Landscape Protection in Environmental Impact Assessment in Poland

The example of a Gdansk fortification system which is threatened by transport investments

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Abstract: A planned road system may either show the beauty and exceptional features of nature, culture, and landscape, or do them damage, especially when it is located nearby areas of significant cultural and aesthetic value. The specific case-study of potential threat to a historic fortification system in Gdansk, which may be harmed by planned road investments, provides a background for presenting the strengths and weaknesses of landscape protection in Environmental Impact Assessment (EIA) in Poland. The conclusion is that landscape protection in EIA practice is not sufficiently recognised and used. Moreover, the strategic environmental assessments (SEA) are applied with a limited scope, mostly for local plans, prepared for the implementation of a specific activity. It results in poor management of wider structures, like landscape macro-composition. The examples presented in this paper prove that only the overall assessment of planned road systems, either in terms of an SEA or an EIA reveals, how seriously they may affect another urban system, namely the historical fortifications of the city. Properly conducted SEA/EIAs may result in rapid improvements in the landscape of certain city zones, which are under particular pressure because of investment. So, the assessments may be helpful in the exposure and better access to objects of cultural heritage, as well as being helpful in the improved management of their surroundings, promoting the unusual historical image of Gdansk.

Key words: culture heritage, landscape, road system, threat, environmental impact assessment

1. Introduction

Roads, when once completed, remain in the landscape for a long time. Their unique character relates to the fact that not only do they carry passengers in a physical sense, but they also trace people back to the cultural environment, which may be hundreds or thousands of years old. Roads may either cause damage to the environment and the landscape, or show the beauty and exceptional features of the nature, culture and landscape, in which they appear. They provide an opportunity to observe the variety and richness of the development process in which man has always been involved. However, this is only possible when they are planned taking the landscape into account. The landscape is "The reflection of all possible phenomena occurring on the surface of the earth" (Bogdanowski 1994).

Proper landscape management requires that road systems need to be developed in a sustainable manner. The best tool for enabling this to take place is an Environmental Impact Assessment (EIA), however, an EIA provides no guarantee for proper landscape management. The EIA is a multi-step, interdisciplinary process for reaching the best, conscious and balanced decision concerning future development. An EIA is conducted in advance of implementing the activity. It enables the acquisition of full knowledge about suggested activities, and about threats to the environment (including landscape and cultural aspects), it also provides the chance to avoid, or reduce, potential damages. The EIA offers an opportunity to find a compromise between different goals, examining not only technical and economic conditions but environmental, cultural, landscape and social as well. Therefore, it might become a very helpful tool in making decisions that have an influence on the landscape. Although the EIA neither replaces a building project, nor a decision, it may affect them.

This procedure should be implemented especially when a harmful activity is planned to be located in valuable and sensitive area. Potential threats in such cases seem to be a problem all over the world, ever since we have observed that the growing pressure of development, which has always been connected with road construction. A good example of difficult choices that have to be made is the road system situated near areas of significant cultural and aesthetic value. The planning of a road system is especially important in Poland, due to the fact that a planned highway system, which is very controversial, will be introduced in the near future.

The specific case study of the fortification system in Gdansk, which may be damaged by new investments in roads, is a representative example of valuable, but endangered landscapes. The example of a unique landscape of historic fortifications was chosen due to its importance within the city space. Preserved parts of the historic fortification system, although they are divided functionally and have partially been destroyed, comprise a specific structure in the landscape of the town, and provide it with its unusual image. Some of the parts, due to their significance and their future, are still the subject of public discussion, even during the international conferences, for example: „Wisloujscie Fortress - history, present, future“ (1999); the other parts have been renovated. They all need protection, especially when there is pressure due to investments in roads. New roads should undergo environmental assessments, so the chosen case provides a background for presenting the strengths and weaknesses of landscape protection given by the EIA procedure in Poland, which is obligatory for all harmful activities, also from transport sector.

2. The Legal Framework of Eenvironmental Impact Assessment in Poland

For many years, the Environmental Impact Assessment procedure has been evolving in Poland. The first regulations appeared in the 1970s, but they did not affect the decision-making process. In 1980s a few legal acts concerning environmental impact assessment were introduced, but the EIA was treated as an Environmental Impact Statement (EIS), not a procedure. Political changes in 1989 brought with them new ideas and activities concerning environmental protection. The independent National Commission on EIA was established in 1990. New legal regulations concerning EIAs were issued. The EIA became an important tool of environmental policy, but still it was an environmental impact statement rather than a process. In 1995, planning appraisals (SEA) began to be considered. In 1998, the Espoo Convention was ratified, and the EIA become a quite well developed procedure. The „Environmental Protection Act“ was established in 2001, on the basis of the previous „Act concerning public access to information and EIAs“, which was issued in accordance with Directive 85/337/EEC changed by Directive 97/11/EU concerning „The assessment of certain public and private projects involving the environment“. EIAs in Pol-

and covers two areas:
- Strategic Environmental Assessment (SEA)
- Environmental Impact Assessment (EIA) for specific activities.

SEA (*plan appraisals*, *strategic assessments*, or *environmental impact prognoses)*, deals with the results of polities, strategies, plans (e.g. spatial plans), and programs implementation (e.g. industry, agriculture, transport, energy). However, in practice it is mostly addressed to new spatial plans. The plans, which were accepted formally before 1994 and are still valid, don't undergo SEA procedures.
An EIA is obligatory for all planned activities, which might seriously affect the environment. Activities, for which an EIA is obligatory in every case are listed in list I in the legal ordinance (analogue to Annex 1 to Council Directive)**.** Activities, which should undergo an EIA following the decision of the relevant authority, are listed on list II (Annex II). Both lists include projects from different sectors, also including infrastructure projects, like motorways, express roads and major roads.
The planned activity has to be in accordance with the spatial plan. If it is not, a new plan has to be made, so a two level environmental assessment is being conducted: an SEA for the new plan, and an EIA for the specific activity. If the activity is in accordance with the new plan, for which an SEA had been conducted, it undergoes an EIA. If the planned activity is in accordance with old plan, only an EIA has to be conducted.

In Poland, an EIA (in accordance with the „Environmental Protection Act") is a process to identify, analyse and evaluate:
- The direct and indirect impacts of the activity on:
  - The environment and peoples' health and welfare
  - material assets
  - cultural heritage
  - the interactions between the factors mentioned in the first, second, and third indents
  - accessibility to mineral deposits
- possibilities and measures to avoid and minimise negative impacts
- scope of monitoring,

where the *environment* is defined as the overall system of natural elements, including those shaped by man's activities, comprising: land surface, minerals, water, air, fauna and flora, **landscape** and climate.

The EIA procedure is strictly connected with the planning system, because:
- the guidelines from *plan appraisals* have to be taken into account in preparing spatial plans
- the decisions concerning a specific project, made in accordance to the EIA, have to be in compliance with spatial plan.

