LOGISTICS ACTIVITIES IN TRANSLOCATION PROJECTS OF HISTORIC MONUMENTS

KOŁAKOWSKI Tomasz

Wrocław University of Economics, Faculty of Economics, Management and Tourism, Jelenia Góra, Poland, EU
tomasz.kolakowski@ue.wroc.pl

Abstract

The aim of the paper is to identify the logistics actions in the unusual projects, which are projects of translocation of historic buildings. Translocation, or otherwise removing, transfer, is the transfer of a historic building in another location. It is performed only in exceptional cases, ie. if this is the only way to save the cultural heritage object from destruction. Thus understood translocation of historic buildings includes logistics activities that are part of a trend of atypical logistics applications where logistics management is directed primarily to projects in the field of public services in order to improve the quality of life. In the author's opinion, an important role in achieving the efficiency and effectiveness of these projects fulfill the logistics activities. The above issue is innovative both in theoretical and practical terms. Therefore, an article in a general way to indicates the importance of logistics in managing both historic buildings and cultural sites.

Keywords: Translocation, logistics activities, project, historic building, cultural heritage

1. INTRODUCTION

The period of global economic and social transformations provided the background for the changes experienced in many areas. One of such activities, resulting from the above-mentioned transformations, referred to the need for fighting the degradation of non-productive heritage features. Currently a significant spatial pressure, referring primarily to urban areas, has become quite noticeable. Cities, and especially their central parts, can usually offer very limited space for construction, therefore it is frequently attempted to substitute their “old’ features with the “new’ ones. Moreover, the progressing congestion imposes modernization and transport infrastructure development, which can also result in the planned features interfering with the already existing ones. The increasing pressure for residential housing development as well as social and economic infrastructure is also visible in rural areas. Thus, the desire to improve the broadly understood socio-economic infrastructure requires appropriate space which, quite frequently, has been used in a different way (built-up space). It often happens that historic buildings (monuments) represent the features constituting obstacles in the development of new built-up areas or infrastructure and which, in accordance with legal regulations, should be protected and conserved for future generations *(Abundant legislation and expert studies were published in this matter, which regulate cultural heritage management, including historic landmarks. In Poland the Act of 23 July 2003 on the protection and guardship of monuments [1] is an overriding one in this respect.)*. However, their location can constitute a substantial developmental barrier, e.g. a new function assigned to a particular space. It is not always possible to “include” the existing historic monument in a new concept of a given area management, or attempt to assign new functions to such sites, since it is not conducive with their conservation and protection but, on the contrary, aggravates the above-mentioned problems of conservation and architectural nature.

Translocation (relocation, moving) of a historic building remains one of the forms of specialized work covering relics of the past, as part of conservation work technology, which firstly allows maintaining the historic composition and structure of an object and secondly the elimination of e.g. the existing conflict of such object with the new concept of area management. This method is used in modern conservation of architectural monuments. The translocation itself constitutes a specific type of project which requires proper management

of its subsequent phases. Logistics operations which, in the author's opinion, are decisive about the efficacy, efficiency and effectiveness of the undertaken translocation operations, perform a vital role in its consecutive stages. Later in the study an attempt will be made to identify and indicate the role of logistics operations within the framework of subsequent stages (phases) in implementing translocation projects of historic landmarks. First, however, the problems related to translocation in its project oriented dimension will be discussed.

2. TRANSLOCATION PROJECT AS A CONSERVATION AND AN ECONOMIC PROJECT

The activities involved in the translocation of historic buildings can be analyzed in two ways. Firstly, from the perspective of conservation activities, and secondly in terms of an economic venture.

