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LANDSCAPE OF FRANZ ANTON VON SPORCK IN ROZTĚŽ SURROUNDINGS

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Abstract

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The paper presents the cultural landscape surrounding Roztěž near Kutná Hora. The existence of a designed landscape linked to the person of Franz Anton von Sporck was presumed in the area between the chateau of Roztěž and chapel of St. John Baptist on the Vysoká hill built in 1695–1697. Compared to other landscape designs of Sporck this project is almost unknown, but the name of the landlord offers a clue. This is the reason why this area was selected for testing the Methodology for Identification of Designed Landscapes created at the Department of Landscape Planning of FH MENDELU in 2012. The assessment confirmed the basic compositional relation (Roztěž chateau – chapel of St. John Baptist) and detected conditions of larger spatial relations linked to the chateau. The special part of surveys and analyses used GIS tools that allow for testing the visual links between individual features of the composition and spaces, and to formulate a hypothesis about the actual form of the composition in the landscape. The core of the composition was the chateau of Roztěž, but it was not limited only to the link with the chapel but included the surrounding settlements as well (Malešov, Nová Lhota), and also the extensive pheasantry.

Keywords: designed landscape, GIS, Sporck, Roztěž

INTRODUCTION

The presented paper focuses on the possibility of identifying historic landscape compositions on the example of a landscape around the chateau of Roztěž, which is connected with the name of Franz Anton von Sporck. The description and assessment of this landscape were carried out as a case study testing the utility of Methodology for Identification of Designed Landscapes, which is one of the outputs from the Programme of Applied Research and Development of National and Cultural Identity (NAKI) – Methods and Tools of Landscape Architecture for Spatial Development (2011–2015) at the Department of Landscape Planning of the Faculty of Horticulture, Mendel University in Brno.

Designed landscape is a specific type of cultural landscape. In this context, Hendrych (2005) speaks about preserved monuments of intentional and elaborate organising and cultivation of rural spaces and landscapes, or landscapes containing features and clusters of features that are significant in terms of cultural and historic heritage. The type of landscape containing a design composition organising spatial relations and often superior to economic use of the landscape is titled as architectonised landscape by Hendrych (2010).

Kučová and Kuča (2005) note the definition of a cultural landscape formulated on the 16th meeting of the Committee for World Cultural and Natural Heritage UNESCO in Santa Fe, 1992, which understands cultural landscape as a combined work of nature and man that reflects the development of human society. Again, one of the categories of a cultural landscape is a designed cultural landscape proposed and created intentionally by human means. Such a landscape contains compositions created for aesthetic reasons and often links them with aristocratic homes, church buildings and other structures and developments. Features of a designed landscape composition are

interlinked by a network of relations creating a single unit, and preservation of these links is one of the key requirements for protecting designed landscapes. However, the presumption of any protection is the primary identification of a designed landscape, which is often difficult because the historic traces could have been destroyed by later use of the land. This identification is crucial also for the process of spatial planning, during which the preserved traces of a composition can be considered valuable from the cultural, historic, and town-planning point of view and should be conserved as such (Act No. 183/2006 Coll.) and their description and graphic map representation included in spatial analytic documentation (Public Notice No. 500/2006 Coll.). There is a demand for a tool that would allow for identification and basic assessment of designed landscapes.

The aim of the paper is to describe the Sporck composition around the chateau of Roztěž, as well as methods used for the analysis. The ambition of the tested methodology is to be used by public authorities and bodies of local and spatial planning as a tool for basic identification of designed landscapes and values that should be further protected within the given area. Special analyses already performed by a professional landscape architect are a superstructure providing detailed analysis of the composition and serving as a basis for proposal of appropriate management in the landscape. Due to the size of the entire assessment, only the part of the methodology will be presented that deals with the identification of the composition.

MATERIALS AND METHODS

Model Area

The studied area is situated about 10 km southwest of Kutná Hora (Fig. 1). The core consists of the cadastral areas of Roztěž and Nová Lhota communities; a significant link covers also the cadastral areas of Malešov, Tuchotice, Vidice, Mezholezy, Vysoká, Rozkoš, Dobřeň, Suchdol, Miskovice and Bylany. The model area lies on the Plateau of Kutná Hora, which slopes northeast down to the basin of Čáslav. The plateau, here represented by the district of Malešov uplands (Bína, Demek, 2012: 79) is cut through by the valley of the Švadlenka brook, and the chateau of Roztěž stands on the upper edge of this valley (about 410 metres above sea level). The visual landmark of the area is the hill of Vysoká (471.2 m above sea).

Upon its historic development the area can be characterised as mixed forest and agricultural landscape with woodlands bound to those areas where agricultural use is difficult – floodplains of streams and valley slopes.

The current land use in the cadastral area of Roztěž significantly limits the development of the community – there is a game reserve, golf course and 1st degree zone of hygienic conservation protecting the Vrchlice reservoir (Herel, 2011).

Literature mentions a compositional link between the chateau of Roztěž and chapel of St. John Baptist on the hill of Vysoká, both built by Franz Anton von Sporck. The hunting folly of Roztěž, as the groundwork of the current chateau, was built by Johann von Sporck on the ruins of a former

1: *Localization of Roztěž in Czech Republic. Background: satellite map of Czech Republic. Source: http://www.arcdata.cz/produkty-a-sluzby/geografickadata/druzicova-data/Družicová+mapaČR/.*

castle in 1669. The current character of the chateau is from 1900–1911 (arch. L. Bauer) when the park was adjusted under the command of Fr. Thomayer (1908–1912). Since 1946 the chateau was owned by the Journalists Association (Bartoš, 1997; Hieke, 1984; Rýpar, 1957). It is privately owned nowadays.

From the perspective of a potential composition of the surrounding landscape the Sporck era is crucial. Johann von Sporck bought the dominion of Malešice (including both Roztěž and Vysoká) in 1666 and left it to his son, Franz Anton. Franz decided to build a single-storey chapel known as Belveder (from the Italian Belvedere – beautiful view) on the nearby hill of Vysoká.

According to Grimm (1937) the construction took place in 1695–1697 following plans of an unknown Italian architect, and the chapel was originally intended for 3 elderly Augustinian monks from Lysá nad Labem (Zavadil, 2000b). The question of the architect is open, but Šulc and Kubka (2012) state that almost surely it was Giovanni Battista Alliprandi, who already worked for Sporck at that time. Grimm (1937) also mentions trees and barrier railings encircling the structure. According to Zavadil (2000b) the chapel was consecrated on 24. 6. 1698 as the Chapel of St. John Baptist. The dominion was sold in 1699, but the Augustinian monks stayed until 1759. On April 30, 1834 the chapel was destroyed by a lightning that caused fire. Detailed description of the building is provided by Šulc and Kubka (2012) together with stating the fact that the building on Vysoká uniquely linked the seemingly controversial functions combined in one structure – a folly, chapel, hermitage, and place of baroque festivities.

Kaše (1992 and 1994) thinks that the chateau of Roztěž and the chapel on Vysoká were linked by a tree avenue consisting of 1,100 limes planted by Sporck in 1695. He also notes the pheasantry with forest aisles that allowed for a visual link between the chapel and the chateau. The same author also declares Sporck to be the initiator of a forest aisle from the chateau front to the valley of the Švadlenka brook, with an arched stone bridge at its end. Larch tree avenues leading from the chateau towards Malešov and Rozkoš are mentioned by Zavadil (2000a). However, he does not state the year of their planting.

The tree avenue already mentioned by Kaše is specified by Herel (2010) as an avenue lining a scenic route leading roughly towards the west from the gardener's house at the chateau, crossing under the first bridge below the road above Roztěž, through the pheasantry straight to Vysoká, peaking with a viewpoint on a gentle terrain drop. He suggests Sporck to be the designer of the tree avenue as well as of another tree line that has partially preserved to this day – tree avenue lining the road from the chateau to Roztěž, from Roztěž to Nová Lhota, and from Lajpcik to Tuchotice.

