

Discreet Landscapes of Fortifications

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Dyskretny
krajobraz
fortyfikacji



Introduction

Wprowadzenie

From an ancient history fortifications in landscape were imposing and dominant structures. They were constructed as being strong in their material form, but also the same in their symbolic appearance from the time that they had been created until recent years. Their strong symbolism was and still is present even if they were just ruins or if they stood intact in the landscape.

But even more, those structures were often the dominant part of a landscape. That visual domination made a note that put an accent to the life of every inhabitant or even a visitor of certain territory or even made a lasting definition and quite unique description of that landscape and in that respect made it different among others.

Those first fortifications (ancient or medieval) varied in shapes, construction and some of the landscape positioning, but in the landscape

they remained highly visible and influential in terms of social interactions (and even political mythology). Those building were real center of communities in terms that there was the palace of the ruler, position of the holy shrines or just the position of refuge in the time of need. Old fortifications were structures that reflected economic power of the ruler and also political context and respect of the whole country or state within.

In the most early history position above the enemy meant early warning and also dominant position in waging the defense. To climb on the hill for the attackers was tiresome and rather risky task. To conquer few dozens of meters in height difference meant that strength for fighting will be spent futile and that during the process defenders could pore on the attackers' whole array of projectiles.

In that early prehistoric time the whole aspect of fortification was connected with the solitary fortified post that is in some cases just the small military outpost and in some cases big or even huge settlement or town.

Fig. 1. Coastal defense position (infantry bunker) on the island of Veliki Brijun built after WW II (photo by Z. Mavar, 2011)

Ryc. 1. Nadbrzeżny schron bojowy na wyspie Veliki Brijun budowany po II wojnie światowej (fot. Z. Mavar, 2011)

Defended statically and often isolated from any outside help, people in those fortifications depended even on maintaining some level of visual harassment in the landscape to be able to deter the possible attacker.

But the solitary defenses as points in the landscape soon in the past evolved to the fortified line and even to the fortified landscape, as those lines of fortifications become even more organized. The Roman limes or the Chinese Great wall are still evident in that respect. When the Roman Empire conquered the waste Mediterranean areas protection of the isolated sites still posed as imperative task. But in those times the philosophy of fortified landscape or the foundation of the Limes had begun to emerge in the European history. The string of fortified positions, communications and continuous line of defenses, mainly walls, moats and palisades emerged as a landscape feature on the near east, in the eastern and western European landscapes and as far as north in the Scotland.

The position of those landscape is so protracted form the north of the Europe in Scotland though much of the western and southeast Europe to the near or middle east. Towers, walls, moats, ramparts or just the palisades were built in continuous order to provide the defenses and safety in those earliest historical times with much landscape authority. On top of the mountain ridges they had been visible from the space even (as the Great Wall of China still is).

In those early time the blades, clubs, spears and arrows together with stone projectiles and hot oil or even bitumen made the first weapons available for attacking or defense. Those weapons depended strongly on the physical strength of the man than used them. The bigger the man the stronger the impact was. It was also the higher he stands, the better chance to survive and to blow the lethal blow he will have.

It was the time when one had to think and practice viable defense meant to stand on the high ground, well above the enemy. To stand on the hill was the primary choice. Until the emerging of the artillery, the main defense in the time of cold weapons was powerful and continuous fortified wall mostly circular or rectangular in shape, in some cases even along the polygonal trace.

It was time when wood in the form of palisades were used in the places that were abundant by it, or the mud brick dried on the sun in places where mud and sun were available in the same amount (as in Mesopotamia and Egypt) or the stone in the places that had it available and the workforce had the means to shape it and use it (as in the most of the Greece, near East or on the Croatian coast). With all of this materials, the aim was to make higher and stronger (and it meant thicker) walls that had the position well above the possible attacker. To enhance that the fortifications had even better chances to survive they had often been placed on the higher

ground (on the natural hills, mountain tops, or slopes where the relief allowed, or the artificial mounds made from layers of previous settlement in the Mesopotamia or medieval artificial mounds for the keeps).

