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SPATIAL ASPECTS OF SUSTAINABLE DEVELOPMENT OF THE PORT OF GDAŃSK

Abstract

Further spatial development of the Port of Gdańsk should be shaped basing on a holistic vision, subjected to the resources for sustainable development, and shaped in close co-operation by both the local and port authorities. The spatial structure of the Port of Gdańsk forms a friendly basis for such development, and constitutes a solid value of the Gdańsk' urban space and of the whole Three-Town urban area, connecting history and modernity, technical and economical values with a rich historical heritage.

Spatial order as an expression of sustainable development of the Port of Gdańsk

It may be stated that sustainable development is a striving towards a full balance – social, ecological and economical. With respect to the shaping of a given space, this striving could be best described by the concept of spatial order, and could be defined as “an orderly whole, in which each part is subject to common rules; it is a whole, in which functional logic, stableness and spatial transparency, and also aesthetics and beauty, play a predominant role” (Fig. 1) [1].

Spatial order is achieving increasing importance in the hierarchy of social values.

The forming of spatial order in the local scale of the Port of Gdańsk means such a shaping of the port space, which will realise social, economical and environmental needs in the best way.

The attainment of good functional-spatial solutions is difficult. First of all it requires proper co-ordination between the town and port authorities in such fields as: investment policy, environment, port promotion, and spatial planning. It also requires permanent communication with the Gdańsk population, in that with local populations of the Stogi, Przeróbka, Nowy Port and Letnica districts.

In the special case of the Port of Gdańsk, spatial order means:

- a transparent functional-spatial system, organised around the most stable element of the structure – the port basin system;

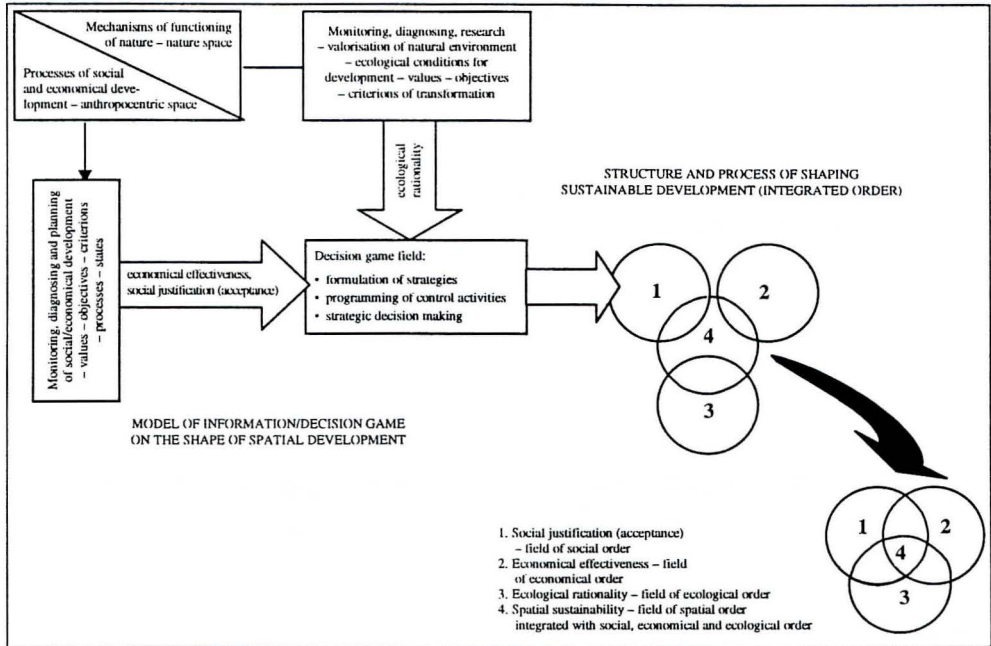


Fig. 1. Process of sustainable development formation

Source: J. Kołodziejcki: *Strategy of sustainable development as the basis for national spatial development policy* „Polska 2000 PLUS” KPZK, Biuletyn Komitetu Przestrzennego Zagospodarowania Kraju nr. 176, Warszawa 1997.