The more recent layer in the landscape's history is the spa and and pilgrimage place with chapel of Virgin Mary the Helping (Bartoš, 1997), which stands on the terrace above the miraculous spring by the road between Roztěž and Nová Lhota. The complex formerly included also an inn (originally 1825 Empire building), hunter's lodge, statue of a kneeling angel, stone fountain and three stone bridges. The central chapel of Virgin Mary was built in 1819 on a place of an older wooden structure pointing out to the place where, according to a folk tale, Virgin Mary with baby Jesus appeared in a hawthorn (alder) tree (Zavadil, 2000a; Herel, 2010).

Methodology

The Methodology for Identification of Designed Landscapes (Kulišťáková *et al*., 2012) presents ways to identifying intentional patterns in the contemporary cultural landscape. The methodology consists of two parts. The first part specifies the basic analyses that way point out to the features of an intentional landscape design. Special analyses in the second part lead to detailed explanation of the development of a designed landscape, its characteristics, significance of the partial features, principle of forming and determining the degree of preservation/damage. The paper presents only a part of that methodology dealing with the identification of a composition.

Map Analysis

The first part of the methodological process issues from a thorough analysis of readily available maps, imagery and literary resources relating to the selected area of interest. The key part of the analytic process is looking for significant features. With respect to the historic development of designed landscapes these features include e.g. chateaux, monasteries, churches, follies, memorial structures, pilgrimage areas, calvarias and small sacral buildings and sepulchral areas.

Attention is paid to the position of these features in the landscape, the layout, the spatial relations between them, specific route location, accompanying vegetation, cleared strips in woodlands, etc. Other important information include the position and layout of pheasantries, game parks, gardens and fishpond systems. Besides landform and objects it is also necessary to look into the names of settlements and local topography captured on historic and contemporary maps or mentioned in period text documents.

The oldest analysed map source is the Müller's Map of Bohemia of 1720, rendered in 1:132 000 scale (Semotanová, 2012). For the purposes of identifying designed landscapes these maps include lots of important data, such as the position of built objects (chapels, churches, chateaux, and farmsteads), their relations to surrounding settlements, setting in the terrain and links between them. Local topography names suggest the existence of pheasantries (Fasangarten) and game parks (Thiergarten) or specify alone-standing objects.

Special names were given e.g. to follies (Lusthaus), churches (Kirche), hills of the cross (Kreuzberg), chapels (Capell), hermitages (Eremitor) and monasteries (Clost., Clöster). Sacral objects were stated along with their patronage (St.-, S.-). Tree avenues are captured occasionally – both those that cut across open land, as well as those leading through forests and clearly graphically defined within the surrounding woodland growths. Any suggestions of designed landscapes in the Müller's maps are significant, mainly because they were not commonly recorded despite many of them have already been in existence. These compositions can be also perceived as culturally significant of visually prominent in the period landscape.

Other analysed map resources included the maps of 1st, 2nd and 3rd military mapping. Their thorough general characteristics are provided by Boguszak and Císař (1961). First Military Mapping took place between 1764 and 1768 in Czech countries, according to Semotanová (2001) it was between 1763 and 1785 in the whole Habsburk monarchy, in the scale of 1:28 800. Although these maps lack accuracy, the value of their evidence is very high because they capture many significant features in the landscape. Second Military Mapping took place between 1836 and 1852 on the basis of an already established trigonometric network and after surveying of cadasters – land registers. These maps are much more accurate and capture the landscape in great detail – they allow for identification of many different features. Third Military Mapping took place in Bohemia between 1877 and 1880, in the scale of 1:25 000. Elevation is represented by contour lines and ground elevation points. The advantage is high accuracy of the maps; the disadvantage is their limited legibility due to colour shifts and incompleteness, especially in the borderline regions. In general, the military mapping maps do not illustrate the land in such a detail as e.g. the maps of stable land register, but according to Lipský (2000) they do provide better comprehensive overview of larger areas.

Another source of information is represented by the Imperial compulsory prints of the Stable Land Register maps. They were created in order to mitigate discrepancies in tax levying procedures (Doušek, 1998). The imperial prints are rendered in detailed scale of 1:2 880 and were created between 1825 and 1843. According to Semotanová (2001) these maps were reviewed and redrawn between 1869 and 1880 to record changes that occurred after the completion of the original surveys. The advantage of these maps is the detailed record of the land cover over the individual plots of land, which can be crucial especially for the analysis of visual relations of a composition. From the perspective of landscape analysis it is also important to note the detailed topography nomenclature.

Just another source of information are the historic aerial views from between 1949 and 1956 available online. Aerial photography was taken in the scale of 1:25 000 (Struha, 2009), the shots are black-and-white (which sometimes makes it difficult to determine the specific type of land cover) and their advantage is the fact that they capture landscape before collectivisation – land consolidation. Their detailed scale allows for easy identification of already vanished objects or traces of dilapidating landscape compositions.

A significant source of additional information, especially for the determination of accurate position of the individual features of a composition, are the land registry maps. The Land Register (cadaster) was established upon the passing of the Cadaster Law No. 177/1927 Coll. On the Land Register and its Keeping. The original purpose of this document (taxes) changed to legal and general economic purpose, which issued in high-quality, detailed and accurate map resource (ČUZK, 2012). The maps capture the individual plots of land and buildings in a form before the post-war changes (this period often destroyed traces of many designed landscapes). These maps are specifically valuable when searching for an exact position of an already vanished building, and due to their accuracy they can be overlaid with a current land register or ortho-photo map.

Contemporary map resources used for the analyses included ortho-photo maps and tourist maps. Orthophotomaps represent geo-reference vertical aerial photographs providing quick overview of the condition of a landscape composition. Other advantages (e.g. identification of historic landscape structures and spatial layout of the landscape) as well as disadvantages (e.g. their two-dimensional character) are stated by Žallmannová (2005). Tourist maps point out to historic or natural interests in the landscape, often along with brief text description. Tourist maps may capture features of compositions even if they are already in state of ruins or do not exist anymore. Footpath layout in the contemporary landscape may refer to historic road and path layout.

The above listed resources were compared with each other to assess the way they capture the features identifying a potential composition. The features appearing on the maps were recorded and entered into a single map layer using the ArcMap 10.2 software where they became a basis for examining the features of composition in GIS environment and drawing of a composition map.

Special Analyses

In case of the Roztěž area the primary analyses suggested the potential presence of a designed landscape. Further steps therefore included special analyses – determination of a hypothesis about the composition and its validation using special spatial models and analyses. Spatial analyses are usually performed in the GIS environment where the basis is an accurate determination of position of the individual features of a composition, followed

by analysis of the mutual relationships, which can be either visual (visual link) or symbolic – the viewer cannot see one feature from another although they did relate to each other. Relations between features could be suggested e.g. by footpath or road layout, planting of tree avenues or shaping of vegetation. The possibilities of GIS tools in the analysis of visual links in designed landscapes (especially historic and derelict ones) are studied in detail by Sedláček, Kulišťáková (2013) and Kulišťáková (2010).

The analysis of spatial relations took place in two steps:

A) Analysis of spatial relations using basic editing tools

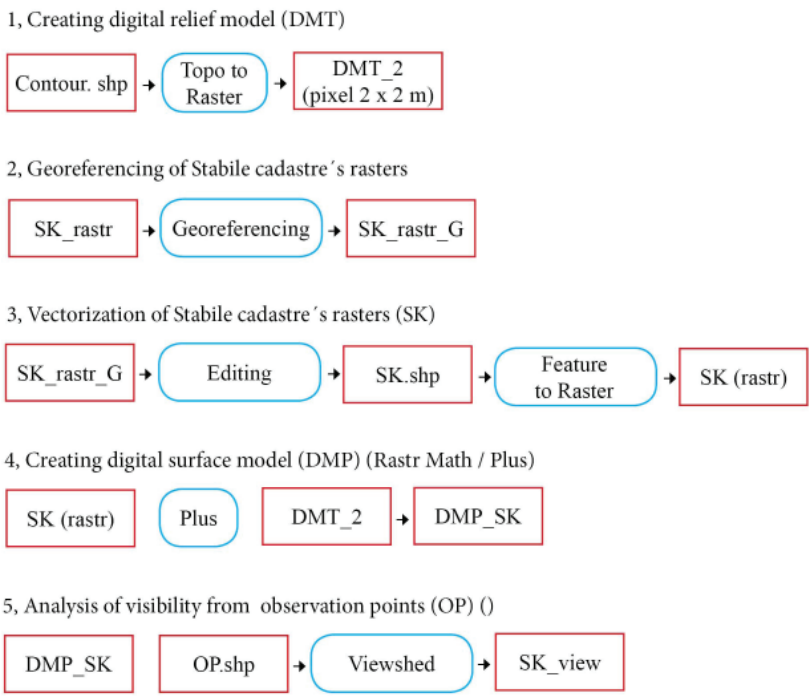
The model area was assessed upon the analyses and mutual correlations of land register maps (for their accurate recording of already non-existent objects and forest clearings), contemporary maps and ortho-photo maps in the environment of ArcMap 10.2. Using relevant map resources it was possible to accurately determine the position of individual features of the composition (including the derelict ones).