Until the emerging of broad firearms usage in the process of warfare, the construction of fortifications relied mostly on wood, stone, baked brick, earth or unbaked brick. Along with the material construction, in principal form, did not change much through millennia. The systems of additional constructions had been enlarged such as moats, ramparts, hidden obstacles, or even few rings of walls, but the idea remained the same, as to be higher above the potential enemy.

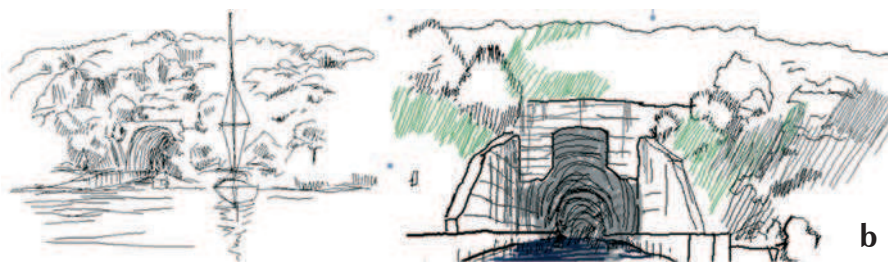
Art of war inevitably evolved and changes appeared in wagging the attack, but not so until development of artillery made the final difference. Artillery with more firepower and range changed the tactics of attack and defense so that inevitably forced renewal of fortifications, renewal of existing fortifications and development of new types of fortification structures and even the forming of the complex fortified systems. In mid of the 15th century fall of Constantinople had been the turning point in notion that height and thickness of the fortified walls was not enough anymore. The fortified walls are strengthened and finally changed in shape completely. With the wall new inner and outer fortification elements emerged (bastion system of fortifica-

Fig. 2. Entrance to the underground marine shelters that were built after the WW II along the Croatian coast at discrete locations Dugi otok island, Vis, Lastovo and many others (2.a – Drawing by D. Arbutina; 2.b – Source: Republic of Croatia – Ministry of Defence

Ryc. 2. Schron przybrzeżny dla floty Jugosłowiańskiej marynarki wojennej (budowano po II wojnie światowej wzdłuż chorwackiego wybrzeża na dyskretnych lokacjach wysp Dugi otok, Vis, Lastovo i wielu innych), (2.a – rys. D. Arbutina; 2.b – Źródło: Ministerstwo Obrony Republiki Chorwacji)



a



b

tion with extended trace and strong earth infill was introduced) and the fortification structure becomes more complex. New schools of fortification architecture are developed and those presented different approach to the fortification development (for instance famous Vauban school of fortification architecture). The art of fortification architecture and construction was in the focus not only military thinkers, but also civil experts (as architects or builders).

In that Renaissance time, fortifications became more close to the earth, thickness of the defense position was supplemented by the broad

and not so high bastions (new typology that substituted the high towers in older fortifications). Battlements of the old fortification had been too narrow for the artillery to manage, and walls were too vulnerable to the strong recoil of any of the early guns (and those early guns did not have any recoil amortization apparatus attached to it, so the horizontal forces were quite strong after any shot). The new fortifications were, because of the artillery, lower and wider than their predecessors and defenders depended on their guns to keep the possible attacker on the safe distance from the fortifications itself,

as to provide that attackers' artillery did not pose any threat to the lines of fortified walls of the defending positions. In that time position on the higher ground was still the advantage if the artillery had been possibly to deploy within the fortifications itself, because the higher ground of otherwise quite lower fortifications meant that the line of sight and line of fire or the defending artillery had been prolonged as much as possible according to those early technical means. Political situation in Europe from 17th century and constant competition in the development of attack principles and equipment was the main input for the development of more and more complex systems of fortifications. In that respect even new defense fortifications are developed with the broad scope of constructions that are classified among the lines of their tactical position in the defense system, character of defense possibilities, construction materials that had different resistance or durability or even different building technology (application difference of those materials used).

Range of that artillery rose from under a kilometer to the distance of two even three and more kilometers and with it, the systems of defenses and their fortifications extended outside with the walls enclosed space in even more and more broad area. Systems of fortifications became more and more complex and they depended more and more on the fire support from other part of the defenses than

to the banal physical connection that walls had been provided in the past. In the 18th century the Fort was developed as a solitary structure for the isolated defense. It was designed and built in different forms of layout according to the terrain topography. At first it was engaged separately, but afterwards forts are arranged in the defensive groups on some distance from the core of the fortification ensemble (as it was the case in Paris) and such fortification system produces different and specific character in the landscape in general.