SEA/EIA procedure, together with planning system, is the main tool for managing the space and landscape in the processes of urban/rural development. In both cases, relevant authorities are responsible for conducting the procedure.

3. Landscape Protection in EIA Regulations in Poland

Although there is no clear definition of the *landscape* (which should be protected due to the definition of the environment) in Polish law, it is stated that the landscape quality comprises **ecological, aesthetical and cultural values** of the specific area and it's natural elements,

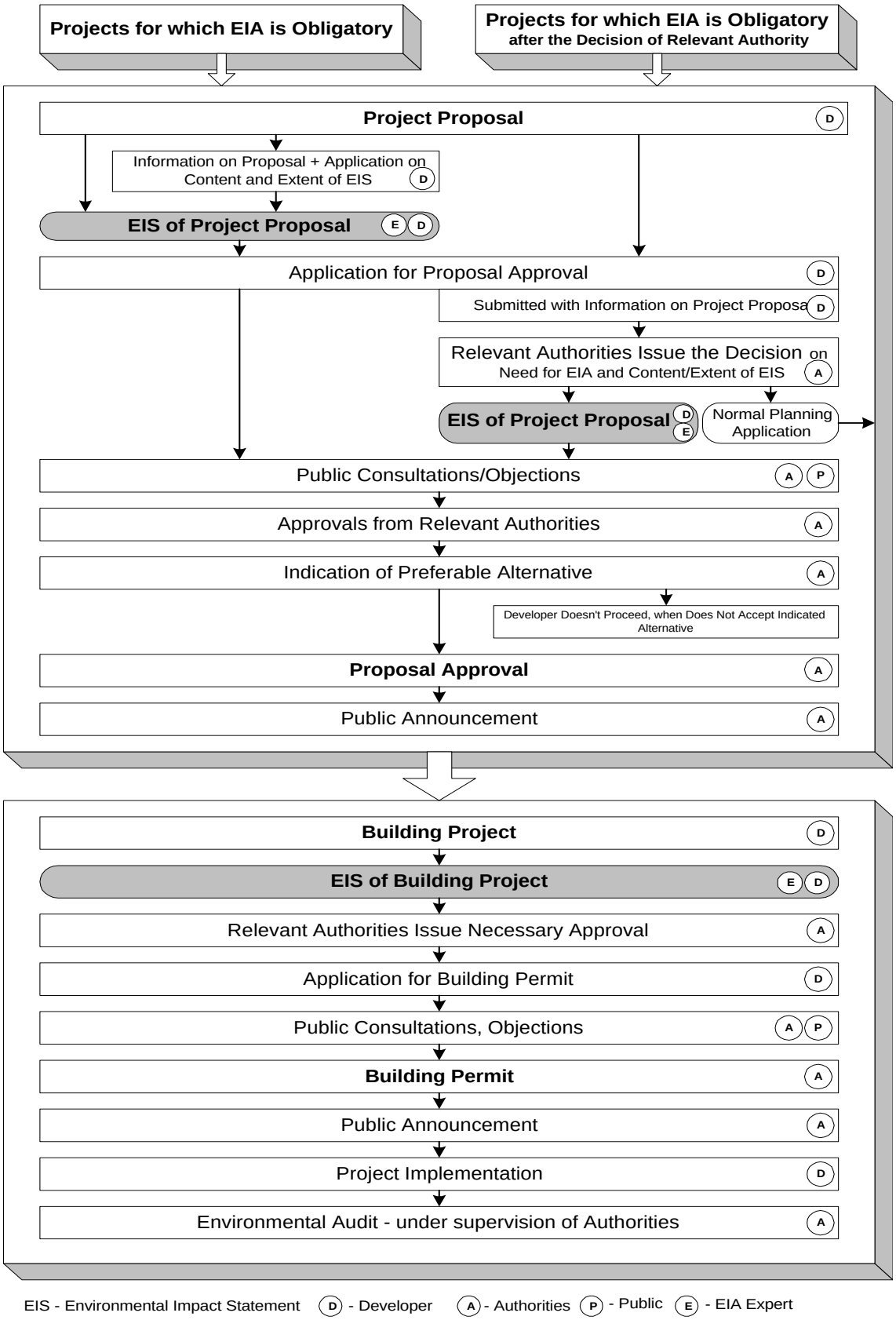
created by the natural processes as well as by man.
The systemic approach established in EIA legal regulations provides a tool for a proper assessment of threats to the landscape. It enables one to see the technical, environmental, cultural, social and economic problems not in isolation, but in their mutual relations, it helps one to make a decision concerning the best alternative for a future development. Figure 1 illustrates the general steps in the EIA procedure in Poland, which are crucial for landscape protection. The two-level process consists of:
- assessing the project proposal and issuing proposal approval (development order)
- assessing the building project and issuing building permit.

The above stages of the procedure differ from each other.
Assessing the **Project Proposal** relates to an early, concept stage of the planned activity. The Relevant Authority which gives an opinion on the need for an EIA and content and extent of an EIS is for the list I activities *voivode* (a governor of a province), for list II – *starosta* (a head of the sub-regional council) and sanitary inspector.

The information on the Project Proposal to be provided by the developer in order to obtain the Decision on the Need for an EIA and content and extent of an EIS, should include:
- the description of the site and character and size of the planned development
- the size of area, of building project, land use, existing vegetation
- the description of production processes
- the description of considered by the applicant alternatives (if any)
- the estimated quantity of expected water intake, use of natural resources, materials, fuels and energy
- the description of the planned mitigation measures
- the estimated type and quantity of expected residues and emissions or energy, resulting from the proposed development in spite of the implementing the mitigation measures.

The report (EIS) in accordance with the „Environmental Protection Act“ should include:
1. a description of the proposed activity, in particular:
- the physical characteristic of the development proposal and the land use requirements during the construction and operational stages
- the characteristic of the production processes
- the estimated quantity of expected emissions resulting from the development proposal, when in operation
2. the description of the elements of the nature environment likely to be affected by the planned development
3. the description of the considered alternatives, including:
- „0“ alternative (not conducting the activity)
- the alternative best for the environment
- with an indication of the reason for choosing these alternatives
4. a description of likely effects on the environment of the considered alternatives, including industrial disasters, and trans-boundary effects
5. an indication of the reasons for choosing the development proposal by the developer, with the description of the likely impacts on the environment, in particular on human beings, flora, fauna, topography, water, air, climate, material assets, the cultural heri tage, the landscape and the inter-actions between foregoing elements
6. the description of significant negative effects, direct and indirect, secondary, cumulative, short, medium and long term, permanent, temporary - resulting from:
- the existence of the project
- the use of natural resources
- the emissions