The basic editing tools in the GIS environment were used. Lines (poly-lines) were drawn over the layer of selected points of composition using the editing tools in order to connect the individual point features (points). These were then correlated with the underlying maps with special emphasis on their alignment with the derelict or existing tree avenues, forest clearings and paths. Spatial axis lines, which were not verified by this analysis, were extended (using lines) to the length of 10 km and the analysis focused on finding out whether they could accent any other object of interest or a place in the surrounding landscape. The principles of landscape design – partial segments creating the whole – are known from many designed landscapes, e.g. from Jičín (see Hájek, 2003), the areas of Libějovice-Lomec, Nové Hrady, Čimelice-Rakovice (see Pavlátová, Ehrlich, 2004), Lednice-Valtice complex (see Salašová, Kulišťáková, Sedláček *et al.*, 2013), Nové Zámky (see Kubeša, Kulišťáková, 2010) etc.

B) Special spatial analysis using the viewshed tool

Spatial analysis of visual relations from selected viewpoints was performed using the ArcGIS environment and its viewshed tool. The principle of visibility is based on a calculation over a digital terrain model, which defines points (cells in a grid) that are linked by an uninterrupted line of view. Visibility analysis issues from landform and land cover, which are represented by a digital model of the surface. Most applications automatically generate the analysis with so-called binary viewshed that works with two values only (1, 0), where 1 represents a visible point and 0 an invisible one (Kulišťáková, Sedláček, 2013). This simple method was used to identify objects that could be seen from three viewpoints and thus influence the direction of tree avenues and forest clearings in the surroundings – especially in the pheasantry and in the game park. The land cover of the first half of the 19th century was considered in the visibility analysis.

A basic map for visibility analyse in the first half of the 19th century is the set of maps of geo-



2: *Graphic diagram of data preparation and visibility calculation*

referenced and vectorised maps of the stable land register – the reason is their accuracy and the fact that they capture most features of the Sporck composition that survived in the landscape even 130 years after it was established. The accuracy was corrected upon the maps of the First Military Mapping.

The stable land register maps were used to vectorise areas of use and built objects that form spatial barriers and may therefore change the visibility (all built objects, woodlands, orchards). The following cadasters were selected for analysis: Malešov (Malleschau/Mallessow) and Maxdorf colony, year 1838; Roztěž (Rozterz), Stará Lhota (Alt Lhotta) and Nová Lhota (Neu Lhotta), year 1838; Vidice (Widitz), Rozkoš colony (Roskosch), year 1838; Tuchotice (Tuchotitz/Tuchotic), Karlův Dvůr colony (Karlsdorf), year 1838; Mezholesy (Mezholes/Mezhlolez), year 1838; Bylany (Billan), year 1838; Miskovice (Miskowitz/Miskowic), year 1838; Suchdol (Sukdoll), Vysoká (Wisoka), year 1838; Dobřeň (Dobrzen), year 1838.

Calculation Method (Fig. 2):

1. Digital relief model (DMT)
   Input data: hypsography in shp format, contour interval 2 m; Operation: Topo to Raster; Output data: Grid with pixel size of 2 × 2 m (DMT_2).
2. Georeferencing and vectorisation of stable land register grids
   Input data: stable land register grid (SK_rastr); Operation: Grid transformation (in TopoL environment); Transformation of map sheets using the Gusterberg crossbar model; Output data: georeferenced stable land register grid (SK_rastr_G).
3. Vectorisation of georeferenced stable land register grids and transformation to grid representation, pixel value equal to the height of the spatial barrier; Input data: georeferenced stable land register grid (SK_rastr_G); Operation: Vectorisation of the grid using editing tools; Output data: vectorised stable land register (polygon layer with database – specification of use, height of spatial barrier[1]) (SK.shp); Input data: SK.shp; Operation: Feature to grid; Output data: SK (grid).
   Grid representation of the stable land register equals the height of the key spatial barriers. Pixel value ranges from 0 to 34. Zero represents all areas without spatial barriers, other values represent places with spatial barriers. Pixel size of all input grids issues from this digital layer. With respect to the width of the forest clearings which are expected to have guided the views towards distant landmarks, the pixel size was set to 2 m. The transformation of vector data to grid format thus causes minimum distortion of the spatial characteristics of small landscape features that do significantly influence the result.
4. Creation of digital surface model (DMP)
   Input data: DMT, SK; Operation: Mathematic grid operation – plus; Output data: digital surface model (DMP).
   The digital surface model represents the course of the topographic surface of the landform, along with features representing its natural as well as man-made cover (Vojtek, 2013).
5. Analysis of visibility from selected viewpoints
   Input data: DMP; Operation: Viewshed; Output data: grid representation of areas, which do/do not appear in views from the viewpoint.
   Three viewpoints were selected: they are the key points in the composition of the Roztěž landscape. The first one is the Roztěž chateau building, the second one is the gamekeeper's lodge in the pheasantry (crossing of the main forest clearing strips) and chapel of St. John Baptist on Vysoká. The eye height of the viewer is defined in the offset database field. The value is variable. At the gamekeeper's lodge the offset was set to 1.6 m, which represents the eye height of the viewer standing on the crossing of the main clearing strips in the pheasantry. The viewer's eye height looking from the chateau building was set to 10 m, which represents the height of the eye above terrain when looking from the first floor of the chateau. At the chapel of st. John Baptist the offset was 20 m, which is eye height when standing in the viewing tower on the top of the chapel. With respect to different height of the building and different eye height of the viewer the baseline data were composed individually for each of the analyses. The height value of the chateau for visibility analysis from the first floor of the chateau was set to 0, viewer's eye height was determined by the offset value (10 m), which was added to the actual height of the landform without the chateau building.

1 Elevations of signifiant and spatially prominent features – visual barriers: Orchards – 6 m; Woodland – 25 m; Buildings (within communities) – 6.5 m; Church of Virgin Mary on Vysoká – main spire 23.5 m, main aisle – 13 m (RTF, 2010), verified upon calculation from points on the Basic map 1:10 000; Chapel of St. John Baptist on Vysoká – 22 m (height derived upon side view with known ground dimensions, according to RTF, 2013); Fortress in Malešov – 28 m / lower part 15 m (calculation upon data in restoration project, www.malesov.cz); Church of St. Wenceslas in Malešov – 34 m, calculated from points on the Basic map 1:10 000; Church of St. Wenceslas in Jindice, 15.5 m (tower, RTF, 2007); Church of Holy Trinity Drahobudice – 27 m (spire), calculated from points on the Basic map 1:10 000; Church of St. Margaret in Suchdol – 27 m, calculated from points on the Basic map 1:10 000; Church of St. Nicholas in Vidice – 22 m, calculated from points on the Basic map 1:10 000; Chateau Roztěž – 12 m, the Roztěž chateau was heightened by one storey by the Dahlbergs, therefore in Sporck's time it was lower than today; Chateau in Malešov – 12 m.

Field Surveys

All information gained through the studies of the baseline data and analyses in the GIS environment were examined in the field. The field survey served to test the spatial (especially visual) relations between selected features of composition and verification of conclusions from the spatial analyses. Field survey on Roztěž took place in different seasons (August 2011, October 2011, January 2012, March 2012, November 2013) to capture the existence, condition and effect of the compositional features at different times of the year, especially in winter when trees are bare and allow for easier examination of the micro-relief characteristics and visual links.

