

Fig. 1. *21st century building threats, 2015.*

Spatiality of 21th century conflicts

Non-Military Buildings as part of Civil Defense System

Keywords: space, conflict, building, threats, civil protection;

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Research methods I
Prof. Dr. Zeynep Aygün, teacher
Poturak Semir, student
Mimar Sinan Fine Arts University
December, 2015.



1. Thesis topic clarification

The underlying intention of the thesis is an approach to architectural design of civil buildings which would grant higher security levels against man-made attacks as a continuously raising threat in 21st century. Variety and “innovation” of such threats defines a very specific challenge for the wide concept of building security. Work will have intention to (re)invent architectural language which will be able to deal with contemporary and future threats but also emphasizing ongoing debates about security-privacy, peace-conflict and other related dichotomies.

In this particular thesis, conflict is a context for architecture to be observed. This context is a determinant factor for construction of architectural discourse, a research path, out of available research methods. The research on the relation between the conflict and its spatial dimension should first start with construction of theoretical framework, definition of terminology and clarification of the scope of the work. For this purpose theories and concepts developed by other researchers as well as personal ideas will be used. Because of the multi-disciplinary nature of the thesis topic, concepts from other disciplines are welcomed for the purpose of more truthful and eventually applicable research approach. Undeniable of coexistence between architecture and its context indicates that several research methods should be used in order to develop meaningful theoretical framework and benefit from different researches resources. Phenomenological approach, case study and ethnology may all be put in use in different sessions, depending on the type of information which is required by the progress of research. Grounded theory also can have a potential application in this dissertation but is less probable to happen.

The question is, how am i going to dissect (or eventually create) the relationship between the space and the conflict which is being accomodated in this space? Am i going to observe the conflict and its spatial manifestation, or my attention will be focused on space and its facilitation of conflict? Is there maybe a third option where this dichotomy can be overcome, and where space and conflict can be seen as one unified entity?

Conflict theory, which has stated and defined the race for power, has its spatial context. We can observe it as if conflict itself has it's own perception of space. Space is transformable, it bends, morphs, in order to host the events, or rather perceptions of it. With it's limitations imposed by physical and qualitative features, space is guiding, manipulating, morphing the events. As if the specific event, perspective and space are caught up inside a setting of their interconnections, which is changing according to transformation of both, space and the event it hosts, during the lasting time of event. A result is yet another, evolved spatial setting which waits to host another set of events, where the synthesis process repeats over and over again (Galtung, 2009). This loop is an explicit parallel to the Conflict theory by Marx.

As one of the starting points conflict theory by Marx seems to reflect contemporary conflicts and their causes. The unequal distribution of wealth which creates a political charge, tends to provide more power to one group of people over the others. What it also indicates is that such a state of affairs (thesis) will always have its counter part (antithesis), and this duality will create a conflict which eventually ends up in creation of synthesis, a conflict resultion. Further more, the newly created situation will then become a new thesis which will inevitably give birth to new antithesis and so on. What this means is that conflict is an event which at the same time is a cause and consequence, and is an evergoing process.

I strongly believe that the power of design, power possessed by architects, is unique and is one which can help to distribute the power in a way to reduce conflict potential. Size of the building, number of people it accomodates, value of assets which are kept inside of it, value of resources present in the building's environment determines the buildings value as a target. Architecture is deeply rooted in institutionalization of ideology, identity and power, it is a very tool, or perhaps a weapon, in battle for domination.

Power can be measured with the threat potential, with the potential to create a damage to others. Architecture can be used as a tool to reduce the risk, to reduce threat potential thorough design. Eventually it can

take away the meaning out of threat, it can make it disappear. Threats create dependance which comes from fear, so if we as architects can design buildings which will host and protect its user, therefore reduce the threatening potential from external and internal entities we are on the right way to design freedom, to design for true democracy. At the end, we should not be concerned with design to give the power to everybody, but we should focus on building forms which will embrace equality and basic human needs. This means that a focus has to be placed on the prevention of unwanted events, rather than on the engagement of architecture in conflict scenarios, although the conflict-based behaviour and performance of built forms has to be addressed at least as another layer of building security. This may sound impossible, to idealistic but Galtung (2009) uses very simple problem to show us how apparently impossible challenges can be solved with our spatial cognitive power. He poses a task which asks from a participant to write on opposite sides and opposite ends of long paper stripe, letters X and Y. Then he challenges participant to connect those two letters by a line without crossing the borders of the very same paper stripe. One of the solutions appears to be a Möbius stripe, which presents a double-curved surface able to connect opposite ends and.

