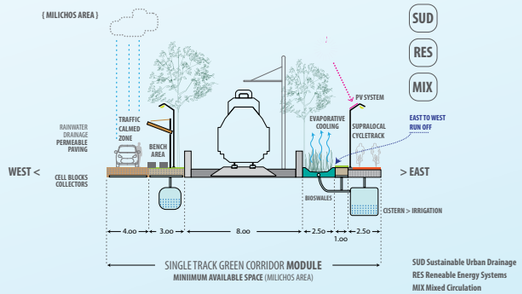


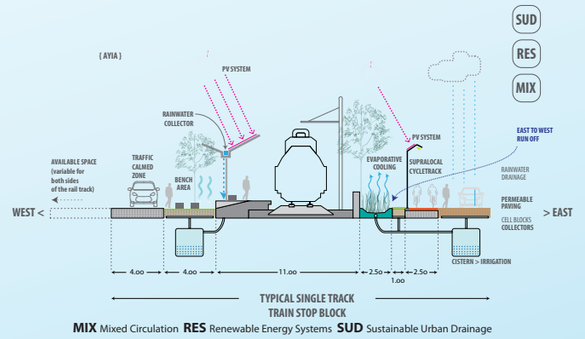
TRAIN AS CATALYST for URBAN OPERATIONS

The surface operation is considered a feasible alternative to the cut and cover proposal of ERGOSE allowing the train to act as an urban catalyst, to re-organize urban space alongside a green corridor with Surface operations approx at a cost of 150 million € (estimation) as a contrast to the Cut & Cover solution that would reach a cost of 250million euro / 700 million euro (full cut & cover).

The Green Corridor prioritizes sustainable urban drainage systems for run off attenuationa and cleansing in order to set in operation a sustainable ecologic loop for clean water provided as wc water in various train facilities and ancillary uses and for irrigation of green areas.

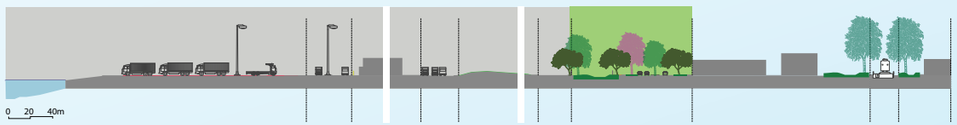




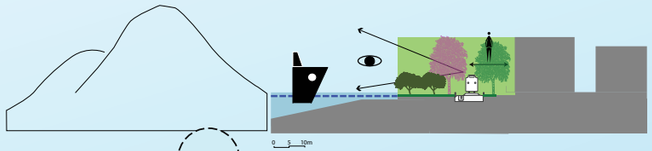


MULTIMODAL SINGLE RAIL GREEN CORRIDOR

TOWARDS A BALANCED URBANITY

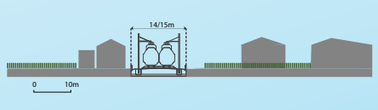


NEW PORT Area & GREEN Coastal Strip:
>freight port construction is "frozen" by *The Council of State* [STE, 2015]
>"existing line abandoned" creating a new "spatial fix"
>multiple horizontal layering requires stitches and green connections
>existing coastal strip between new port and avenue to be used as green corridor

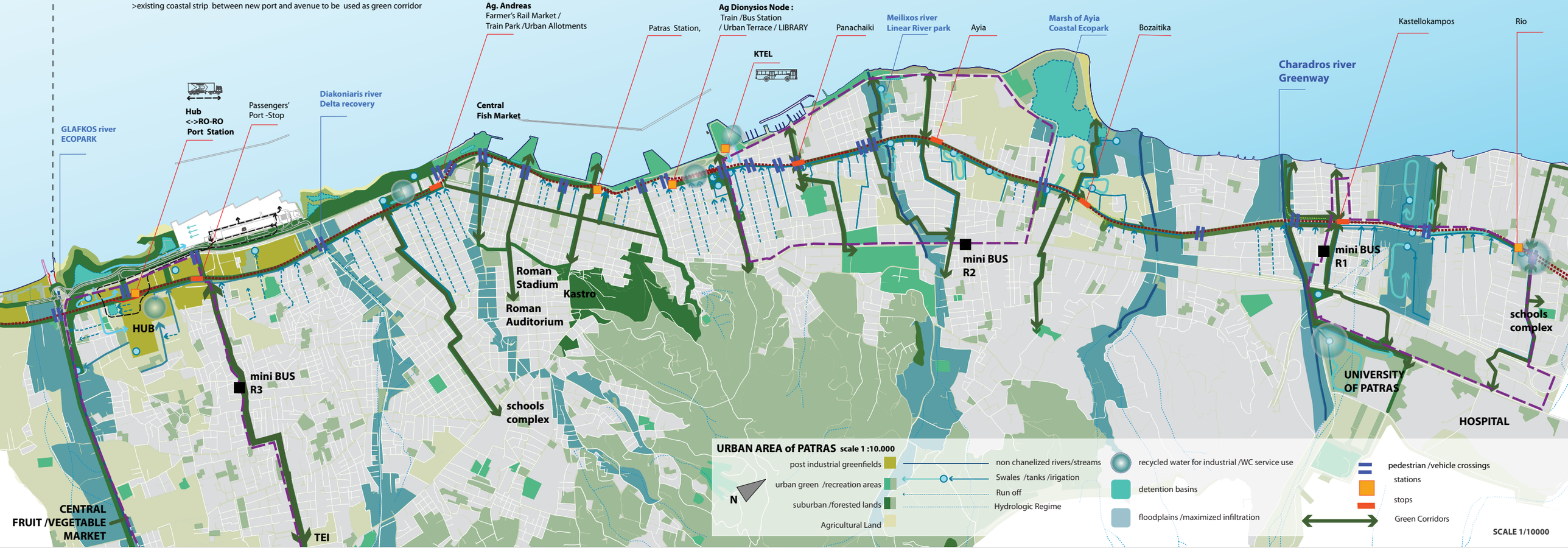


AG.DIONYSIOS to Pyrgos:
train operating ON GROUND -DIESEL operation (no cables)

AG.DIONYSIOS - Bozaitika:
train operating ON GROUND single standard track -ELECTRIC operation



Bozaitika -RIO:
train operating ON GROUND double standard track -ELECTRIC operation



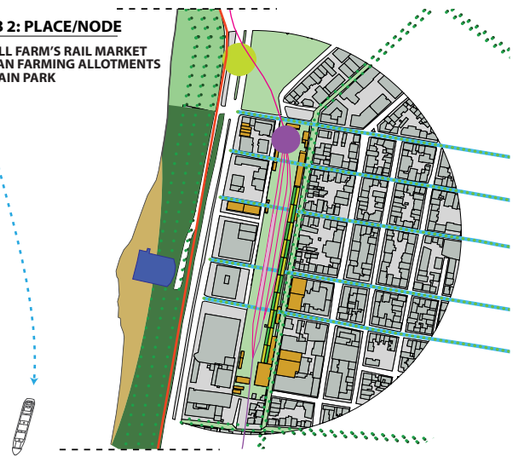
TRAIN, BY ALL MEANS! _ MAIN HUBS & URBAN INTEGRATION

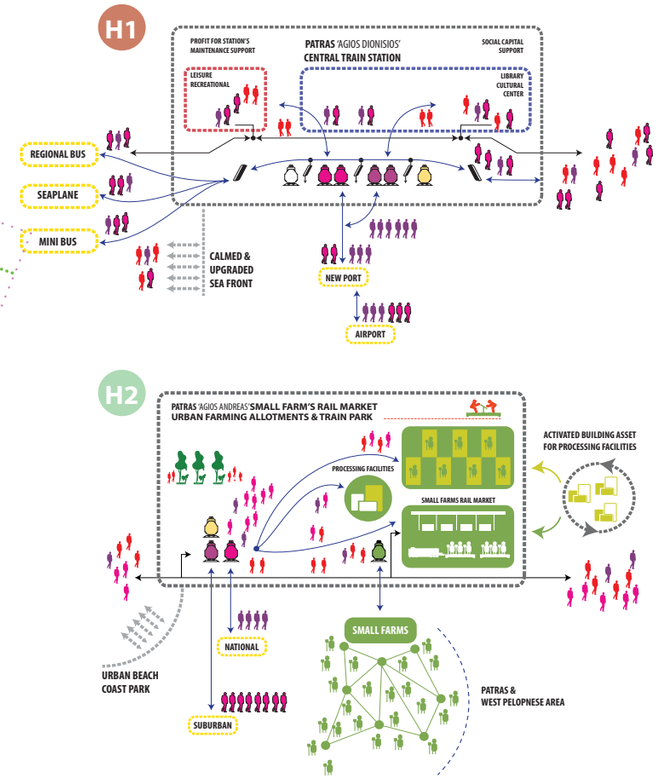
HUB 1 : PLACE/NODE

CENTRAL TRAIN STATION
INTERMODAL HUB
LEISURE & CULTURAL HUB

HUB 2: PLACE/NODE

SMALL FARM'S RAIL MARKET
URBAN FARMING ALLOTMENTS
& TRAIN PARK



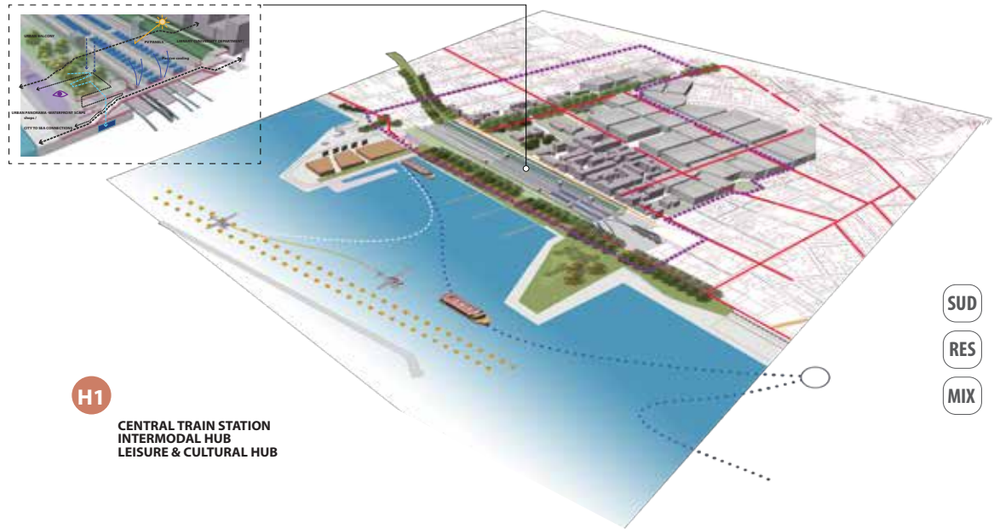


HUB DIAGRAMS LEGEND

- SUBURBAN RAILWAYS
- NATIONAL RAILWAYS
- FARMER'S MARKET TRAIN
- CARGO TRAIN (LIGHT FREIGHT)
- SUPPLEMENTARY USE
- SMALL FARMS URBAN FARMS
- TRAIN PASSENGERS
- PASSENGERS

MAP LEGEND

- CENTRAL TRAIN STATION
- CENTRAL BUS STATION, SEAPLANE PORT, TRAIN BY BOAT TERMINALS
- LEISURE - COMMERCIAL USES CENTRAL TRAIN STATION BUIDING
- GREEN SPACE [HIGH DENSITY]
- LEISURE/ RECREATIONAL
- CULTURAL - LIBRARY USES CENTRAL TRAIN STATION BUIDING
- OPEN PUBLIC SPACES GREEN SPACES / PARKS / SQUARES
- SMALL FARMS FACILITIES [ACTIVATED VACANT BUILDINGS]
- RAILTRACKS
- TRAIN BY BOAT
- SEAPLANE
- TRAIN STATION/STOP
- GROUND LEVEL CROSS
- MINI BUS RING
- REGIONAL/ NATIONAL BUS



