

The Architecture of Background

Preserving spatial environment through flexible designing methods

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Abstract:

The design process is the procedure in which the architect seeks for one of acceptable solutions (that may be evaluated in an objective way), which he or she finds to be one of the best (what stands for subjective content). Achieving good quality in design is the most important in curriculum, however it often takes unique design process into consideration. As the subject is taught, students usually omit or ignore several important questions, like an impact of architecture on social life, meaning of architectural solution in urban or rural context as a result of long term relationship etc.

The aim of the research is to define the term “Architecture of Background” and to implement new elements related to specified content in students’ curriculum. The research has been made simultaneously in scientific and professional activities to verify the theoretical basis. Architecture of Background may become a definition for common architecture that composes most part of spatial environment people live in. The teaching focuses on several aspects:

- understanding spatial context,
- consciousness and responsibility relating to cultural and historical heritage,
- understanding social needs and expectations,
- working on function and form independently from each other.

Structure of flexible designing method has been established to present the subject in methodical manner. Preliminary design data are taken from project guidelines, master plan and referential data. Architect uses or composes the definitions of spatial and architectural typology that refer to the site. Two definitions of vernacular and traditional architecture and their relationship to architectural concept are also developed. While comparing definitions with the concept itself, features are extended by contemporary ones, which reflect present utilitarian and esthetical expectations. Choosing final set of features determines further formal decisions.

In the same time functional-spatial (FS) scheme is to be established in accordance with site parameters, e.g. plot area, soil conditions, access etc. Then detailed scheme is fitted to the chosen set of architectural features to create formal solution. To manage all problems and questions additional conditions are to be taken into account, namely the building code (law regulations), technical and technological conditions and others applicable.

The idea of “the architecture of background” is meant to improve the quality of spatial environment by incorporating flexible designing techniques and methods. Students and professionals are both part of the research and first results are discussed in the paper.

As one can observe common urban or rural landscape, one finds unified architectural forms filling the surrounding. These are mostly low quality, low budget and uninteresting solutions lacking proper planning and designing efforts. The scope of the research is to develop better architecture for buildings that compose the proverbial bricks, of which our world is built.

Through “Architecture of Background” assumptions it is possible to implement new design techniques to develop so-called typical design and common design in flexible manner. This is to provide the inhabitants with variety of relatively high quality, low budget solutions and fit architectural objects into their environment – and also to establish these methods in students’ curriculum.

Introduction

Unification of experiencing the architectural work through problems of architecture itself as well as spatial planning questions is one of the most interesting topics in students’ curriculum at the Technical University of Poznan. “Architecture of Background” program and research was designed to force students to become involved in analyzing and evaluating various aspects of design.

The background means architecture addressed to common members of society, architecture that cannot be seen in fashionable journals or avant-garde publications. While discussing the impact of architecture and every single building or structure on sustainability of an environment it becomes apparent that harmony of forms and balance of environmental exploitation require the design based on two different sets of criteria:

- the space is marked with important, “publicly” exposed, exceptional buildings (being the result of a strictly individual design process, sometimes incontextual); this way of designing leads often to conforming the ambition of investor / developer, signifies the role of public building, creates a spatial sign, organizes space or is meant to last for centuries as frequently used structure; this way becomes too often the way to seeking and finalizing architectural solution and is omitted in this research,
- the space is filled with common buildings and structures whose task is rather or purely utilitarian; it was strongly marked, that designing simple forms and simple buildings should be seen as even more important for an environment because those structures are predominant in the landscape of cities, towns and villages.

To define the aims of methodology of designing the architectural background it is important to emphasize the role and value of this work, which is to maintain suitable spatial management and to convince students, that such an activity may be as well categorized as high architectural standard in design (because of its cultural and social sensitiveness).