- minimisation of social and environmental conflicts by rationalising the distribution of port functions and by an economical, careful management of space;
- intensification of port space utilisation in accordance with its predispositions and value in the scale of the town;
- conserving and further shaping of historical and cultural heritage located in the port space (banks of Motława River, Polish Hook, Wisłoujście Citadel and its surroundings, Westerplatte Memorial);
- spatial integration of port and town, in that shaping of the waterfronts.

To summarise, shaping of spatial order in the Port of Gdańsk leads to the selection of the direction of development of the port. The development should aim not so much at spatial expansion as at the improvement of quality of the port space. This is a very important challenge facing the port at the beginning of the XXI century, and which is a pre-condition for acceptance of new port investments by the local population.

Evaluation of planning experience connected with the development and co-ordination of investment processes in the Port of Gdańsk

Experience gained from various planning projects, which included port areas of Gdańsk, leads to the following conclusions:

- In Western Europe, the normal practice in the long term shaping of directions of port area development is to develop Master Plans, i.e. general plans for the ports. As a rule, such plans are visionary and “multi-plot”, analyse various scenarios of development. They allow

for an in-depth evaluation of chances for and dangers to the port development. Basing on such studies, large port organisms define their needs for space, reserve certain areas, formulate their needs for transport services and shape the port – town relationships.

The first Polish sea port, for which a Master Plan was developed in a similar way, was the Port of Gdańsk. The initiative came from both the town and port authorities. The preliminary boundaries of the study were adopted basing not so much on the boundaries of the port (sea and land boundaries), but by trying to isolate in the spatial structure of the town the real area of the port and industrial complex of Gdańsk, centred around the port basins. During the study, which lasted over 2 years (1994-1996), the initial boundaries were more strictly defined and verified. Finally, into the area were included ca. 3900 hectares, of which ca. 2200 hectares was already developed.

In spite of the verbal declarations of the town authorities that they are interested in the study, and in spite of establishing a special Programme Council, which was expected to consult and express opinions during each stage of work on the Master Plan for the Port and Industrial Complex of Gdańsk (PICG), the real input of the town was very small. When the work on the Master Plan was finished, the final results were presented to several commissions of the Town Council, and were positively accepted. However, there was no will or inclination to transfer the conclusions of the Master Plan, especially these which were connected with the directions of spatial policy in the port and near-port areas, to day-to-day planning practice of the town.

The practically low implementation – in relation to possibilities – of the vast resource of information and conclusions of the PICG Master Plan was caused mainly by the lack of a legal and formal authorisation of the study. In consequence nobody was responsible for the implementation of the plan.

No resolution was taken by the Town Council to utilise the conclusions and principles of space management resulting from the PICG Master Plan in the – obligatory for the town – “Study of conditions and directions of development of the Town of Gdańsk”, though such a mechanism was proposed by the authors of the Master Plan.

In the specific case of the Port of Gdańsk, a certain concordance between the vision of port development contained in the PICG Master Plan and the realised at a later time study of conditions and directions of spatial development of the Town of Gdańsk was finally achieved. However, this was possible only thanks to personal co-operation resulting from the initiative of the authors of the study, but not as a result of a conscious policy of Gdańsk authorities.

- The development of local land-use plans for port areas should be started only when investment programmes for the whole analysed area are defined. This is because siting requirements for port potential are so specific and so dependent on the type of investment, that without the knowledge about them the plan cannot become a real tool for co-ordinating the process of development of a given port area.