I would like to start with short discussion of phenomenological existence of architecture. Idea about the cognitive ability of humans to design shelters with role to protect them from various threats defines the cognitive ability of humans to design shelters with role to protect them from various threats defines security as a very cause for first cultivations of space to appear. Security was always one of the fundamental needs which were imposed on architectural design. The variety of threats inside different and very same geographical frameworks resulted in a variety of architectural concepts. Built, shaped forms, we can imagine them appearing as a result, a symptom, of specific needs, which were imposed by the human survival instinct. Different threats lead to different spatial manifestations of human fear. In other words cultivation of space occurred from a need to establish protected environments with particular conditions to allow for desired attributes of human performance. Further on i can assume that variations of geographical-historical context of inhabited spaces, inspired different shapes to facilitate different needs in different ways, although it is hard to deny that there is a certain, very profound correlation in terms of the geometry of built forms (see fig. 2. and 3.). When a specific need has been facilitated, other ones appeared, followed by corresponding forms. As if architecture never existed without a cause, without predetermined meaning, as if that with every solution architecture provided another problem which then again had to be solved, and so on. Therefore, architecture was always a “symptom”, (a term Zizek (1989) uses to describe existential relation between two phenomena) of basic and more advanced human needs.



Fig. 2. *Broch of Gurness, Scotland, 2012.*



Fig. 3. *Tulou, China, 2015.*

It is not unfamiliar that there is a significant difference in human behaviour and performance during “normal” and “emergency” situations. There is an underlying pattern between the architectural language and security i can feel it every time i am caught analysing specific conflict event in its spatial conditions. Every time it happens that i am touching a higher system of interrelated parameters of space which are present within the scope of every conflict event. Detachment, absolute independence of conflict spatiality features may appear as such because of the very nature of conflict as a process which drives the evolution of the society in its fundamental existence. It seems that conflict is a particular event which tends to turn off and exclude most of the

context, as if it creates its own context, as if the built environment is transformed into a chessboard.

The very nature of civil buildings is their functionality during the events when the conflict is not present and this state of affairs hosts predictable everyday events. This means that design of building security systems must not compromise building functionality during times without conflict. Another problem which may arise, and is an ongoing problem in USA, is that too much security can create a feeling of insecurity. In other words, we will observe an environment as an unsafe if we are surrounded with high-security systems even if there is no real threat.

Research of relation between the built forms and conflict scenarios will eventually set focus on the very conflict, not on the architecture, because architecture is observed as a symptom of problematic situations as a parameter of the problematic event. But looking from other side, architecture may be also perceived as a cause of the appearance of conflict so, this perspective can also be interesting for an investigation. Architecture will be presented as an answer or additional problem for the challenges imposed by undesirable events. In the conflict scenarios, research will be focused on the building performance rather than on the experience of building inhabitants although spatial experience of security should be examined in relation with other existential dimensions of architecture while considering security parameters (comfort, privacy).

One of the very important, basic steps in approaching security dimension of architecture through the research, is definition of scope of the architectural language and potential threats as well as the wider theoretical and practical, abstract and real, context where those two are being confronted.

2. Setting up the research

Architectural design and its research can deliver different information using different research methods. This information can have different relevancy, value and potential application within defined research scope. Therefore understanding and defining selection criteria for selecting phenomena to include in research and defining methods to apply in analysis of selected phenomena is substantial. In broad view the topic of conflict spatiality is a phenomenological one. It is a phenomenology which sets up the ground for definition of the research. From this general perspective, a more detailed selection of related phenomena, case studies and ethnological methods will arise and help in developing more concrete, practice based dissertation. I see this process as one which is inevitable, unavoidable, and which sets up a base for further development of research. What then occurs is a variety of potential paths to lead the research further on.

In a broad sense, I imagine a map of the research to start with phenomenological research which would end with a hypothesis. From this hypothesis second, independent research would be conducted as a kind of verification method for stated hypothesis, as if I would try to ground my findings in another set of relevant phenomena. As architecture is in tight relation with design, the other half of the research could represent a project which would try to summarize, present, explain stated hypothesis. Second part of research would then have the common impotence of grounded theory which says that we will always tend to find what we are looking for, so special attention should be given to methods which would reduce this imperfection.