The principles of Architecture of Background (AoB) can be explained in four aspects. The first aim is to rationalize architectural design process focused on creating common architecture conforming the cultural, environmental and utilitarian needs of contemporary society. The second one is to define a complex system of criteria and evaluation for adjusting common architecture (background architecture) to both individual (investor’s) and local (social) conditions. The third one is to systematize architectural typologies in context of space (urban or rural) and architecture itself. Last but not least, the fourth aim is to protect existing spatial and architectural values, expose them and support “calm” development that will not suppress monuments and elements of cultural (architectural) heritage. The method is thought to allow flexible adjusting to the necessities of an individual while maintaining the understandability for most if not all members of community.

The idea of AoB uses various scientific concepts discussed by Banka (1999) or Sanoff (1999). That means involving interested parties in the design process, looking for their evaluation and comparing professional understanding of architecture and space with common and often

primitive knowledge of it. AoB was also meant to respond for P.R.S. planning method giving new information on environment and social expectations in another, detailed scale (Barelkowski, 2001a).

The implementation of the method runs against an additional difficulty in Poland, due to the distrustful attitude of the recipients. The inhabitants of that area are accustomed to the tradition of liberal spatial management and of regulating spatial developments by means of general commands and decrees. They have serious trouble in understanding the complexity of the area while the national policy for spatial management does not exist. What is more, many times they are unable to understand the impact one “bad” project executed in the area has on the environment and how long lasting are the results of such an activity. The authors of the method believed the following aims to be essential¹:

- integrating the spatial planning and architectural activities;
- using the existing body of theoretical knowledge in the area of methodology and models of architectural designing;
- involving the public in the design process, with the intention of making involvement of non-professionals more effective and creative
- providing with education in the area of architectural aesthetics;
- extending the mechanisms responsible for the spatial order, to counterbalance the legislative and social deficiencies.

Architecture of Background methodology

Architecture of Background (AoB) is based on several concepts. One of them is an ideological principle claiming that living space for certain community should be composed of singular exceptional and unique objects and multiple common ones. This points toward another concept of close coordination between spatial planning and architectural design. Therefore P.R.S. method of spatial planning was chosen as a referential platform where sustainability and harmony should be guaranteed in the same ways (Barelkowski, 2000). Third question is the addressees of architectural activity – this means especially wide group of members of local community or future members, who are firstly interested in cheap designing and cheap building. In such cases functional factors (unfortunately) and esthetical factors are of minor significance².

Protection of landscape cannot be achieved without the existing precise space management definitions and valid law regulations – and this cannot be done by AoB methods while these are architectural procedures. However, the results of the research are open to inhabitants of other areas than Rakownia, where they can be helpful in fulfilling another important task – the education among people.

AoB as a method of designing is also connected to the theoretical model of architectural design. Among analyzed models Popper’s appears to be the closest one. Putting behind the concept of treating the design process as a constant evaluation through acceptance or negation, the criteria proposed by Popper underline significance of external (in relation to architect’s activities) conditions like usability, environmental relationship, cultural symbolism, environmental impact or economical impact (Powell, 1987).

The structure of AoB consists of several steps (Barelkowski, 2001b):

1. The process starts with compiling functional scheme for certain location.

2. Designer uses existing reference manual to the site, the area and the region to examine the features of local and traditional architecture. If no such data is available designer follows the additional program to acquire necessary references. During this step definitions of vernacular and traditional architecture are formulated.
3. Functional-spatial (FS) scheme is established.
4. Parametrical data on location is acquired – plot area, soil conditions, transportation and pedestrian access etc. – which defines technical conditions for design process.
5. The building code (law regulations), technical and technological conditions connected to specified function, economical factors are included in the process.
6. Typologies are analyzed in the context of selected FS scheme and plot data. Preferred typology is chosen to become the main reference for architectural solutions.
7. The choice between “vernacular” and “traditional” is made affecting the range of formal expression in architectural design.
8. The library of details is analyzed to determine the set of referential details for specified project.
9. Concept design is being prepared.

It is crucial to mention that AoB requires involving the coming users as well as local society to check their opinions on architecture, locality, spatial potential and expectations. That kind of participation and obtained evaluation of design process, although expressed by non-professionals, is the source of information on background architecture that cannot be underestimated.