SUD
RES
MIX

H1

CENTRAL TRAIN STATION
INTERMODAL HUB
LEISURE & CULTURAL HUB

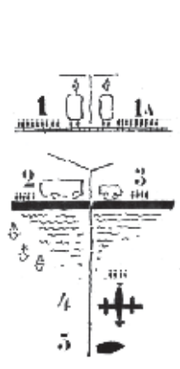
SUD
RES
MIX

SUD Sustainable Urban Drainage
RES Reneable Energy Systems
MIX Mixed Circulation

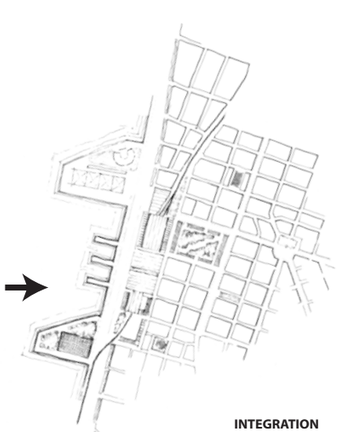
H2

SMALL FARM'S RAIL MARKET
URBAN FARMING ALLOTMENTS
& TRAIN PARK

CENTRAL TRAIN STATION AG. DIONISIOS; STRATEGIC DEVELOPMENT TOWARDS SUSTAINABILITY AND URBAN INTEGRATION



1. NATIONAL RAILWAYS
1A. SUBURBAN TRAIN
2. LONG DISTANCE BUS/ COACH SERVICE
3. MINI BUS HUB
4. SEAPLANE
5. TRAIN BY BOAT

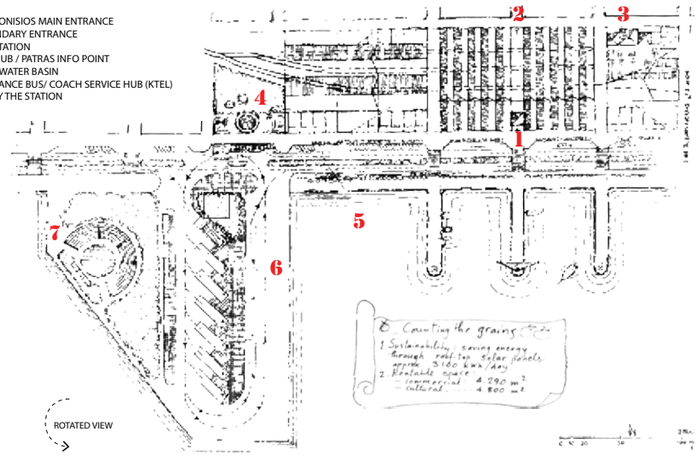


INTERMODALITY

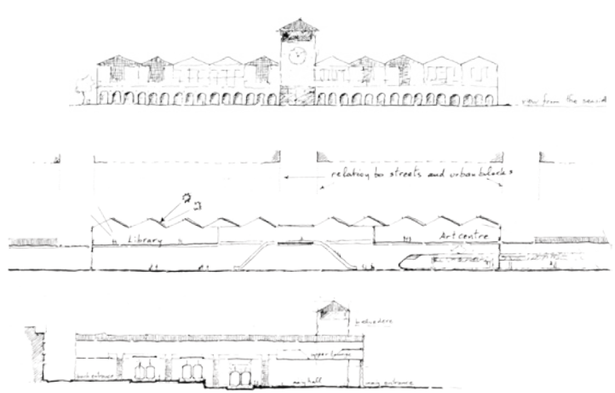
EXISTING URBANITY

INTEGRATION

1. R/W AG. DIONISIOS MAIN ENTRANCE
2. R/W SECONDARY ENTRANCE
3. OLD R/W STATION
4. MINI BUS HUB / PATRAS INFO POINT
5. SEAPLANE WATER BASIN
6. LOND DISTANCE BUS/ COACH SERVICE HUB (KTEL)
7. THEATER BY THE STATION



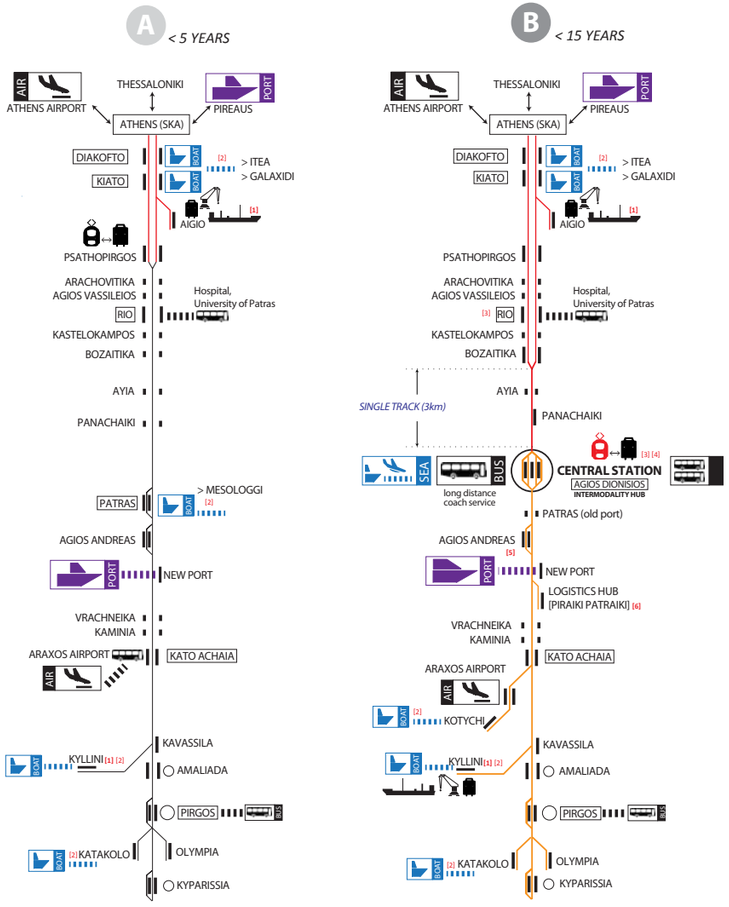
ROTATED VIEW

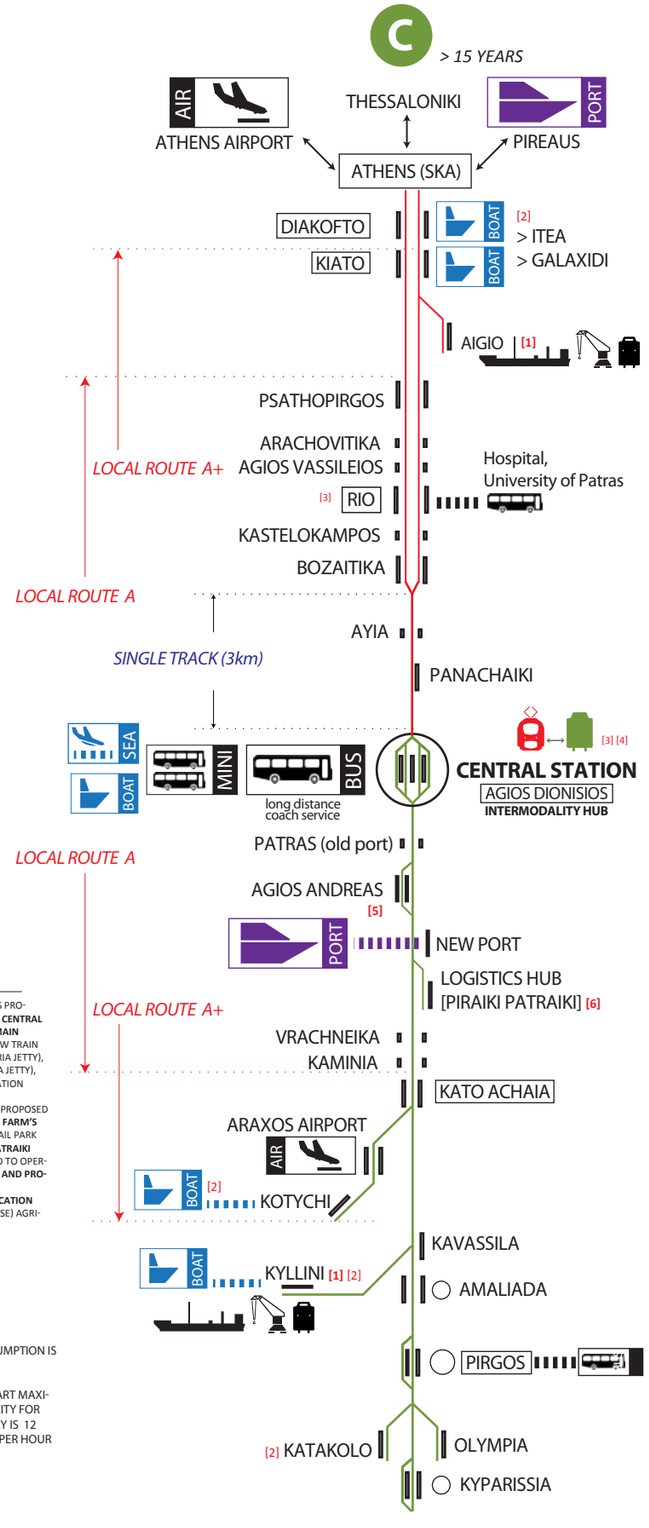


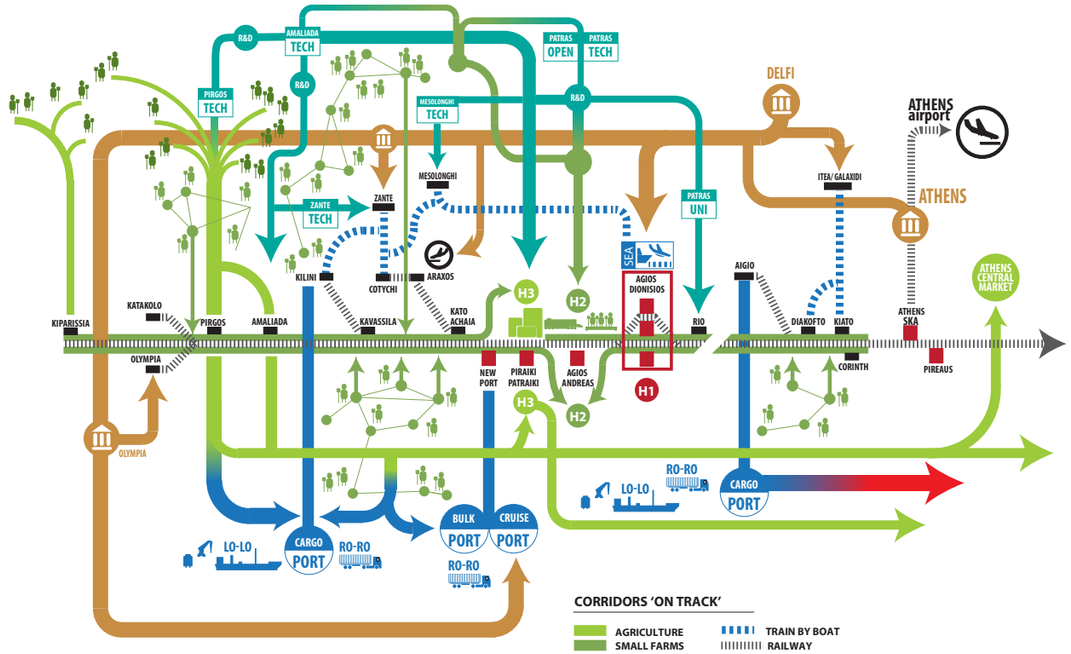
SUSTAINABLE DEVELOPMENT AND ADAPTABILITY

TRAIN, BY ALL MEANS! _ RAILTRACK & TRAIN NETWORK UPGRADE

STEPWISE OPERATIONAL RAILTRACK UPGRADE







CORRIDORS 'ON TRACK'

- AGRICULTURE
- SMALL FARMS & RAIL MARKET
- KNOWLEDGE INSTITUTIONS
- CULTURE PLACE OF INTEREST
- PORT: SEAWAYS
- TRAIN BY BOAT
- RAILWAY
- H1 CENTRAL TRAIN STATION INTERMODAL HUB / LEISURE & CULTURAL HUB
- H2 SMALL FARM'S RAIL MARKET URBAN FARMING ALLOTMENTS & TRAIN PARK
- H3 LOGISTICS HUB/ PROCESSING, PACKAGING, CERTIFICATION

SYNERGIES ON TRACK

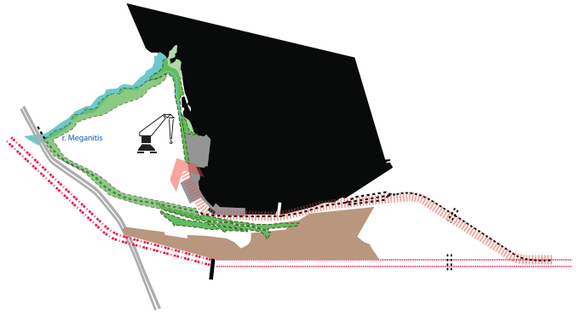
Train network upgrade operates in a multiple synergies activation frame aiming towards a productive lift both in a local and a supralocal perimeter.