FIG. 1. EIA IN POLAND



EIS - Environmental Impact Statement (D) - Developer (A) - Authorities (P) - Public (E) - EIA Expert

and the description by the developer of the forecasting methods used to assess the effects on the environment
7. the description of the measures envisaged in order to avoid, minimise or compensate negative environmental effects
8. the comparison of proposed technological features with the most environmentally friendly technology
9. indication, whether the delimitation of the area of „limited land use" should be made and if so, defining the extent and the rules of development for such an area
10. presenting the problems using graphic methods
11. presenting potential social conflicts
12. proposal for monitoring during construction and operational phase
13. description of any difficulties, such as technical deficiencies or lack of know-how
14. a summary in non-technical language comprising information specified in the report
15. sources of information

If the proposed development comprises the industrial installation (stationary technical unit) which may cause pollution, and requires the integrated permit, the report should comprise the comparison of proposed technique with the best available technique.
The report should relate to impacts during the construction stage, when operational and after the life of the operation life.
The Proposal Approval comprises land use requirements and may comprise the guidelines concerning avoiding, reducing and monitoring the impacts. The Proposal Approval may be issued for specific area for many developers, and they do not have to be owners of the area. Although the relevant authority is responsible for conducting the procedure, the developer plays an important role in choosing the alternative to be developed. The developer has to accept the alternative indicated by the authority in the Draft Proposal Approval (Draft Approval includes Approvals from Relevant Authorities) as the best for the environment. If the developer does not accept the indicated alternative, the Authority has a right to stop the procedure.
Assessing the **Building Project** takes place at an advanced stage of the planning process. The Relevant Authority which issues the Necessary Approval for a Building Project, on the basis of an EIS (it is not an opinion, as it was at the first stage) is, as in the first stage of the procedure, a *voivode* for the list I activities or *starosta* and sanitary inspector for list II. To obtain the Building Permit, the developer has to submit the Building Project, Proposal Approval, EIS, legal title to the site, and Necessary Approvals and comments from statutory consultees. The content and extent of the report for building project is the same, but in addition it should include:
- a detailed description of the Building Project and other information gained after Proposal Approval
- an indication of how the guidelines related to environmental protection, described in Proposal Approval and other decisions concerning environmental protection, have been taken into account, when preparing Building Project.

The Building Permit may comprise the same requirements related to environmental protection as Proposal Approval and, additionally, the guidelines concerning the scope and schedule of environmental audit. The Building Permit may be issued for specific area only for one developer - the owner of the area or person who has a right to it.

The Figure 1 also shows different participants' responsibility for landscape protection at specific stages in the procedure.
Although there is a legal possibility to take landscape aspects into account, practical experience shows that the landscape is treated as the least important aspect of the space,

and the last stage of designing process. Landscape studies within an EIA usually are not put into practice, mainly due to economic reasons. If landscape studies are a part of an EIA, they consist mostly of:

- the description of landscape resources
- the general statements of the character and magnitude of landscape threats.

Valorisation of landscape resources, assessment of landscape sensitivity to degradation and defining the significance of impacts appear very rarely. Defining mitigation measures and the conditions of constructing and implementing the project relates often only to tree planting in the affected area, not to serious changes in the project (for example another site, size, landscaping in a large extent, road alignment). Moreover, minimising negative impacts, and enhancement of positive impacts usually takes place only within the area, which belongs to the developer, or to which he has a right. Even if the study of the landscape and guidelines relate to a larger area, the developer is not obliged to implement mitigation measures outside his property. Descriptions of variant ways of protecting the landscape are rarely found and are seen rather as a problems for the developer, and even authorities, than as a help in common goal of sustainable development. Conducting monitoring, and environmental audits in relation to the landscape do not exist in practise, so any remedial measures concerning the landscape can be implemented. That is why it is so important to spread the knowledge about the importance of the landscape quality, using all the methods, including the EIA. Within this procedure, each participant should play an important role.
Planners should take into consideration the guidelines from strategic assessment in preparing sustainable spatial development plans. Developers and designers should plan the activities by taking into account the guidelines from SEAs as well as case-specific EIAs, especially paying full respect to such values as cultural heritage, landscape and visual aspects, which are difficult to measure. Developers should also implement all the mitigation measures indicated during the procedure.
EIA experts (working for the developer) should identify all significant environmental impacts (including the landscape), present the best alternative, describe relevant mitigation measures and prepare systematic, comprehensive and adequate reports (environmental impact statements-EISs), which will be a complex and understandable source of information for all participants.

Competent public authorities should:

- issue relevant decisions:
  - decide on the need for an EIA, together with the scope of the EIS
  - indication of the best alternative, different from investor's, if necessary
  - rejecting the application when developer does not accept the indicated alternative
  - proposal approval with relevant recommendations on mitigation measures and monitoring of landscape impacts
  - a building permit with relevant recommendations on mitigation measures, monitoring and environmental audit
- implement activities aiming to develop the quality of reports, especially in relation to the landscape protection
- implement activities aiming to force the investor towards initiating recommended mitigation measures.

Society should exercise a right to take part in the EIA procedure. The consciousness of such possibility in Poland is rather weak, although is guarantied by law. Another crucial point is that the economic and functional aspects are taken to be the most important, while landscape and aesthetic values seem to be less important, especially for the developers, but also for the authorities and society.

The efficiency of the EIA, in relation to landscape management depends on how the negotiations between the participants of the procedure (investor, relevant public administration, institutions giving opinions, society, ecological organisations) will be conducted. Contemporary practice in Poland shows that the possibilities of landscape protection through EIAs are not widely recognised and sufficiently used, although are guarantied by law to every participant.

4. Possible Threats to Historical Landscapes Connected with Road Building

A landscape, which seemed to be so durable and constant to past generations, is nowadays recognised as an easily damaged value, particularly when it faces increasing spatial development and consequently the inevitable pressure for building new roads.
The manner of planning, designing and construction of roads, which can be increasingly seen in urban and suburban space, is one of the factors which creates the quality of town landscape, due to the scale of new investments, their character, location, relations with the surroundings and the environmental impacts. Therefore, the roads serve as a good example of both the threats to the existing landscape, and the possibilities of enhancing it.
The demands concerning the technical parameters and the scale of new roads are still growing and at the same time the technological and economic possibilities of constructing roads on areas which were previously inaccessible appear. These trends may cause serious threats to historic landscapes. They are as follows:

- physical loss of landscape recourses (cutting down old trees, river regulation, pulling down historic buildings, levelling, embankments, excavations)
- disturbance of functional relations-separating complexes, limiting access etc
- incursion on environmental relations (cutting ecological corridors)
- disturbance of landscape (its harmony, scenic exposure, historic compositional axes), spatial disintegration, cutting the unity of systems, deformation of an existing composition
- visual impacts such as intrusion of large-scale buildings, roads being located too close to the sites under protection, loss of individual landscape features as a result of introducing elements which become common throughout the country
- air pollution, vibration, noise degrading the value of surroundings
- making of additional investment, necessary for roads' construction and operation, such as building sites or storage reservoirs
- starting incidental, "messy" and rapidly growing development in unwanted locations.