Designers of a local plan should also have a knowledge of the problems of development of the whole port. The larger number of informal studies is at the designers disposal, such as pre-investment studies, siting feasibility studies, variants of spatial solutions or even technical proposals for shaping a given port potential, the better will be the quality of the local land-use plan. In the past, many such studies were produced – both in the planning department of the Maritime Office in Gdynia (an opinion of the Maritime Office on all spatial/land use plans concerned with the coastal belt and port areas is required by law) and in various research and design institutions supporting

maritime economy (the Maritime Institute, the Maritime Construction Design Office, various R&D centres). In effect each new port investment was carefully analysed with respect to siting possibilities and requirements. At present the process of producing informal studies and reports is strongly limited and narrowed down. The result is e.g. in the irrationally defined boundaries of the lot for Europort in the North Harbour, causing significant difficulties in the development of other terminals, or in the "overdimensioning" of the preliminary concept of the Maritime Container Terminal, which resulted in a stoppage of work on the land use plan for North Harbour II.

Starting from early stages of formation of the concept, close co-operation between the designers and the Port Authority and other port space users is necessary during the development of the plan.

- In the new version of the Act on spatial development there is an irrational solution, by which internal marine waters and the territorial sea are excluded from the regulations on local land use plans [2]. This means that all basins of seaports are outside the scope of local land use plans. It is self-evident that both parts of a seaport its land area and port basins must be shaped together. It is difficult to imagine how compatibility of spatial solutions can be achieved if responsibility for planning the development of the land and water areas in the port is divided. Also, the line of contact of sea and land is formed artificially by land reclamation or by dredging. The solutions of the Act are a significant hindrance to planning processes in the port areas, and should be changed.
- Further development of the Port of Gdańsk is increasingly faced with conflicts, at the base of which are mainly social and environmental reasons.

The state of environment in the port and nearport areas is steadily improving. The carried out since 1995 monitoring of atmospheric pollution shows that there is a significant decrease of pollutant concentrations, and that (except benzene and toluene) permissible values are not exceeded. This is documented by consecutive reports on the state of environment of the town. One of the reasons of the improvement is the decrease of production in the most noxious plants and the introduction of new techniques, which limit emissions. The newly designed storage and handling terminals are or will be built using closed tank systems (LPG, liquid chemicals' terminal, LNG) or silos systems (grain and fodder terminal EUROPORT I), i.e. they should have no negative influence on the quality of environment. *The pontoon bridge over Martwa Wisła will improve road transport in the whole right-bank side of the port, removing most of the local burdens.*

In spite of the positive trend to reduce the impact of the port and industrial complex on environment, this does not improve the picture of the port in the public eye. On the contrary: each new designed port investment is faced with strong resistance of the local communities, supported by ecological organisations, some aldermen, MPs and local press. The population of Stogi, Przeróbka, Nowy Port, Letnica become integrated around protest actions directed against every attempt to invest in the port areas (protests against the Maritime Container Terminal, polystyrene plant Alf-Atochem, modernisation of the Port-Service oil waste incineration plant, chemical terminal in the North Harbour). There are no generally accepted authorities on environmental risks, the opinion of which would weigh equally strongly with the local population and the decision makers.

- The position taken by the town authorities with respect to the directions of development of the port is unclear. The new system of port management, in which the town is a partner, should result in the formulation and creation of a common spatial policy. However, in real life things are quite different. Differences in opinion within the deci-

sion making institutions of the town result in a situation, in which the Town of Gdańsk enters the port managing company contributing some land areas, and at the same time – during the process of developing the local land use plan for North Harbour II – blocks any possibility of utilising the contributed areas for the needs of the port. If both sides “stiffen” their positions, then further possibilities of spatial development of the North Harbour shall be wasted.

Determination of the development needs of the Port of Gdańsk

Studies of history and present development of the spatial structure of the Port of Gdańsk, and also experience from implemented spatial development plans of port units, allow to state that on the threshold of the third millenium the Port of Gdańsk is a complex, still re-defining itself spatial organism, with active development processes facing social and environmental barriers.

The port enters the XXIst Century with clearly drawn development trends, which can be related to three distinct parts of the port space (Fig. 2).

a) North Harbour

In the North Harbour, the area called North Harbour I in the town's spatial planning documents, has become fully filled up with investment activities. It may be stated that the started in 1970 Stage I of building and development of the North Harbour is at its end.

