Abstract. The paper studies the constant and continuous concern for how speed - through high-speed train - influences rail joints, which in turn contributes to urban competitiveness, by improving quality transit area. Also, because rail station building quality and safety are enforced by the European Union, this paper brings into attention a lot of observations on Romanian railway buildings architecture. Unfortunately, in Romania there are no equivalent high-speed tracks, the rail network is partly electrified, with no flagship technology. In fact, new national upgraded lines do not employ 20th century engineering. With no elimination of constrictions such as at-grade crossings, no upgraded buildings and with no range of quality services for passengers, Romanian railway accumulates deficiencies over a period longer than twenty years.

Key words: railway station, passengers, architecture, national situation, social progress.

1. Introduction

When we speak about rail, either we think of means of transportation, or speed, or travel conditions, in most cases we are not seeing the buildings - the train stations (International Union of Railways, 2010).

In an efficient railway system, the focus is put on the quality of passengers services (Bera and Rao, 2011). Hence, rail station building quality and safety are enforced by the European Union. Also, the idea of sustainable architecture, related to construction market involves two concepts: the concept of need (the need to provide a reasonable standard of living for everybody) and the concept of limit (the environment limit to meet the present and future needs of society) (Mihailescu, 2012).

Therefore, this paper brings into attention and presents some pertinent observations on railway buildings architecture from Romania. The heuristic method combines aspects coming from identifying those national rail stations that could become attractive poles and then comparing...
national situation with similar European system.

Then conclusions outlook the Romanian Railway System discrepancies between what paper-projects said to be done and the real Rail Station Aspect after rehabilitation and modernization.

More, the motivation of the theme chosen for study is the constant and continuous concern for how speed - through high-speed train - influences rail joints, which in turn contributes to urban competitiveness, by improving quality transit area.

In this quest, railway architecture is seen from two points of view:
− firstly, architecture - as a way of organizing the system; and
− secondly, architecture - as designing buildings.

Thereby, the subject discussed in this study highlights a number of issues existing in the two directions of analysis presented above, and in the end we have some opinions, of which we may detach proposals that can be put into practice.

2. First Romanian Rail Stations
Initially, in Romania, because there were not many railway lines linking major cities, railway buildings were small, having only the role of showing train stops for various industrial and/or freight operations, later being designed for passengers.

Therefore, in Romania, rail stations emerged during 1854/1869-1918.

Then, until the year 1945, focus was set on reconstructing the existing railway stations, especially those destroyed or damaged during the First World War, and also on increasing capacity of the existing railway stations. During the Second World War, the Romanian railway stations suffer major destructions.

Between years 1945-1990, Romanian state aims at restoring damaged railway stations, strengthening and extending them, and building new ones along new railway lines. After 1990, in all the rail station - including administrative and technical buildings, the activity is abandoned. Since then, because:
− inappropriate maintenance,
− or without taking into account passenger’s transit,
− or without implementing any level of technology and safety,
− or to increase the quality, the design or the attractiveness of the rail service,
− or because of vandalism.

Romanian railway stations degrade each day.

Most railway buildings are designed of ground floor and first floor, in various architectural styles. Thus, in Moldavia and Wallachia, railway stations were modeled after the Austro-Hungarian pattern, and in Dobrogea and the Bucharest-Giurgiu rail line, the Stations followed the German and British models. More, Suceava Station (formerly Burdujeni) is similar to Freiburg Station, from Switzerland and Comanesti Station is designed as a replica of the Lausanne Station, from Switzerland.

3. National Rail Stations after year 2007
The issue of accessibility has a central place on the European agenda of spatial development policies (Carjan et al., 2011). Along with the adherence of our country into the European Union, to align to the quality standards, Romania was forced to
Urbanism

upgrade and rehabilitate rail stations. Therefore, were prepared “Romanian Rail Strategy, 2001-2010”, and then “General Transport Master Plan for 2007-2013.

Romania adopted the Directive no. 1692/1996/EC, regarding Trans-European Transport Development. Also is important to mention Decision no. 1346/2001, on T.E.N.-T. Network and Law no. 203/2003 regarding designing, development and upgrading national and the European transport infrastructure (republished in Monitorul Oficial Part I, no. 89/26.01.2005). These documents aim to:

− facilitate passenger traffic;
− provide services at European level, and
− re-launch rail tourism.