RESULTS

Assessment of Landscape Components

In the first stage the image of the model area was characterised using historic and contemporary maps and other historic sources. The description focused on those features that could refer to the presence of a potential composition.

Müller's mapping captures the alone-standing chapel on Vysoká (S. Ioh. Bapt.). The village of Roztěž is captured without name. The valley of Vrchlice is captured with ponds and probably water-powered iron-mill (fabrique). Terrain landforms include the wooded slope down to the Švadlenka brook (with gamekeeper's lodge), but the actual brook is not drawn.

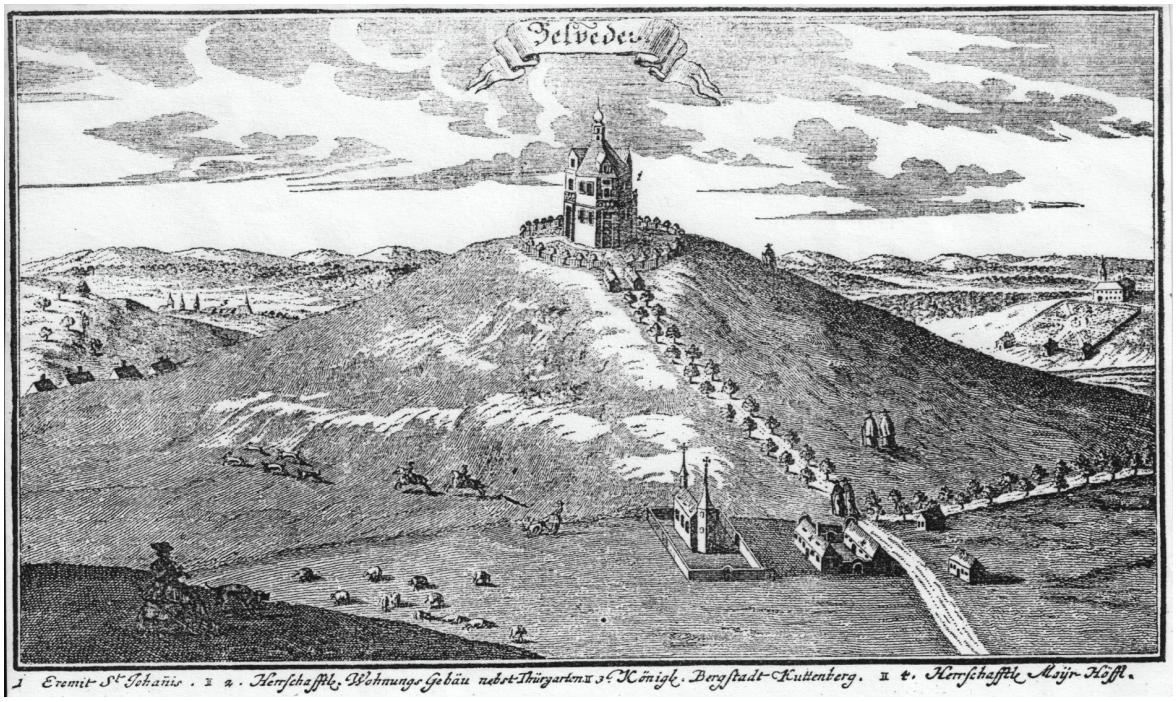
First Military Mapping clearly captures the position of the Roztěž village and the chateau, which was built on the edge of a terrain drop above the Švadlenka brook. In the woodland west of the chateau it is possible to see the early phase of the game park and the clearing strip that accentuates the chapel on Vysoká. Several fishponds are established on the Vrchlice river between Roztěž and Vysoká. The spa is visible as well. The Vysoká hill is clear, without any woodland, therefore a visual link is expected. The map of the Second Military Mapping clearly shows the position of the Roztěž chateau above the wooded valley of Švadlenka and the woodland that surrounds the chateau from three directions, including the clearing strip running north-west. Towards the village there is a garden and tree avenue in the direction to the gamekeeper's lodge and pheasantry. The strip towards Vysoká is not visible from the lodge. Between Roztěž and Nová Lhota it is possible to see the spa and chapel on a hill (St. Maria Hill). The hill of Vysoká is probably covered mostly by grass, with some ornamental layout around the chapel and woodland on the northern side. The map of the Third Military Mapping also shows, in great detail, the clearing strips in the surrounding woodlands, including the one that runs behind the gamekeeper's lodge towards the chapel on Vysoká. On the hill of Vysoká it is possible to see grassland, with some arable land on the southern side, and ornamental garden around the chapel. The village of Nová Lhota first appears on the map of the First Military Mapping, the Second and Third Military Mapping, as well as the Stable Land Register map show also the tree avenue lining the road leading to this village. The village itself has an interesting layout, which is not enclosed but form a semi-circle, as a natural end of the tree avenue running from the Spa.

The maps of the Stable Land Register show a clear layout of the area with three main focal points. The first one is the Roztěž chateau with a tree avenue towards the gamekeeper's lodge in the pheasantry, and stripe clearings towards a bridge across Švadlenka and also to the north-western direction. Another focal point is the spa area with chapel of Virgin Mary and tree avenue towards Nová Lhota, and the last one is the hill of Vysoká with a chapel surrounded by woodland and access path from the village of Vysoká. The mutual linking of these focal points is suggested by the direction of the clearings cutting through the pheasantry, from the gamekeeper's lodge to village of Vysoká.

The 1954 aerial view shows the Roztěž chateau with a smaller garden than before. The clearing from the chateau towards the bridge is still visible, as well as the one through the game park north-west of the chateau. The historic road with tree avenue towards the gamekeeper's lodge is present as a line only, the presence of the avenue trees is illegible on the photo. The clearing strips around the gamekeeper's lodge are overgrown. A clearing is still visible in the place of the lodge house. The spa area surrounded by greenery and tree avenue towards Nová Lhota are still clearly visible. The area around the village is gradually overgrown with woodland. The hill of Vysoká seems to be covered with arable land except for woodland in the north-eastern segment of the hill and a small grove on the south-western foot of the hill. The space around the chapel is still clearly defined on a circular ground and is overgrown. Compositional relations are not very clear. However, detailed historic view shows an interesting feature – the direction of a compositional axis in the north-western direction from the chateau across the road bridge.

The current ortho photo map (Fig. 3) shows that the village is totally surrounded by woodland. Even the chateau is much more secluded from the surroundings. The space around the village is completely altered – it was turned to a golf course. Most of the historic structures in the landscape have been erased. The clearings in the woodlands are not visible any more. The spa area with the chapel and connection with Nová Lhota – road and tree avenue – are still present. The summit of Vysoká and segments north-east and south-west exposed hillsides are covered with woodland. Rest of the hillsides are covered with arable land. Only the peripheral walls are visible from the chapel

3: *Comparison of the landscape around Roztěž on the Third Military Mapping map and on a current ortho-photo-map. Map sheet No. 4054_2 © digitization AOPK ČR, zoomify application by Laboratory of Geoinformatics UJEP. www.oldmaps.geolab.cz; Czech Republic Ortho-photo (ČR) Copyright © 2010 ČÚZK.*



4: *The hill of Vysoká on a 1715 engraving. In Grimm (1937).*

of Vysoká. Compositional relations are not visible any more.

Tourist map informs about the existence of the chateau, former spa complex with chapel (local name "Lázně" and a symbol of water spring, symbol of chapel), about the derelict chapel on the hill of Vysoká and existence of a recent viewing tower (built in 2001) on the same hill. In terms of composition it is interesting to note the presence of a road through the woodland north of the Roztěž chateau, roughly in the trace of the original clearing, which, for instance, is not visible on the ortho-photo map.

To support the information from maps should be supported by historical pictures. For Roztěž the most important of the historic images is an engraving from 1715, that captures the chapel on Vysoká with its surroundings (Fig. 4). Its origin

is commented on by Teplý (2001), who states that it was published in the work of Ferdinand van der Roxas of 1715, which was ordered by Franz Anton von Sporck. The legend below the picture describes the individual objects as follows: St. John's hermitage – aristocratic residential building with garden – Royal mining town of Kutná Hora – Panský dvůr.

