

Spatial Reserve
design strategies
between usage and location

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Doctoral School of Architecture
Theses 2021

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Abstract

The dissertation explores the topic of spatial reserve by investigating design methodologies of architectural creations that are in connection with spatial constraints. Its goal is to contrast the limitations arising from both the location as well as the design program in order to explore the potentials in their relationship, the spatial reserve. The core finding of the dissertation is, that there exists an abstract spatial form in our buildings, the spatial reserve, in between the usage based spatial minimum and the maximum volume resulting from the requirements of the legal environment.

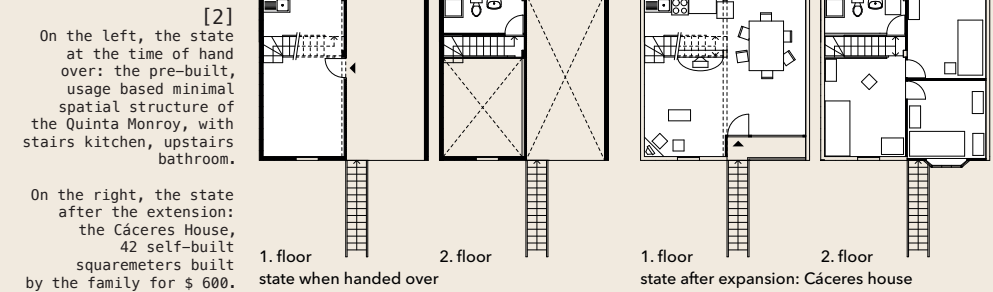
Space usage and the usage-based spatial minimum requirements are discussed based on historical and contemporary case studies, to focus on usage based tendencies in architectural design methodologies. Volumetric and geometric constraints on architecture resulting from legal requirements are examined on buildings where these limitations and the confrontation with the legal environment are part of the recorded design methodology.

The theses on the spatial reserve are focusing on the topic of architectural design methodology, based on previous findings on usage based spatial minimum requirements and volumetric and geometric constraints, revisiting and detailing case studies discussed earlier in a new perspective. The elaboration and the topic of the spatial reserve can be applied to new architectural creations, it can also provide a way to evaluate the spatial quality of existing ones and the design methodologies associated with them.

Keywords:

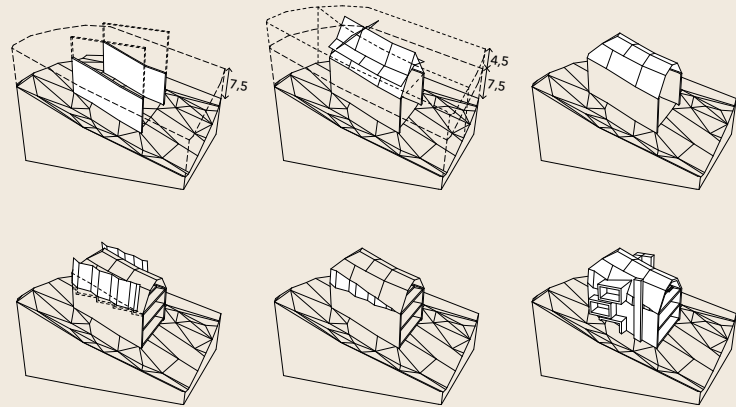
reserve, space usage, building regulations, user, building geometry

previous page [1]
Due to the mesh on the Fischer department store, only the rough volume of the building can be perceived.

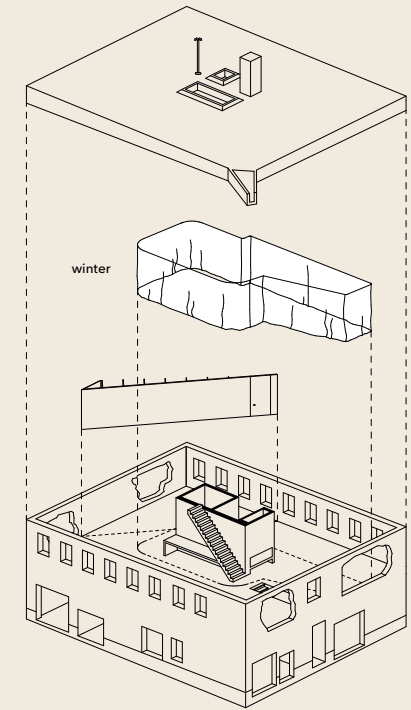


First, founding thesis

There is a specific spatial requirement for any given use, that determines a minimally-sized, usage based, spatial structure. For any specific type of usage this represents spatial minimum that is still usable for that purpose. The usage based spatial structure is abstract and undeveloped, it is the architect's task to work out the details and adapt it to the environment. The usage based spatial structure is a minimum, it shows the future building's minimal spatial requirement of use.



[3]
Phases of the building geometry of the house with a Lake View shaped by the local legislation.