Making an arch over time, rail buildings for passenger were neglected since in their construction occur no interference on activities of rehabilitation and modernization.

These actions come out after approval of a national strategic document, divided in two stages: "Master plan for the first group of projects" and "Master plan for the second group of projects", for the period 2008-2025.

Work on these rail areas assumed: modernizing ticketing, common spaces, galleries and toilets (by restoring plastering and painting, repainting or plating surfaces depending on destination, repairing or replacement of joinery, floors, creating false ceilings, replacement of electrical, heating and ventilation systems, various building works, construction of anti-sliding ramps for access, or insertion of lifts).

In some Stations were demolished parts of buildings, for example in Cluj-Napoca Station disappears "Old Post" building, being replaced with a green space. Other rail stations were restructured in new sections, such as Arad Station, and elsewhere were built new building bodies, such as in Drobeta Turnu-Severin Station.

Regarding intermodal terminals, Master Plan reminds the E.U. policy, which is supporting the development of this type of transport. In Romania are recommended as absolutely necessary terminals in Arad, Constanta and Giurgiu. In other terminals is recommended to avoid investments, others should be gradually closed because are operating with small volumes of goods, or should be left for private investments.

Most European old railway stations are dating from the nineteenth century and reflect the grandiose architecture of the time. They are seen as a testament to the past of a nation, every corner carrying a story of a world long gone.

In Romania, a first example of forgotten Station is Gara Filaret. In 1869, opened in the same time with the inauguration of the Bucharest - Giurgiu railway line, the building is the first passenger rail station from Romania.

Then, in 1872, Targoviste Station, today North Station in Bucharest, was opened and Filaret Station loses its meaning. Hence, in 1960 Filaret rail Station became Filaret Bus station, train lines being disabled. Thus, the first railway station in Romania instead enjoying prestige is now just an empty place, from where buses depart.
The second example is the Station Timisoara (North), which in 1884 became the first Romanian electric illuminated rail station, before other Stations in Vienna or Paris.

Other examples of train stations are: Dealul Spirii, Cotroceni, Herastrau or Obor Station - East Railway Station. These stations, instead of being closed or vanished, should have been involved either in a functional conversion process or demolition and rebuilt. Nevertheless, Romanian railway heritage is far from any cultural atmosphere.

4. European Rail Station Concept

Creating a system in which all networks are related, it is not seen only as a zonal network transformation in Europe, but as an efficient system, which gravitates and starts right from the concept of “Euro-Corridor (Carjan et al., 2011).

The new concept of rail station, accepted and used by most European railway companies, involves converting the existing ones, from simple terminals for departure/arrival, equipped with facilities related to basic needs of passengers (ticketing, luggage, small restaurant, parking, etc.) to authentic urban centers. Thus, in these places occur, on one hand, multimodal transport changes and on the other side rise a wide range of commercial activities, which are not related to transport activity, but designed equally for passengers and locals.

On the other hand, we cannot bring into question the issue of sustainable rail or a combination with other modes of transportation in a system without a multimodal opened market or real users (Osso, 1996).

Since 2008, in Romanian Euro-train Stations ought enjoy extensive shopping areas, cinemas, fresh air, cool in summer and warm in winter, in rail stations such: Craiova, Timisoara, Cluj, Iasi and Constanta (which are upgraded stations) or Ploiesti Sud, Arad, Alba Iulia, Brasov, Bacau, Suceava Burdujeni, Buzau, Focsani, Sighetsoara, Drobeta Turnu-Severin, Galati, Fetesti, Sibiu, Tulcea and Oradea (as rehabilitated stations).

Related to upgrading and rehabilitating of 150 rail station (in most important cities in counties with a large number of population), that belong to C.F.R. S.A. and that were financed by B.E.R.D (for modernization), by Credit Suisse First Boston (for rehabilitation), or by PHARE Program (for rail stations like: Giurgiu City, Alexandria, Slatina, Pitesti, Ramnicu Valcea, Resita Sud, Sfantu Gheorghe, Targu Mures, Vaslui, Botosani, Piatra Neamt, Bistrita, Zalau, Braila, Calarasi and Slobozia). But the current situation is different. Although works had been finished in most railway stations, train stations betray no sense of modern, clean and welcoming spaces.

