

Zeitschrift: IABSE reports = Rapports AIPC = IVBH Berichte
Band: 77 (1998)

Artikel: Saving buildings by relocation
Autor: Iordachescu, Eugeniu / Domsa, Julietta
DOI: <https://doi.org/10.5169/seals-58221>

Nutzungsbedingungen

Die ETH-Bibliothek ist die Anbieterin der digitalisierten Zeitschriften auf E-Periodica. Sie besitzt keine Urheberrechte an den Zeitschriften und ist nicht verantwortlich für deren Inhalte. Die Rechte liegen in der Regel bei den Herausgebern beziehungsweise den externen Rechteinhabern. Das Veröffentlichen von Bildern in Print- und Online-Publikationen sowie auf Social Media-Kanälen oder Webseiten ist nur mit vorheriger Genehmigung der Rechteinhaber erlaubt. [Mehr erfahren](#)

Conditions d'utilisation

L'ETH Library est le fournisseur des revues numérisées. Elle ne détient aucun droit d'auteur sur les revues et n'est pas responsable de leur contenu. En règle générale, les droits sont détenus par les éditeurs ou les détenteurs de droits externes. La reproduction d'images dans des publications imprimées ou en ligne ainsi que sur des canaux de médias sociaux ou des sites web n'est autorisée qu'avec l'accord préalable des détenteurs des droits. [En savoir plus](#)

Terms of use

The ETH Library is the provider of the digitised journals. It does not own any copyrights to the journals and is not responsible for their content. The rights usually lie with the publishers or the external rights holders. Publishing images in print and online publications, as well as on social media channels or websites, is only permitted with the prior consent of the rights holders. [Find out more](#)

Download PDF: 09.07.2025

ETH-Bibliothek Zürich, E-Periodica, <https://www.e-periodica.ch>



Saving Buildings by Relocation

Eugeniu IORDACHESCU

Dr. Eng. - Manager
Industrial Engineering
Bucharest, Romania

Eugeniu Iordachescu born in 1929 received his civil engineering degree from the Construction Institute of Bucharest in 1953 and PhD in 1982. He is the manager of the Industrial Engineering Company Bucharest

Julietta DOMSA

Prof. Dr. Eng.
Technical University of Cluj,
Cluj-Napoca, Romania

Julietta Domsa, born in 1948, received her civil engineering degree from the Technical University of Cluj in 1971 and PhD in 1984. She is professor at the Dept of Management and Technoogy - Technical Univ.of Cluj.

Summary

The solution of saving special buildings from demolition have been applied on a relatively large scale in Romania by their replacement.

The paper synthetizes the national experience in conceiving and technology of realizing the displacement of the buildings, consisting, mainly in:

- the decision of replacing a construction and the preparation works;
- the establishing of motions in space which are to be made;
- the estimation of financial and technical resource consumption.

In conclusion the advantages of the saving solution of the buildings by replacement using translation, are presented.

Keywords: building, saving, systematization, replacement, translation, technology, equipment

1. The Decision of Replacing a Construction

Whitin the systematization of the urban zones, throughout the years, there have been met serious difficulties in preserving some constructions, valuable by their architectural style and historical significance or even by their good condition in which they were preserved.

The solution of saving these special constructions from the demolation, by replacement using the translation, represents a qualitative leap in the construction activity. By this procedure, in comparison with a new construction, the buildings are preserved in the conditions of a substantial economy of materials and human resources, in a reduced execution time and without evacuation during the translation period.

2. Technology of Translation

The translation technology imposes the preservation of the equilibrium conditions and respectively, of the construction displacement within admitted limits. These requirements are solvable by making a plane girder network loaded perpendicularly on their plan, called "bearing

frame". It is a new construction element, made from reinforced concrete, realized in the zone where the construction is cut from the foundation. The weight of the construction is taken over by the bearing frame which distributes it to the supports imposed by the technology, e.g. rigid supports on the presses respectively, elastic supports on bogies.

From the experience of the over 25 works of translation performed after 1982 in Romania there can be established five types of motions which a construction can execute in space:

- the lift as well as descent of the construction, which are made with hydraulic presses;
- the displacement of the construction on a horizontal plane and respectively in slope, which are realized according to the technology designed with electric cable hoists (for pulling) and / or with hydraulic appliances (for pushing);
- the rotation of the construction; it is performed by the application of a horizontal force at the end of a beam of the supporting system.

The saving by translation of a large number of constructions also led to the establishment and check of the tools, equipments, of measuring and control devices as well as of the admitted tolerances for an entirely safe execution of this technology.



Fig.1 Translation of building from Aurel Vlaicu Street, Bucharest

The replaced constructions were churches, dwelling and social-administrative buildings, hospitals, memorial houses etc. Fig. 1 presents the displacement of a seven story block of flats in Aurel Vlaicu Street, Bucharest, on a built surface of 2245 m² and a structural weight of 5100 tones. The considerably height building was 14.4 m displaced at a speed of 1.9 m/h by means of 52 bogies pulled by two electrical cable hoists.

For the constructions saved in Romania using the translation there has been established a cost indicator between 29 and 47 % from the value of a new equivalent building. The basic materials used were the cement and structural steel and they represented about 25...30

% from the quantities of these materials used at a new construction.

The execution of some translation works is also accessible in the future to other construction companies not only in our country but also abroad, in the conditions of using a specialized team and well equipped for this kind of works. The translation procedure for saving the buildings may avoid the evacuation of inhabitants or the interruption of their activities during the translation works and it also preserves entirely the construction in economical conditions.