AoB refers to specific Polish conditions, in which typical architectural designs are most popular. Therefore one of the main fields AoB should work is typical design. In that case AoB is intended to propose a group of projects, in which every project is “equipped” with alternatives, allowing choosing from interior design, exterior finishing, different economical standards.

The references in design

The references become the basis for all analytic questions. The collection of references is proceeded through processing data acquired from the site. This includes photographic, cartographic, environmental examinations and visits in site and in the surrounding. Those are accompanied by inquiry. Gathering, compiling and analyzing civilization, environmental and historic information from the area as well as from the region brings up the background, defines its character and specificity. Battle and McCarthy point out these factors as constantly influencing the design and its reception among addressees at least (1997).

Focusing on architectural form as a permanent element of spatial environment, with its quality well known to influence human life conditions, including social and psychic comfort, aims at receiving adequate parameters of architectural solution in accordance with the uniqueness of the location. The cited “calmness” and modesty are of great significance because working with AoB ideas means conscious creation of common product, which is designed not to take primary role in the selected area.

In the majority of well-known design process models and methods an architect takes many varied factors into account. This often includes a variety of information, sometimes similar to the references used in AoB. There are many differences affecting the approach to design

according to an idea of background architecture. The table shows a comparison between common basic design tools used to acquire and analyze AoB references and mechanisms.

Table 1. The comparison of selected references processing in common and AoB design procedures

Design procedure content	Common architectural design procedure	Architecture of Background method
Spatial analysis of contextual areas	<ol style="list-style-type: none"> 1. Photographic documentation of site and the surrounding 2. Analyzing and/or acquiring existing various area documentation (e.g. infrastructure, environmental plans etc.) 3. Visits to the area 	<ol style="list-style-type: none"> 1. Imaging of selected site 2. Photographic documentation of contextual space including information from region 3. Analyzing and/or acquiring existing various area documentation (e.g. infrastructure, environmental plans etc.) 4. Visits to the area
Analysis of economic trends in planning area	Important economic premises or investor's budget definition	<ol style="list-style-type: none"> 1. Investors preliminary assumptions on budget 2. Sociological examination on predominant types of inhabitants (possible clients) and their economical preferences 3. Preparing alternatives meeting various economic expectations (the lowest and highest budgets, even not resulting from examination mentioned in no 2)
Social participation and evaluation	Exceptional cases (like cooperative design and design in participation)	<ol style="list-style-type: none"> 1. Series of inquiries depending on specificity of design task 2. Acquiring people's opinions; social evaluation 3. Forcing future users to join and participate in decision making
Typology analysis	Sketches and photo documentation – the typology of buildings located in the neighborhood	<ol style="list-style-type: none"> 1. Urban or rural typology analysis (excluding the site context and its unique location) 2. Site context 3. Building typology analyses (related to function, inhabitant, etc.)
Referential database	None	Database with graphic additions or registers as well as parametric analyses
Vernacular and traditional architecture definition (in context of site and area)	None	<ol style="list-style-type: none"> 1. The definition of vernacular architecture (more open). A set of features referred unconstrainedly to original composition and detailing allowing however the so-called contemporary re-interpretations 2. The definition of traditional architecture (rigorous). This definition describes present interpretation of historic composition and detailing in selected typology

Every referential element plays its role in process of improving architectural solution. It appears to be necessary to use those references in order to understand and create sustainable environment of human life as Peski (1999) comments. Banka (1999) points out that most inhabitants do not expect (what seems to sound like truism) any sophisticated architectural expression. They do prefer some architectural solutions that are easy to understand and harmonious with the environment – this means that common background architecture should use more traditional or tradition-based semantics.

Typologies

Typologies are important in AoB method not only because of their referential value. They record the evolution of individual and social expectations for usefulness and beauty in architecture and space. Common typologies and even more traditional typologies mark direction that seems unreasonable and improper while discussing the consistency of architecture. It has to be underlined that creativity in transforming old building ideas and preserving building structure “untouched” while adjusting interiors to contemporary standards and technical equipment seems to be very contradictory and insincere. In practice this contradictory approach appears to be environmentally justified.