Modern high-speed railway lines are often perceived as a continuation of the trip by plane or car, or as a sustainable alternative, a seamless journey.

In this light, at this time in Romania none of those transport sectors mentioned above, are functioning at a satisfactory level. So we cannot utter or think either of a coherent network of motorways, nor dense air traffic, nor efficient rail networks.

As such, the implementation and development of the Euro Stations Program finds no echo outside a general infrastructure, which should be
previously developed, to fulfill and maintain itself, as it does in other countries in Western Europe.

Currently, in this approach, the stringent scenario for Romania must meet the European Union requirements to cope mainly the rail transit of goods and rail passengers, in subsidiary, thus allowing optimal circulation of fluent traffic originating from Spain, France and Germany, headed to Central Asia via the Black Sea.

Upgrading the main rail corridors is a necessity but not sufficient in terms of European sustainable rail transportation.

5. European vs. Romanian Rail Station

If the charm of old Romanian railway stations was given by the bell, clock and mailbox, now the stations are seen as small and obsolete places with no ventilations, dark, cramped, with shrivel walls and broken windows, with narrow and lumpy platforms, causing discomfort and retention.

Also, the atmosphere inside the train compartment is poor and congestion resulting from an insufficient number of trains for passengers who frequently throughput to their job places, this type of transport is more a necessity than a civilized trip.

While in Romania rail stations are left to degrade and disappear one by one, without leaving any appeal, in the rest of Europe, railway buildings are highlighted, restored, protected, supported and promoted by various cultural projects that state their stories.

The challenge is to adapt this old stations to contemporary needs, both in terms of increasing number of trains, new trends in passenger comfort, with no distort on their architectural monument features.

On the opposite situation from Romania, we meet Brussels-Luxembourg Station, located near the European Parliament. As one of the oldest in Europe, which was originally called “Gare du Quartier Leopold” Station, was completely transformed after renovation, becoming a model for technological innovation. Building facade was kept intact, as is ranked as cultural monument. Located underground with the mall above, the new Station has multiple sound protection features, also perfectly adapted for passengers with reduced mobility and parking for cyclists (Ilie and Luică, 2009a). In France, Strasbourg Station, after renovation, was not just only an old preserved and upgraded building of the nineteenth century, but also became an opportunity for tourism and economic development in the region, thanks to the opening of the L.G.V. east route, in 2007. Because it was concealed in a huge glass dome, with high quality facilities along the inner halls of the building, close to all transportation stations (tram network, train, car and bicycle) is fully accessible to all travelers and exchanges of traffic, making transit in best conditions (the process of rehabilitation of Strasbourg Station granted in 2008 the Brunel Prize for architecture. Since 2005 Brunel Award honors achievements in the field of architectural and rail design). Moreover, for the most loyal customers of the station there is “Saloon Grand Voyageur”, a special room arranged as for the arrival of the Emperor.

Modern European railway stations offers shopping centers with a complete range of services, known either as "Rail City" or "Gare et Plus". Thus, besides all
kind of repairs or restructured spaces, their today's turnover has increased by over 25%, such in Switzerland train stations, like: Basel, Bern, Geneva, Lucerne, Lausanne, Winterthour, Zurich, Zoug, St. Gall or Gare de Plus: Viega, Yverdon-les-Bains, Sion, Will, Coir, Soleure, Delemont, Brigue (Ilie and Luică, 2009b).

To motivate the need for modern train stations in Germany, there is a prize awarded both for Stations in big and small cities. The winner is announced after incognito visiting nominated Stations by a jury, formed by authority and specialists. Among the eligibility criteria they identify that a building should be beautiful, with a large number of people who daily throughput, with clean and decorated exterior and interior spaces. Also, it matters a lot that staff to be friendly, passenger information to be presented in a smart way and the platforms to be welcoming. Everything should be nearby: shops, sufficient chairs and many different quality services.