With the development of the artillery, the fortifications became closer to the earth and less and less visible, their landscape positioning became more than hidden and that process evolved the fortification of presence that had been surrounded not with the glory and threatening appearance, but with the silence and secrets. Those fortifications became discreet and almost invisible, but present in the landscape in many ways and on many places. With the emerging of the bore artillery around year 1860. it was crucial in finding new solutions for defense, so the defensive activities were shifted to the defensive line or even few defensive lines away from the fortification core (it was the case with the fortification

of the town of Antwerp from 1860.–1870.). That system of fortification was often applied from the second half of the 19th century and was of much importance during the World War I. Development of the artillery and new siege equipment and techniques (HE shell and mortars) urges the modernization (or development) existing fortification systems and application of the new construction techniques and materials (concrete, steel or reinforced concrete). The role of the defensive formations (defensive fortification groups) had been reinforced (main fort, batteries of heavy or light artillery, auxiliary artillery batteries, defense strongpoint's and trenches for the infantry defense and protection) and with it much broader territory is commandeered for the purpose of fortifying. With the development of the aviation in the WW I all those historic systems lose their importance. It was the time when the main defensive position was fortified line (as a continuous front line) and main defensive position was fortified region. That region was consisted from well fortified positions whose organization and construction was well suited to the terrain on what they are constructed (as it was the case with the Maginot line or Siegfried line). Fortifications were constructed

with smaller silhouette and become closer to the ground with less and less visibility and their positioning in the landscape becomes more concealed. It was the process where the fortifications lost their ornament and threatening appearance and become surrounded with the secrecy and silence. Fortifications of such new type become discreet and almost invisible but present in the landscape on many places and in many ways. In the wake of the World War II fortifications were dug well under the ground and forts are replaced by the bunkers in the fortified regions. First fighting experiences in the WW II emphasized the great importance of the underground construction. Development of the nuclear weapons and more and more profound technical means changes the approach to the issue of fortification and such structures almost completely disappear from the landscape. After the WW II permanent fortifications are dug into the ground and under there they are extended and made more and more complex but resistant to the possible nuclear blast. Fortified regions are after the WW II extended and made more complex for possible defenses with the well camouflaged array of underground fortifications resistant to the nuclear attack.

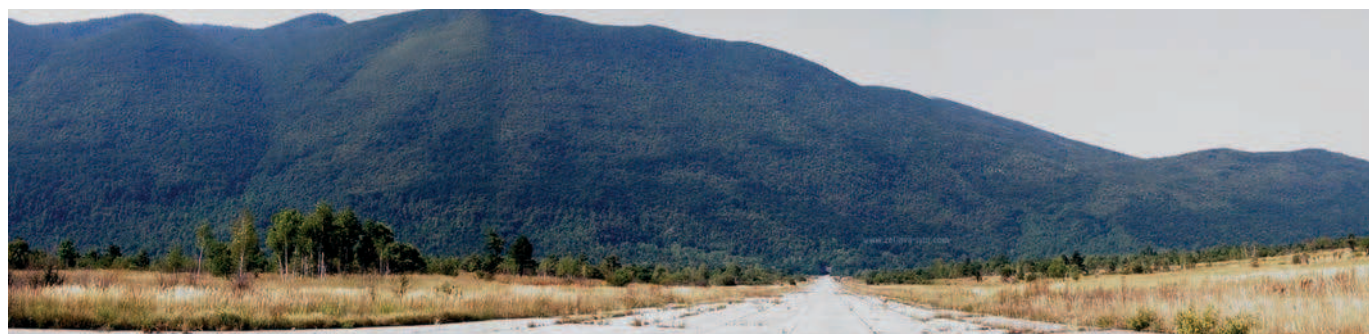


Fig. 3. Discrete landscape of the Željava air force base – airport runway and entrance to the underground part under Lička Pleševica mountain. The base was built from year 1954. until 1968. and it was destroyed in the year 1992. Source: www.zeljjava-lybi.com