The port is preparing to enter, with a very ambitious programme, a new area, the North Harbour II (located east of the currently built grain and fodder Europort terminal). The planned for this area activities of the Maritime Container Terminal and of the regional distribution centre would allow to remove technological gaps in Port of Gdańsk activities in the fields of container handling and distribution/logistics functions. These functions could become the carriers of progress in the port and town. Therefore, the very valuable reserve areas of North Harbour, with the highest along the Southern Baltic coast rent of location, would be properly utilised, forming a new quality of port and urban space in this part of the town's spatial structure.

The eastward development of North Harbour potential is partly in conflict with the recreational and protective function of the Stogi Island coastal zone, even though the new boundary of the port, running along Nowotna str., has significantly limited the earlier concepts of North Harbour development and shifted in time the problem of reducing or closing the recreational beach at Stogi.

b) Inner Harbour

In the functional and spatial structure of the Inner Harbour prevail areas intensely invested, which however are partly de-capitalised. Development of this part of the port will concentrate on restructuring and modernisation of the existing port potential. Mainly in this area appear problems related to conservation of cultural heritage, revitalisation of the historical houses, quays and port basins, extension of ties between the port and town, and limiting negative environmental effects of the port and port industry.

It is planned to develop reserve areas of the Inner Harbour by building smaller – as space and navigation conditions allow – handling/storage terminals, and by adding ferry and possibly ro/ro terminals. A change of the image of this part of the port is assumed, among others by treating the port channel as an important axis of the “composition grid” of the town's spatial structure (such an assumption was adopted in the study of conditions and directions