Another example is targeting the UK stations, like St. Pancras International. The British were able to make this train station not only a modern but also a commercial and an important touristic center. By the powerful international promotion of the newly renovated railway station was paved the way from project to a notable success.

In terms of shape and representation in the area where the Station is located, we can mention a few examples. Puertollando City in Spain, before having high speed connectivity infrastructure, was a city dominated by coal mines and chemical industry. Currently, the image changed, the economy being characterized by green energy plants, operating with innovative systems. City Fulda, in Germany, was transformed from a city dependent on the textile industry, in an important location for conventions.

By comparison, cities are not alike in space usage, being different from country to country. Spain, Japan and Germany focus on various types of new developments; if Germany focuses on the construction of hotels and facilities for conferences, Spain focuses on developing residential areas. In contrast, France is creating new towns and districts, build new hotels, residential or commercial activities: Lyons or Lille.

Returning to urban and long-distance transport and to problems related to proximity and accessibility, Romanian passengers are not accustomed to travel by train especially along short distances. In Romania, rail activity is quite far from the expected result. For example, if the speed exceeds 200km/h in other countries, here, after rail rehabilitation to ensure transport safety, we can travel at speeds beginning with 35 and a top speed of 65 km/h. In this case, interferes the bus transportation, because it has more trips per day and often stops in areas favorable to travelers. Also, even if trains would have more routes and more frequent stops, in the station of departure or destination there are no links to other means of transportation: buses, taxis, bicycles, only on foot.

Much more, offering routes on an infrastructure with poor conditions, it generates diminishing volume of user charges, and until it shall be in proper parameters, liberalized international transport of goods and passengers is choosing other means and routes. In essence, the problem of establishing a
sustainable rail was laid along high-speed revival in Europe, particularly in relation to the carriage of passengers and to expansion of railways in the next period. Entirely stations are always simultaneously reporting to the rail lines package and to accessing spaces, generated by the relationship between the building and the city.

Although we may speak about two completely different categories in which we can fit a passenger rail station - transit or terminus - the focus is directed to: streamlining operational flows, comfort and lots of services, and not least towards safety in operating (Ambrosio and Sciomachen, 2012). As much more diversified functions are included in building, as more the status station increases, exceeding rail station status, thus becoming a key element of a complex social and economic railway system.

Once rail station building became autonomous, it suffered a strong ambiguity, being in a position to mix spatial needs to technological answers, belonging to a totally different world, on the one hand being the industrial building, and on the other being a civil architecture.

From the point of view of the perception of rail and secondly from lack of development of institutional relationships, it should be updated, reinvented and promoted the “train” brand, not as an unhealthy and cramped place, with delays and difficult trips. The time spent with repairing damaged gauge tracks on long distances ended, translated into delays and deviations from optimal routes, but now there are no delays in departure program.

Moreover, the rank of trains changed. If passengers had to chose between ranks like: Personal (P), Accelerat (A) or Rapid (R), now they are confused by new names, such as: RegioExpress (RE), Regio (R), RegioUrban (RU), RegioSuburban (RS), InterRegio (IR), InterRegio Night (IRN), InterCity (IC), InterCity Night (ICN), EuroCity (EC) sau EuroCity Night (ECN).

Also, a key measure of the shift from self-mobility to public transport, both in the physical sense – as a transfer from one conveyance to another, and for the purposes of changing the customs of travel, is to organize intermodality in large and medium cities, where this lacks or is poorly developed (Negulescu, 2012). Another vicious element in rail system is the small fraud that generates passenger frustration, regarding some passenger that travel without a ticket, bribing train controller with a small sum of money than the ticket price. Private trains do not run as fraudulent services.

In addition, if passengers do not feel the need to change and improve Stations appearance and services, the Ministry initiative interventions are minimal, as far as there are no rapid or major benefits from building aesthetics.

Against this background, rail system needs additional regulations regarding Station’s design and their impact on the environment, today’s railway stations assuming just economy in construction and maintenance (Strategia PND 2007-2013).

