

THE FRAMING OF THE MEANS OF CONVEYANCE INTO THE ENVIRONMENT LANDSCAPE

ÎNCADRAREA MIJLOACELOR DE TRANSPORT PUBLIC ÎN PEISAGISTICA MEDIULUI ÎNCONJURĂTOR

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Abstract. *The urban development specific to the Romanian big cities , but not only, has gradually led to the elimination of the environment's various component elements, this imposing the **necessity for the rearrangement** of the ambient by planting trees and transforming many destroyed surfaces into parks. The authorities' efforts can be sustained by the producers' and also the designers' in order to offer to certain objects or vehicles of public use a friendlier aspect, easier to be used, adapted to the environment in which they are exposed. This paper presents the designer's implication in conceiving some transportation means which can correspond from aesthetic, technological and functional point of view not only to the needs of the citizens but also to the need of the environment. Thus, two case studies were chosen (tram concept, train wagon concept) as main urban and interurban transportation means; transportation means which are present in the currently constant landscape.*

Key words: train, tram, design

Rezumat. *Dezvoltarea urbană specifică marilor orașe din România și nu numai, a condus treptat la eliminarea unor elemente componente ale mediului înconjurător, impunând **necesitatea reamenajării** ambientului prin plantarea de pomi și transformarea în parcuri a numeroaselor suprafețe distruse. Eforturile autorităților pot fi susținute de cele ale producătorilor și totodată ale designer-ilor pentru a oferi unor obiecte sau vehicule de uz public un aspect mai prietenos, mai ușor de folosit, adaptat mediului în care acestea sunt expuse. Lucrarea de față prezintă implicarea designer-ului în conceperea unor mijloace de transport care să corespundă din punct de vedere estetic, tehnologic și funcțional atât nevoilor cetățenilor cât și mediului înconjurător. Astfel s-a optat pentru două studii de caz (concept tramvai, concept vagon de tren), ca principale mijloace de transport în plan urban sau interurban, mijloace de transport prezente în peisajul veșnic actual.*

Cuvinte cheie: tren, tramvai, design

INTRODUCTION

The visual and psychological urban pollution generated by the unaesthetic and degraded aspect of the Romanian transportation means, represents the basis for launching new concepts for products which respect the principles of eco-design (Pralea Jeni, 2009).

MATERIAL AND METHOD

The public transportation means represent a point of interest for the passengers, producers, environment and designers. The designer's involvement in the transportation means' design is a real challenge, due to the responsibility imposed

by the complexity of the project as well as to its impact on the society. The work method used in designing public transportation means which are compatible with the needs of the modern society is based on respecting the designing rules specific to the design activity (Pralea Jeni, 2009). In order to realize the concepts presented in this paper, the research phase presumed the use of: the interview method (producers, transportation means drivers and passengers were interviewed), the Internet, normative and specialized books. When making the idea and the project sketches modern virtual work methods were used, like: 2D and 3D programs, graphic charts.

RESULTS AND DISCUSSIONS

Based on the market studies and on a detailed research of the transportation domain the “Sitra” concept appeared. (The author: Silviu Teodor- Stanciu, fig. 1-5) (<http://tramclub.org>). **Sitra** represents a high capacity tram, having low positioned floor, using the latest technology, bold exterior design, adaptable to urban environments (fig.1). The integration of the public transportation means in the environment’s landscape, as well as the incorporation of certain technical elements that correspond to the various needs of the passengers represents a permanent challenge and preoccupation for the designers of all times.