I would also like to point out another approach that I have in mind. By the means of phenomenological research method a theoretical framework would be designed in order to provide a knowledge which would lead me to a meaningful selection of specific case and ethnological studies where I would examine realistic space-conflict relationship. The acquired knowledge would then eventually lead me towards the hypothesis. What seems attractive about this approach is its realistic nature, idea of grounding a hypothesis in real time-space events (see fig. 4.).

I find this approach of construction of research very inviting and potentially useful, and it came as a result of mental exercises when I was trying to define the research path in my mind. While the general overview

of thesis research process may vary significantly, the specific parts of the research will usually have a preferred research method as means of more efficient generation of useful knowledge.

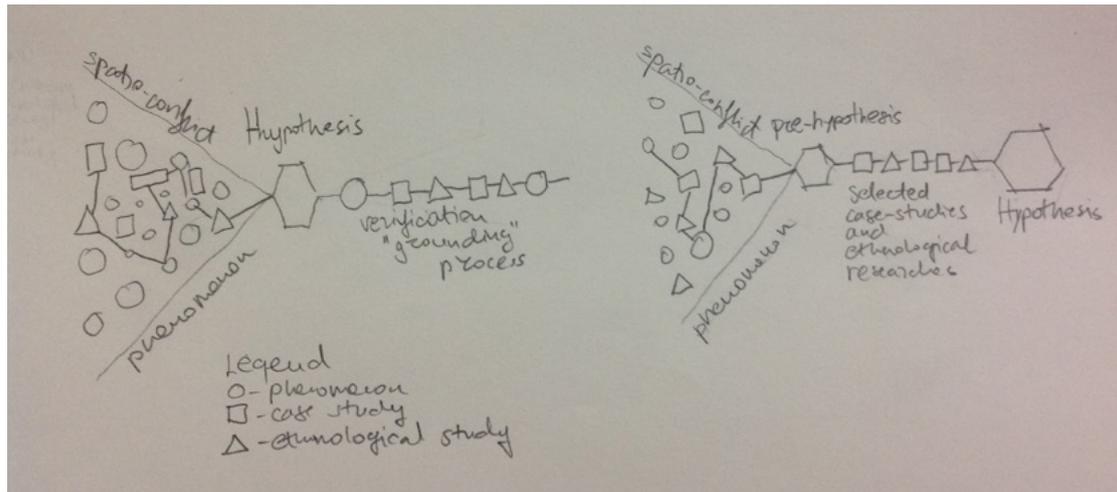


Fig. 4. Map of research path, 2015.

Because of my personal belief that architecture cannot be detached from neither theory nor practice i can already assume that part of the thesis project will include design propositions, or will at least include guidelines to help other architects when considering security aspects of architecture. As the subject of building security is already present in my thoughts for certain time, certain ideas which can promise a path to design solutions are spontaneously appearing.

The first part of the research will be focused to investigate the phenomenon of the conflict-space relation. This part of research should bring me into the position to make a reasonable decision which should indicate how stated phenomenon should be examined further. As architecture has a long history of its existence, starting a research from "tabula rasa" can be a big challenge. Inventing and setting up an independent and respectful theoretical framework to base work on would then extend into several years of research. On the other side there are theories of architecture, or in worse case Euclidean geometry, which can be studied and used to construct a relevant theoretical framework and corresponding architectural language. The fact that classical grounded theory is focused on the generation, rather than on verification of knowledge marks it as insufficient for this particular research. Measuring the quality of architectural design is, in my opinion, very important when it comes to identification of building's security level. This draws the Strauss and Corbin's version of grounded theory as a more useful one because it assumes that there is a, more or less, objective context, base, upon which a research is based on.

Herbert Spiegelber, the eminent phenomenological philosopher and historian of the phenomenological movement, declared that there are as many styles of phenomenology as there are phenomenologists. (Seamon, 2000). Both existential and hermeneutical phenomenological approaches could be useful when it comes to the acquirement of valuable data. Historical relation of space and the conflict, the phenomenon of conflict place, battlefield, can be examined by hermeneutical analysis of the relation between the conflict and its spatiality. Evolution of architectural elements, architectural language in relation to conflict, war, battle can be examined in order to understand the meaning of form as an answer to challenges imposed by those specific events throughout the history. Maps, texts, plans of structures designed as elements of conflict resolution system could be examined in order to draw conclusions explaining the design process in relation to conflict. Historical evolution of the relation between built forms and threats could potentially lead to the identification of the underlying pattern that bonds them. Hermeneutical phenomenology in this case will be preferred method of research because the notion of understanding whole, the idea of relation between space and conflict as a fundamental one seems to be a reasonable starting point in my opinion (see fig. 6.). Existential phenomenology is on the other hand oriented towards the very experience of spaces infected by conflict and together with ethnological approach can be a path indicator for development of realistic theoretical framework. Real-time investigations of conflicted spaces can bring important insights to be taken in account when making decisions