In the first case translocation, as it has already been indicated, represents a transfer consisting in moving or relocating a building (immobile object), brick-and-mortar or wooden, into a different site. Such operations are performed in exceptional cases only, i.e.:

- when it is the only method to save the object from damage as a result of e.g.: forces of nature (e.g. tectonic movements, washout - river banks, seas), consequences of human interference in natural environment (e.g. sliding off, mining damage - post-mining areas) or collision with an emerging infrastructure (e.g. highway construction, railway line, extension of an open-pit mine, etc.),
- when it is the only method to preserve the endangered (damaged) feature for future generations, e.g. by placing it in a specially dedicated site (open-air museum, etc.), primarily when its current location or environment does not present any substantial historical or cultural value (the translocated object does not lose its authenticity in a new place) and it is not exclusively associated with its environment (a historic garden, a park, surrounding constructions, etc.) [2] [3].

Therefore, translocation remains a complicated technological process which requires considering individual characteristics of a given object, such as: the type of construction material, area, volume, weight, the method of building foundation, etc. [4]. In terms of a historic building disassembly the following translocation projects are distinguished:

- demountable constructions - mainly wooden buildings, architectural details, in specific cases brick-and-mortar objects (brick, stone),
- non-demountable constructions - mainly covering brick-and-mortar constructions, wall paintings and stucco [5].

The second approach to translocation refers to the translocation of a historic building in terms of a specific economic project which it undoubtedly is. Translocation remains a part of the main characteristics of a project listed in the publications on management or the assessment of economic (investment) projects - **Table 1**.

Based on the above presented background, we can indicate that, a translocation project, similarly to any other one, requires an adequate management process to be carried out, i.e.: sufficient material, human, information resources in the preparatory phase (planning and organizing of a translocation project), performing specialized operations in its implementation phase (executing physical translocation) and proper project completion. Having taken such perspective, the focus of a project team is concentrated on the effectiveness and efficiency of the activities planned for execution within the framework of the carried out project. For these reasons it is crucial to conduct appropriate identification and analysis of activities within the framework of particular phases in a translocation project. In the opinion of the author of the presented study, logistics activities plays an important role among them. Therefore, the next part of the article presents an attempt of their identification and general characteristics.

Table 1 Translocation of a historic monument in the context of project main characteristics

Main characteristics of the project	The characteristics referring to translocation projects of a historic monument
Specific purpose	The fundamental purpose of translocation projects referring to historic monuments is saving an object from damage and the desire to preserve it for future generations.
High complexity	An object translocation requires coordinating numerous activities at different stages (preparing, implementing, completing) and levels (strategic, operational) of its execution and especially combining conservation approach with the technical part of translocation and the entire management process.
Specified timeframe	Specified timeframe resulting from the availability of specialized equipment, human resources. Sometimes such timeframe results from weather constraints (particular season) or the condition of an object itself (danger of collapsing).
Limited, mainly financial, resources (budget)	Usually executed by public institutions within the framework of strictly defined budgets. The need to manage public resources effectively.
Focus on benefits	The main benefits are of socio-economic nature: result from higher tourist attractiveness of the area to which a particular feature is being moved eliminating the conflict with planned infrastructure, advantages of aesthetic, historical, cultural, etc. nature.
Uniqueness, rareness, individual character	Due to the uniqueness and rareness of historic monuments themselves and their environment a translocation project presents the same character (different geographic, geological, technological, etc. conditions.)
Risk of failure	The risk of damaging the relocated object, fracturing its structure or elements while transporting, complications prolonging the project implementation, which could thus be reflected in its costs.
Usually the involvement of people and institutions representing diverse specialties	The implementation of a translocation project requires both coordination and consultations with people and institutions representing various specialties: architects, conservation officers, technologists, engineers, specialists in project and finance management, etc.

Source: author's compilation based on [6], [7], [8], [9], [10].

3. LOGISTICS ACTIVITIES IN TRANSLOCATION PROJECTS OF HISTORIC BUILDINGS - GENERAL APPROACH

Despite the fact that a translocation project itself is not a strictly logistical one, still the plan structure of its implementation covers numerous activities of such nature. They can, as it has already been pointed out, have a significant impact on the efficiency, effectiveness and efficacy of the entire translocation project.