All impacts mentioned above may result in decreasing the quality of cities' historic landscapes. This provokes such opinions as "*modern transportation becomes a terrorist*" (Bogdanowski 1999). A great variety of landscapes, new investments and their environmental consequences, as well as technological, economic and legal conditions create the need to use methods relating to many different aspects of development. One of them is the EIA, especially when it is used in the sensitive areas of valuable landscape, like the unique historic landscape of the fortification system.

5. The Gdansk Fortification System and its' Protection

The panorama of a historical city is "*a magnificent lively and colourful image of the city, which speaks of its past, and at the same time, shows its present beauty*" (Dabrowska-Budzillo 1990). In the thousand-year-old Gdansk, the most expressive features of its panoramas and unforgettable fascinating profiles, are the reminders of city's military past. Bastion fortifications, entrenchments, towers, gateways, city walls, moats - all these offer to the people of Gdansk a clear image of their ancestors' way of life and defence. An important

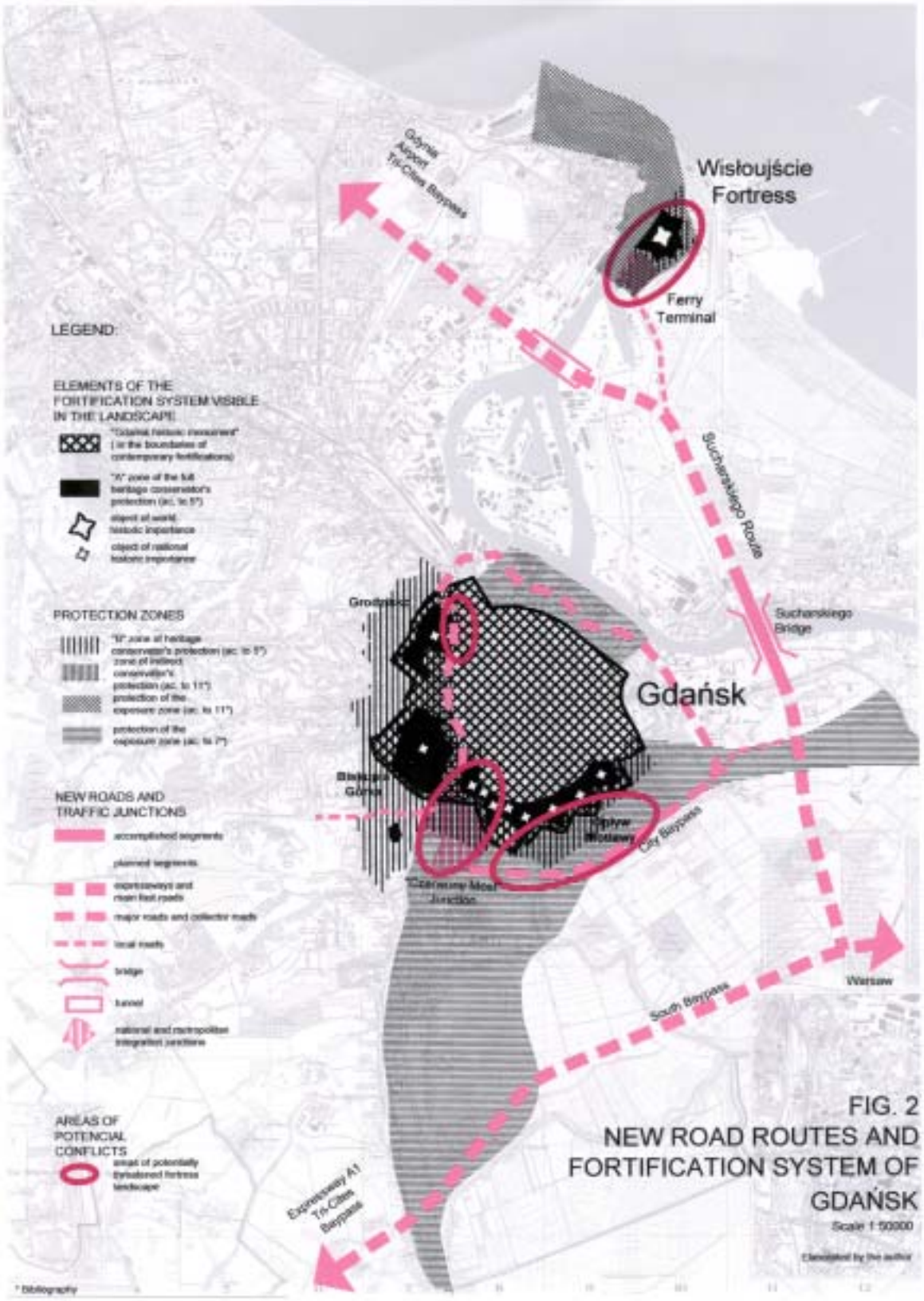
feature is the scale of old military buildings, their importance is recognisable to all.

Preserved elements of the fortification of the historic Fortress of Gdansk comprise (Biskup 1998; Biskup, Strzok 1993):
- fortifications surrounding the city of Gdansk stronghold: bastions, gates, redoubts (Stankiewicz, Biskup 1998)
- Wisloujscie Fortress (Tower, "The Wreath"- with tenement-houses, barracks, four-bastion Fort Carre with casemates, five-bastion East Entrenchment, moats) (Balewski 20008).

The purpose of the system has always been to defend the port town against an invasion from the land (the belt surrounding the town) and from the sea (waterside fortifications with the Wisloujscie Fortress). Military structures were established between the early Middle Ages up to the twentieth century. Large scale, visible, and dominating the city elements of the landscape include the fortification systems: in the southern bastions so-called oplyw Motlawy, in the western bastions Biskupia Gorka and Grodzisko and in the north Wisloujscie Fortress. They were founded in the 15th and 16th centuries and reached their finest shape and spatial range in the 17th century (Biskup, Strzok 1993, p 5,6; Biskup 1998, p 37). The Wisloujscie Fortress was probably built in the 10th century on the site of a lighthouse at a very outlet of the Vistula River (Zbierski 2000, p 37). These structures are remarkable for their scale and character in the spatial composition of the city, and they add a lot to its individual, unique image.
The value of Gdansk's cultural heritage turned out to be so important that in 1974, the city within the boundaries of the fortifications, was listed on the Heritage Conservator's records, and in 1994 was acknowledged as a monument of history by the order of the President of Poland. That initiated the attempts to place Gdansk, together with the Wisloujscie Fortress, in the Listed World Cultural and Natural Heritage by the World Heritage Committee (UNESCO). The Wisloujscie Fortress - the most interesting example of sea-side defensive architecture in Poland - is a unique historic structure, because it gradually absorbed various elements of European military architecture from the late Middle Ages up to the 17th century. The Fortress "*witnessed the history of military architecture in Europe for two centuries. Nowhere else can such precious structure can be found*" (Ottenheym 2000, p 69).
The historic importance, visual quality and exposure features mean that this article relates to the distinctive and recognisable fortifications of **oplyw Motlawy, Biskupia Gorka, Grodzisko and the Wisloujscie Fortress** (Fig. 2). All of them undergo some kind of conservator's protection, but the fact that they are the objects of conservator's interest, does not guarantee, automatically, their legal and effective protection.