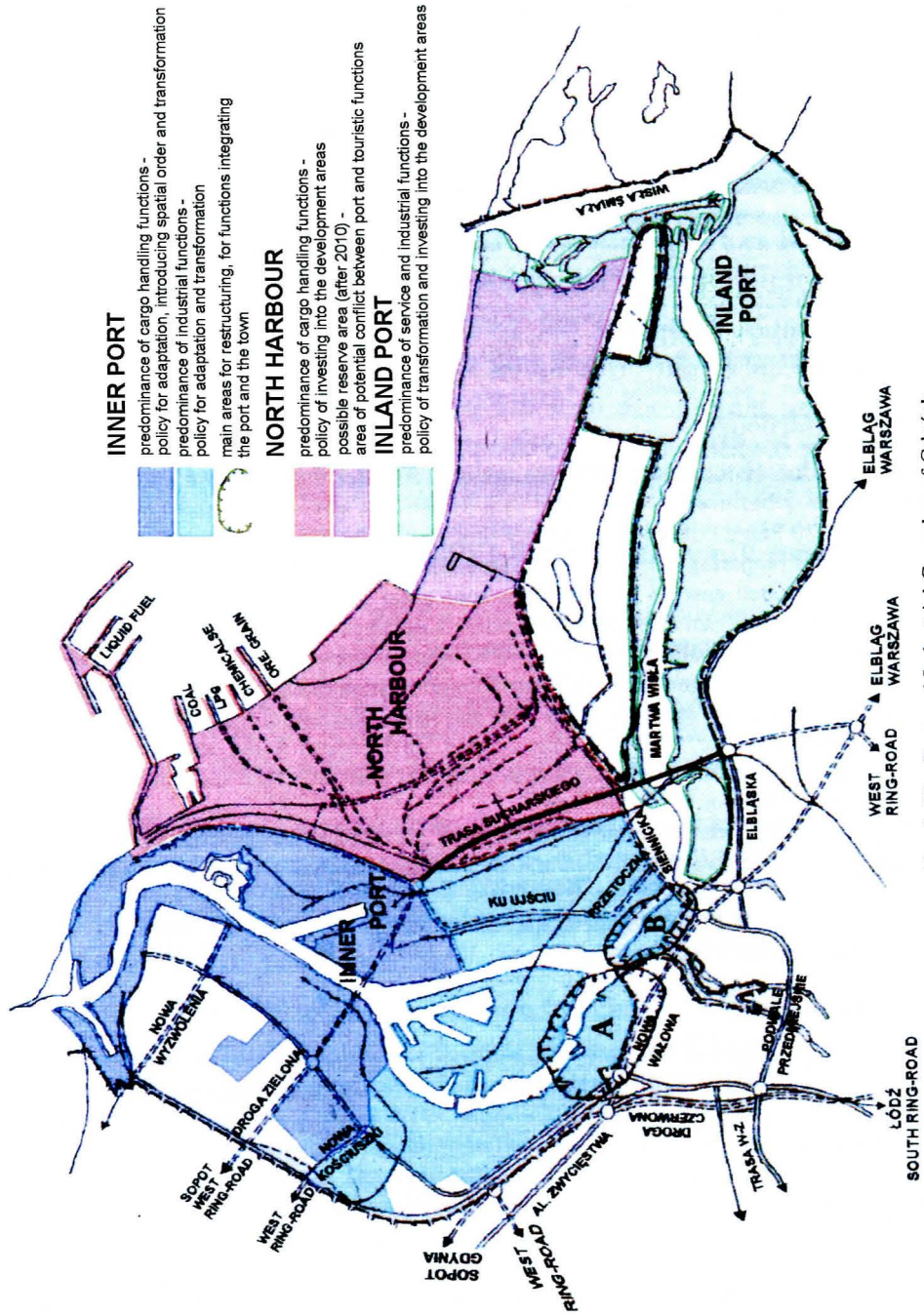


Fig. 2. The Port and Industrial Complex of Gdańsk

of spatial development of Gdańsk). This needs programme improvements, which will break up the present mono-cultural use of space in this part of the port, and which will be socially acceptable. The most important areas waiting for such improvement are: the neighbourhood of Wisłoujście Citadel, Nowy Port waterfront, Polski Hak, a part of the previous shipyard area, and also the Motława basin including its quays.

c) Martwa Wisła system

The biggest uncertainties are connected with the development of port functions along the Martwa Wisła (east of the Siennicki Bridge). Activities in this part of the port were always dependent on the intensity of connections of the port with the Wisła water route, i.e. with inland navigation. When the North Harbour was planned, nearly all concepts assumed that the new port area will be connected by channels with the Martwa Wisła or Śmiała Wisła because it was thought that inland transport will find its place in servicing of the Port of Gdańsk. Up to this time such a connection has not been realised, and time has shown that during the last 30 years (since the beginning of construction of North Harbour) the participation of inland transports in port services was quite insignificant. Also the technical condition of inland routes has deteriorated. It is very difficult to assess whether there are any chances for an improvement of this situation. Inland navigation is strongly supported by the European Union in accordance with the EU pro-ecological transport policy. However, the scale of Polish limitations in this field is so large, that creation of transportation needs for inland navigation is very difficult. Without decisive movements (national policy) of the State an increase in importance of inland navigation in the Polish transport system cannot be expected.

At present, the land and basins of the Martwa Wisła and Wisła Śmiała region are only little used by the port. Development of this part of the port should be aimed at strengthening the sea/river character of the Martwa Wisła water route (improvement of parameters, in that a widening in the Wisła Shipyard area), and at a concordant activation of available land areas along both banks, mainly the development of yachting, tourism and support functions, and maybe in the future the construction of an inland harbour in the Płonia Mała region (east of the Gdańsk Refinery).

The part of Martwa Wisła, which lies east of Wisła Śmiała, is outside the boundaries of the port. Nevertheless its southern bank in various studies and reports on the future development of the Port of Gdańsk is seen as an area which could be used for the development of port or accompanying functions. This concerns especially the stretch of Wisła Śmiała between the pontoon bridge connecting Sobieszewo Island with mainland. This stretch is in the Pruszcz Gdański municipality.