Research & Development
Setting literally on track knowledge through university research, the proposed synergies network focuses on a cooperation between farmers and agriculture activities in general (small or expanded scale) and new/alternatavie technologies, branding Patras periphery as a high quality production farming placemark

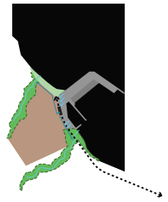
Culture
Synchronised Intermodality using the upgraded railtrack corridor as a backbone, simultaneously uplevels connections among major cultural/historical nodes in north-western peloponese perimeter as shown in the diagram. Connections established assist, among other sectors, tourist industry growth.

SEAWAY NODES

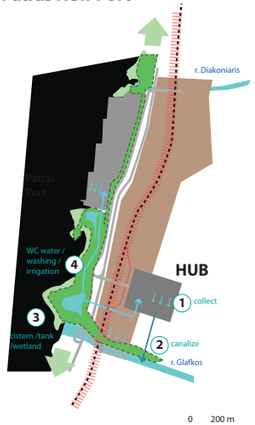
Aigion Port
Renovation of 8km rail line



Kyllini Port
Renovation of 25km rail line
Pyrgos Kavassila detour



Patras New Port



PORT OPERATION SYSTEM

The proposal activates a triple port cargo system using existing port infrastructure nearby the city of Patras located in west Peloponese.

>Aigio is proposed to operate as main cargo port (after Pireaus) for west-side cargo traffic, open to future Lo-Lo system upgrade . The port is proposed to connect directly to the Railway network
>Kyllini i sproposed to operate as secondary cargo port also open to Lo-Lo system upgrade (by demand)
>New Patras Port is roposed to operate as Cruise and Bulk port on a Ro-Ro system

PORT AREA DYNAMICS LEGEND

- Sustainable Hydrology
- Ecology Park / Green Corridor /Green Strategy as Mittigation
- Existing Port Infrastructure
- "Paused" Port Infrastructure by Council of State ΣΤΕ 717/2015
- Planned Double Standard in Tunnel
- Planned Double Standard
- Inactive Metric Line
- Renovated from Single Metric to Single Standard

LEGENDS

OPERATING LINES
- METRIC GAUGE
- STANDARD GAUGE ELECTRIFIED
- STANDARD GAUGE [DIESEL OPERATING]
- STANDARD GAUGE [BIO-DIESEL OPERATING]

INTERMODALITY HUBS
- CENTRAL STATION
- INTERMODAL STOP
- TRAIN BY BOAT
- TRAIN BY BUS
- INTERNAL PORT BUS

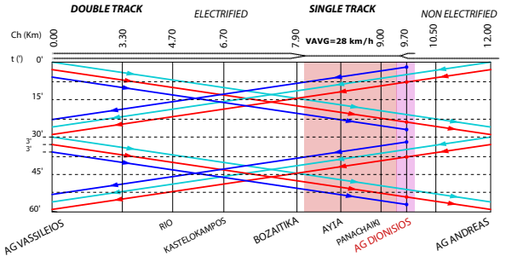
MEDIA
- CARGO PORT
- CRUISE PORT
- BULK PORT
- TRAIN BY BOAT
- SEAPLANE
- LONG DISTANCE BUS
- MINI BUS NETWORK
- INTERNATIONAL AIRPORT
- DIESEL
- ELECTRIC
- BIO-DIESEL

** EACH LINE REFERS TO A SINGLE TRACK*

NOTES

[1] AIGIO & KYLLINI ARE PROPOSED TO OPERATE AS CARGO PORTS (ALREADY DO PARTIALY). JETTIES AND PLATFORMS ARE FULLY OPERATIONAL. LINK WITH RAIL NETWORK IS FEASIBLE
[2] A 'TRAIN BY BOAT' NETWORK IS PROPOSED TO ACCELARATE INTERMODAL SYNCHRONISED COAST TO COAST TRANSPORTATION
[3] A 'TRAIN BY BUS' NETWORK IS PROPOSED TO ACCELARATE HINTERLAND SYNCHRONISED TRANSPORTATION
[4] **AGIOS DIONISIOS** IS PROPOSED TO OPERATE AS **CENTRAL TRAIN STATION** AND **MAIN INTERMODAL HUB**: NEW TRAIN BY BOAT STATION (VORIA JETTY), SEAPLANE PORT (VORIA JETTY), NEW CENTRAL BUS STATION (VORIA JETTY)
[5] **AGIOS ANDREAS** IS PROPOSED TO OPERATE AS **SMALL FARM'S TRAIN MARKET** AND RAIL PARK
[6] FORMER **PIRAIKI PATRAIKI COMPLEX** IS PROPOSED TO OPERATE AS **LOGISTICS HUB AND PROCESSING FACILITIES, PACKAGING & CERTIFICATION** FOR LOCAL (PELOPONESE) AGRICULTURAL PRODUCTS

RW LINE CAPACITY



ROUTE LEGEND
- SUBURBAN / 30' / direction
- INTERCITY / 30' / direction
- PASSING / 30' / direction

NOTES

[1] HEADSWAY ASSUMPTION IS 3 MINUTES

[2] SINGLE TRACK PART MAXIMUM ROUTE CAPACITY FOR 3MINUTES HEADWAY IS 12 NON-STOP ROUTES PER HOUR (BOTH DIRECTIONS)

04 "RAILSCAPE"

	Participants
International University Team	Coordinator: **Athanasios Spanomaridis**
Zurich/ Patras/ Athens	**Dr.Markus Nollert,** Spatial Planner, ETH Zurich - bureau für RAUMENTWICKLUNG **Theodora Papamichail**, Architect & Urban Designer, IRL, ETH Zurich **Athanasios K. Spanomaridis**, Architect. A.A Dipl (Hons) RIBA, Hons Grad Dipl. A.A - Assoc.Prof. Department of Architecture, University of Patras **Savvas Pantazopoulos**, Undergraduate in Architecture, University of Patras **Mara Papavasileiou**, Architect Eng. NTUA, Master in Regional and Urban Strategy Sciences Po Paris
SWITZERLAND/ GREECE	**Alexandros Zomas**, Architect Eng. AUTH, MSc NTUA, PhD candidate NTUA

TEST PLANNING

PATRAS

INTERNATIONAL COORDINATOR
ETH ZURICH
UNIVERSITY OF PATRAS
NATIONAL TECHNICAL UNIVERSITY OF ATHENS

UNIVERSITY TEAM
ATHANASSIOS SPANOMARIDIS
MARKUS NOLLERT, THEODORA PAPAMICHAIL
ATHANASSIOS SPANOMARIDIS, SAVVAS PANTAZOPOULOS
ALEXANDROS ZOMAS, MARA PAPAVASILEIOU

RAILscape

Greek ports and rail network

Gross weight of goods handled (mio t) on
TEUs (1000)
Passengers/ year (1000)n
Distance
Rail network

Athens
3`200`000 TEU
20`000`000 pass/y

Thessaloniki
322` 000 TEU
48`000 pass/y

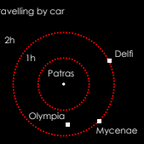
400 km
Minimum distance for competitive freight transport

Active/ Under construction
Inactive

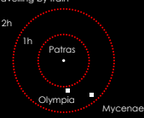
Touristical potentials

- Archaeological sites
- Passenger ports
- Listed cruise ports
- Sea routes
- R.S. : Railway station
- Active rail network/normal gauge
- Active rail network/metric gauge
- Inactive rail network/ metric gaug
- Rail network/under construction

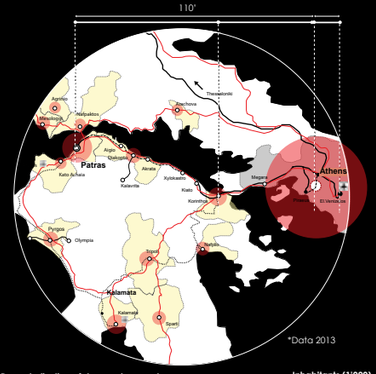
Travelling by car



Travelling by train



Decentralization potentials

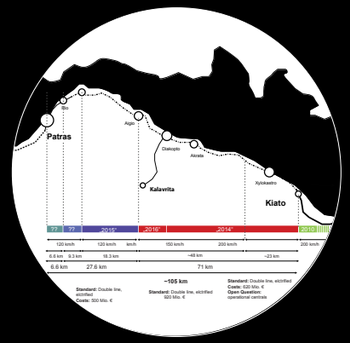


Decentralization of dense urban centers

- Cities
- R.S. : Railway station
- National road network
- Active rail network/normal gauge
- Active rail network/metric gauge
- Inactive rail network/ metric gaug
- Rail network/under construction
- Municipality
- Attica Metropolitan region
- Munipality of Central Sector of Athens

Inhabitants (1'000)

Timeline and Costs/ Kiato- Patras



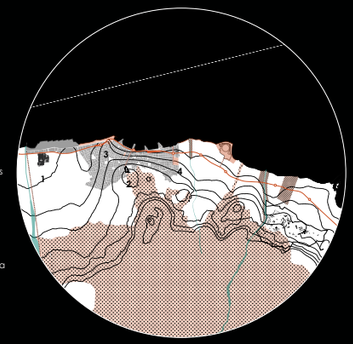
Railway network

- In operation
- Under construction
- Tendering completed
- Tendering ongoing (Submission: 24.03.2015)
- Planning/ unclear

Harbour areas

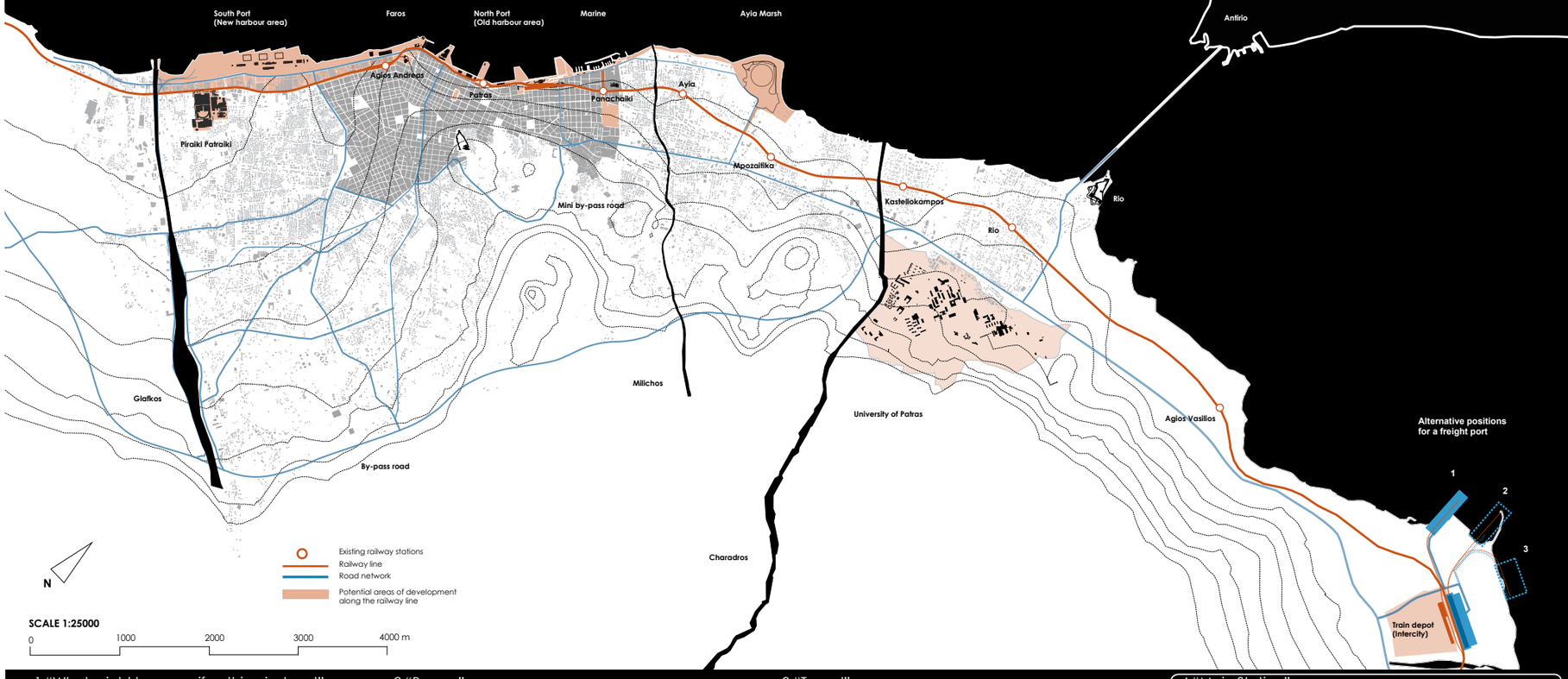
- Existing railway stations
- Railway line
- Road network
- Ports