In Poland the conservation system relates to:
- the historic monuments, structures and zones listed in heritage conservator's record (buildings and architectural monuments and structures, urban complexes, historic parks and gardens, cemeteries, ethnographic features, historic sites, technical features, industrial remains, museum collections, and other man-made features of cultural or historical importance)
- archaeological sites and features (listed and not listed)
- other valuable historic monuments and zones, like historic landscapes, cultural reserves, cultural parks, desirable to protect, not listed in heritage conservator's record, but postulated by the conservators for registering into spatial plans.

The tools ensuring the legal conservators' protection are:
- heritage conservator's records (including historic and archaeological resources listed in the record)


Wisłoujście Fortress
Ferry Terminal
Gdańsk
Warsaw
South Bypass
Expressway A1 Tri-Cities Bypass
LEGEND:
ELEMENTS OF THE FORTIFICATION SYSTEM VISIBLE IN THE LANDSCAPE
PROTECTION ZONES
NEW ROADS AND TRAFFIC JUNCTIONS
AREAS OF POTENCIAL CONFLICTS
FIG. 2
NEW ROAD ROUTES AND FORTIFICATION SYSTEM OF GDAŃSK
Scale 1:50000

- spatial plans (including all resources listed in the record as well as historic areas and structures not listed in the record, but designated in local plans as protected areas).

Records and plans include detailed guidelines (in the form of legal regulations and bans) concerning the rules of protection. These tools are effective in protection of the culture heritage. However, the process of registering the conservation zones, which are not listed in conservator's record, into the spatial plans is quite difficult. The zones, imposing some obligations concerning land use, are considered to be restrictions, effecting in financial losses, not only by developers, but also by local authorities and society. This is the reason, why implementing conservation zones into the plans is not very popular in practice. Planners try to implement conservation rules in other ways - for example using „cards of terrain", where the specific, detailed, rules of land use for small areas are described.
The objects and areas, which are valuable, but not listed within the records nor indicated in spatial plans as protected areas, are treated only as suggestions and guidelines for planning and designing processes. They serve as the postulates for planners to protect the listed objects, their surroundings and other valuable areas.

The institutions responsible for the culture protection are:
- the Minister of Culture (in his name the General Heritage Conservator is responsible at national level; the General Conservator has a status of vice-minister)
- Voivode (Province) Heritage Conservators, in the name of the Voivodes, are responsible at voivodeship level.

In figure 2, the different zones and monuments undergoing conservators' protection and interest are shown. They have been identified and described by different institutions, authors, in different periods of time, and they are indicated in different papers / scientific descriptions / reports. That is why theirs names and spatial extent differ from each other. Some of them - strictly defined within their boundaries - are the subjects of legal protection. They are monuments and areas listed in Heritage Conservator's record - in this case this is the „Wisloujscie Fortress" as a monument of national importance and „Gdansk historic monument" within the boundaries of the fortifications. The other conservation areas do not have legal protection yet. They are valuable areas, which are expected to be granted legal protection as the protected areas specified within spatial plans (bastions: oplyw Motlawy, Biskupia Gorka, Grodzisko and their conservation zones).
Nevertheless the actual state of conservator's protection, all historic monuments and areas marked in the figure 2, due to their significance in the city structure, should be the subjects of thoughtful consideration, especially concerning the fact that new routes and junctions are being planned in the surroundings of these unique monuments. Are the planned developments a chance or a threat to precious cultural assets?

6. Road Projects in Gdansk

Gdansk began and later flourished as a port. This still remains a leading function of the city. An improved connection between the city and its hinterland has been essential for the port's transformation and improvements. The Gdansk authorities have made a decision concerning the construction of new links carrying traffic from the port southwards, bypassing the overloaded city centre. In addition to functional-economic advantages, this will improve the living conditions of those living in the city centre, by decreasing noise, vibrations and air pollution, caused mainly by the heavy transport servicing the port. At the same time, the existing negative effects on historical monuments, located in the polluted city centre, will be minimised.

The principal planned developments concerning roads are as follows:
- Sucharskiego route connecting the port area with the south (towards Warsaw and A1 expressway) and with the north (Gdynia, the airport)
- Southern Bypass connecting Sucharskiego Route with A1 and Warsaw
- Metropolitan integration junctions situated by Wisloujscie Fortress, Gdansk Glowny railway station, and by oplyw Motlawy (so called Czerwony Most) (Fig.2).

Some of them have been partly realised; the others are at different stages in the planning procedures.

7. Conclusions Concerning Environmental Impact Assessments

All the planned road activities should undergo the EIA procedure. However, as each case is at a different stage in the planning processes, its stage in the EIA differs accordingly. These cases are presented below, starting from the concept stage, through the draft plan, project, up to the construction phase.

7. 1. Integration junctions

The junctions of Gdansk Glowny and Czerwony Most are still at the concept stage and are not yet the subjects of spatial plans. They are only marked in the Management Study (the document creating the community's spatial policy and defining the Conditions and Directions of Spatial Development), which does not have to undergo an SEA due to legal requirements.

Junction Gdansk Glowny

Gdansk Glowny traffic junction is a metropolitan junction located in a conservation zone. The location of multi-story car parks is also being considered here. They may disturb the surroundings of the Grodzisko fortifications. No landscape studies, carried out prior to Management Study, were undertaken for the areas which might be affected.

Junction Czerwony Most

Another project, much more advanced, which is controversial and demands thoughtful consideration, is a planned metropolitan integration junction at the foot of the oplyw Motlawy fortifications. It is located in two different conservation zones (Fig.2). A bus station, and multi-story car parks are planned there. Developing this area might lead to blocking the only good view of the bastions from the main entrance routes to Gdansk when one comes from the south. A beautiful view from the bastions towards Zulawy Gdanskie (protected landscape zone) and the edge of the moraine plateau may be disturbed as well. The character of the surroundings will be changed completely. Moreover, the construction of a large-scale junction, situated in the immediate vicinity of historical monuments, may be followed by secondary development - uncontrolled, spontaneous large-scale developments along the City Bypass.

Some planning works related to a new road system and Czerwony Most junction are being undertaken by engineers, without reference to landscape studies, which is a typical practise.