about the research process. Research approach which also can prove efficient is a conduction of selected case studies with different aspect of architectural and conflict relation. A series of researches with a goal to bring contribution to higher facilitation of security within the contemporary architectural design in oppose to present and forthcoming threats.

What i feel like is that an architectural research has to be constructed from general and specific parts. It would resemble the way Alexander (1977) constructed Pattern language where the patterns describing different forms of built environment were calssified by dimensions of space they are referring to and where the more specific patterns have to be in relation with more general ones and vice versa. This means that first part of research should be focused on construction of contextual framework. In the second part attention can be focused on a more specific researches which will be grounded on the defined research context.

Essence of architectural design and its everlasting presence, forces the architect to think and incorporate most (if not all) of the forces and elements present in the surrounding context of the building, in order to deliver a design solution capable of answering the needs arising events which can challenge the reasons of buildings existance. Important aspect of architectural design is its feature to be measured. In my modest opinion, security of architectural design can be measured by the number and types of threats with wich it can cope with and also with how succesfull it is against those threats. This means that a certain evaluation method is required in order to picture the building security levels. For the purpose of research, evaluation methods designed by other researchers, will be used. It is also very likely that during the research my personal evaluation methods will appear, and therefore they will be described and explained.

As it appears to me, in a conflict scenario, where architecture serves to protect, unit of measurement is a human life, therefore a number of potentially saved human lifes can be an indicator of the quality of specific architectural intervention. It is due to the extreme attribute of conflict situation where protection of human lifes is a priority and where everything else becomes irrelevant. Various numerical proportions between building attributes and features can also be used to indicate and evaluate building security levels (eg. total area of the building/ area covered by the openings on the building). This type of quantitative analysis can lead towards statistical data which can potentially indicate patterns and relations between built form and conflict parameters.

The quality of architectural solution can be potentially measured without eventually examining the qualitative values of human experience, although deductive reasoning of subjective experience has to underline design of qualitative evaluation systems. Vulnerability and risk analysis, are some of the building security evaluation methods presented in *The Architect's Handbook of Professional Practice (2014)*. Qualitative evaluation and description is useful and sometimes the only way to describe security level of built forms, but personally i would prefer to use quantitave methods whenever it will be possible. Parametric design, and other CAD software can be very useful in terms of optimizations, simulations, analysis (see fig. 5.).¹

Although the origin of the CPTED concept (Crime Prevention through Environmental Design) is nowadays intensively debated, the very concept seems to circle around same principles, where CPTED focuses on the spatial dimension of crime and design strategies directed towards the reduction of crime. (Robinson, M. B., 2013). Oscar Newman (1996) describes crime caused problems present inside the block of midrise buildings by pointing to the specific configuration of built forms inside of a urban landscape which cause the lack of the feeling of beloning, owning, attachment of inhabitants with the areas surrounding the buildings. The approach Newman uses to define the relation between design and crime doesn't starts from direct human experience of environment, but rather tends to explain certain behaviours starting from the spatial setting parameters of the environment. He tends to focus on the manipulation of architectural interventions as means of crime reduction and prevention. Specifically he claims that the environment should be designed in a way to put

¹ This topic is familiar to me because i personally was engaged in several projects which were focused in use of computer aided design tools for problem solutions. One of them is a small game where a user enters a labyrinth and has to find its way out. Architectural component of the project was an actual process of designing a space such as labyrinth, where user interacts with virtual environemnt in first-person. I can imagine that such software could be used as simulations where i could track user's decision making process in path-finding.

the inhabitants in a role of natural surveillance system. This approach places the legitimate users of space into a passive position when it comes to crime prevention, as it is based on the belief that elements such as Visibility, Access, Territoriality are important parameters which can help in the prevention of crime. In my research i would like to encourage more active role of the inhabitants during the occurrence of undesired events.