Culture and Nature



- Existing railway stations
- Railway line
- Rivers
- Areas of natural
- Nature

1. Piraiki Patraiki- Post- industrial area
2.Castle
3. Ancient oracle (covered by Agios Andreas church)
4. Mammos beer factory- Post- industrial area



- Existing railway stations
- Railway line
- Road network
- Potential areas of development along the railway line

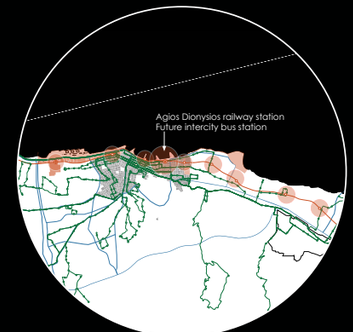
SCALE 1:25000

0 1000 2000 3000 4000 m

Inner Development and Densification potentials

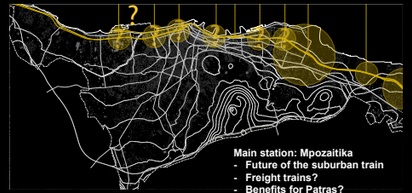
- Existing railway stations
- Railway line
- Road network
- Potential areas along the railway line
- Areas of densification 2015-20
- Areas of densification & development 2020-30
- Areas of densification & development 2030-50

Railway and Public transportation



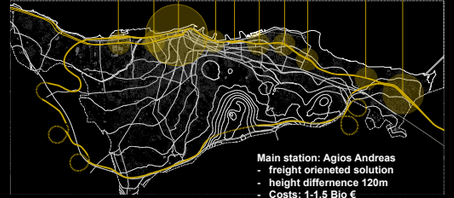
- Existing railway stations
- Future railway stations
- Railway line
- Road network
- Bus network
- Critical spots of intermodal nodes

1 "What might happen, if nothing is done!"



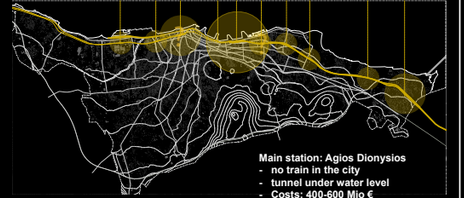
Main station: Mpozaitika
- Future of the suburban train
- Freight trains?
- Benefits for Patras?

2 "Bypass"



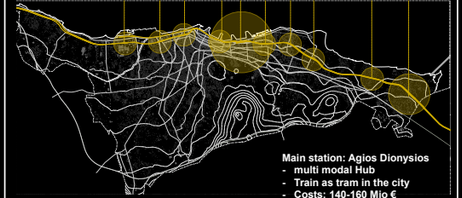
Main station: Agios Andreas
- freight orieneted solution
- height differnence 120m
- Costs: 1-1.5 Bio €

3 "Tunnel"



Main station: Agios Dionysios
- no train in the city
- tunnel under water level
- Costs: 400-600 Mio €

4 "Main Station"



Main station: Agios Dionysios
- multi modal Hub
- Train as tram in the city
- Costs: 140-160 Mio €

ode

TEST PLANNING

PATRAS

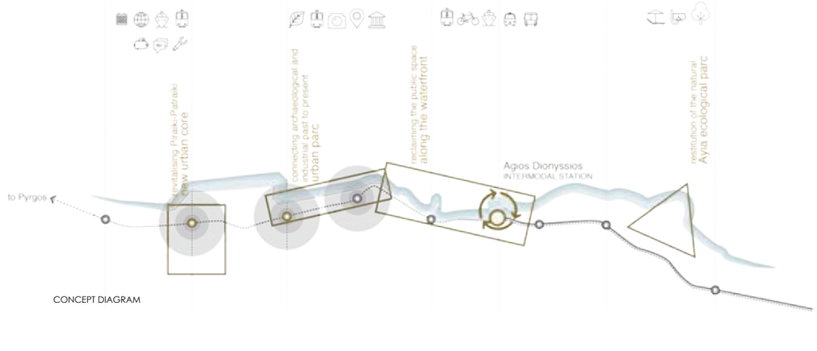
INTERNATIONAL UNIVERSITY TEAM

COORDINATOR
ATHANASSIOS SPANOMARIDIS

ETH ZURICH
UNIVERSITY OF PATRAS
NATIONAL TECHNICAL UNIVERSITY OF ATHENS

MARKUS NOLLERT, THEODORA PAPAMICHAIL
ATHANASSIOS SPANOMARIDIS, SAVVAS PANTAZOPOULOS
ALEXANDROS ZOMAS, MARA PAPAVASILEIOU

RAILscape 2



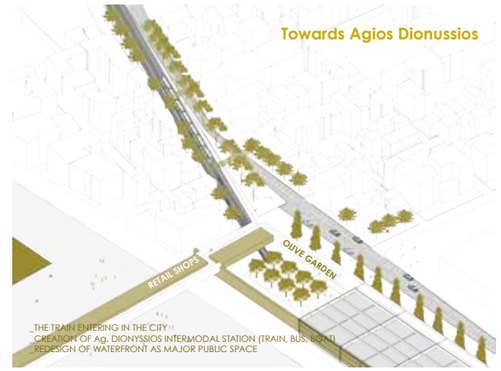
CONCEPT DIAGRAM

Agios Andreas

_UNLEASH THE ARCHAEOLOGICAL POTENTIAL TO PUBLIC VIEW
_USE THE DEPTH OF THE CITY
_NODE BETWEEN NEW AND OLD PORT
_REDUCE TRAFFIC LANES

Old Port

_RECLAIMING THE WATERFRONT
_CREATION OF OPEN PUBLIC SPACE
_ENHANCEMENT WITH EPHEMERAL PROGRAMMATIC ACTIVITIES
_REDUCTION OF TRAFFIC LANES



Towards Agios Dionussios

_THE TRAIN EMERING IN THE CITY
_CREATION OF Ag. DIONYSSIOS INTERMODAL STATION (TRAIN, BUS, BOAT)
_REDESIGN OF WATERFRONT AS MAJOR PUBLIC SPACE

Peiraiki – Patraiki : stimulating the urban economy

Peiraiki-Patraiki complex could be reused as a core for the creative and extrovert economy, rebranded as a contemporary creative hub that would stimulate a more productive sector. Local manufacturers can coexist with younger generations and together create new synergies for innovative entrepreneurship. The complex could also shelter a conference centre and cultural activities.
Parallel to that, the strip between the highway and the rail tracks could be redeveloped into a mixed-use project, featuring residence, offices and retail activities. The morphology of this intervention will reply to the new scale imposed by the port acting as a landmark of a metropolitan impact.

Waterfront strip : a new linear urban park

The waterfront linking Agios Andreas and the new port, is proposed to be redesigned as a new linear urban park, blending leisure and cultural activities, prolonging the promenade from the old port. The archeological ruins of Ag.Andreas combined with the industrial nostalgia create the urban narrative of the city of Patras that will be depicted on this park of specific identity.

Agios Andreas

The area around Agios Andreas cathedral is a place of multiple historical interest. Pausanias, Greek traveler and geographer of 2nd cent AD, mentions in his book Achaika the ancient oracle by the spring. The passage of train can be combined with a new view towards the archaeological history of the place, by revealing the topography and the depth of the urban palimpsest, combining ancient, byzantine and contemporary elements.

Agios Nikolaos

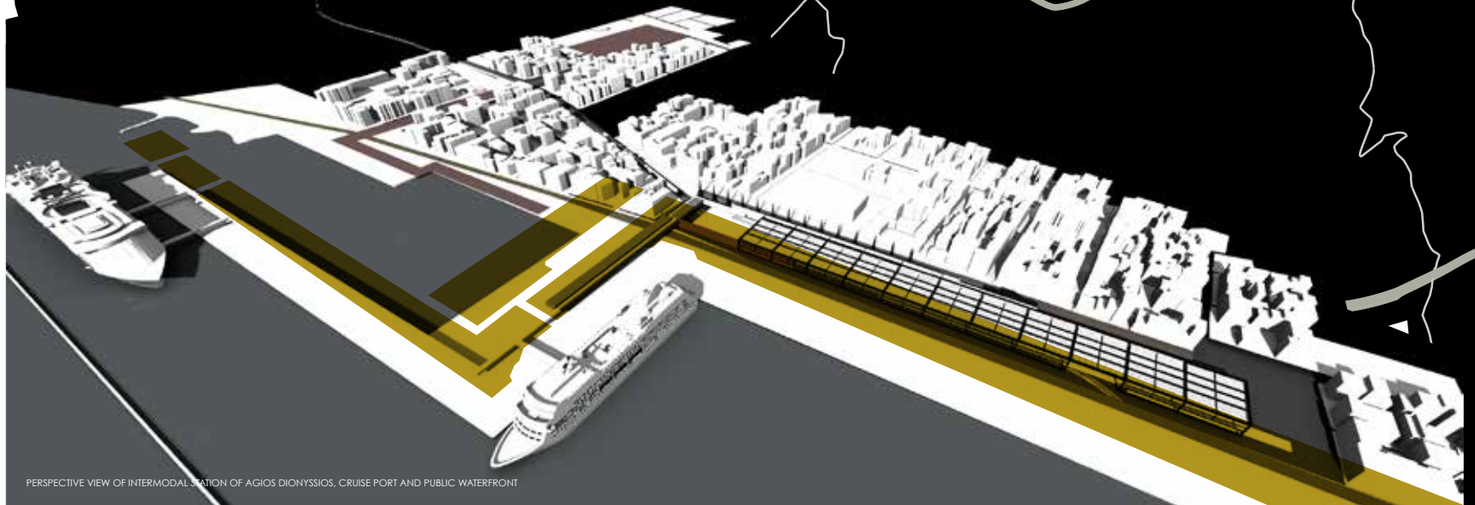
The pier has a strategic role as a public space of multiple uses reflecting a diverse programmatic character and offering incentives for yearlong appropriation. Annual events, such as the well known Patras carnival can function as main attractors for visitors and contribute to the touristic offer. In addition, activities spread along the year, such as sports events, open air installations or exhibitions could be combined to more punctual events, such as a farmers market or book bazaars.

Agios Dionyssios : the multimodal station

The new multimodal station of Patras, combines intercity, interregio and suburban trains with the bus network and progressively a new cruise port.
The station accommodates not only the functional needs of distributing passengers' flows, but also incorporates the urban life, is porous to the city and introduces a new urban experience where the train is the vehicle for positive change. It would be crucial that policy measures are introduced by the municipality concerning the regulation of uses and land prices for the future years.

Ayia Ecological Park

The area dominated by the Ayia marsh is a wetland of major importance for the ecosystem. We propose to preserve and enhance the character of the area by the restauration of the Ecological Park of Ayia. The character of the park will reflect the environmental values and promote a sustainable relation to nature through educational programs and activities. Sports and leisure activities will also be implemented in relation to the existing green and blue infrastructure, while cultural activities will be programmed and take place in open air interface.



PERSPECTIVE VIEW OF INTERMODAL STATION OF AGIOS DIONYSSIOS, CRUISE PORT AND PUBLIC WATERFRONT

A sustainable transformation system on urban scale will offer the possibility to investigate the given reality of the City of Patras in order to discover in it those primary values, which can be transformed in time, to support a consistent and rich in imagination, radical reinterpretation of the contemporary City' s structure. The "strip" as a multidimensional Urban landscape.