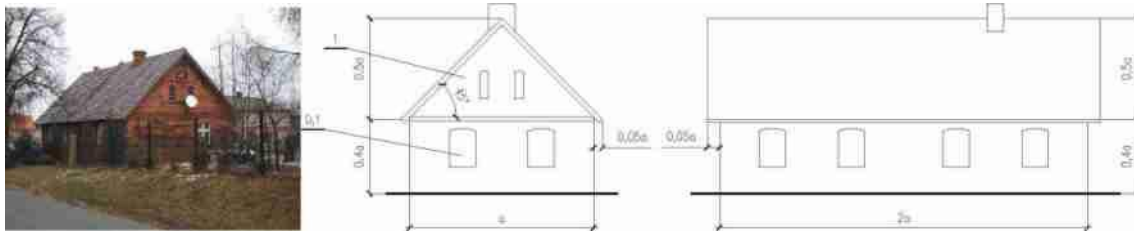


Figure 1. Analyzing general features of a typical house in the countryside (from 1904).

To determine the definition of certain typology detailed research is conducted. It includes measuring and recording numerical parameters of existing buildings, studying historical information on buildings and building technology. There are features of different scale and importance to the definition:

- general features like general shapes of buildings, roof types, function,
- parametric features like proportions, rates, etc.,
- detailed features like building or elevation materials, door and window shapes, etc.

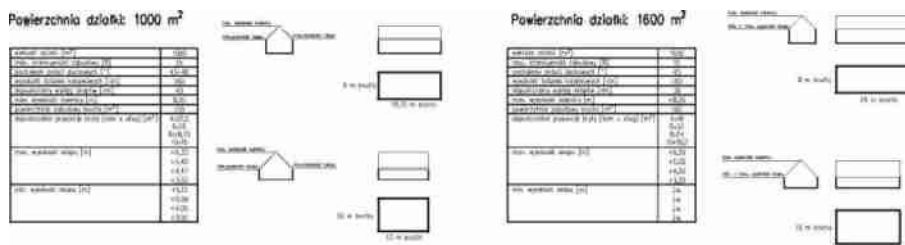


Figure 2. Analyzing parametric features of a specified house.

Vernacular and traditional

The AoB method uses stipulated differentiation between “vernacular” and “traditional” architecture. Both terms refer to relationship between the architectural heritage of an area and the way this heritage influences the design process. In this individually composed definitions vernacular means following general and parametric guidelines in a loose way while working with architectural scheme. The traditional method means rigorous approach to all three sets of features with possible exceptions.

That kind of variation gives AoB method a flexibility in composing larger areas – when architectural design results made with accordance to AoB are to be used in multiple applications in some group of plots or in the whole area³. AoB tries to explain the two terms by former obligatory composition rules, by building workshop potential which strongly influenced architectural look of buildings and by the very detail itself.

The Architecture of Background research

The research has been simultaneously conducted in two ways – one through professional application, the other through comparative analysis of students' works done during one semester. The first could provide the answer how common people perceive the procedure based on AoB method and how do they evaluate it. The second was more concentrated on creative approach to the design process presented by the students.

The research group started with preparatory works. The location for designing activity was chosen in the neighborhood of city of Poznan, Poland. Village named Rakownia was selected and the team initiated to gather wide environmental information on local architectural and spatial typologies. The material prepared in this way was intended to allow synthesis of data on building types and typologies, their function, relation to certain space (private and public spaces relationship). It showed also the environmental context (rural landscape) and it recorded functional structure of surrounding terrain.

The studies involved documentation of landscape areas to be filled in with newly designed buildings. Additional analysis was undertaken to find the predominant features of existing architecture. This village founded in the late 19th century had three phases of development – all of them were carefully investigated and recorded.