Ryc. 3. Dyskretny krajobraz bazy lotniczej Željava – pas lotniczy i wejście do podziemnych pomieszczeń pod masywem górskim Lička Pleševica, budowanej w latach 1954-1968, a zniszczonej w roku 1992. Źródło: www.zeljjava-lybi.com



Fig. 4. Position of the Italian defense system in Zadar that was built in the years close to the WW II (photo by D. Arbutina, 2011)

Ryc. 4. Zadar – fortyfikacja włoskiego systemu obrony budowana w przeddzień II wojny światowej (fot. D. Arbutina, 2011)

Fortifications in Croatian Landscape

Fortyfikacje w chorwackim krajobrazie

In the prehistoric time Croatia had the number of hill forts that commandeered the landscape high above the plains or the sea. From the hinterland to the coast and on the island are still visible traces of such positions. On the island of Veli Brijun, the position of such hill fort dominates the secluded bay beneath it and in the Istria or Dalmatian hinterland those structures above the small plains still possess the notion of atavistic safety. They did not possess the idea of sup-

porting the permanent settlements, but provided the safety in the time of need and crisis. Their walls were of stone without any mortar used and they presented the landscape features that now, thousands of years after their creation look like they had been there as natural phenomena. Their position was in connection with the defense of settlements, communication routes and strategically important locations (ports, river crossings, important road junctions etc.)

So exposed close to the sea coast prehistoric settlements in the central portion of the Croatian hinterland were much more fit into the natural landscape, as they had been within the forests or close to the rivers and they did not had any structures

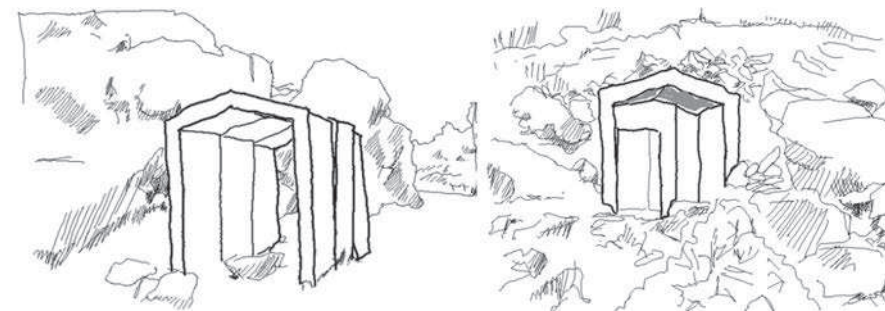


Fig. 5. Croatian army field fortifications from The Homeland war (1991-1995) that are dug into the hills on the opposite side of the front line (not exposed to the enemy). The positions are well presentable from the road that from the Velebit Mountain goes to the town of Zadar (near the town of Obrovac and one of its former industrial facilities that are now dismantled). Field fortified positions were constructed from reinforced concrete precast elements that were just assembled on the site where the large hole was dug. After positioning the concrete elements and all necessary construction the whole fortification was just covered with the large quantities of earth and stones (drawing by D. Arbutina)

Ryc. 5. Chorwackie fortyfikacje z okresu wojny 1992-1995 wkopane w łańcuch górski po drugiej stronie linii frontu (nie narażonej na wroga). Stanowiska bojowe są dobrze widoczne z trasy drogi, która schodzi z górskiego masywu Velebit w kierunku miasta Zadar (w pobliżu miasteczka Obrovac i byłych obiektów przemysłowych). Fortyfikacje były wykonane z prefabrykowanych elementów betonowych i postawione nad wykopany wielkim otworem. Po ustawieniu betonowych elementów i niezbędnych konstrukcji całość była przykryta dużą ilością ziemi i kamieni (rys. D. Arbutina)

that will be viable to withstand the devastating effect of time. Nevertheless even those had fortified features that could be traced even today. So, on the Vučedol area the earliest settlement had some sort of the defenses in the form of palisades, moats and ramparts, but positioning of the settlement well above the Danube River made it quite dominant in the landscape. High ground of that one of the oldest settlements in Croatia makes the landscape position crucial in its defensive abilities and social posture. It was highly visible and landscape dominant in that the oldest period of human settling in the Croatia.