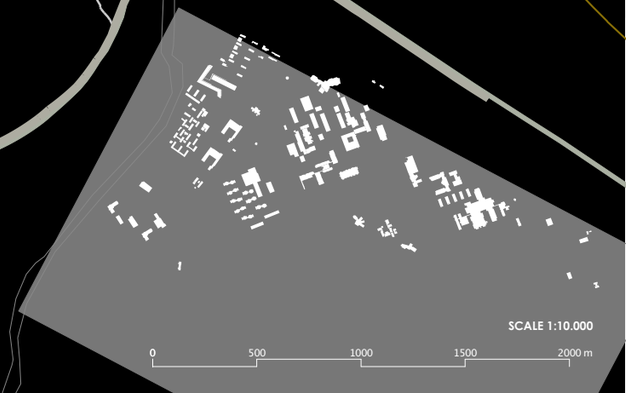
STRATEGIC GOALS

1 / PARALLEL DEVELOPMENT OF THE CITY AND THE RAILWAY SYSTEM THROUGH AN INTEGRATED AND SUSTAINABLE SOLUTION

2 / REVEAL THE CULTURAL AND HISTORICAL ASPECT OF THE CITY

3 / REINTERPRETATION OF THE WATERFRONT IN LEISURE AND CULTURAL SITE

4 / DEVELOPMENT OF TRANSPORTATION AND COMMERCIAL HUB



SCALE 1:10.000

0 500 1000 1500 2000 m

TEST PLANNING

PATRAS

INTERNATIONAL UNIVERSITY TEAM

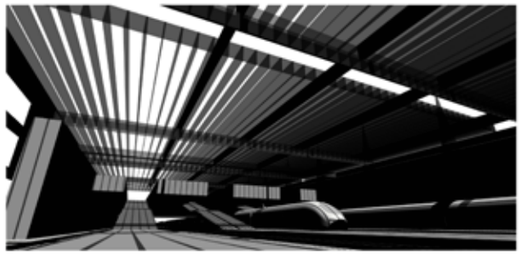
COORDINATOR
ATHANASSIOS SPANOMARIDIS

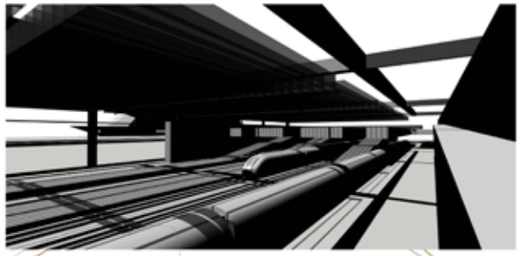
ETH ZURICH
MARKUS NOLLERT, THEODORA PAPAMICHAIL

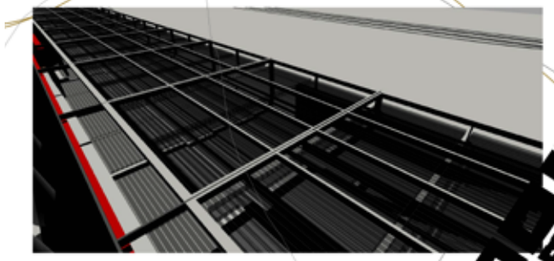
UNIVERSITY OF PATRAS
ATHANASSIOS SPANOMARIDIS, SAVVAS PANTAZOPOULOS

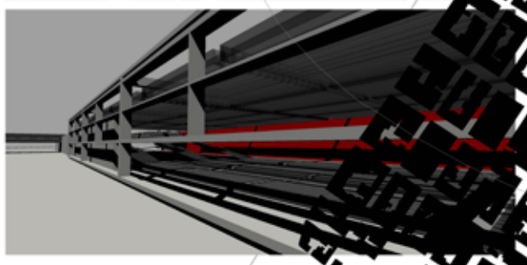
NATIONAL TECHNICAL UNIVERSITY OF ATHENS
ALEXANDROS ZOMAS, MARA PAPAVASILEIOU

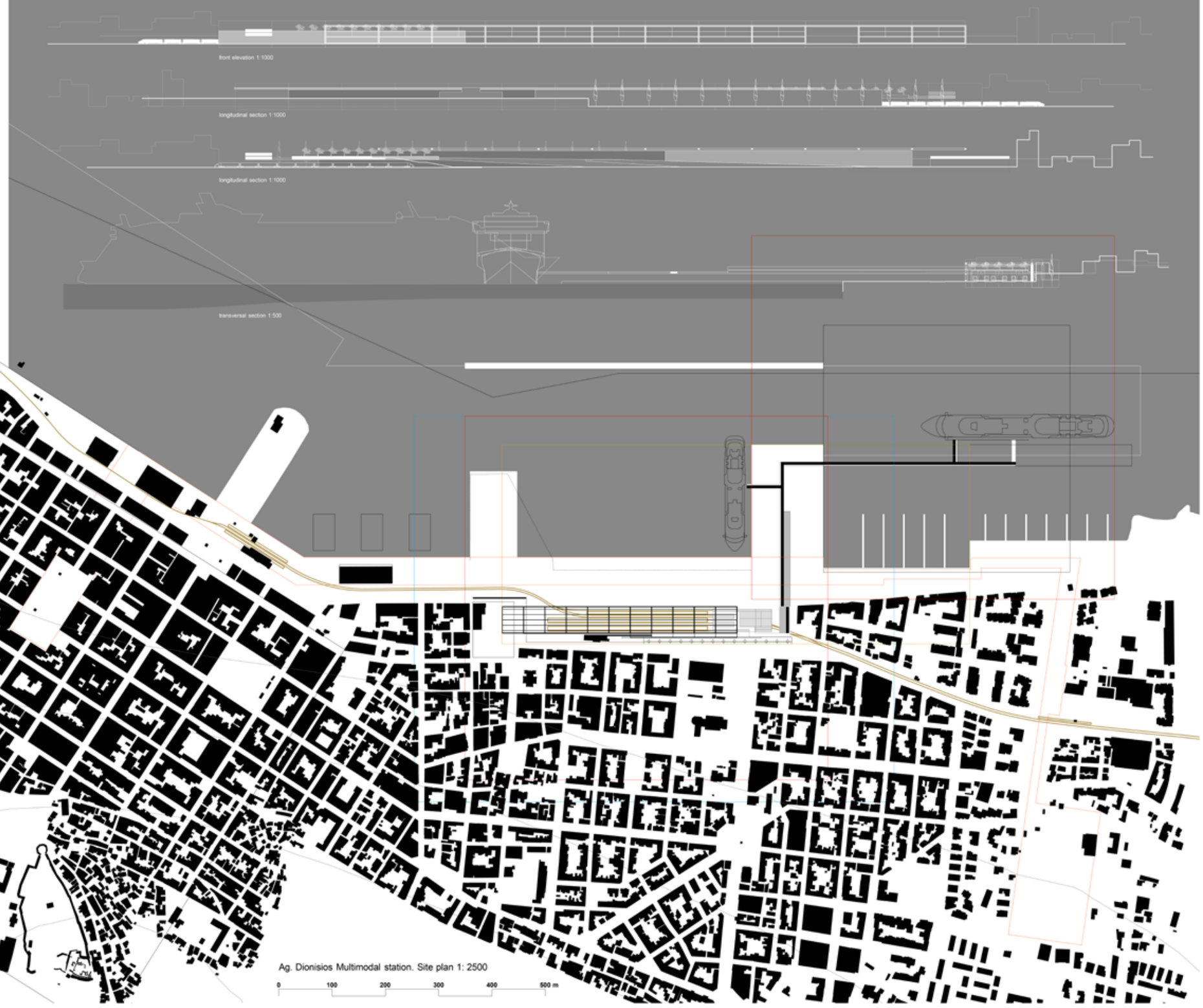
RAILscape 3











Ag. Dionisios Multimodal station. Site plan 1: 2500

0 100 200 300 400 500 m

TEST PLANNING

PATRAS

INTERNATIONAL UNIVERSITY TEAM
COORDINATOR ATHANASSIOS SPANOMARIDIS

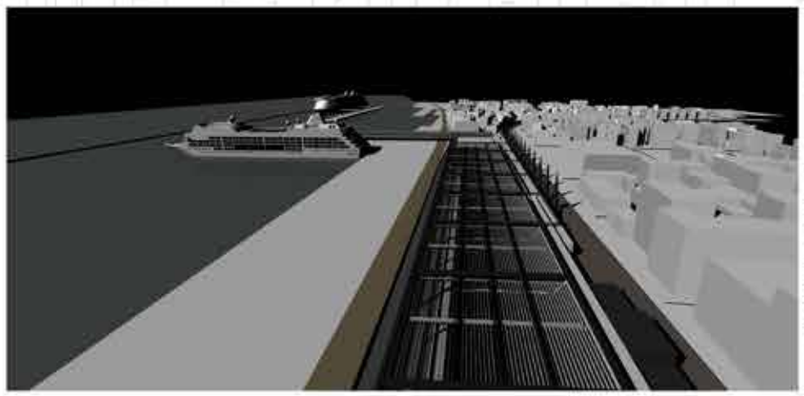
ETH ZURICH MARKUS NOLLERT, THEODORA PAPAMICHAIL
UNIVERSITY OF PATRAS ATHANASSIOS SPANOMARIDIS, SAVVAS PANTAZOPOULOS
NATIONAL TECHNICAL UNIVERSITY OF ATHENS ALEXANDROS ZOMAS, MARA PAPAVASILEIOU

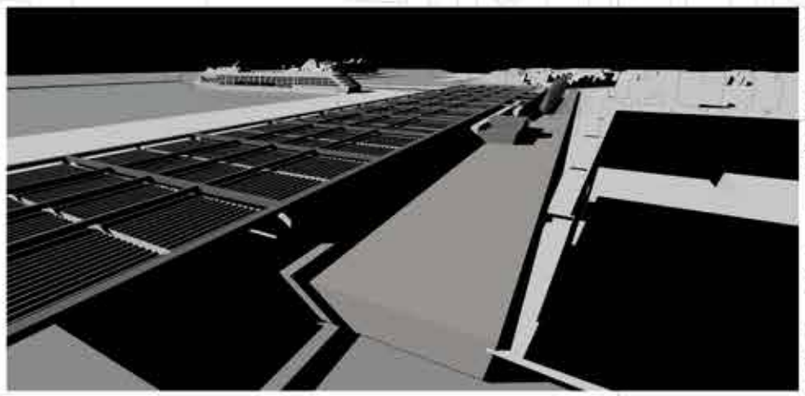
RAILscape 3.1

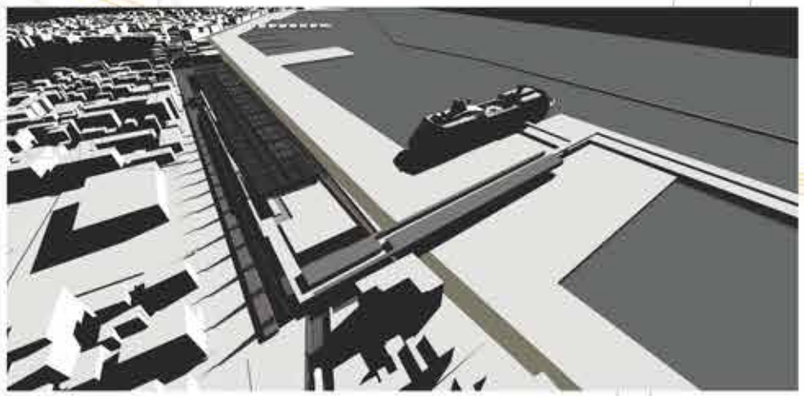
Rail SCAPE

The "train" offers the possibility for a new sustainable and resilient way of experiencing the city of Patras. It creates a thick landscape of urban possibilities by activating programmatic nodes in order to provide interconnections to the urban, suburban and regional scale. The presence of a significant infrastructure can be again a catalyst for development, offering a drastic re-interpretation of the city's topography to the resident, the visitor and the passer-by. Patras Urban Landscape is a space where diverse and, more often, controversial elements co-exist. Their presence creates a particular level of vision, capable of contributing to a new way of recognising the landscape that we experience on a daily basis. Our project recognises this landscape and through a series of interventions, it puts forward, reveals its primary structures creating a contemporary architectural script for the city. Ag. Dionysios multimodal station, a new public space, should be linked to the surrounding fabric and be a real "urban connector" within the city.