So, our study reveals that physical forms of the intermodality varies from simple systems, such as the relationship of different transport stations in an organized proximity, to complex systems,
such as polyfunctional intermodal poles (Negulescu, 2012).

6. Conclusions

Mobility, defined in terms of business, aspirations and social needs is in continuous readjustment and improvement. Thus, it produces as reverse mutations in spatial and environmental order and also in the behavior and social psychology of the society (Commission of the European Communities, 2001).

In Romania, at the opposite side to the Western situation, passenger train travel trend is decreasing from year to year.

This evolution of transport leads to a steady transformation of transit facilities and building architecture, becoming an infrastructure without which life cannot be imagined today.

Unfortunately, in Romania there are no equivalent networks as L.G.V (Lignes à Grande vitesse) in France, Spain or Japan’s Shinkansen (the new service, named Shinkansen (meaning new trunk line) run on new, much wider standard gauge, continuously-welded rails between Tokyo and Osaka, using new rolling stock, designed for a speed of 250km/h). Moreover, the rail network is partly electrified, with no flagship technology, like I.C.E (following the French TGV, Germany was the second country in the World that inaugurate a modern very high-speed rail service, with the launch of the InterCity Express (I.C.E.), on the new Hannover - Würzburg High Speed Line, with a top speed of 280 km/h), or S-Bahn category. The term S-Bahn (derived variously from stadt/city and schnell/fast) and signage of a white S on a green circle, is an entirely private German project that operates over an electrified network, in a mixed urban and rural area, extended and adopted in other countries, like: Austria, Switzerland and Denmark.

In fact, new national upgraded lines do not employ 20th century engineering. With no elimination of constrictions such as at-grade crossings (Cassone and Gattuso, 2010), where lines intersect other lines or roadways, avoidable curves and reverse curves, Romanian railway deficiencies have been accumulated over a period longer than twenty years.

Apparently there is still a tendency of revival of the national railway system by adopting Transport White Paper and other important European documents, related to the way of developing and maintaining transport infrastructure.

Guided by principles whose validity can be designed in a predictable future, Romania should meet at least three conditions:

- to increase rail capacity,
- to provide quality services to passengers and
- to ensure environmental protection.

All of these depend on a continuously rail system designing and implementation, maintenance, operation and funding. Also, more than never, operational smoothness is often more indicative of organizational discipline than technological prowess.

In this respect, the present study answered the way we perceive 20th century Station architecture, as an element of intermodal facilities.

More, Romania must understand that the concept of intermodality aims to organize some comfortable transfer conditions, attractive among the various modes of
travel, but mostly between individual motorized transport and less intrusive means of transport, in relation to environmental and urban space factors (Negulescu, 2012).

The research involved combining several distinct elements: accessibility, urban economy, social progress and spatial planning, rail passenger building architecture, and most, the concept and the background that intermodality develops.

Likewise, proper repositioning of European, national and regional/local interests will allow accelerating investments in transport infrastructure and also will increase mobility (Ghituleasa and Ghituleasa, 2012). Thus, seizing the evolution of the railway system originally designed only to perform a transport - to fulfill the needs of people to travel or to transport goods, now shows that it subsequently served political, social, economic and cultural aspects.

Passenger rail transport success depends, more than ever, by the ability of the rail companies to be timely, accurately and completely informed, to use information to connect quickly and easily both with customers, passengers, partners and competitors and also to make decisions and act effectively (Ghituleasa and Ghituleasa, 2012).

In the context of sustainable development, a problem that can be sensitive in our country, with a numerous natural heritage and protected areas, is environmental vulnerability after the impact of transport infrastructure modernization. Thus means that should be considered the implications of modal transportation on: passenger health, air quality, noise levels and the healthy habits mobility.

Train stations are a crucial part of every journey by rail. So it is vital that they offer facilities that can meet the needs of each passenger:
- may become more attractive to customers;
- can provide services more accessible;
- may be greener;
- can generate profit.

Thus, transport by rail meets each customer's expectations concerning service quality, value, timeliness, long-term growth, competitiveness and business success.

In most E.U. Member States these criteria are already integrated.

7. References


Received: 27 September 2012 • Accepted in final format: 5 October 2012