The logistics itself, as the area of economic activity refers, above all, to the tangible processes covering the transfer of material loads and the underlying information about the involved economic entities and between them. In recent years this area has been increasingly extended, also by the flow of people *(Abundant legislation and expert studies were published in this matter, which regulate cultural heritage management, including historic landmarks. In Poland the Act of 23 July 2003 on the protection and guardship of monuments [1] is an overriding one in this respect.)* However, from the perspective of a translocation project, the concentration on material transfers represents a proper approach, supplemented by information, hence a well-established and generally accepted definition of logistics can be referred to, i.e. the one suggested by the Council of Supply Chain Management Professionals (CSCMP) association, based on which logistics represents the process involving planning, implementation and monitoring of an effective and efficient transfer and storage of goods (loads), services and the associated information from the place of origin to the point of their consumption in order to meet client's expectations [11]. While adopting the particular components of this definition for the purposes of translocation projects it should be emphasized that a specific type of item (load) can be involved, i.e. a transported historic monument. It is mainly accompanied by the transfer of specialist, technical and technological information. The existing location of an object is its place of origin, whereas the consumption (usage) site is the new destination

of its foundation. Transfer streams remain the elements connecting overall phenomena and processes related to translocation, while the logistics operations, in the author's opinion, are of great significance in this area.

The subject literature on logistics lists numerous logistics operations supporting the decision-making process. H.Ch. Pfohl discusses general business logistics to be performed in connection with the implementation of logistics processes: storage, transport, reloading, development and transfer of orders, packing and marking. He also attracts attention to the fact that the first three items represent major processes in the flow of goods. The others are of supplementary nature [12]. Similar logistics activities presents E. Kulińska [13] who distinguishes e.g.: storage, transport, accepting goods, shipment of goods, waste management and development of customer orders. J.J. Coyl, E.J. Bardi and C. J. Langley [14] developed an extended list of logistics operations including the following items: translocation and transport of goods, warehousing and storage, industrial packing, handling materials, inventory control, execution of orders, demand forecasting, production planning, purchase, customer service at an appropriate level, plant and warehouse location, handling returns, supply of spare parts and pre-sales service, collecting and disposing waste. On the other hand, S. Zamkowska [15] emphasizes that the occurrence of a particular activity depends, to a great extent, on the specificity of an entity, as well as the method of business logistics organization. This is actually the situation encountered in case of projects referring to the translocation of historic monuments. As it has already been mentioned, translocation is not a mass type of activity, hence the particular logistics operations can occur, within the framework of a particular translocation project, with diverse intensity. Some of them, e.g.: demand forecasting or production planning, in case of translocation, are nor present at all. **Table 2** below lists and characterizes logistics operations most frequently associated with the implementation of translocation projects referring to historic monuments.

a b c

Fig. 1 Examples of storage (a) (b) and marking (c) elements of the relocated historic object - Open Air Museum of Slovinic Countryside in Kluki

Source: author's photos

Table 2 The list of logistics operations present in a translocation project of a historic monument