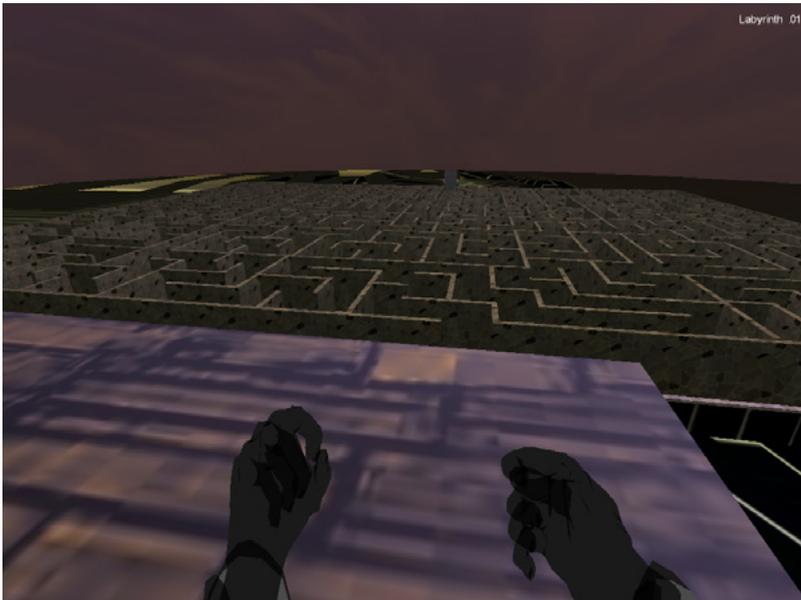


Fig. 5. *Labyrinth 01*, 2015.

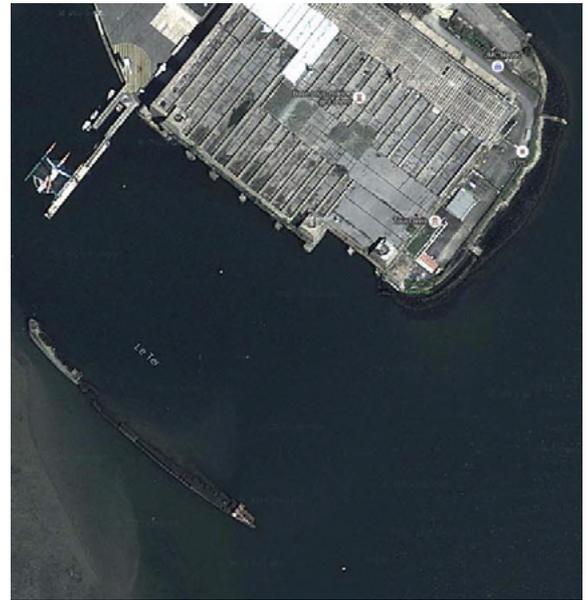


Fig. 6. *U-boat Nazi bunker defended by two shipwrecks against torpedos*, 2015.

I believe that architecture is a skill, a tool, a term which has much bigger significance than the one offered by mainstream architectural community. Orientation in space, navigation, positioning are just few of the actions which are addressed by our cognitive spatial reasoning. Our ability to communicate with space, to understand its meanings, to identify relations is one of the fundamental concepts on which our existence is based upon, but also the one which is commonly taken for granted. I also believe that our perception of space, our image of space, our deductive and inductive reasonings of space, and finally spatial manifestations of our reasoning should be at the very core of architectural design. Without a significant development of “spatial skills” i don’t think we will be ever able to design the space to perfectly fit our needs, neither will we able to imagine such spaces. Furthermore we have also to engage in education of people about the space, because i believe that there is much more for us to learn about it and this will eventually lead to our, more rational, performances.

Architectural experiments as a research method tends to show up as one of the ways to aquire useful and reliable quantitative and qualitative data. Although experiments which are directed specifically towards aquirement of specific numerical or qualitative data are not very common amontarchitectural community, i can sense a huge potential in researching behaviour of built forms by setting them up in controllable events and scenarios. Myself, i try to perform small experiments within the urban environments, by investigating the unkown parts of it, trying to attach the unknown to known parts, find ways, exists, as part of the tries to develop personal “spatial skills”.² Another experiment i tend to conduct is picturing the plan of the buildings just by analysing its outer skin (position of doors, windows, fire staircases). What this personal experience and experiments of relation between me and urban environment tells me is that there is a set of survival set of skills emerging which relate with our spatial cognition of our living environment, and what makes this topic more interesting is the 20th and 21th century urbanization which brings absolutely new challenges, motives and inspirations for our own evolution.