plan 1:1000







TEST PLANNING

PATRAS

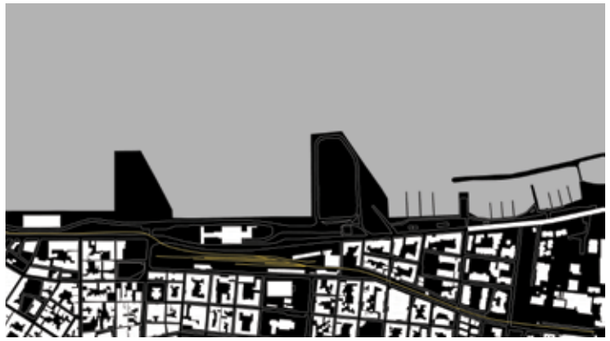
INTERNATIONAL UNIVERSITY TEAM
COORDINATOR
ATHANASSIOS SPANOMARIDIS

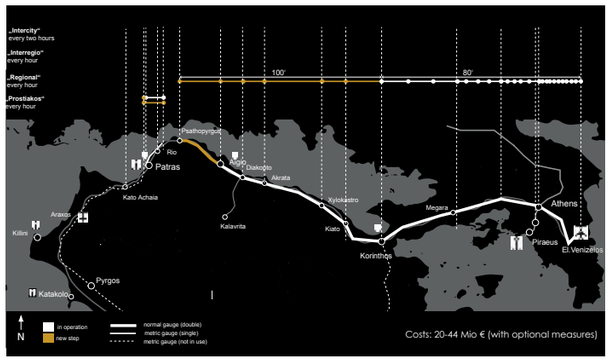
ETH ZURICH
UNIVERSITY OF PATRAS
NATIONAL TECHNICAL UNIVERSITY OF ATHENS

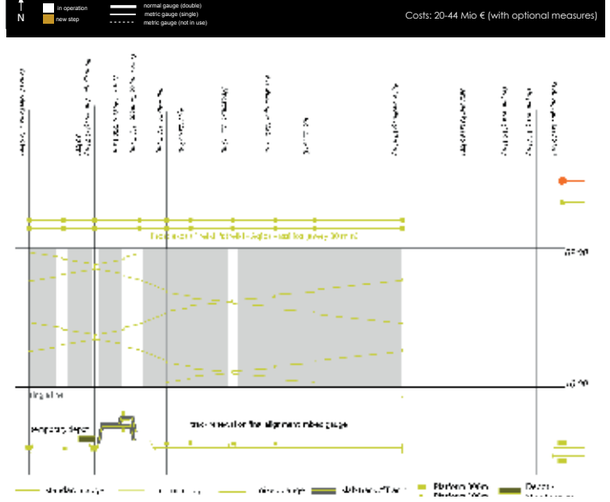
MARKUS NOLLERT, THEODORA PAPAMICHAIL
ATHANASSIOS SPANOMARIDIS, SAVVAS PANTAZOPOULOS
ALEXANDROS ZOMAS, MARA PAPAVASILEIOU

RAILscape 4

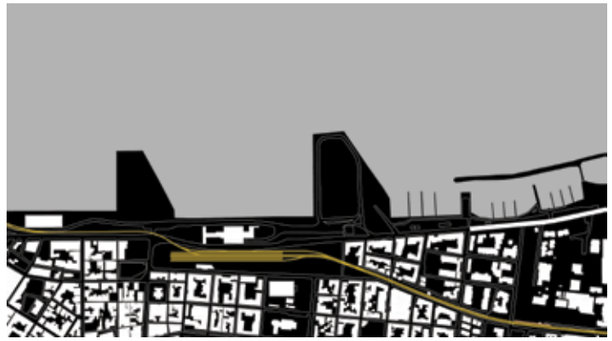
PHASE 1
IMMEDIATE IMPLEMENTATION - FIRST STEPS
2015-2020

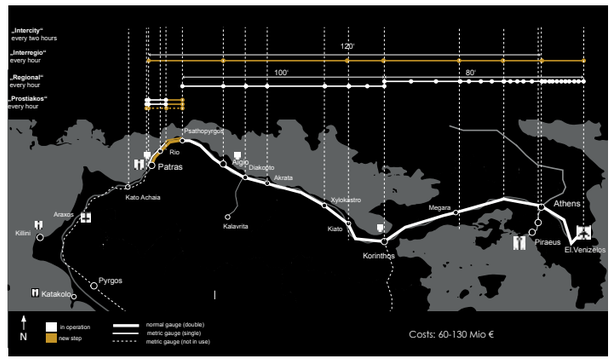


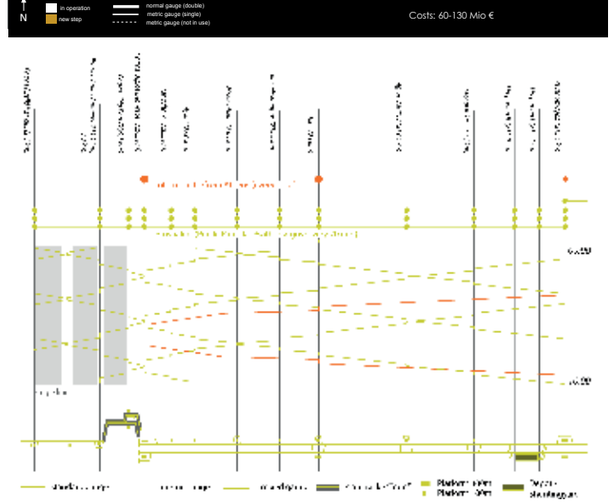




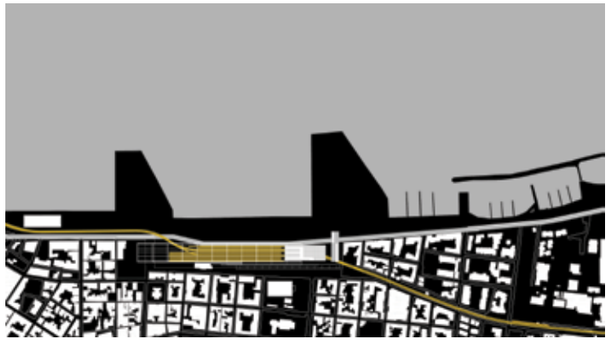
PHASE 2
STRATEGIC ACTIONS FOR SHORT TERM
2020-2025

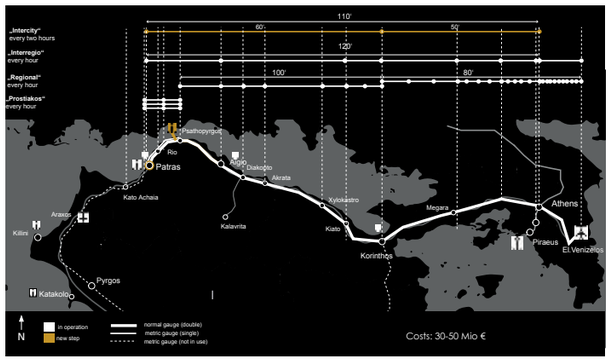


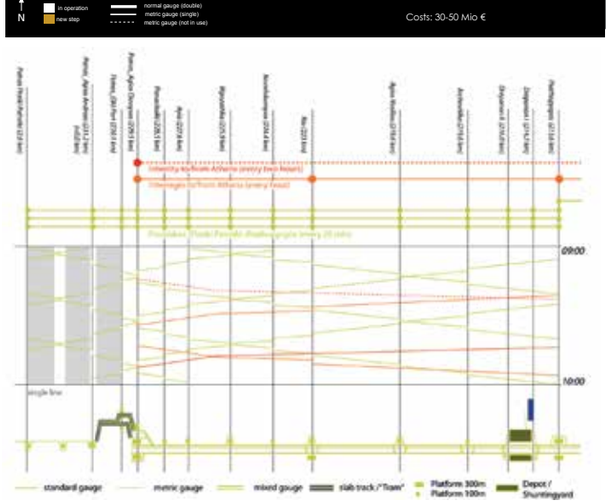




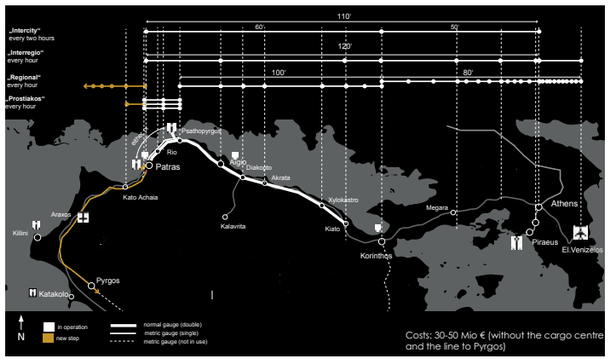
PHASE 3
STRATEGIC ACTIONS FOR MEDIUM TERM
2025-2030

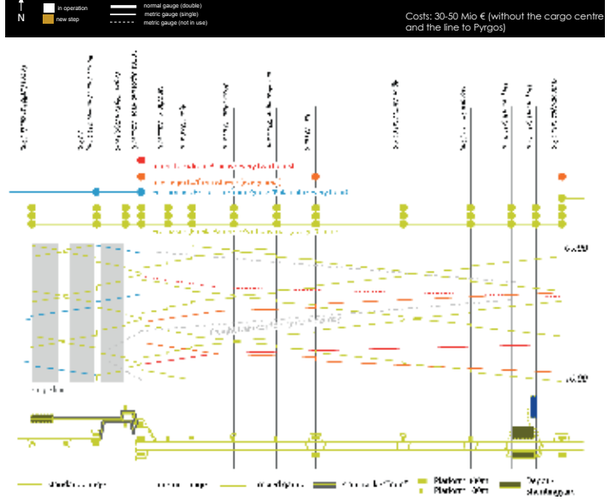






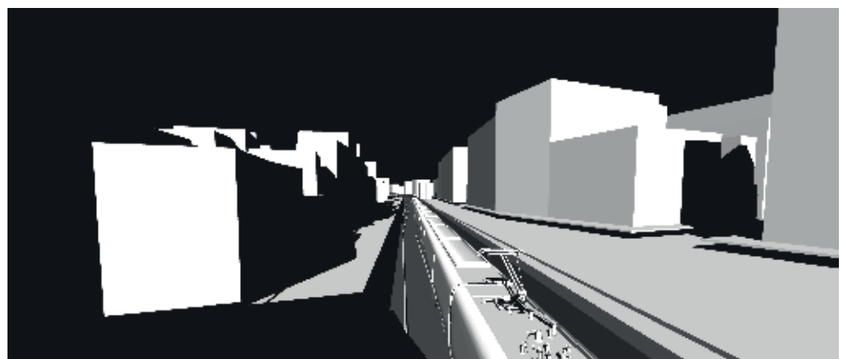
PHASE 4
STRATEGIC ACTIONS FOR LONG TERM
2030-2040

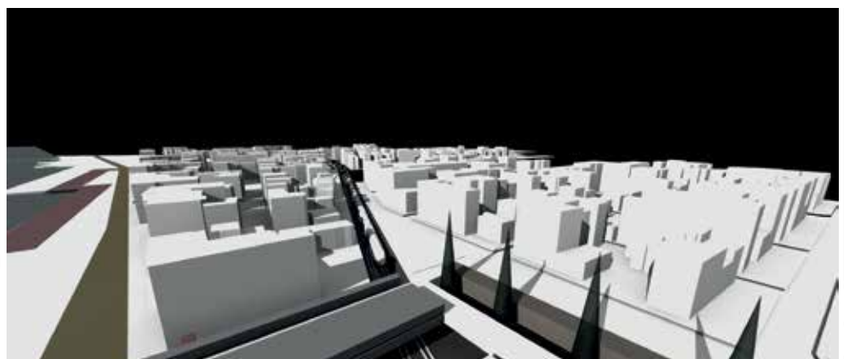




RAIL OPERATIONS

RAILWAY EXTENSION AGIOS DIONYSSIOS STATION





Participants in the Test Planning Process

Former Agios Dionyssios station, 2015 | photography: Theodora Papamichail

Steering Committee

Prof. Dr. Bernd Scholl, Director of the Institute for Spatial Planning and Development, ETH Zurich

Bernd Scholl is a full professor for Spatial Planning and Development at the Swiss Federal Institute of Technology since 2006. His Chair is part of the Institute for Spatial and Landscape Planning at the ETH Zurich. He was Director of the Institute from 2007 to 2009 and is once again since 2012. From 2011 to 2013 he was Director of the Network City and Landscape (NSL), which uses research and teaching to lay the foundations for a design of our environment that meets human needs, is sustainable, and has high aesthetic and cultural qualities.