It is clear that the folly with chapel occupy a prominent position on high terrain with access through tree avenue and that there is a circular garden around them. West of the chapel (i.e. in a position agreeing with the drawing) there are underground cellars (result of field survey), which could be parts of the hermitages in the picture. The view is from the village of Vysoká from where the access road lead to the folly (the farmstead and church, although looking differently, do comply with their current position). The view from Vysoká is confirmed also by the fact that the tree avenue from the chapel breaks in the village and continues towards the south – this would agree with the layout of the avenue captured on historic maps. The chateau in the right part of the drawing is Roztěž, as the comments say. The formal garden in front of the chateau is surrounded by walls – this is not confirmed by any other sources, but the fact is that the detected compositional lines in the landscape, although radiating towards Roztěž, do not run directly to the core of the building (preserved from the Sporck's period), but to a nearby place north of the building – the centre of a formal garden would be a logical explanation. A part of the surrounding wall is captured on the map of the First Military Mapping. The layout of the chapel on Vysoká with its circular garden is also depicted on a memorial coin minted on the occasion of the chapel's consecration and christening of the son of Franz Anton von Sporck.

From the perspective of identifying landscape composition all the above mentioned buildings are crucial, but the key features are the tree avenues and clearing strips in the woodlands that link the individual objects. The available maps show the linking between Roztěž chateau and the gamekeeper's lodge in the pheasantry by tree avenue and clearing, and the axis from the pheasantry runs through a clearing towards the chapel on Vysoká (not visible today), although it is actually rather distant. A system of clearing strips linking to the Roztěž chateau is visible as well. Clearly visible is also the spa complex and tree avenues in the landscape. The presumption of intentional designing of this landscape issues also from its linking with the person of Franz Anton von Sporck. The activities of this aristocrat, linked to the large designed landscapes in his other dominions of Kuks (the large baroque complex was developed between 1692 and 1724) and in Lysá nad Labem (Johan von Sporck got Lysá in 1647, Franz Anton died there in 1738) support the presumption that a designed landscape could have been built in Roztěž as well. The landscape can be therefore identified most likely as a designed complex with the need for further surveys and research works.

Analysis of Composition

Key hypotheses determined by the analysis of available map resources and field survey were examined in the ArcGIS environment. The results of spatial analyses are shown, for clarity, over the shaded terrain model, although they were not calculated upon this model.

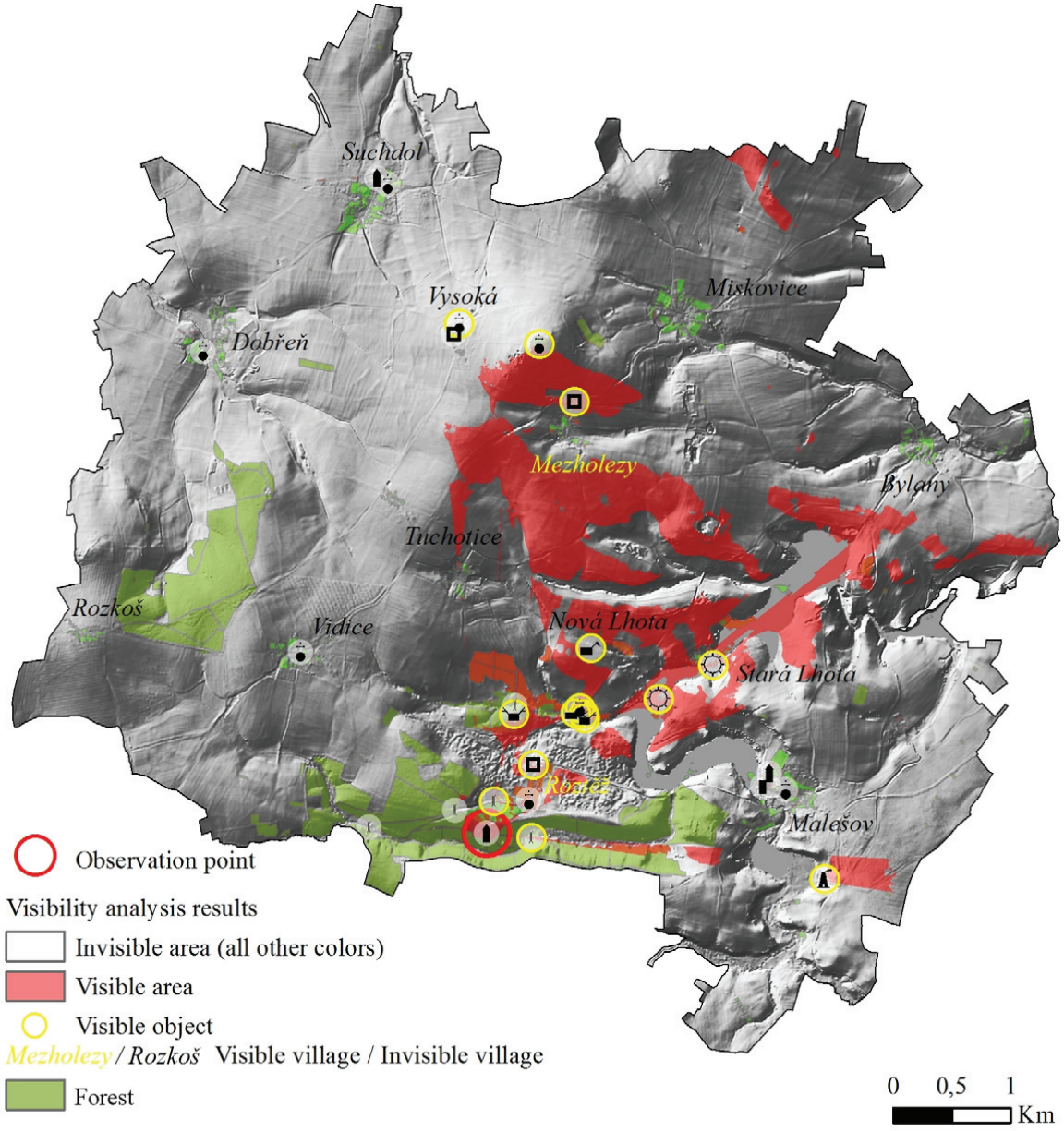
Visibility analysis from the Roztěž chateau (Fig. 5) confirmed that the characteristics of the landform and type of land cover allowed for a visual link between the chateau and chapel of St. John Baptist on Vysoká. Also the size and direction of the woodland clearings and tree avenues allowed for visual linking of the chateau and the gamekeeper's lodge in the pheasantry. The total visual exposure of the studied area was 10.3%.

Analysis of visibility from the gamekeeper's lodge (Fig. 6) showed a visual link with the chapel on Vysoká and also with the Roztěž chateau. East of the lodge ran a triangular forest clearing, which allowed for looking towards the key landmarks of Malešov – fortress, which had an ornamental viewing spire in Sporck's time), chateau of Malešov and church of St. Wenceslas. Although the lodge was hidden within the forest and only 0.5% of the area is visually exposed, the ingenious position of the lodge on the edge of a terrain break, as well as sophisticated shaping of the clearings, allowed for viewing the key landmarks.

The intricate location of the gamekeeper's lodge is clearly visible in the visibility analysis from Vysoká (see Fig. 7), where the pheasantry woodlands are visually significant only around the gamekeeper's lodge and to the south towards Roztěž.

Another analysis of spatial relations was performed upon the overlay of the actual orthophoto map and maps of land registry; direction of forest clearings and tree avenues was examined by analysis in ArcMap 10.2 to the distance of about 10 km from Roztěž. This analysis allowed for an accurate location of the lodge's position through which ran the axis of composition from Roztěž to Vysoká (breaking in the place of the lodge) and thanks to the fact that the clearings are captured on the cadaster maps it was also possible to examine the direction of this axis. Thanks to these analyses it was confirmed that the chapel of St. John Baptist on Vysoká had one entrance facing this axis, which confirms the idea of an intentional composition. A lovely view towards the entire dominion from the folly on Vysoká is also confirmed by the visibility analysis (Fig. 7), 59.6% of the area is visually exposed. Upon the above stated findings it is possible to characterise the composition relatively accurately (Fig. 8).