Logistics operations	Characteristics from the perspective of a translocation project
Translocation and transport	Basic logistics operation within the framework of a translocation project. Depending on a historic monument type (non-demountable, demountable) the translocation takes, respectively, the form of moving or relocation. In both cases the physical translocation of an object in space is performed using appropriate means of transport. As a result of translocation (transport) of a historic feature to its new location it usually maintains or expands its utility.
Storage and warehousing	The need for proper storage of an object's particular elements occurs mainly in case of demountable pieces, both on the site of their disassembly and in the location of their planned assembly. In some cases a specific warehouse management is carried out, since the need occurs to protect the transported elements in an adequate manner, due to the fact that the relocation time of an object's particular components does not coincide with the time of its reassembly in its destination. The storage of such components consists in their temporary storage in specific conditions ensuring their safety and protection against damage, e.g. the influence of weather conditions, fire, theft, etc. (see Fig. 1a and 1b).
Reloading (including loading and unloading)	The activities related to transporting a historic monument. In case of its relocation it is required to load the elements of a disassembled object onto a particular means of transport, which is followed by their unloading at its destination. In case of moving the entire non-demountable object a specific type of reloading is performed, which consists in lifting the historic monument using specialist equipment (loading), its moving (transport) and finally the object foundation in its destination (unloading).
Order development and execution	From the perspective of logistics it consists, in general terms, in carrying out operations (activities) related to an overall execution of the order placed by a client. In case of translocation it takes place when an entity responsible for translocation, e.g. an open-air museum, places an order with an outsourced company to transport, load and unload an object. In such case an external entity executes some logistics activities within the framework of the project, whereas the project managing entity supervises proper implementation of the placed order. The crucial role is played by a properly planned system of information and communication transfer between the entities carrying out the particular phases of a translocation project.
Packing	Sometimes in case of translocation projects referring to demountable objects an appropriate packing of the relocated elements is necessary. In such situation packing can play various functions, i.e.: protective - (protection while transporting and against atmospheric conditions, etc.), warehouse (allows for proper storage of the components in a suitable place until their reassembly), transport and handling (facilitates the transport of components and all handling activities related to loading, unloading and reassembly). Due to a non-standard nature of the transported objects some packaging can be specifically ordered.
Marking	In case of demountable objects the disassembled elements require specialized marking, to facilitate their later identification for the purposes of their reassembly. In this case a special information and identification system is adopted within the framework of the carried out project. The marking itself can be done directly on the disassembled components (see Fig. 1c), or on their protective packing.
Location of storage area	In case of demountable objects, when the time of particular objects' relocation is not identical as the time of their reassembly, the decision has to be made about e.g. their temporary storage in an own storage or in a rented place (area).
Waste management	Collecting and segregating waste (e.g. wood) which can occur while disassembling and reassembling an object. Logistics decisions are focused on supporting recycling and possible utilization.

Source: author's compilation

At this point additional emphasis should be placed on the concept of customer service. Its nature is quite complex and it can be associated with diverse functional areas of an entity or with different project implementation phases. On the one hand, from e.g. marketing perspective it refers to a direct contact with a client while taking an order or handling a complaint, on the other, in case of logistics (customer service logistics) it is primarily related the physical distribution of goods. In a translocation project it is present in the situation of an order for the certain logistics operations placed by an entity initiating a project (e.g. transport including loading and unloading) with an outsourced company. In this context customer service logistics can be analyzed in accordance with the 7R rule, i.e. as providing the ordered service (object translocation) in the required place, time, quantity or quality along with adequate service and at a proper price [16]. Therefore, determining the

correct level and standards of the service logistics can turn out one of the most important strategic decisions having crucial impact on the overall costs involved in the entire project.

The above presented discussion confirms that logistics operations in a translocation project of a historic monument can take the form of decisions made at both an operational level and a strategic one. Especially in the latter case there is a need for their proper planning. It should be manifested in the form of an organizational separation of logistics operations in the project internal structure (self-service in terms of the execution of logistics operations), or as the identification of major logistics activities commissioned to the cooperating, outsourced entities (e.g. subcontractors). Usually, however, a mixed structure turn out to be the best solution in this matter.

4. CONCLUSIONS

Translocation projects of historic monuments are usually implemented by specialized institutions and organizations, both public and private. The internal structure and scope of such ventures require, in many cases, to coordinate operations performed by several entities and meet very restrictive requirements and recommendations, frequently imposed by the legislation in force or specialized conservation regulations. Among the activities planned for implementation an important role is played by logistics operations. Their importance is mainly visible in case of translocating demountable objects, within the framework of which the activities related to disassembly, transport and storage are intensified.

The presented discussion allows concluding that the purpose of logistics activities in translocation projects is to ensure multifaceted and often multi-entity coordination and cooperation. It is carried out in the process of subsequent phases made up of the implemented projects focused on the transfer of a specific material resource taking the form of a translocated historic monument. Proper execution of these activities, on the one hand, facilitates the efficiency and effectiveness of a translocation project management and, on the other, ensures rational and effective usage of the funds allocated to the project.