7. 2. Southern Bypass

The Southern Bypass is at the concept stage of the planning procedure. The spatial plan has not been prepared yet. However, the additional environmental expertise, which may be treated as the preliminary, not obligatory stage of the EIA, was elaborated. The recommendations concerned, mostly, natural environment protection. The draft project for the Southern Bypass would, if implemented deprive the protected area of its great natural importance) and the landscape protection (the project would cause potential damage to the edge of the moraine plateau, as the result of the large scale earthworks which have been planned). The study resulted in changing the road alignment. It is a good example, but is not a typical situation.

7. 3. Ferry terminal near Wisloujscie Fortress

Among new projects located close to historic landscapes, the only one which has been a subject of an SEA is a new spatial plan „Westerplatte - Wisloujscie". Its most important element is a ferry terminal, which was defined in the Management Study as a junction of national importance, planned in close vicinity to the Wisloujscie Fortress.

The draft plan is accompanied by an SEA, which has positively assessed the location of a large scale ferry terminal in two conservation zones (Fig.2). Yet, doubts arise whether the conclusions of the SEA are correct. Another study, the Study of Cultural Assets which was prepared in advance for this area, has formulated detailed land use principles, which are completely different from those implied in the draft plan. The Study of Cultural Assets has had a favourable reception from the Voivode Heritage Conservator. It recommends transforming areas marked in the plan for ferry terminal into tourist services (hotels, small ferry and yacht ports). Some development principles have also been suggested (height, architectural designs). The port function has been excluded.

Such differences in approach arise from the fact that there is a great deal of pressure on the area neighbouring with the Fortress coming from investors. The area belongs to Gdansk Port. But it also is under the protection of the Heritage Conservator, and, which is very important in this case, is endangered by existing development. Wisloujscie Fortress is already threatened by the operation of two activities which were located nearby many years ago, when the EIA system did not exist: Gdansk Port and a large scale sulphur treatment plant. This installation has been a great threat to the fortress for years, damaging its physical structure. Moreover, the activity of a port has some other negative effects. The Fortress remains in ruins and is neglected, waiting for a decision about its future, and financial recourses.

Now new developments are being planned. A comparison of the scales of the planned terminal and the tourist services allow for reaching very clear conclusions. Large sporting yachts as well as a car ferry, which regularly crosses the Martwa Wisla (Vistula), do not detract from the profile of the Fortress. But the size of a sea going passenger ferry is far greater than that of a local ferryboat. Such a giant at a landing-pier or crossing the Martwa Wisla river in the immediate vicinity of the Fortress would dominate the monument. Moreover, the scale, dimensions and uniformity of a ferry terminal and planned integration junction might disturb the character of the large area around the Fortress and the Fortress itself.

The Fortress should be used to attract tourism. Therefore, all features which were decisive for giving its present status and character should be treasured, including the main water gateway to Gdansk. They both present an opportunity to promote and advertise the cultural heritage of the city.

Despite the fact that a ferry terminal might actually enliven the area, and help to keep and protect the Fortress, the need to protect the world's cultural heritage in a wider spatial context is the issue of outstanding importance. Legal, land-owning or economic aspects should not be decisive for the physical development plans of the area. Therefore, the Heritage Conservator has expressed his negative opinion of the City Development Strategy (the basis for the Management Study) and the Management Study – only in relation to plans concerning Wisloujscie Fortress (despite the Conservator's negative opinion, the Management Study can formally be accepted by the City Council, as happened in 2001), and did not issue an approval to a submitted physical development draft plan (a draft plan cannot be formally accepted without positive approval, because it becomes a local law).

Resistance by the Heritage Conservator and the fact that the acceptance of the physical development plan was doubtful, resulted in necessary changes to the draft. After negotiations, the Port's Board accepted moving the terminal to the mouth of the Vistula, into the other port area. The hinterland of the Fortress will take on functions related to tourism, under the Conservator's protection. This changed attitude of Port's Board, accepted by the Heritage

Conservator shows that reaching consent is possible. However, in this case, it was not the environmental appraisal, which forced the change in the plan. The appraisal was inadequate concerning the cultural heritage and landscape protection aspects. This example illustrates a typical situation in Poland, in which SEAs and EIAs are conducted in a very technical fashion concerning the landscape, often without consultations regarding the culture and landscape being made by professionals. Usually the reports are being prepared without the assistance of architects, landscape architects or urban planners. One can observe a much better situation in relation to the natural environment.

7. 4. Sucharskiego Route

The Sucharskiego Route is the most advanced road investment. One section of a road - the first stays bridge in Gdansk (Sucharskiego Bridge), new "landmark" of the city - has been already completed. A multi-stage EIA procedure has been undertaken. Recommendations have been made referring to the choice of a bridge variant in south segment of the route (a low-water bridge, instead of a concerned high-water bridge, which might disturb the profile of the main town) and to the appearance of the route's surroundings which would preserve a historical pattern of a nearby street. The complementing landscape study, which was recommended by the EIA report confirmed that a pier of the new bridge would not affect the historic profile of Gdansk. However, the landscape study which has been undertaken in this case, it is not representative of the situation in Poland. Practical experience shows that landscape assessments are considered rather as „ornaments" than as a real problem, and in fact they do not influence the project itself, mainly for economic reasons. Moreover, another, more typical, aspect appeared in this case. The EIA was originally related to the bridge, which had a road for cars and a pedestrian-cycle way. It fulfilled the sustainable planning criteria concerning the town structure. However, due to the economic reasons, the project has been changed by the developer, and the new bridge has been constructed without a pedestrian-cycle way. It eliminates the possibility of the promotion of the landscape values of the river valley and profile of old Gdansk.

All the examples presented above prove that only the overall assessment of planned transport systems allows for the revelation of how seriously such systems may affect another urban system of historic city fortifications. In Gdansk there is only one military monument, which belongs to the world cultural heritage - Wisloujscie Fortress. Moreover, this is unique, for its dimensions and exposure, fortification complex - oplyw Motlawy. In the close vicinity of those two monuments, undergoing conservators' protection, new road investments are being planned. The projects may destroy "protective belts" around the Fortress and oplyw Motlawy. Such large monuments need a suitable setting in order to present their true, glamorous, splendour. The implementing of large-scale road projects requires a complex, systematic approach, regarding all aspects of space. Properly conducted SEAs and EIAs paying special respect to the visual aspects, would certainly help provide a better understanding among developers, authorities, conservators and other interested parties. Sustainable planning depends on a compromise between municipal authorities and conservator's service and needs the close co-operation of all competent bodies. Consequently, certain conservator's recommendations should help regulate the way in which inevitable road development is introduced into the city space. Planning and locating such investments in the immediate vicinity of historical structures without conservator's participation, in isolation from their guidelines and boundary conditions contradicts the idea of a protection zone and makes impossible the effective protection of our cultural heritage and the landscape.