Several discussions with community members were organized, an inquiry was executed and in the same time preferred typologies were defined and consulted with inhabitants and county administration. While comparing the value of nature⁴ with the standard of newly built houses an agreement was made to describe future development parameters taking old, early 20th century objects as a reference.

The research team composed nine typologies and all of them excluded new building types⁵. Simultaneously, the second inquiry was addressed to potential clients and plot owners to prepare preliminary cost estimation, which could be accepted. Additional questions concerning functional program, detailing and others were asked.

Then the first phase of practical part of the research was started. Thirteen design tasks were taken in order to verify the assumptions of architecture of background method principles. Seven design cases were finished and another six are currently under way. AoB, as it was said before, involves users and community members' participation (which can be limited in certain cases). This kind of cooperation refers to models from the 70s that have been continued furthermore until today according to so-called cooperative design and design in participation. Sanoff (1999) introduces those types of designing expressing their great impact on quality of final solutions, which appeared to become more functional and widely approved by both users and local communities. AoB research team found Van der Ryn + Clathorpe with Jeff Oberdorfer and Kaplan Mc Laughlin experiences suitable to profit from, especially that the first examined tasks were simple family houses in the countryside. One of the aims of the real work was to achieve the typical design fitted with large number of greater and smaller variations. Those differences were planned to please potential inhabitants and to force individualization in formally balanced architectural environment. The variety had to come in unified convention. Inhabitants' opinions, tastes and psychological perception of architectural space came as the first and most important factor for design.

The team prepared four different design types to conform various requirements. These proposals include two small single family houses, one medium sized and one residential type for larger plots. All of them were worked out as typical designs to be adjusted for individual needs. The third inquiry was prepared among the “clients”. Afterwards the mentioned designs were presented and discussed. Every concept had at least four versions of interior organization and different variants of exterior finishing.



Figure 3. An example of small house design 2



Figure 4. An example of residential design 4

During all stages the proposals were often reworked. After finishing all phases the addressees were asked to evaluate the whole process referring to how their needs and expectations were responded and solved and how much satisfaction they have got from participation in the design. The “clients” were satisfied with presented finishing options and with the way it affected the total cost of designed house.

Table 2. Results of AoB implementation in design process

“Client” no	The choice of design	Rate of concept acceptance	Choice of functional scheme (version)	Choice of architectural look (version)	Rate of substantial changes in original functional scheme	Rate of substantial changes in original architectural look	“Client’s” evaluation (0-10pts)
1	3	medium	B	II	no changes	no changes	10
2	2	high	A	I	low	low	8
3	4	high	A	III	high	low	6
4	1	medium	C	I	medium	low	6
5	2	low	C	II	high	high	3
6	none of presented ⁶	n/a	n/a	n/a	medium	low	9
7	2	medium	A	I	high	low	8
8-13	still under way						

n/a – non applicable

Second part of the research was a part of students’ curriculum during year 2001⁷. Two groups of students were selected and presented with the site and the task. One group was free to choose designing methods and ways to seek solutions. Another group was rigorously tied with AoB procedures that included multiple visits to the area and contacts with local community (obligatory). No internal versions in design proposals were requested, however students were explained to be sensitive for flexibility of interior space and different arrangements of the designed houses. They were also told to focus on modesty of architectural look and its role as background conforming to the rules of expressing more the nature than the civilization presence in an area.

The students prepared numerous designs. It became apparent that some of them could not understand the idea, even if it was largely discussed during exercises. The quality of designs was not very satisfactory, only few works reached the point in which the most crucial

principles of AoB method were performed. Final presentation in Rakownia showed how community members validated those works. Some of them received positive opinions even if from professional point of view they were inadequate.



Figure 5. An example of student's work that is positive as incontextual solution. Unfortunately this was an improper response for the AoB principles.