From 1997 to 2006 Bernd Scholl directed the Institute for Urban Development and Regional Planning at the University of Karlsruhe (today called KIT) as a full professor for the chair of the same name. During this time, Bernd Scholl acted as a chairman and member of numerous international expert commissions and juries.

Prof. Dr. Kostas Moraitis, Architect, Engineer, NTU Athens

Kostas Moraitis wrote his doctoral thesis: *Landscape: Allocating place through civilisation. exposition and theoretical correlation of the most significant modern approaches* at the School of Architecture at NTUA. His further education includes postgraduate studies on ethical and political philosophy, the Seminar on Aesthetic Philosophy (Université I de Paris, Panthéon-Sorbonne, 1980–1981); the Postgraduate Program of Arabic and Islamic Studies EMKAIS (Pantios University of Social and Political Sciences, Athens, 1981–1982). He has been teaching at NTUA since 1983 and is responsible for the postgraduate seminar on the History and Theory of Landscape Design.

He has published on architectural projects and scientific work, participated in collective editions, and is author of a tutorial book concerning landscape design.

He has received numerous distinctions in architectural competitions in Greece and Cyprus. two first prizes in International Architectural Competitions: Urban and Landscape Design for the city of Lviv – Ukrania (2008), and Design for the Centre of Holistic Medicine in Allonisos – Greece (1998).

Prof. Dr. Vassilis Pappas, University of Patras

Dr. Vassilis Pappas is a full professor at the University of Patras, Department of Architecture. His main teaching subjects are Geographic Information Systems, Cartography, Regional Planning, and Spatial

Analysis and Planning. He is the author of many monographs, scientific papers, research works, and etc.

He has coordinated and participated in numerous national and international research and consulting projects dealing with information technology applications in spatial analysis and planning (PHARE, PHARE/OBNOVA, SMART, COMETT, LEONARDO, TELEMATICS, etc). He has worked as an individual consultant in many national organisations, as well as private firms, as a G.I.S. expert and spatial planner. In addition, he served as a reviewer and evaluator in the IMPACT-GIS, INFO2000 and City of Tomorrow EU programs. Dr. Pappas is a member of HellasGIs (president 2009–12), the Hellenic Cartographic Society, the Greek Planners Association, and the Technical Chamber of Greece (1980–2014) and was a pioneer in founding the Greek GIS society.

Dr. Rolf Signer, Planner, ETH Zurich

Dr. Rolf Signer completed a diploma in cultural engineering at the Swiss Federal Institute of Technology Zurich (ETH) with subsequent postgraduate studies in spatial planning at the same university where he was awarded a doctorate (Dr. Sc. Techn.). He works as a specialist planner in Switzerland, where he is a partner in an office for urban and regional planning in Zurich. Their projects encompass works on an urban and regional scale, both at home and abroad.

Rolf Signer is also a lecturer at ETH Zurich and TU Vienna. In this context, he was a coach for the International Joint Seminar weeks in Patras (Urban and Railway Development in Patras, 2013) and Athens (Rail and City – Code Athens, 2015). In addition, he was in charge of the task mission for the test planning process Rail&City in Patras in 2015.

Irini Frezadou, Dipl. Ing. Architect, TU Darmstadt; Spatial Planner, ETH Zurich

Irini Frezadou is an architect and spatial planner. She specialises in urban planning and design. She has earned several prizes in both Greece and international architectural competitions. Her current activities include spatial and transport development projects in Patras and Athens, in collaboration with ETH Zurich.

She has worked as a designer, architect and urban planner in several outstanding offices in Germany, Switzerland and Greece. Since 1994, she has her own office in Athens. She has participated in several Greek and International Architectural Competitions. Seven Prize awards (1st, 2nd and 3rd prizes). Publication of articles in various newspapers and magazines (Kathimerini, OIKO magazine). Several engagements as a speaker and a member of the organisation committees in Greek and international organisations: coordination and moderation of the International Rail and City Symposium in the Acropolis Museum, April 2015; organisation and coordination of two international student seminars (CODEPATRAS Student Seminar 2012–2013, CODEATHENS Student Seminar 2014–2015); collaborator with ETH Zurich; Member of the ETH Support Team for CODEPATRAS Test Planning Process; Member of the Expert Group in the ARL (German Academy of Spatial Research and Planning) Initiative: Spatial and Transport Development for the Hamburg–Athens Corridor.

Nicos Milionis, Transport Engineer, MEng

Nicos Milionis is a transport engineer with long experience in transport infrastructure planning and design, with emphasis on maritime and multimodal infrastructures as well as on the evaluation and assessment of EC funded structural and development programmes, in Greece and other EU countries, as well as in several developing countries.

His experience includes numerous planning, design and feasibility assessment projects related to the port of Patras and to sections of the national road and rail networks in Western Greece, which are part of the TEN-T network. Nicos Milionis is head of METRON – Spatial Planning and Development, a consulting firm based in Patras that is active in regional and urban planning and transport planning and design.

Peter Noser, Architect & Planner ETH/SIA

Peter Noser has a Master's in Architecture from ETH Zurich (1970–76). Since 1977 he has been an independent professional in Zurich working on: housing projects, participating in architectural competitions, and remodeling existing buildings. Studies in Urban Design. Assistant Professor for Planning and Architecture, under Prof. B. Huber, ETH Zurich (1980–81).

Since 1990, he is a Project Manager for the City of Zurich: Planning Studies and Organisation of Competitions for Communal and Cooperative Housing Projects. Since 2000, on the Management Team for Planning Instruments, Project Coordination of Zurich's Main Railway Station Development and Station Oerlikon, Urban Regeneration Projects in Zurich Nord (Affoltern & Leutschenbach). Since 2007, Head of Planning Department & Area Management, Vice Director of the Office for Urban Design.

Since 2013, he is a Consultant in Architecture and Urban Design, Coaching a Master's Course on Spatial Development, under Prof. Dr. B. Scholl, ETH Zurich.

Hans-Peter Vetsch, Former Head of Operation & Safety for the Gotthard Base Tunnel

Over the last 25 years, Hans-Peter Vetsch has been involved in several projects of the Swiss Railway (SBB), as well as the German and Austrian Railways: organising conversions in large railway stations, developing operating concepts for freight traffic (trailers on flat cars), developing innovative strategies and concepts in railway operation and safety.

Hans-Peter Vetsch is the creator of the operational and safety concepts for the Gotthard Base Tunnel, a specialist in matters of complex operating procedures, including accompanying technologies, e.g. signal box, ETCS, among others. He is also a specialist in safety matters: offering advice and presentations worldwide.

He is an advisor on the introduction of ETCS for the ÖBB and Commissioning Manager of ETCS for the DB. Since 2015, he runs his own consulting company: Ceo Vetsch Rail Consulting GmbH.

Teams

1 ASTOC
ARGUS/ BJP/ MESS

Members

Prof. Markus Neppl, Dipl.-Ing. Architect BDA
Sebastian Hermann, Dipl. Ing. Urban Planner AKRP

ASTOC Architects and Planners, Cologne

ASTOC Architects and Planners has been based in Cologne for about 25 years, creating urban design and architectural projects in Germany and abroad. Numerous awards and commendations confirm our all-round competence and emphasize the high quality of our work. Although architecture and urban design are two separate and independent disciplines, each with its own set of demanding requirements, ASTOC has been able to combine them successfully in a host of projects. The advantage arising out of this for the client is our dual expertise: Our urban design projects benefit from our substantial experience in the conceptualisation and realisation of buildings, while, through our extensive knowledge of urban design issues and interrelationships, we are able to endow our building projects with a strong architectural personality, standing in perfect accord with their localities. Many of our urban design projects have attracted a great deal of interest, at home and internationally. One example is Hamburg's „Harbour City", currently the largest inner-city urban design project in Europe.

ARGUS Stadt- und Verkehrsplanung, Hamburg

ARGUS Urban and Transport Planning, founded in Hamburg in 1983, deals with the complete spectrum of transport and traffic engineering planning using the variety of experience gathered over the years. This way all subject matter and all different phases of planning and construction are integrated under one roof. This allows an optimal flow of information and minimises sources of error. Bearing the current urban design and transport specific requirements in mind, ARGUS develops solutions in a cooperative, interdisciplinary and forward-looking manner using state-of-the-art planning procedures and instruments as well as the application of modern technology.

Dipl. Ing. Daniel Bläser, Urban Planner AKNW
Dipl. Ing. Hendrik Jansen, Urban Planner AKNW
Konrad Rothfuchs, Grad. Eng.

MESS GbR Kaiserlautern, Mannheim

MESS GbR was founded in Kaiserslautern 2007 and expanded with a second office in Mannheim in 2013. mess is working in the context of space and urban development, urban design and interventions. MESS develops from the respective local context specific plans, designs and concepts. These plans range from innovative conceptions over strategic planning through to the elaboration of concrete designs for cities, districts and individual spaces. The priorities of the office represent strategic development plans, master plans and urban planning. In this field of work, MESS looks back to a significant horizon of experience. Over the past 9 years, numerous projects in interdisciplinary collaboration were accompanied by the overall urban context on the urban design. MESS works mainly in Germany, but also in other European countries, such as for example during the International Architectural Biennale 2006 and 2010 in Venice.

BJP | Bläser Jansen Partner GbR, Dortmund

BJP was founded in 2012 by Daniel Bläser and Hendrik Jansen. Clients include municipalities, research institutions, private bodies and initiatives. The performance profile includes four complementary areas: Urban and regional planning focuses on the creation of action-oriented strategy concepts. Design finds its roots in urban design. Here we offer framework plans, structure and development planning and urban design solutions. Research includes mainly practical research approaches at the regional, municipal and neighborhood levels. We are working on mobility and climate-change and energy issues in urban contexts. We regularly publish in professional journals and books. One of our great strengths is the recognition of interdisciplinary requirements, so we expand our team, depending on the specific project and its various disciplines, architecture, landscape architecture, design, ecology, culture, and sociology so that potential conflicts can be identified and managed at an early stage.

2 Feddersen & Klostermann

Members
Feddersen & Klostermann, Städtebau Architektur Landschaft
Studio Vulkan, Landschaftsarchitektur GmbH
Brühlmann Loetscher Architektur & Stadtplanung ETH SIA
Roland Kobel, dipl.Civil Engineer SIA

Feddersen & Klostermann, Städtebau Architektur Landschaft

Integrated infrastructure development focused on holistic urban planning concepts.

Studio Vulkan, Landschaftsarchitektur GmbH

Our work focuses on using the synergy between the many facets of urban life and landscape at both urban and regional scales, from infrastructure and open space, to nature and social interaction, to create dynamic urban space with strong and site specific identities.

Brühlmann Loetscher Architektur & Stadtplanung ETH SIA

Buildings are not autonomous objects but rather blocks reflecting a high-level in urban design.

Roland Kobel, dipl.Civil Engineer SIA

Expert/Consultant in Railway Systems. Currently working at SBB (Swiss Railway Company).

3 iocarydi.com

Members
Dr. Io Carydi, Doctorate Architect NTUA Landscape Urbanist MA AA
Dimitris Karidis, Professor of Urbanism, School of Architecture, NTUA
Nikolaos Katsikis, Instructor in Urban Planning and Design, Harvard GSD
Fanis Kafandaris, Architect – Researcher NTUA – PhD Candidate School of Architecture NTUA
Ioannis Nikolaidis, Transportation Engineer, D.E.A.

Io Carydi founded the firm *iocarydi.com* in 2004, which currently specialises in landscape urbanism and sustainable landscape infrastructure for integrated systems in urban design interventions. The firm has been nominated for several design awards in international competitions (award for Kapnergati Square in Kavala (2007), first prize for a park on an urban block in Filothei (2008), award for ΓΣΠ square in Nicosia Cyprus (2011), while recent collaborations with international firms include projects for infrastructure and urban space such as the Zaryadye Park in Moscow, and the master planning and sustainable landscape design of G race Kalamata resort and villas.

Dr. Io Carydi, Doctorate Architect NTUA Landscape Urbanist MA AA

Io Carydi is a doctorate architect and urban designer and founder of the firm iocarydi.com, that specializes in architecture and landscape urbanism. She was an associate landscape architect for Hargreaves Associates in London. She is a Graduate of NTUA (PhD and Diploma) and an MA graduate with Distinction on Landscape Urbanism at the Arhitectural Association. She has taught at the AA, the University of Patras and the National Technical University of Athens. She has been involved in several projects that include the award winning New Campus of Montpellier and the design of the Olympic Park for London 2012. Her research interests focus on environmental processes and the appropriation and integration of physical systems into the urban space for which she has been nominated with several awards in international Design Competitions. Amongst the most recent projects of her own firm is the collaboration on Zaryadye Park (Moscow-Russia), and the landscape design and Master planning of Grace Kalamata Resort and Villas (Kalamata-Greece).