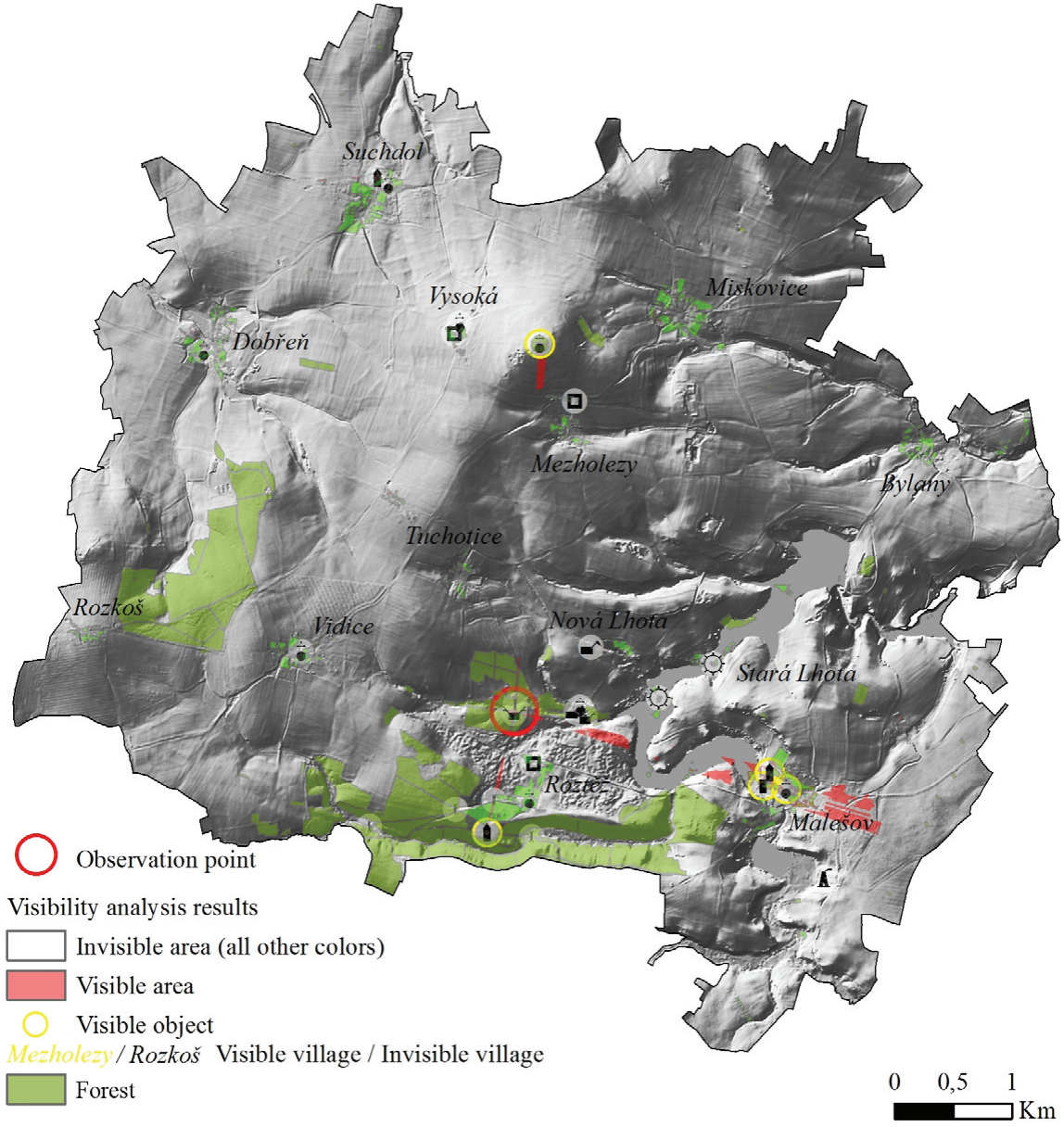
The key point of the composition was the chateau in the village of Roztěž, the seat of Johan von Sporck



5: *Visibility analysis from Roztěž chateau. Explanation of symbols of historically significant buildings – see Fig. 8. Baseline source – Copyright © 2010 ČÚZK, WMS Viewing service – Shaded relief model.*

and Franz Anton von Sporck. Compositional links ran from the chateau, some of them were symbolic, because the dynamic landform and visual seclusion of the chateau (woodlands) do not always allow for a direct visual link. Another important feature of the composition is the chapel of St. John Baptist on Vysoká. It was oriented towards the compositional axis from the Roztěž chateau. The gamekeeper's lodge also stood on this axis (only remnants remaining today) as well as arched bridge across Vidický brook (still existent). The character of the bridges is still visible on 3 compositional features in the area.

The main axis runs between Roztěž chateau and chapel of St. John Baptist on Vysoká (Fig. 9). It is a combination of view lines as well as physical (clearings, avenue, road) and symbolic links (direction of axis where terrain does not allow for visual linking). From the chateau the axis ran across the field in the garden, crossed the road and originally it ran through tree avenue towards the forest where it continued uphill trough a clearing and the lodge. At the gamekeeper's lodge the axis broke slightly and ran down to the valley of Vidický brook, crossed over it by a bridge and ran up again to the edge of the woodland. It continued further as a symbolic axis (terrain does not allow for viewing the chapel on Vysoká) to the hill from where Vysoká is visible again. From there a view to Vysoká was possible, but there was no road to reach it (the road