Fig. 1. Integration of the Sitra concept in the urban environment’s landscape

The Sitra concept, 25 meters long, having 6 motors, with: 5 doors (4 for the passengers and one for the driver) (fig. 2), 38 seats, a total capacity of 195 passengers, air conditioning (cold - hot), informative announcements regarding the next station during travel, wagons with smoke and heat detectors which transfer the information to the driver, is designed to be produced from fireproof and non-combustible materials (aspect which completes the safety concept of the vehicle). The driver’s cabin, ergonomically designed, is spacious and has air-conditioning. The main commands are integrated in the driver’s seat for easy

accessibility in handling the vehicle (<http://tramclub.org>). The tram is equipped with two spaces, in the central part, destined for wheel chairs. Two foldable ramps, manually driven, are available in order to compensate the height difference between the floor of the vehicle and the platform (adaptation to the environment and to the passengers' needs: elderly persons, baby carriages, bicycles and people with disabilities) (fig. 3). The equipments of this concept are according the European standards ("StrabVO 1999") (<http://tramclub.org>). The back side of the interior (fig. 3) has a metal stand designed to hold two bicycles (for people who prefer ecological means of transportation). Due to the compensated secondary suspension system (allows the driver to adjust the ground level), the use of the tram is possible even in the case of heavy snowfall (adapted to the weather conditions from Europe). Having motors on each wheel (fig. 4) allows the passengers to enter the vehicle at a height of only 20 cm and the absence of steps in the interior provides a fast and secure flow. The tram can enlarge its transport capacity by adding an articulated trailer wagon. The basic model, made from three modules, has also options with two and four modules (fig. 5).

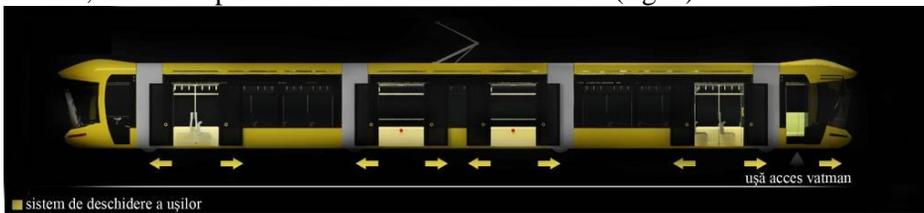


Fig. 2. Door opening system



Fig. 3. Special space for people with disabilities/ Bicycle stand.



Fig. 4. Vertical placement of the motors / Coupling system / Pantograph/ Dashboard.

Aesthetically, the vehicle has a compact, refined aspect, in fully concordance with the elements of the classic architecture, through the round shape specific to the 1900, and also the elements of the contemporary architecture, through edges or aggressive and dynamic oblique lines, and last but not least in harmony with the environment. The body's round form, as well as the big

windows gives the impression of being part of the nature, Sitra becoming a friendly vehicle not only from functional point of view, but also aesthetically. In the front part, the tram has a wide wind screen, oblique from exterior to the upper edge, aspect which offers massiveness and also a certain dynamism. The spherical calotte which limits the superior part of the wind screen emphasizes the fluid character of the Sitra concept. The general line of the front part is interrupted by the oblique disposal of the linear headlights, this underlining an aggressive and dynamic aspect. The interior, designed not only to be refined, but also useful, has seats covers made by hemp fabric, a fluorescent illuminating system hidden in panels placed in the lateral sides of the ceiling, which offers the same fluid aspect as on the exterior. For a better systematization of the interior, on both sides of the access doors glass panels framed in metal bars were placed and for the orientation of the passengers, visual and auditory indicators were placed, as well as boxes for advertisements and trash bins at each door, all of these items maintaining the identity of the vehicle intact. From a chromatic point of view, Sitra comes in a variety of colors (borrowed from nature: yellow, cream, green, turquoise and others), in harmony with the ones used for the interior.