In the respect of the development of the first civilizations small settlements grew in size and they needed the position for the population that is safe and easily defendable. In the middle ages some of the prehistoric patterns evolved and changed, but idea stayed the same, to be high on the hills and to dominate through the landscape with their isolated position. Here on the Croatian coast, few towns developed on the peninsular positions that protracted deep into the Adriatic Sea, such as Poreč, Rovinj or Zadar, where their position often posed in the landscape view especially the one from the sea. Their silhouettes were and still are the intriguing factor when you approach them from the sea or even from the land. They had the fortifications that were superimposed to the leveled appearance of the sea and the coast around them. In many of preserved

Fig. 6. Ammunition depot Kamenjak close to the Medulin (Istria) that was built after WW II (photo by Z. Mavar, 2009)

Ryc. 6. Magazyn amunicji wydrążony w skale na lokacji Kamenjak w pobliżu miejscowości Medulin (Istria), budowany po II wojnie światowej (fot. Z. Mavar, 2009)



fortified historic structures on the Croatian soil more than one presents ancient fortification systems, among them some even from the ancient Greek and Roman times, and even more from the Byzantine and Venetian times (Pharos-Stari Grad on island of Hvar with Greek remains, Split-Roman period, Bribir-Roman period, island of Palacol-Byzant, Prezid-Roman, Zadar – with the array of Roman, medieval and Venetian fortification remains and constructions etc.). In some cases only peripheral elements of some more recent fortifications are preserved (Split, Šibenik, Zadar and Pula with more recent bastion system fortification preserved in some extent).

According to the landscape value of the fortified structure towns in Istria and along the Croatian Adriatic coast must be emphasized. With those examples some of the bastion type fortresses for the defense from the medieval and later Turkish threat on the coast and in the hinterland must be specified (as in Split, Šibenik and Zadar on the coast or Karlovac, Slavonski Brod and Osijek in the Croatian hinterland).

From the end of the 19th century till nowadays they evolved into discrete structures often forgotten and hidden. Aim of the paper is to present those recent structures (from the end of the 19th century till last decade of the 20th century) and their position in Croatian landscapes that is not appreciated at all.

Croatian discrete and secluded fortifications

Chorwackie dyskretne i ukryte fortyfikacje

Memory to be made aware of

Potrzeba świadomości o zabytku

Fortifications within present Croatian borders could in the European context be considered as something quite interesting during the assessment of different European fortification systems especially considering state strategic position within framework of historical and political details. As a Case study locations that shaped some of the Croatian history in last more than 100 years are defined by structures that in historic represent historic groups of secluded fortifications. History and political changes made the fortifications in the Croatian landscape inevitable. They had been maintained, newly built and in recent years hidden. Through the changes and till today they had been part of the military installations and because of that seclude from the daily life. Now they had been rediscovered as they are military abundant and are

not in use any more, so they become the burden and potential.

All those fortifications are made in different times and as many other fortifications all around the world they had been maintained, modernized, upgraded, abandoned, destroyed and rebuilt or complexly remodeled. Today many of them are



Fig. 7. Map of Croatia with selected areas with presentable and preserved fortifications (drawing by D. Arbutina)

Ryc. 7. Mapa Chorwacji z oznaczeniem wybranych dyskretnych fortyfikacyjnych krajobrazów i elementów (rys. D. Arbutina)

1. Osijek
2. Slavonski Brod
3. Karlovac
4. Lička Pleševica (Željava Air force base)
5. Rijeka
6. Fortified area/region – Fortress Pula
7. Island of Dugi otok
8. Zadar
9. Šibenik
10. Split
11. Hvar
12. Vis
13. Lastovo
14. Dubrovnik

secluded from everyday life and well hidden because they had been part of the military infrastructure almost until this day. Military made them maintained in basic fashion and even such rudimental upkeep provided state of relatively decent preservation. Now they are out of the military commission and they become burden for armed forces that are not as numerous as it was in the past. With the burden of maintaining the potential of such structures is evident even for the military personnel. Numerous abandoned forts or fortified positions, naval or air force bases, together with underground shelters, bunkers, above ground or underground depots, connecting tunnels, barracks and exercise areas provide the material part of the eventful history of the southeast of the Europe and because of that their value is priceless. Among those discreet structures many of them are undetected by the conservation experts. Among those undetected structures many are underground facilities and fortified positions that had been up to the recent day under the military jurisdiction or still are today under military commission.