The examples presented, related only to the fortification system of Gdansk, show that SEA/EIA procedures connected with road planning does not work sufficiently well in relation to landscape protection. This thesis may be supported by other practical experiences

from Poland. In many cases only the pressure of conservators and determination of some experts preparing environmental impact statements, including landscape aspects (which happens rather rarely), may force the developers to make some changes in projects.

8. Making Advantage of EIA Possibilities

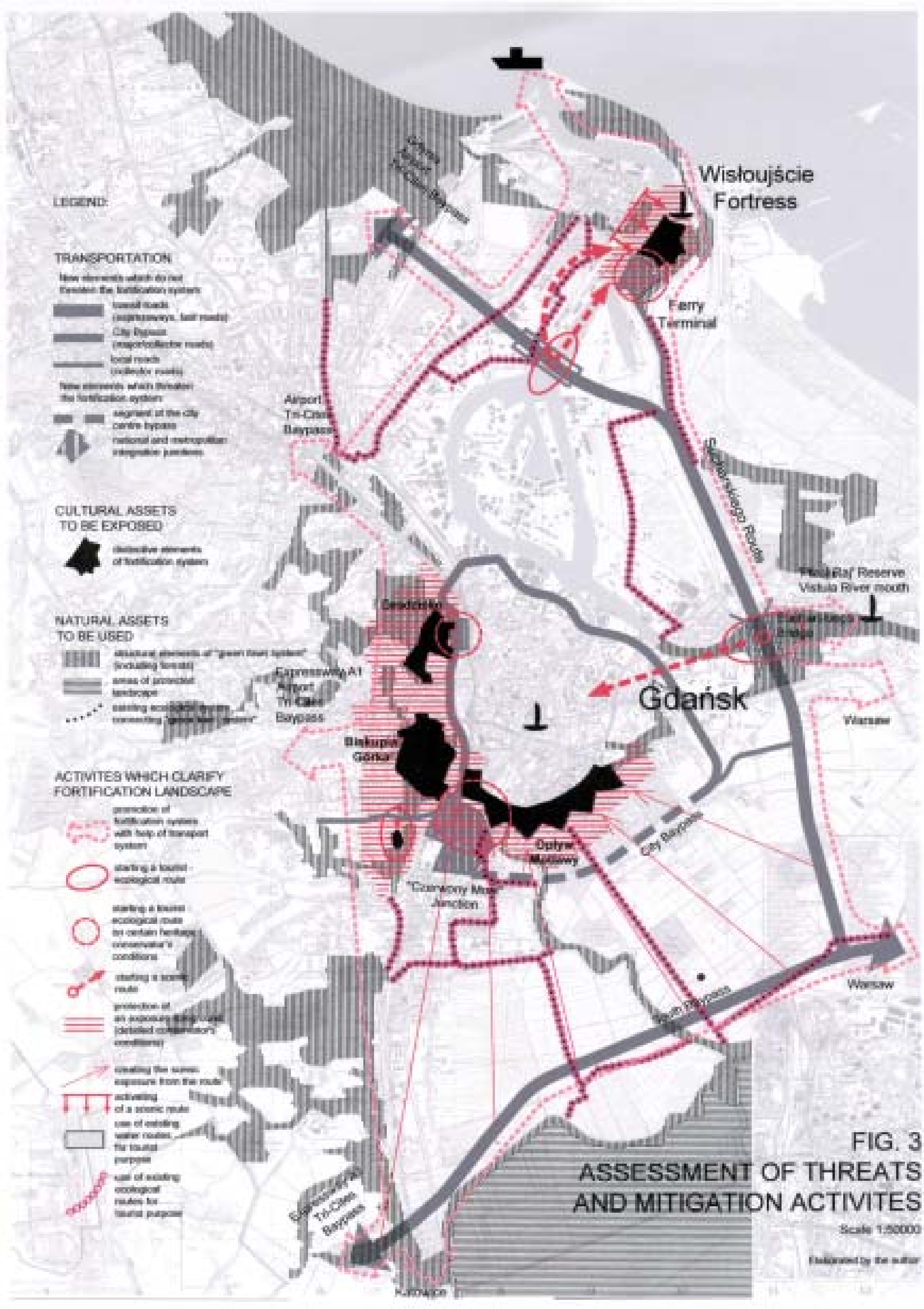
Each of the road projects presented above will, in a different ways, influence the landscape of the area in which investments are being made. In order to estimate the overall importance and character of new projects in a complex way, and to recommend suitable mitigating activities, the environmental assessments, including landscape studies, should be undertaken.

Suggested steps are as follows:

- To carry out a strategic assessment for the Management Study; it would give the right to promote additional landscape studies for chosen areas prior to small local plans; landscape assessment has to relate to the area of real impacts, not only to the area defined in limited boundaries of a spatial plan-this is because only a broad approach enables the implementation of suitable mitigation measures; it would create a chance to determine the conditions of space management with respect to visual and landscape values in a wider context
- To carry out the strategic assessment of the city's entire traffic system, in relation to outside connections with country road system; this should comprise professional landscape studies and define general guidelines for the transport policy and its implementation
- To conduct EIAs for each investment allowed in SEAs; EIAs should include detailed landscape studies, defining the conditions of implementing projects in given zones, providing recommendations for shaping surroundings of planned projects (zoning of development, dimensions, the share of built and hard-surfaced area, green zones etc.)
- To complement the administrative decisions with the conditions of implementing road projects defined in SEAs and EIAs.

Only such a systemic approach allows planning, in advance, ways of solving important problems facing the city and including principal interests. SEAs provide better possibilities for landscape protection than EIAs, because they provide for a full and comprehensive assessment of the complex activities' results (e.g. transport system of a city, not a single connection); refer to a large area (e.g. extensive bastion fortification system together with its protection zone and with a usually large zone of transportation impacts); involve a long time span (including indirect results, delayed in time e.g. caused by secondary development); comprise mutual relations between results (e.g. caused by various activities, not only transportation, which might appear in different periods of time in a given space). However, on the other hand, they can not replace EIAs, which provide necessary detailed guidelines. Conducting planning activities without a holistic approach may result in changes in the quality of city space. It should be stressed that transportation is a system which services the city, which does not create a value in itself (unless, of course, the part of it - like bridge - is a work of art in itself as can be found in Paris). Their designs have to respect protective goals, which are decisive for the city's image, moreover, they may make them visible and increase accessibility. The recommendations from well conducted prognoses and EIAs, which may be helpful in promoting unusual cultural landscape image of Gdansk in road planning, could be as following (Fig. 3):

- promotion of fortification landscape with help of traffic system, by readable system of information, advertisement, signposts (including the airport, ferry bases, yacht heavens, expressways)
- visual marking of routes approaching precious objects by architectural elements, symbols, art elements, green areas, information