Fig. 5. View of the interior; Options for the length of the tram

Public mean of transportation, the train, through its esthetics and functionality must integrate in the environment it was designed for. In the case study presented (fig.6) a wagon produced in the `80 was analyzed. (Two leveled wagon, serial number 26-26) for which the designer (Author: Nedelcu Viorel, fig. 6-11) proposed the modernization by improving the functional and esthetic characteristics. The studies which were made imposed the designer's intervention over the exterior by improving the window area (silicon fitting and increasing the dimensions through optical illusion). The designer proposed the realization of horizontal lines located on the length of the wagon in order to cover its large monochromic areas. At the window area, the gray line chromatically unites the windows between one another, giving the illusion of big and continuous windows (fig.6). An important role in the evolution of trains had the electric frame (www.alstom.com). In order to aesthetically frame the concept of an electric frame in the environment, the designer, after a number of computer analysis (computer programs 2D and 3D), proposed the concept illustrated in fig.7. The front part by the proposed graphics reproduces the train's characteristics: aggressiveness, quietness, calmness, and the pleasure of traveling (fig.7). The graphic used, defines the shape, accentuates areas and covers large surfaces. The graphic elements used are shapes of geometrical forms. In fig.8.b,c. is presented the situation before the

color intervention and fig.8.a,d. the train after the designer's intervention is illustrated (www.alstom.com). The quality leap justifies the growth of the esthetic value of the train and its integration in the environment, and also the importance of the software that allows these interventions and studies. The use of continuous gray stripes from the window area gives the illusion of length, transparency and speed. The door area can be highlighted through colors (red, white, yellow) assuring a faster passenger embarkation, eliminating the confusion and panic that can emerge in a crowded train station. From an esthetical point of view, especially the exterior shapes of the trains, give the impression of complexity, the graphic being a simple way to create the harmony of the shapes. Usually, the railway companies order the trains in their specific colors, thus leading to a great chromatic variety.



Fig. 6. Graphic proposal of the wagon (Stylistic proposal, daily landscape framing)



Fig. 7. Frontal part of the train (before and after the graphic intervention)



Fig. 8. Graphics a. frontal area after and b. before the graphic intervention; c. the side area before and d. after the graphic intervention



Fig. 9. Graphic proposals for the front's and doors' area

After the theoretical and practical researches that were performed, a new model of chairs is recommended for the train, which will correspond to the new ambient requirements of the wagons fig.10. The concept presents updates which will assure the physical and psychological comfort of the passengers (foldable tables, auxiliary

light consoles, recycle bins, sockets). The redesigned space can be executed from modern and ecological materials and presents new facilities (fig.8).

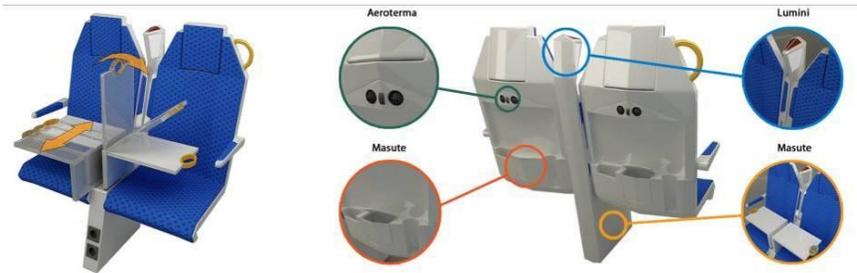


Fig. 10. Forced convection air heater, tables, lights, tables



Fig. 11. Modernized wagon concept: a. Access ramp for people with disabilities; b. Interior; c. Bicycle supports

CONCLUSIONS

Taking into account the complexity of the design activity, the product's impact on the environment must be studied, on the short term as well as on the long term. The product must fully correspond from functional and aesthetic point of view, to contribute to the elimination of the sound pollution, answering the needs of the public as a component of the natural ambient. Unlike the graphic used on various objects like cars, buses, trolley buses and trams (having aesthetic and also advertising purposes) for the trains the graphic is used to define the shape, the functional items and details, also to avoid big flat surfaces. The dimension of the trains, as well as the preoccupation for beautiful, enforces their graphical framing in the scenery.

The use of 2D and 3D programs create the base for arguments in the evaluation of a project. This work was supported by CNCIS –UEFISCSU, project number PNII – IDEI code 1226/2007.

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