Mysterious underground structures existed in earliest fortifications, but in those structures that had been built immediately before the WW I underground facilities become more and more important. In that respect Pula fortifications are great and well preserved example. Smaller systems of underground facilities connect isolated artillery positions built just

before the outbreak of WW I. In that time impressive network of underground corridors and underground spaces had been constructed under the older and later parts of the town of Pula in the total length of around 40 km. Construction of interconnected underground shelters (52 in total) enabled terrain configuration. That system was upgraded up to the beginning of WW II. They are in generally well preserved condition so there is great interest to present them or to use them all in some peacetime purposes

Fantastic underground world was built during the existence of Yugoslav federation with such frantic intensity that as much as 40 facilities were constructed during the period of Cold War up to the last decade of the 20th century. Among those underground facilities 5 outmost interesting and fascinating are within Croatian borders. According to the geostrategic estimations the most important was complex of Željava air force base that had capability to withstand nuclear blast. It was built on the Croatian border with Bosnia and Hercegovina. Huge military complex in Željava included 5 runaways and huge underground shelter that had the capability to host few dozens of aircraft and few hundreds of air force personnel for more than a month. The underground facilities are dug well under the Lička Pleševica Mountain with the radar arrays on the top of the mountain 1650 meters above the sea level. Facilities that had the capabilities to withstand nuclear blast and to

support the life of people inside with their airplanes for more than a month was carelessly destroyed in 1992 and now stands forgotten, deserted and shamelessly ruined with so much other underground facilities, even when we estimate that cost for the Željava construction alone was more than 8.5 billion dollars.

Conclusion

Wnioski

When we encounter those most recent fortifications their presence is often noticed but suppressed as something distant and not relevant for the life as it was or as it is today. Their value is not appreciated at all because they are left without their original use. Their presence is not recognized as something interesting even in historical terms because they were constructed within time period that is so recent and as such is not jet so interesting. In some cases those structures once distant and secret, now become attractive and exposable. They become the bait for adventurers that stroll by foot in the mountains or sail across the Adriatic coast. Their discoveries become sporadic as these structures emerge on the sight in the same fashion. They are in many cases in the middle of attractive and inbuilt land and therefore provide the opportunity for real estate speculations or just the building infill (as this is the case on the Brijuni islands). Or they still have the threatening appearance

and are avoided with fear (as it is with the Bihać air force base and all of its underground installations that are still threaten with mines and explosives).

But with this all they are witnesses' of the times that had been and therefore deserve the respect and maintenance in some level to be able to provide the same evidence for generations to come.

Those areas, structures and spaces have the significant dimensions but discrete and imposing positions. They also have the symbolism of that passing time and symbolism many of absurd and even dangerous ideas. With all that symbolism and because of it they are as is stated:

1. Fortification and their discrete landscape are relevant in space and relevant as elements in future spatial planning efforts. It means that their presence is spatially significant and that they are still provided with some importance in processes of the spatial planning. They possess the qualities that deserve special guidelines or restrictions in the planning, preservation and redevelopment process.

2. Fortification and their discrete landscape unfortunately have their symbolism ignored or with shame suppressed. Their appreciation is problematic even if some of the painful but necessary morals could be extracted from their presence as materialization of some ideas and actions.

3. Fortification and their discrete landscape have their presence

still to be discovered and acknowledged and with it they have to be treated in manner that will provide their preservation. That preservation should not be secluded just to some of their most prominent features (buildings without their landscape surroundings are as much absurd as bunkers preserved on the parking lots or in the middle of the street or even private backyard). They do exist but with no visual integrity. It is just the prosthetic in the preservation idea. Their preservation should be pin pointed one (there is no need to preserve all of them, as they are by definition expendable and multiple, but the lines or systems must be preserved in that possible conservation actions what could mean that multiple structures will be protected), but their preservation could be restricted (if that restriction will provide some quality action to take place) on the examples that will be possible to seclude from the changing landscape and to preserve landscape of their own. The fortification landscape is in that sense crucial in preservation activities and must be protected in the same way as the solitary fortification structures.

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