2 When i was planning my hitchhiking trip along the Aegean coast of Turkey, biggest issue was how to escape Istanbul. It is a mega-city which doesn’t seem to have defined borders, and wide highways dividing the city seemed as uncrossable obstacles for my physical abilities. This challenge which almost made me give up from my trip, remained as a very strong impression in form of a question: “How do you escape the city depending only on your physical and mental abilities”? At the end i took a ferry boat from Istanbul to Bursa with hope that Bursa will be more easy to escape as it is has 15 times less population.

3. Towards thesis

What if we could design a building which, while collapses doesn't put its inhabitants in danger? My personal observations tend to focus on the change of functionality of built forms during different events. In a simple mental experiment I discuss that what is supposed to be a window, a hole in the wall to let the sunlight inside, to provide the view to the outside, can become a gun post during the conflict scenario.



Fig. 7. *Mimosa Pudica*, 2009.

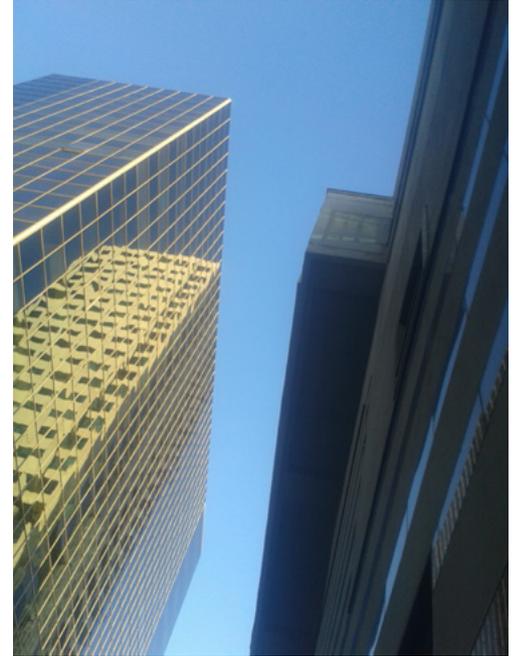


Fig. 8. *Building camouflage*, 2015.

The research path will tend to move towards generation of ideas which would support architectural design in terms of protection and security. Identifying problems and solution will come from subjective, direct experience of built environment or as a result of more distant, objective analysis of built environment. The very wide variety of architectural responses to threats can present a big obstacle if there would be an attempt to design a unifying theory of architecture which deals with the dimension of security. Such a theory would have a task to explain all of the vernacular, specific, educational architectural concepts. What seems more appropriate is a model of five rules proposed by Le Corbusier (1931) with which he tries to set up a model, a standard to promote certain building values.

Biomimicry (Janine M. Benyus, 2012) as a concept can be a useful starting point when it will come to design proposals part of thesis. From cells and primitive organisms to the rainforests security mechanisms are present to protect and preserve species in struggle for survival. Plants are particularly interesting in the case of architecture as they resemble the immobility of buildings and therefore can provide an inspiration for design. A plant named *Mimosa Pudica* presents an interesting example of a defense system. When touched it closes its leaves to prevent the intruders from eating (see fig. 7.).

Labyrinth is an archetype which has a goal to create a feeling of being lost to the user. It tends to prolong the travelling time from point A to point B, so it crosses my mind as a potential element of architectural language of security. With such features labyrinth can be used as a security measure of building with intention of confusing the intruders and making their way to the building harder while giving more time to building users to prepare for the forthcoming conflict event.

Cameleons are widely known animals which can change the colour of their skins in order to avoid intruders. Camouflage is in military buildings, bunkers, vehicles and other elements of military infrastructure. I believe that this concept can be also investigated and applied in order to achieve higher security levels of civil buildings (see fig. 8.).

Important phrases used:

- Architectural language;
- Theoretical framework;
- Conflict spatiality;

Topics and resources which would eventually help the process of demystification of relation between architecture and conflict scenarios:

- history of evolution of building defense systems;
- psychology of conflicts;
- analysis of contemporary and future threats;
- building security standards;
- examining CPTED;
- application of computer software for data acquisition;

Potential outcomes

- set of conclusions about the relation between architecture and conflict;
- set of design rules which would embrace the security dimension of architecture;
- critical overview of architecture regarding new security threats;

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