

FUNCTIONAL AND AESTHETIC ADAPTATION OF CONVENTIONAL PUBLIC MEANS OF CONVEYANCE INTO THE URBAN LANDSCAPE

ADAPTAREA FUNCȚIONALĂ ȘI ESTETICĂ A MIJLOACELOR DE TRANSPORT PUBLIC CONVENȚIONALE LA PEISAJUL URBAN

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Abstract: *Taking into account the principles of eco-design, the present paper speaks of the redesign of a public means of conveyance starting from existing mechanical elements, but having an up-to-date body. The design uses, in a proper way, a part of the main constructive elements, reinventing a new concept, adapted to the urban landscape. The paper presents the manner in which a product can be modernized by maintaining certain landmarks and technologies for maximum economic efficiency and by creating an ecological product.*

Key words: urban, means of conveyance, up-to-date body, design.

Rezumat: *Având în vedere principiile proiectării ecologice, lucrarea tratează reproiectarea unui mijloc de transport în comun pornind de la elemente mecanice existente, dar recarosat în trendul actual. Designul folosește cu mult discernământ o parte din principalele elemente constructive, reinventând un nou concept adaptat peisagisticii urbane. Lucrarea prezintă modul în care se poate moderniza un produs prin menținerea unor repere și tehnologii pentru maximă eficiență economică și crearea unui produs eco.*

Cuvinte cheie: urban, mijloc de transport în comun, recarosare, design

INTRODUCTION

The usage of public means of conveyance represents an optimal variant taking into account the respect for the urban landscape, natural environment and for the economy. The price-quality-environment relationship, the comfort and care for the passenger, represent the main objectives of the designer of ecologic products dedicated to public transportation.

MATERIAL AND METHOD

The method used in approaching this theme is based on theoretical and practical research of this subject. The investigation of the main domains of interest on the approach of this theme (Pralea Jeni, 2009), as well as: discussions with the producers, transporters and passengers, the research of the competitive market allowed the approach of this current topic both for the urban landscape, as well as for the socio-economic implications. Thus, according to certain studies, the development and the extension of the great urban centres was noticed, followed by the intensification of the car traffic, as well as by the covering of considerable distances to

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the job or to other interest points of the passenger, represent modifications due to socio-economic and political factors from the last 20 years, modification which impose the rehabilitation of the public electrical means of conveyance. The efficiency of the tram and/ or trolley transportation, due to its speed, to the capacity, to the low phonic pollution, to the low expenditure of electric current, or to the low maintenance costs (Pralea Jeni, Sficlea Magda, 2010), slowly led to the growth of the number of Europeans using public means of conveyance, in exchange with the personal car. The care for the environment by using the public means of conveyance determined the reduction of the traffic jams, the growth of the speed in covering certain distances, the protection of the environment and the reduction of personal expenses for transportation. This ideal of urban behaviour was achieved in countries such as France, Germany, Austria or Spain, where big amounts of money were invested into the infrastructure and new, last generation vehicles, responding to the needs of the passengers of any age, or of those presenting locomotors deficiencies. However, the public transportation systems in the Czech Republic, Slovakia, Latvia, Lithuania, Poland and not only have managed to adapt the existing park of vehicles to the current needs of comfort, safety and of aesthetic aspect (fig. 1).



Fig. 1 – Tatra T3 / Tatra K2 / V3A93 tram modernization, became V3A93CHPPC (photographs source – www.tramclub.ro)

RESULTS AND DISCUSSIONS

In Romania of the last 20 years, a pronounced decline of the public transportation in the big cities was registered. The lack of funds for the restoration of the terrestrial infrastructure, of the wireless network, as well as the advanced wearing of the means of conveyance led to the suppression of tram lines in Constanța (fig. 2) and Brașov and to the suppression of trolley lines in Iași, Sibiu, Slatina, Vaslui and Suceava, in favour of the diesel buses (Pralea Jeni, 2009).



Fig. 2 – Replacement of trams with diesel buses – images from Constanța (photographs source – www.tramclub.ro)

In spite of the deficitary economic context between 1992 and 1997, 24 V2A trams were modernized at Nicolina Iași, 30 Timiș sets at Electroputere Craiova

(1994) and over 500 Tatra T4, V2A and V3A vehicles at URAC București from 1993 to the present moment. Also, in București, Timișoara, Arad, Brăila, Iași, Oradea, rehabilitation programs of the tram railways were conceived, this being the first step towards a civilised transportation, with new vehicles. Oradea is the only city in Romania which bought 10 Siemens ULF units in 2009, for 2,7 million euros/ piece. Due to the high costs, but also to the partially rehabilitated railway, the acquisition of new trams by the transportation systems in Romania is not possible, reason why the modernization of the existing vehicle park remaining the perfect variant for a civilised, modern, low-cost transportation.