The future of this part of the port depends to a large extent on the future participation of inland transports in servicing the port and town of Gdańsk.

Spatial development of the Port of Gdańsk as an area of co-operation of the port and town

The nearly 50 years of centrally planned economy resulted in the disappearance of natural social and economical relationships between the port and town. In space management, this is reflected by a tremendous neglect in the development of contact areas of the port and town. This is shown by:

- stiff boundaries separating the port from the town,
- ineffective use of some port areas,

- outdated solutions of transport, communication and installation infrastructure,
- pollution of environment,
- deterioration of valuable heritage in the port and near-port areas.

With appearance of market economy, contacts between the port and the rest of the town are being rebuilt, and this facilitates transformation of contact areas. The port lies within 7 of the 24 units of the town. The housing districts contacting with port areas – Nowy Port, Letnica, Przeróbka, Stogi – should be elevated from their present civilisation decline and filled up with typical for port district all over the world functions, such as services, insurance companies, banks, hotels, etc. A range of incentives for such transformation is already appearing (freeing of a part of the former shipyard area, rebuilding of the port transportation systems, search for reserves to ensure development of general urban functions associated with port functions).

Intensification of the use of port space is a basic requirement of rational management; it lies both in the interest of the port and town. As a rule, port areas are areas with high location rent, with developed technical infrastructure, easily accessible, attractive to investors. In many European ports port activities disappear from certain regions, which either cannot fulfil the location requirements of modern potential, or which have deteriorated to such an extent that reconstruction is not feasible. In their place other functions, often related to the zone of common interests of town and port, take over. These functions must properly fall in with the spatial structure of the port and town, and also, as far as possible, make use of access to the waterfront. Diversification of economical activity is one of the most important characteristics of the present trends in port development, and this strengthens ties between the ports and their towns. Gdańsk is a port town, but at the same time, in spatial sense, it is turned away from the port. This is caused by many reasons, but the largest influence on the present picture of deterioration of the contact area between port and town, the lack of utilisation and the lack of proper exposition of the waterfront area, was exerted by the 40 years of centralised port economy. During these years both organisms developed independently of each other, in nearly full isolation. This bad legacy of the past is gradually removed – also in the spatial sense. The process should be facilitated by the new model of port management, in which the town plays a significant part.

Analysis of intensity of port area utilisation shows that in the spatial system of the port exist only slightly used areas, of secondary importance to the functioning of the port, which however could be very useful for other functions. This is especially true for the western, left-bank part of the Inner Harbour, which contacts with the centre of the town and with the Młyniska and Nowy Port districts, and for the area of the Wisłoujście Citadel and the Westerpalte region.

In general, it may be stated that market processes in port economy, and the concordant with global trend diversification of economical activities of the port, open up possibilities of utilising some port areas in different ways, which facilitate spatial integration of the port and town and lead to more intensive use and improved quality of the valuable port space.

Large port organisms, and the Port of Gdańsk is certainly one of them, should be shaped basing on a holistic vision of development. Therefore they are an area of activity not only of port authorities but also of the town authorities. Joint actions should ensure proper coordination between the directions of spatial development of the port and town at all stages of planning.

The present spatial structure of the Port of Gdańsk is in itself a permanent value of the urban space of Gdańsk and of the whole agglomeration, connecting history and the present, technical and economical values and the rich cultural heritage.

Its further development must be subjected to the principles of shaping spatial order, and requires discussion, analysis and conceptual effort of the Gdańsk citizens, port and town authorities and port users.

References

- [1] J. Kołodziejcki: *Strategy of sustainable development as the basis for national spatial development policy „Polska 2000 PLUS”*. Biuletyn Komitetu Przestrzennego Zagospodarowania Kraju nr 176, Warszawa 1997. (In Polish).
- [2] Art. 32a, Chapter 2 of Act on spatial development of July 7, 1994, amended on 22 and 27 July 1997.