Wisłoujście
Fortress
LEGEND:
TRANSPORTATION
CULTURAL ASSETS
TO BE EXPOSED
NATURAL ASSETS
TO BE USED
ACTIVITES WHICH CLARIFY
FORTIFICATION LANDSCAPE
Ferry
Terminal
Airport
Tri-City
Baypass
Gdańsk
Biskupia
Górka
Expressway A1
City Baypass
Warsaw
FIG. 3
ASSESSMENT OF THREATS
AND MITIGATION ACTIVITES
Scale 1:50000

- suitable visual initiating of driveways/cycle tracks/walkways leading to valuable objects
- initiating scenic routes/points at specific places on new routes, e.g. at a river crossing or at scenic openings on historical profiles creating inter- and outer-city tourist routes (for example based on municipal system of biologically active areas), which may be started from new routes
- linking new routes with cycle track systems
- protection of exposure foreground of the most precious objects by exclusion of certain functions and types of development
- creating scenic exposure from chosen routes by suitable shaping of their surroundings (e.g. ban on continuous green setting along the roads, creating scenic openings)
- monitoring the state of the landscape, and implementing some special mitigation measures, if necessary
- spreading the knowledge between all participants of EIA procedure, changing the attitudes of developers, engineers-designers, public administration and society, towards the need for protecting landscape and cultural assets at all stages of a project (planning, designing, implementation and operating) - that is the educational task of an EIA.

9. Conclusion

The case study of the Gdansk fortification system is a good, contemporary example of the valuable, unique in Poland, and even in Europe, historic landscape, creating the image of the city, which may be affected by a planned transport system development. The presented cases show that landscape assessment is a weak point within SEA and EIA procedures, although landscape assessment and protection is possible in law. This is mainly for economic reasons, but the other one is low consciousness of the need and possibility of landscape protection among the participants of EIA procedure - developers, authorities, and society. Nonetheless, in spite of difficulties, which appear at different stages of planning processes, and different points of view articulated, there is still a chance to provide sustainable landscape management, using the possibilities guaranteed in SEA/EIA regulations.

Both procedures should be developed, supplementing each other, and implemented to a large extent in practice, because neither of them may work as a separate process in satisfactory way. Guidelines from SEAs, with no support from well conducted EIAs, seem to be too general. On the other hand, EIA recommendations come too late to be a real tool in landscape management if they are not followed by adequately defined general rules. If specific landscape studies are not conducted in advance relating to strategies and plans, then it might be too late to implement adequate mitigation measures during project preparation.

Strategic assessments are relatively new procedures in Poland and they are applied in a very limited scope, so their role in sustainable managing of landscape is rather marginal. In fact, they are used only for local plans. The physical planning system in Poland allows for the preparation of spatial development plans for small areas, usually prepared for the implementation of specific activity, which makes the SEAs conducted for them *project assessments* rather than *prognoses*, with no satisfactory references to the surroundings. It results in poor management of wider structures, like landscape macro-composition. Moreover, the old spatial plans (many of them are still valid) do not have to undergo an SEA.

Consequently, the real role of EIAs in Poland is growing. And in spite of the fact that environmental impact assessments do not result in a complex management of the city-space quality (since they deal with chosen projects only), they may cause quick and actual improvement in the landscape of chosen places and areas. EIAs may regulate development activities in certain city zones, which are under particular investment pressure. Therefore, they become the areas of deep changes and potential threats to the environment and landscape. When it comes to constructing important roads, there appears a chance of desirable actions in principal areas, frequently visited by city dwellers and guests, and crucial for

functioning and image of the city. EIAs may then efficiently protect and expose the landscape values, which would probably be left aside, despite wishful physical development plans' provisions.
EIAs are conducted for projects whose probability of implementation is rather high. That is the reason why EIAs, if well used, may contribute to landscape protection and shaping it in an efficient way. EIAs may be helpful in the promotion, exposure, and better access to cultural heritage monuments, as well as in better management of their surroundings. New roads and junctions do not have to be associated with a threat to precious areas. Under some conditions, their construction may open up new opportunities for the historic buildings, remaining lost somewhere in the city space and not fully readable in the city's structure (Fig. 3). New traffic investments should also create new values for example in the form of a green system which links historical structures scattered among other forms. This refers to fortification systems as well. Quite often they remain unfriendly in use, mostly because of lack of access, and then become forgotten by city dwellers. Rediscovering, exposing and providing common access to large military monuments of world importance is possible, owing to a proper use of EIA procedures. The chance to influence suitable records in administrative decisions which are crucial for the future city space, as well as to rise social awareness of historical image of the city, should not be missed.

Bibliography

1. Balewski, Z. (2000) Zarys dziejow Twierdzy Wisloujscie do 1945r. Ottenheym, K. Twierdza w Wisloujsciu-europejskie dziedzictwo. Zbierski, A. Twierdza morska w Wisloujsciu w swietle badan kompleksowych Pracowni Archeologicznej, PAN i Centralnego Muzeum Morskiego. In: Twierdza Wisloujscie–historia, terazniejszosc, przyszlosc. International conference, Muzeum Historii Miasta Gdanska, Poland

2. Bogdanowski, J. (1999): Krajobraz Miasta - kontynuacja czy banal wspolczesnej architektury. In: AURA, 12 / 1999

3. Bogdanowski, J. (1994): Metoda jednostek i wnetrz architektoniczo-krajobrazowych (JARK-WAK) w studiach i projektowaniu, Krakow, Poland

4. Biskup, K. (1993): Rejony ograniczen budowlanych Twierdzy Gdanskiej w wiekach XIX i XX; Regionalny Osrodek Studiow i Ochrony Srodowiska Kulturowego, Gdansk, Poland

5. Biskup, K., Strzok, I.. (1993): Foryfikacje Nowozytne Gdanska w aspekcie planow zagospodarowania przestrzennego. Regionalny Osrodek Studiow i Ochrony Srodowiska Kulturowego, Gdansk, Poland

6. Biskup, K. (1998): Nowozytne Fortyfikacje Gdanska. In: Zespol forteczny Gdansk-Wisloujscie-problemy ochrony zespolow fortecznych. Conference-Towarzystwo Przyjaciol Fortyfikacji, Gdansk, Poland

7. Dabrowska-Budzillo, K. (1990): Wsrod panoram Krakowa, Krakow, Poland

8. Management Study of Gdansk, 2001, Poland

9. „Environmental Protection Act", 2001, Poland

10. Stankiewicz, J., Biskup, K. (1998): Fortyfikacje miejskie Gdanska od XVI do XIX wieku. In: Gdansk-pomnik historii, Teka Gdanska 3, Regionalny Osrodek Studiow i Ochrony Srodowiska Kulturowego, Gdansk, Poland

11. Styp-Rekowska, D., Barton-Piorkowska J. (1999): Study of Cultural Assets - spatial plan „Gdansk Westerplatte-Twierdza Wisloujscie", Gdansk, Poland