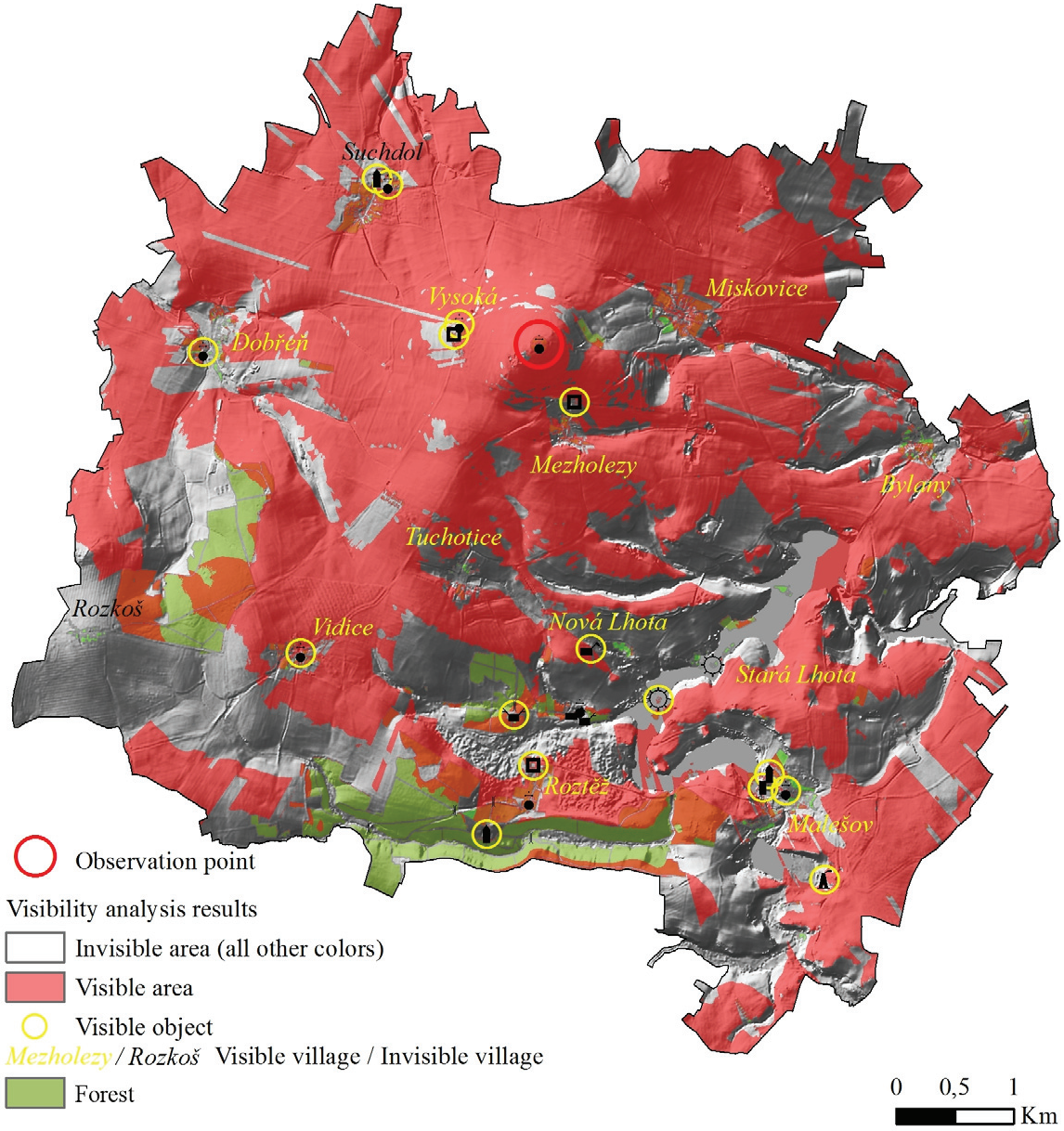


6: *Visibility analysis from the gamekeeper's lodge in the pheasantry confirms a visual link with the Roztěž chateau (south), fortress, church of St. Wenceslas and chateau in Malešov (east) as well as chapel of St. John Baptist on Vysoká (north). This linking was created by sophisticated system of clearings that crossed in front of the gamekeeper's lodge. Explanation of symbols of historically significant buildings – see Fig. 8. Baseline source – Copyright © 2010 ČÚZK, WMS Viewing service – Shaded relief model.*

from Roztěž to Vysoká ran through Tuchotice). The clearings in the forest and the road are still present, the tree avenue is gone. The axis is now disrupted by self-seeded growths and dilapidating buildings.

Auxiliary compositional lines run from the woodland with the gamekeeper's lodge. One is again linked to the Roztěž chateau to which the auxiliary clearing is directed, and form a physical and visual link; the second one runs through a clearing towards the west of the gamekeeper's lodge, which is directed to the church of St. Wenceslas in Jindice. This link is symbolic, because the church is not visible.

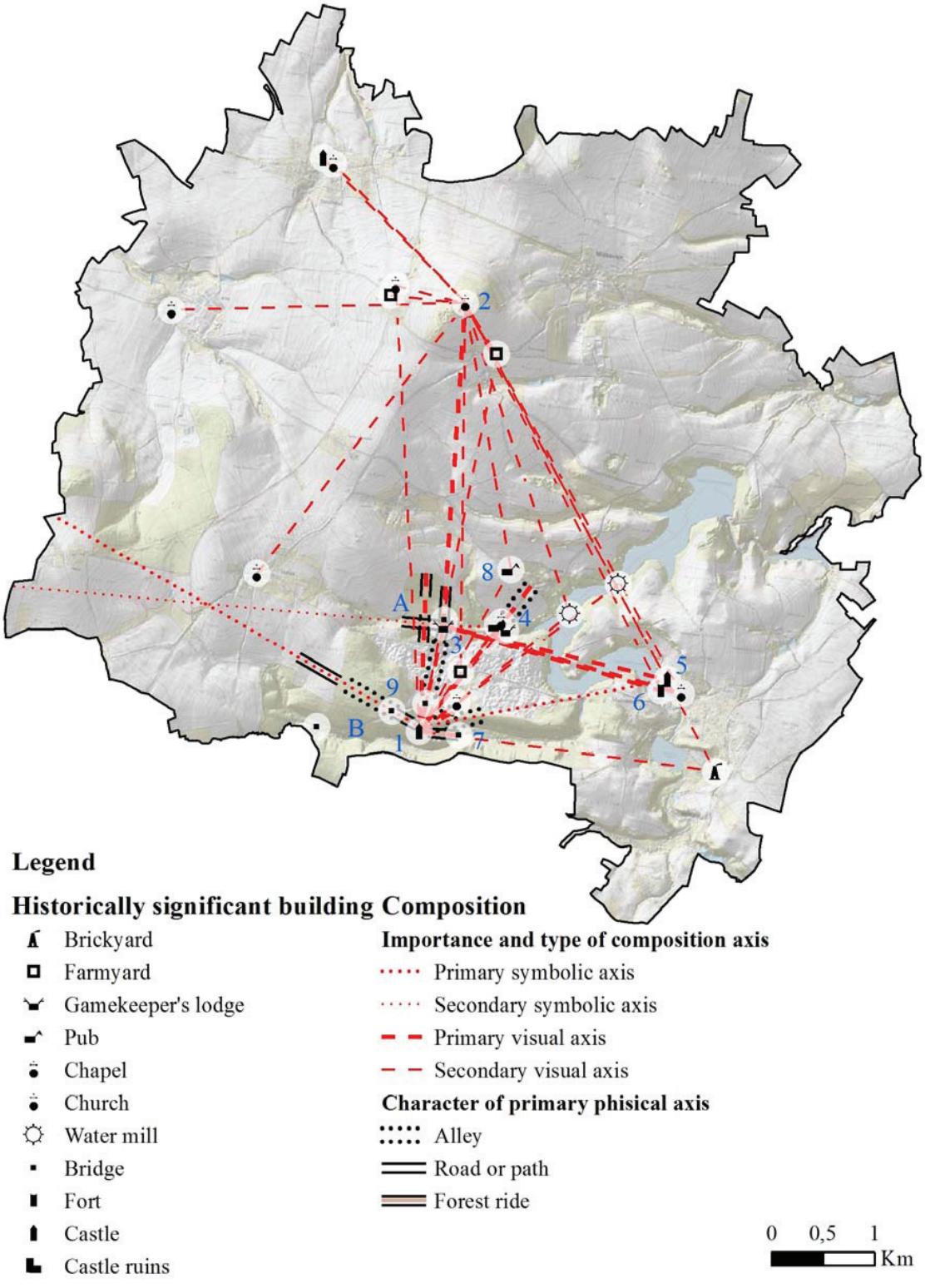
There is another compositional link from Roztěž chateau – towards the church of Holy Trinity in Drahobudice. This axis ran from the chateau across a field, through clearing in the forest, across a bridge with a nice accent of two lime trees. On the other side it continued through a clearing that is still existent and is lined with larch avenue. At the edge of the forest it continued as symbolic, the church is not visible. It is interesting that none of these villages belonged to the Malešov dominion – they were not owned by the Sporcks.



7: *Visibility analysis from the folly on Vysoká. Explanation of symbols of historically significant buildings – see Fig. 8. Baseline source – Copyright © 2010 ČÚZK, WMS Viewing service – Shaded relief model.*

Yet another line of composition links to the Roztěž chateau. To the west it was a forest clearing descending steeply to the valley and across Švadlenka. The clearing did not preserve to this day. In the north-west it was an access road between the chateau and the village, lined by linden avenue. Both the road and tree avenue are still present. Between them was just another of the important links, an avenue (currently of larches, but in Sporck's times it would be of lindens) along the woodland's edge towards Malešov. The tree avenue was used as a scenic walking route – thanks to its position on the edge of the terrain break it offered views towards the villages of Roztěž and Nová Lhota, as well as to the chapel on Vysoká. Another axis, which is composed directly to the Roztěž chateau, is the road with linden avenue from Nová Lhota straight to the chateau, across the road crossing Roztěž – Malešov. Visual analysis based on relief and period layout of woodland vegetation confirmed the visibility of the chateau.

Analysis of visual relations took place directly in the studied area by means of field survey and confrontation of historic resources with the possibilities of the terrain. The analysis showed that due to the varied landform in the studied area and its visual enclosure by the surrounding woodlands it can be presumed that the compositional relations were created as physical (roads and clearings) or as symbolic ones (direction



8: *Designed landscape of Roztěž surroundings. 1 – Roztěž chateau, 2 – chapel of St. John Baptist on Vysoká, 3 – gamekeeper's lodge in pheasantry, 4 – complex of buildings around the spa – chapel, inn, derelict spa, gamekeeper's lodge, 5 – chateau in Malešov, 6 – fortress in Malešov, 7 – stone bridge across Švadlenka, 8 – Lajpcik inn, 9 – gate to the game park, A – pheasantry, B – game park. Baseline source – Copyright © 2010 ČÚZK, WMS Viewing service – ZM 10.*

of the clearings and avenues to a specific feature of the composition, often a distant one, which could not be seen but it did have a relation to the other parts of the composition).