Fig. 3 – GT4 tram (photographs source – www.tramclub.ro)

Thus, the modernization of GT4 trams (fig. 3), exploited model in Iași since 1997, is proposed, in this moment, the vehicle park containing 103 such units. The vehicles were bought in a second-hand regime from the transportation systems in Stuttgart, Halle and Augsburg – Germany, 72 of these being modernised in the 90s, both from a technical point of view, as well as from an aesthetic one. The unitary character of the vehicle park, the reliability which they proven in 14 years of exploitation in Iași, even on the less accessible routes in the city (for example, Padurea Street), with a capacity of approximately 140 seats. The GT4 trams were projected to circulate on difficult routes, with steep slopes, having at the same time system of articulation that helps them in making tight turns. From the 104 vehicles only one was quashed (no.330) after an accident in March 2006. The physical and moral wearing leaves a mark, especially on the standard wagons, the retirement of these representative vehicles for Iași not being delayed too long. The difficult financial context excludes the possibility of buying new tram wagons to correspond the current aesthetic and technical requirements.

The modernization of these public means of conveyance represents the ideal solution that implies the combination of the two requirements at a good price.

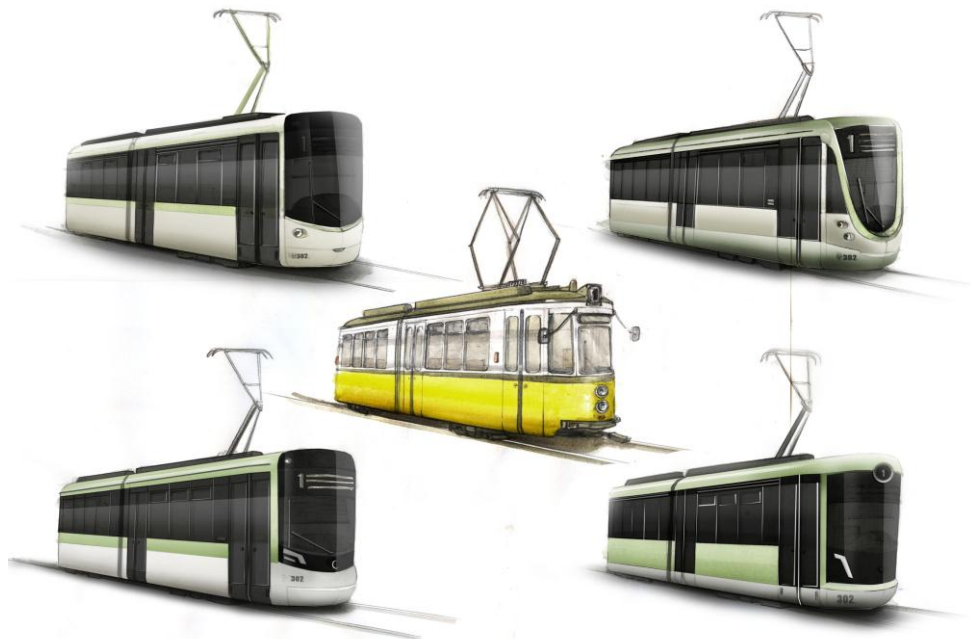


Fig. 4 – Variants of exterior modernization of the GT4 tram
(designer Silviu Teodor-Stanciu)

In order to design a new concept which would correspond the technical data which has to remain unchanged, but would bring many benefits from a functional, aesthetic, ergonomic point of view and for a better harmonization with the environment, one would have to take into account the following (fig. 4):

- Modernization of the front area and posterior one through the interpretation of characteristic elements which provided the identity of the standard vehicle;
- Enlargement of the glass area in order to enlarge the view on the environment;
- Digital display;
- Video surveillance system (outside, inside);
- Passenger protection increase in case of a frontal impact;
- Reconfiguration of the disposing of the seats in the interior for a more efficient interior circulation and comfort;
- A special space for bicycles or perambulators;
- A special warning system for the tramcar driver in case of danger;
- Air conditioning system (tramcar driver's cabin, interior);
- Efficient system of bearer bars (fig. 5);
- Fluorescent lighting system;
- Trash baskets next to each access door;

- Creation of an ergonomic driver's compartment;
- Usage of washable and resistant to wearing materials to upholster the interior;
- Usage of materials made of linen, hemp, ecologic leather for the tapestry of the seats (fig.5);
- Usage of water- based paint;
- Usage of new motors (alternative electricity), pantograph, efficient braking system;
- Adaptation of a chromatics according to the environment requirements and the aesthetic implications of a product (fig. 5).



Fig. 5 – Variant of interior modernization of the GT4 tram
(designer Silviu Teodor-Stanciu)



Fig. 6 – Chromatic variants
(designer Silviu Teodor-Stanciu)

CONCLUSIONS

The concept represents the result of the modernization of the GT4 tram, released on the market in 1959. The tram became a symbol not only for Stuttgart, the city where it functioned over 40 years, but also for Iasi, the foster urban centre of these vehicles beginning with 1997.

The classic allure of GT4 is in harmony with the architectural elements of the historic centre, but it proves obsolete for modern routes, guarded by imposing steel and glass buildings.

In order to modernize it, the front shape will be an Avant-garde inspired one, which would maintain the characteristic elements of the identity of the vehicle, such as the shape of the headlights and their position, the front display, the lateral drainage board, assumed and adapted elements to the concept which offers it the chance of integration both in ancient, as well as modern areas of the city.

Also, the rounded, organic shape, the large windows and the chromatic variants inspired from the vegetal spectrum, successfully fits the vehicle in the landscape of the environment.

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