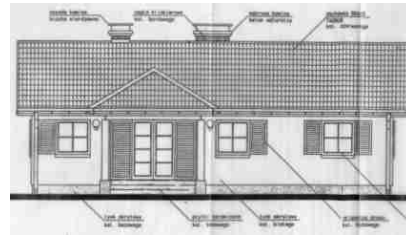


Figure 6. One of positive examples showing good understanding of what Architecture of Background means

Table 3. Results of students' work on AoB method in two groups

	1 st students' group (free rules)	2 nd students' group (AoB rules)
Number of students	23	19
Number of designs	22	17
Average quality of design work (0-10)	5,72	5,85
Minimum response rate of design work for AoB principles (0-10)	1	5
Maximum response rate of design work for AoB principles (0-10)	8	8
Average response rate of design work for AoB principles (0-10)	3,19	5,77
Average evaluation of design work made by members of Rakownia community (0-10)	4,06	7,90

The experiment with students can be, hopefully, taken as an examination of inexperienced designers. Their immature design proposals were often primitive and highly imperfect. The second group following the principles of AoB method found it easier to achieve the expected result. This was reflected in both evaluation made by professional designers (Polish Architects Assn. members, including jurors, were involved) and during meeting with Rakownia inhabitants. It was particularly interesting notice that the results of previously made inquiries were the same people found built design proposals (seen on some pictures above) nice and well-fitted into landscape before the discussion and presentation of students work and AoB method and after having heavily criticized that chaotic and low quality design that was executed in their neighborhood. It was closely observed how people became more open in presenting their opinions and more sensitive for esthetical attributes. In non-professional validation functional questions were of secondary importance.

Conclusion

The AoB method of designing is not a finished research program. The team is still working on and tries to take profit out of both theoretical contributions presented in Poland and worldwide as well as of practical, professional activities that allow to validate the efficiency of the method. In Poland Fikus and others in mid 80s conducted the trials of creating common design rules for housing in limited areas. Authors analyzed the examples of de Carlo at Mazzorbo, Venice, Italy, Kroll at Alencon, France (Tzonis and Lefaivre, 1992) and other works from abroad. It seems that the very new concept in AoB program is to make typical design with variables. To add another advantage of background architecture idea – its level of

integration with spatial planning and mechanisms of understanding and managing space is very high and forces high quality simple architecture in countryside and in cities.

It is hoped to receive positive results in future. For now the first examples of professional work based on AoB method are going to be executed. Fortunately, it was possible to implement spatial regulations as well (P.R.S. method of spatial planning). The paper presented here is just a short excerpt containing a few aspects of AoB. Questions of relation to exploitation of natural resources and infrastructure solutions supporting the sustainability of architectural objects should be discussed more widely. This affects cooperation with local administration. Therefore the paper focused on problem sharing that it is more difficult to protect in case of weak law regulations – esthetical appearance of an area relating to architectural design and detailing.

Footnotes

- ¹ The research team members are: Robert Barelkowski, arch., Ph. D., Polish Academy of Sciences, FA PUT, Ireneusz Ratajczak, arch., PSP expert, architects and branch designers – Katarzyna Barelkowska, Piotr Jasiniak, Andrzej Balewski, Marcin Cellary, Karol Jankowski, Andrzej Barna, Henri Kelani Nikuna and others. Cooperants from county administration were Elzbieta Kujawa and Mateusz Szczepaniak.
- ² The AoB involves working with several inquiries including the preparatory ones. The first one executed showed minor importance of functional and esthetical factors as seen by local inhabitants. The examination involved a group of 322 people from Rakownia and Murowana Goslina county.
- ³ This is the case in new developments realized based on P.R.S. planning method.
- ⁴ Rakownia is considered to be an attractive place for building activity and recreation for Poznan inhabitants. It is located on the border of great forest complex with several lakesides.
- ⁵ Different opinions were expressed. This is probably the result of misidentification of good quality in designing with good technical quality of a building.
- ⁶ None of typical designs was accepted by this “client”. However after preparing individual concept next phases of design were conducted according to AoB method
- ⁷ Two groups of students worked during their 2nd year of education. This was their first fully programmed design task.

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