9: *View from Vysoká towards Roztěž chateau (circled). Photo: M. Flekalová, 2011.*

DISCUSSION

The paper presents the results of analysis of a potential designed landscape surrounding Roztěž near Kutná Hora. It is based on the interpretation of publicly available map sources and secondary information from the literature, therefore it is easily applicable without further costs, which was also the aim of the Methodology for Identification of Designed Landscapes. The consequent step, a thorough analysis of the composition, is already performed by an expert landscape architect upon further analyses and field surveys.

Upon the performed surveys it is very likely that the landscape around Roztěž was really intentionally designed at the time of Franz Anton von Sporck. It does contain the features that Sádlo *et al.* (2005) or Hájek (2003) consider to be the typical components of a baroque composition: points of importance accentuated by architecture (hill of Vysoká with chapel, chateau), straight lines and geometric layout of the landscape (strip clearings, tree avenues), sacral features in the landscape (chapel of St. John Baptist in a prominent position), compositional linking in long distances (links to churches in Jindice and Drahobudice, to chateau in Malešov), and their visual connections were confirmed by visibility analyses.

The personality of Franz Anton von Sporck also suggests that the landscape was designed, just like his other properties. Sporck's activities in Lysá nad Labem are referred about by Semotanová *et al.* (2008) and his efforts in Kuks (dominion Choustníkovo Hradiště) by Hendrych (2010). Franz Anton von Sporck strived for economic and spiritual cultivation of his other dominions, embodied it in designed landscapes, and it is quite unlikely that he would spare the Malešov dominion from his efforts.

The compositional analysis detected a number of new relations; besides the traditionally mentioned visual link Roztěž – Vysoká through the gamekeeper's lodge in pheasantry and scenic route linking these objects (Kaše, 1992 and 1994; Herel, 2010) there are other compositions – we managed to identify the compositional ends for the individual axes and prove a more significant role of utility objects in the composition (farmsteads, mills, brickworks). Utility objects may appear in compositions as a symbol of the dominion's economic prosperity. What is profitable is also beautiful.

The accuracy of compositional analyses in the GIS environment also allowed for locating the centre of the compositional axes – not the chateau building (the original Sporck chateau as the core of the current layout) but a place some 40 m north of the chateau centre. According to a 1715 engraving (Fig. 4) there was a formal ornamental garden with a star pattern and its centre could comply with the point where the compositional axes converged. Unfortunately, we did not manage to find any other image source confirming the existence of the garden and therefore the value of this theory. The existence of the garden is mentioned by Zavadil (2000a), who located it on the southern slope below the chateau. Which does not comply with the engraving, neither with the actual configuration of the terrain, because the southern slope below the castle is a very steep canyon-like valley.

Visual analyses performed in GIS environment on terrain model are crucial for understanding historic compositions in a case when the land cover or terrain have been altered, or if observation points are not accessible. All this applies to the case of the Roztěž landscape.

An important question that usually follows after the identification of values in a landscape (including compositions) is: what to do with the landscape next? How to provide conservation or restoration of these values? Or for whom should this landscape be conserved? These are very hot questions in this specific area – the village has 49 inhabitants, mostly elderly people (Herel, 2011) and any large development is unlikely due to the present limits (game park, private golf course, water source). Potential investments in the restoration of a designed landscape would probably increase the recreational potential of the area, although the times when Roztěž was a popular destination of tourists and outings of people from Kutná Hora, are long gone.

It would be appropriate to respect the preserved compositional axes in the current use and planning of the landscape. The character of the landscape was altered by the golf course development (The Casa Serena Golf Course, 2012). It is a recent composition, which does not necessarily have to collide with the original composition – it would be good if the architect issued from the compositional relations, which did not happen in this case (e.g. keeping of visual enclosure from the chateau towards gamekeeper's lodge – self-seeding vegetation and dilapidated wooden object left untouched). Another disadvantage of the golf course is the loss of the landscape's permeability, but there is also an advantage: the golf resort may protect the landscape from further development.

It is also necessary to note that the studied resources cannot be trusted fully – this applies both to the historic and recent ones. The imagery may be altered by artistic licence or symbolic approach, map can be inaccurate, texts may contain errors (e.g. the tourist map No. 42, 2010 incorrectly describes the chapel on Vysoká). Information always needs to be verified by other sources, ideally compared with the actual situation in the terrain.

CONCLUSIONS

The performed surveys confirmed the function of the chateau in Roztěž as the centre of the composition and intentional organisation of the surrounding landscape. The main compositional axis runs from the chateau and chapel of St. John Baptist on Vysoká, but other objects were incorporated into the design as well – those relating to the economic prosperity of the dominion (gamekeeper's lodge, chateau in Malešov) or enhancing the aesthetic quality of the dominion (access tree avenue to Nová Lhota) and the pheasantry is getting on a much greater importance. However, the current state of the landscape does not suggest a clear and legible composition. The avenue formerly linking the chateau and Vysoká does not exist anymore. The chapel on Vysoká is a ruin in the forest, while the nearby viewing tower is a new landmark. The gamekeeper's lodge is gone, there is just an earth mound in its place. Although most of the strip clearings have preserved in the woodlands, they are dilapidated and the visual links are illegible due to self-seeded vegetation.

However, all this confirmed the utility of the Methodology for Identifying Designed Landscapes (Kulišťáková *et al.*, 2012) in practice. In an area where compositional links are virtually illegible and impossible to detect both from current maps and from field survey (which is also confirmed by the baseline analytic information), many compositional features were found despite their absence in secondary resources (literature) and it is becoming clear that the composition was probably much more sophisticated than originally presumed.

The assessment of the landscape around Roztěž also showed that it is impossible to limit the surveys to a single cadastral area when studying designed landscapes – it is necessary to issue from the historic layout of the area, such as dominion, or from broader context (such as "borrowing" churches outside the dominion for purposes of a composition).

The study of the Roztěž cadastral area in this project proved the necessity to perform such a large-scale landscape analysis – neither the development plan of Roztěž nor the spatial analytic documents of the Kutná Hora region did accentuate the designed character of this area and therefore do not define any regimes of protection or management principles that would support the preservation or restoration of a composition.

SUMMARY

The presented paper focuses on the possibilities of identifying historic landscape compositions on the example of a landscape surrounding the chateau of Roztěž, which is linked to the name of Franz Anton von Sporck. The description and assessment of this landscape were created as a case study testing the utility of the Methodology for Identifying Designed Landscapes (Kulišťáková *et al.*, 2012), of the Department of Landscape Planning, Faculty of Horticulture, Mendel University in Brno. The aim of the Methodology was to develop a complex method for finding out whether a specific landscape is a designed one, to define which features and relations form the structure of the composition, and to formulate the principles of the spatial layout for its further preservation or potential restoration. This identification is important for the process of local planning when the preserved traces of a composition may be considered values from cultural, historic and town-planning point of view, and as such they should be protected when making decisions about the future use of the landscape.

The paper explains the method and results of the basic analysis that indicated the intentional landscape design in the model area, as well as the application of some special analysis in the GIS environment leading to a detailed description of the landscape's development, as well as the significance of the partial features. Besides the fact that the research confirmed a good utility of the Methodology in practice, it brought much new information about the designed landscape of the Roztěž surroundings. The function of the chateau in Roztěž as a centre of the composition was confirmed along with the main compositional link between the chateau and chapel of St. John Baptist on the hill of Vysoká. However, a much broader landscape context was subject to the analyses, as well

as other objects relating to the economic prosperity of the dominion (gamekeeper's lodge, Malešov chateau, mills) or enhancing the aesthetic value of the dominion (tree avenue towards Nová Lhota). The significance of these analyses is also supported by the fact that the individual compositional features areas still present in the landscape, but due to changed land cover they are not perceived as a whole. The relevant planning tools omit the composition in the area. As a result there is a risk that these values, linked to the great name of the Czech history – Franz Anton von Sporck – will be lost forever.

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