The problems discussed in the study go along with the recently intensifying trends in the development of logistics management related to its implementation in various ventures within the sphere of public or socio-economic services. Translocation projects of historic monuments definitely remain one of them, whereas the conducted general analysis covering the identification of logistics operations is supposed to extend the knowledge about logistics in atypical applications. The intention of the article's author was to initiate further, in-depth research in this field, whereas the article represents an element of more extensive discussion on the importance of logistics in the functioning of certain cultural institutions (museums, open-air museums) and managing cultural heritage. Therefore, it provides an opinion in the debate about the evolution of the importance of logistics oriented towards the improvement of life quality and support in the sphere of social and public services.

REFERENCES

[1] Act of 23 July 2003 on the protection and guardship of monuments is an overriding one in this respect, Dz.U. 2003 nr 162 poz. 1568.

[2] ICOMOS, Charter for the Conservation of Places of Cultural Heritage Value, The New Zealand National Committee of the International Council on Monuments and Sites: New Zealand, 2010, p. 4, online: http://www.icomos.org.nz/docs/NZ_Charter.pdf (16.09.2015)

[3] HERITAGE NEW ZEALAND POUHERE TAONGA, Relocation of historic buildings, Sustainable Management of Historic Heritage Guidance. Information Sheet 13., Published by NZHPT, New Zeland, 2007, online: http://www.heritage.org.nz/resources/sustainable-management-guides (17.09.2015)

[4] HAMBERG - FEDEROWICZ A., Zabytki. Przewodnik dla właścicieli, użytkowników i pasjonatów zabytków oraz pracowników samorządu terytorialnego, Biuro Dokumentacji Zabytków w Szczecinie: Szczecin, 2012, p. 21, online: http://kultura.wzp.pl/attachments/article/114/ przewodnik.pdf (16.09. 2015)

[5] CURTIS J.O., Moving Historic Buildings, U.S. Department of the Interior. Heritage Conservation and Recreation Service: Washington, D.C., 1979, p. 2.

[6] JANASZ K., WIŚNIEWSKA J., Zarządzanie projektami w organizacji, Wydawnictwo Difin: Warszawa, 2014.

[7] KAŁOWSKI A., WYSOCKI J., Przygotowanie i ocena projektów inwestycyjnych. Wybrane zagadnienia, Oficyna Wydawnicza Szkoła Główna Handlowa w Warszawie: Warszawa, 2013.

[8] LITTLE I.M.D., MIRRLEES J.A., Project Appraisal and Planning for Developing Countries, Heinemann Educational Books, London, 1982.

[9] MEREDITH J. R., MANTEL Jr. S. J., Project Management. A Managerial Approach. 5th Edition, John Wiley & Sons, Inc., Hoboken, 2003.

[10] GOBLET N., Moving Historic Buildings: One Means of Preservation, eCommons Cornell's Digital Repository, 2006, pp. 34-38, online: https://ecommons.cornell.edu/handle/1813/2951 (28.08.2015).

[11] VITASEK K., Supply Chain Management Terms and Glossary, The Council of Supply Chain Management Professionals, 2013, p. 117, online: https://cscmp.org/research/glossary-terms (15 września 2016).

[12] PFOHL H-Ch., Systemy logistyczne, Biblioteka Logistyka: Poznań, 1998.

[13] KULIŃSKA E., Fundamentals of Logistics and Supply Chain Management, Publishing house MS: Opole, 2010.

[14] COYLE J.J., BARDI E.J, LANGLEY C.J., Zarządzanie logistyczne, Polish Economic Publishers PWE: Warsaw, 2010.

[15] ZAMKOWSKA S., Identyfikacja potrzeb i obszarów działań logistycznych w przedsiębiorstwie. Logistyka nr 3/2011, p. 3089.

[16] WITKOWSKI J., Logistyka w zarządzaniu przedsiębiorstwem, Wydawnictwo Akademii Ekonomicznej we Wrocławiu, Wrocław, 2002.