Dimitris Karidis, Professor of Urbanism, School of Architecture, NTUA

Dimitris N. Karidis is a Professor at the School of Architecture, Department of Urban and Regional Planning, National Technical University of Athens.

Nikolaos Katsikis, Instructor in Urban Planning and Design, Harvard GSD

Nikos Katsikis is an architect and urbanist, Instructor in Urban Planning and Design and Doctor of Design candidate and at the Harvard Graduate School of Design (GSD). At the GSD he is also research associate in the New Geographies Lab, and in the Urban Theory Lab and on the editorial board of New Geographies journal. He holds a professional degree in Architecture with highest distinction (2006) and a Master in Architecture and Spatial Design (2009) from the National Technical University of Athens. His recent work includes the edited volume New Geographies 06: Grounding Metabolism (Harvard University Press, 2015) and contributions in MONU (2014), Implosions / Explosions: Towards a Study of Planetary Urbanization (N. Brenner ed., Berlin: Jovis, 2013) and the forthcoming book with N. Brenner, Is the world urban? Towards a critique of geospatial ideology (Actar, 2016).

Fanis Kafandaris, Architect – Researcher NTUA – PhD Candidate School of Architecture NTUA

Fanis Kafantaris is an architect with postgraduate studies in architecture theory and design and a doctoral candidate at NTUA. He holds a practice and works as a professional architect since 2008 and has participated in various design projects and academic research programmes in Athens exploring the contemporary urbanity of the city and its potentials beyond crisis rhetoric. Currently he is a PhD Student in the School of Architecture in National Technical University of Athens investigating the complexity of the vacant status condition of the buildings.

Ioannis Nikolaidis, Transportation Engineer, D.E.A.

Ioannis Nikolaidis holds a Diploma in Rural and Survey Engineering (National Technical University of Athens, 1985) and DEA in Urban Geography and City Planning (Universite de Paris IV, 1986). Member of the Technical Chamber of Greece, the Institute of Transportation Engineers of Greece and the Greek Rural and Survey Engineers association. Certified Consultant of the Greek State in the categories 10 (Transportation Infrastructure Design) and 16 (Surveying), Certification of ADVANCE Sustainable Urban Mobility Plans Auditor. He specialises in transportation infrastructure design (highways, railroads, airports), traffic management and sustainable transport projects (cities, municipalities) and transportation planning (cities & municipalities networks, public transportation systems) with experience in technical consulting and project management in European Union funded technical assistance programmes and motorway concession projects.

4 International University Team

Members

Coordinator: **Athanasios Spanomaridis**

Dr.Markus Nollert, Spatial Planner, ETH Zurich - bureau für RAUMENTWICKLUNG
Theodora Papamichail, Architect & Urban Designer, IRL, ETH Zurich
Athanasios K. Spanomaridis, Architect. A.A Dipl (Hons) RIBA, Hons Grad Dipl. A.A - Assoc.Prof. Department of Architecture, University of Patras
Savvas Pantazopoulos, Undergraduate in Architecture, University of Patras
Mara Papavasileiou, Architect Eng. NTUA, Master in Regional and Urban Strategy Sciences Po Paris
Alexandros Zomas, Architect Eng. AUTH, MSc NTUA, PhD candidate NTUA

The International University Team was founded especially for the Test Planning Process in Patras and consists of six interdisciplinary experts from ETH Zurich, University of Patras and NTU Athens. Since they do not have a common background, each member is individually represented below:

Athanasios K. Spanomaridis,
Architect. A.A Dipl (Hons) RIBA, Hons Grad Dipl. A.A
Assoc. Professor, Department of Architecture, University of Patras

Studied architecture at the Architectural Association School of Architecture in London. From 1980 to 1982, during his postgraduate studies, taught architectural composition at the same school. Since then, has participated as lecturer and visiting tutor at the University of Cambridge, at Universitat Politecnica de Cataluña -Master's Degree Course, Departamento de Proyectos Arcquitectonicos of Escola Tecnica Superior d' Arquitectura de Barcelona and at the Centre for Architectural Research in Athens, of which he is a founding member. Since 2003, Assistant Professor at the Department of Architecture, University of Patras (Teaching and Research Staff member). Speaker at educational institutions and conferences in Greece and abroad. Participation with distinctions in Panhellenic and International Competitions. Exhibitions: "Architecture and Continuity", London and Athens 1982. Proposals for the Acropolis Museum, Athens 1990. Biennale, Venice 1991. "Techne and Metis", Athens 1994. "Landscapes of the Intimate", XIX Triennale, Milan 1996. "Landscapes of Modernisation; Greek Architecture 1960-1990", Rotterdam and Barcelona 1999. Biennale, Venice 2000 and 2002. "Athens-Scape", RIBA London 2003. PanHellenic Architectural Project Exhibition (WALLS), 2009, Public Space – Wanted 2011. Publications in magazines: AA Files, AA Themes I, Architectural Design, Building Magazine, Architektonika Themata, Tefchos, Themata Chorou kai Technon, Newsletter of Architects' Association, Ellinikes Kataskeves, IdealArchitecture (Korean Architect), Stauba, DOMES. Consultant to Hachette-Rizzoli editions for Greece. Window, Voyager magazines.

In 1984, sets up MIMNERMOU 2 ARCHITECTS studio. Through its project designs, the studio promotes research on redefining the limits of architectural practice and developing a syntax for a contemporary Architectural Script. Member of the TCG (Technical Chamber of Greece) and SADAS (Association of Greek Architects) since 1982. Also a member of the Royal Institute of British Architects (R.I.B.A) and of the Architectural Association since 1980.

Dr.Markus Nollert, ETH Zurich - bureau für RAUMENTWICKLUNG

Dr. Markus Nollert is founder and owner of the bureau für RAUMENTWICKLUNG in Zurich. The office is specialised in tailor-made planning processes in multi-actor networks as well as design tasks on a regional and integrated level. His work emphasises identifying and solving complex problems of spatial development in an interdisciplinary and actor-based environment. Recently, he designed and oversaw the public planning workshop entitled ‚Räumliches Leitbild Karlsruhe 2015' (Spatial Mission Statement/ Spatial Model) and curated a public exhibition on the results.

As a Scientific Assistant at the Chair of Spatial Development at ETH Zurich, he focused on planning processes and design on a regional scale as well as the methodology of planning in multilateral actor networks. His doctoral thesis on the Methodology of Spatial Design was complete 2013. He also founded the public participation platform ‚nextzürich' and has been a lecturer at the Chair of Spatial Development since 2009.

Theodora Papamichail, Architect & Urban Designer, IRL, ETH Zurich

Theodora Papamichail was born in Patras, and today she is an architect and urban designer. She is a graduate in Architecture from the University of Patras and a graduate of the Master of Advanced Studies programme in Urban Design at ETH Zurich.

Parallel to the MAS Studies, she started to work as a research assistant at the Institute of Spatial Planning and Landscape Development (IRL) participating in the project CODEPATRAS. Since 2015, she is a PhD student at the Chair of Spatial Planning and Development at ETH Zurich. Her academic and research work has been presented on a national and international level, including the International Conference in Palermo, ISOCARP 2015 (Brussels/Rotterdam) and architecture exhibitions in Greece (7th Exhibition 'The Void'), Barcelona (Bienalle of Landscape), New York and Vienna (MoMa, Uneven Growth: Tactical Urbanisms for Expanding Megacities). Currently, she assists NRE 1 at the MAS of IRL at ETH Zurich.

Alexandros Zomas, Architect Eng. AUTH, MSc NTUA, PhD candidate NTUA

Born in Athens in 1984 and raised in Paris, Geneva and Syria. He graduated in Architecture from Aristotle University of Thessaloniki in 2008, and also attended courses at the Ecole Superieure d´ Architecture de Paris La - Villette in 2007 as an Erasmus exchange student. During the period 2009–2012, he collaborated with various offices in Thessaloniki and Athens (Sofia Tsiraki Architects, Giorgos Tsopanoglou Architects, Noukakis Architects, Point Supreme Architects). In 2012, he graduated with full honours from the interdisciplinary post-graduate program of NTUA Design–Space–Culture, during which he taught as assistant in the field of architectural design. During 2012–2015, he worked as a project architect at the architectural firm K-studio. At the same time, he created an architectural and urban design firm with Mara Papavasileiou, Micromega Architecture & Strategies. Since 2015, he is a PHD candidate at the NTUA in the fields of landscape, city and ecology.

Mara Papavasileiou, Architect Eng. NTUA, Master in Regional and Urban Strategy Sciences Po Paris

Born in Athens in 1984, she holds a Diploma in Architecture from the National Technical University of Athens and a Master's in Regional and Urban Strategy from Sciences Po Paris under a scholarship of the Embassy of France in Greece. She is currently attending the post-graduate inter-disciplinary program of NTUA Design-Space-Culture. Parallel to her academic path, she has collaborated with various architectural and urban planning practices in Paris, Atelier Jean Nouvel, Attitudes Urbaines and in Athens, Tombazis, k-studio. In 2012, she founded the practice, Micromega Architecture & Strategies, with Alexandros Zomas, which is based in Athens. Her professional and research work has been awarded several prizes in national and international competitions and conferences, and has been exhibited in architecture exhibitions, including Barcelona, Puerto Rico and the 7th Biennale of Young Greek Architects.

Savvas-Petros Pantazopoulos, Undergraduate Student, Department of Architecture, University of Patras

He is currently studying at University of Patras in the Department of Architecture. Alongside with his studies he participated in several architectural workshops, conferences and competitions.

Competitions: Tourist Accomodation Prototype_ international student competition_2011, Formation of Central Nikis square at Kozani (3d drawings for Mourelatos-Filippopoulou Architects)_2011, Paris Market Lab_ international student competition_2011-2012, Formation of the Aheropoietos -St.Sophia axis in Thessaloniki_2012 (3d drawings for Mourelatos-Filippopoulou Architects), Tokyo Replay Center Student Competition_2012, Museum for Underwater Antiquities_O.L.P competition (3d drawings for C+Ph Scroumbelos architects and A.Spanomaridis architects)_2013. Workshops:"People meet in Time" Univesity project,12th Venice Biennale_2010, Villard13,"Reuse, Sustainable strategies of Urban Requalifications", City of Quartu St.Elena, Sardinia, Italy_2013. Conference: „The importance of Philosophy in Architectural Education", Patras,Greece_2009

His research and design proccess concernes the interpretation of Architecture as a Helen of Troy. a procedure of absolute beauty, but with multiple interpretations.

Panoramic view of Patras, 2015 | photography: Markus Nollert

Considering the socio-economic crisis in Greece, the fragmented decision-making currently taking place among the different planning levels and actors is already having a dramatic effect on the implementation of infrastructure networks. This means that new planning methods are urgently required in order to ensure the spatial and infrastructure development of Greece. Firstly, railway networks not only contribute to serving transportation needs, they also promote development and generate new forms of urbanism that provide social cohesion in fragmented areas. During the preparatory steps for the CODEPATRAS project, it was mutually agreed to conduct a Test Planning Process for the City of Patras, the western gateway to Greece. A Test Planning Process is an informal, ad hoc and collaborative process conducted by numerous stakeholders to solve complex spatial problems of strategic importance.

The idea to use such a procedure in Patras emerged from the different interests expressed by various actors concerning spatial planning development and railway integration in the urban fabric, which has been a problem for the last two decades. The introduction of the Test Planning Process started with an initiative from ETH Zurich in close cooperation with the University of Patras and the NTUA (National Technical University of Athens). Using the Test Planning Process in a situation of crisis would bring more clarity to this complex problem and open the possibilities of a new approach. It was initiated in 2014 and involved the important actors of the city, regional development agencies and independent experts of various disciplines. In addition, the process invited four planning teams to explore solutions for the complex tasks simultaneously. Although it is a well-known process in Germany, Austria and Switzerland, it is a pioneering method in a Greek institutional and planning context, combining top-down policies with bottom-up initiatives.

www.codepatras.ethz.ch