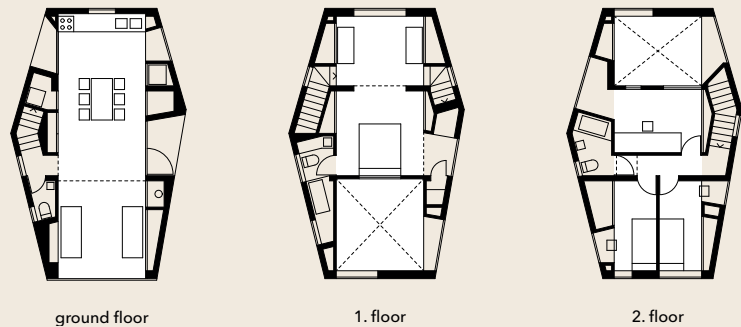
[4]
The relationship between the curtain separating the Antivilla's winter and summer spaces, the core that makes usage possible, and the existing hall space.

Second, founding thesis

There is a specific geometry for every plot that is defined by a part of the building regulation valid for that location. Its details, inaccuracies, contradictions, building-like nature depend on the site and the applicable legislation. This spatial form is abstract and undeveloped, it is the architect's task to work out the details and adapt it to the environment. This determined building geometry acts as an interface, showing the maximum possible volume of the prospective building.

Third, concluding thesis

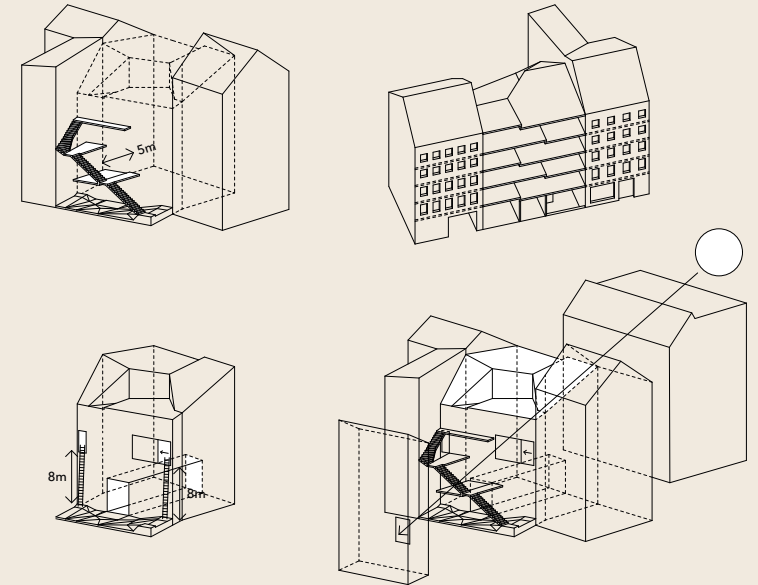
If the aim of the architectural design process is a building that complies with the applicable legislation and the usage needs of the users of the prospective building, it is sufficient to design this building with a smaller or equal volume as required by the building code - whilst also meeting other quality requirements - and to provide space within this building for the minimal spatial requirement of use. The difference between the determined building geometry specified by the location and the usage based minimal spatial structure is a spatial fragment that is no longer subject to geometrical requirements resulting from any legislation or from usability. This fragment is the reserve.



[5]
Next to the Wolf House's rectangular main-use spaces, the supporting functions are organized into the triangular spatial fractures.

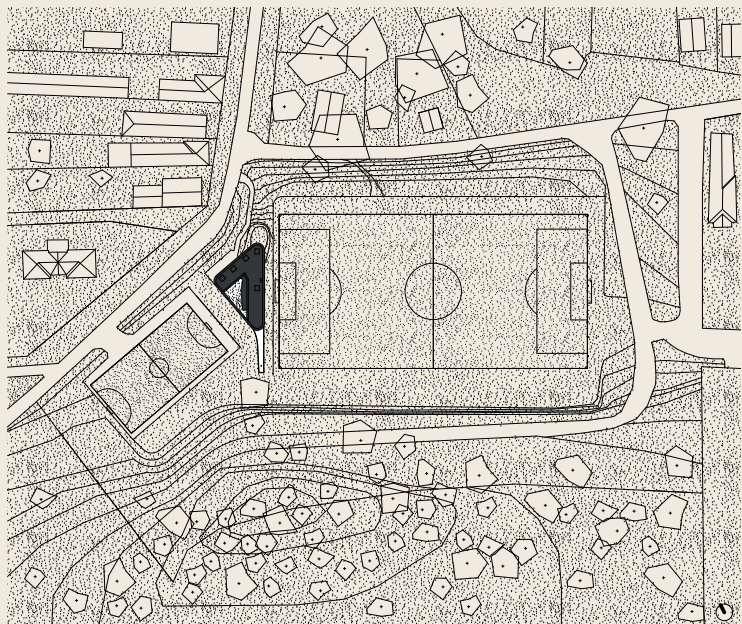
Fourth, explanatory thesis

The reserve is the surplus of the architectural program, that of the building site and the type of usage. It is a spatial fragment whose use is only dependent on the designer. The reserve can be the spatiality in which the architect can create architectural quality or spatial character. The reserve is the space of spatiality.



Fifth, explanatory thesis

The size and position of the reserve depends on the relationship between the determined building geometry and the usage based spatial structure, although three cases can be identified. In the first case, the determined building geometry is larger than the usage based spatial structure, the spatial reserve is formed. In the second case the determined building geometry is smaller in its size than the usage based spatial structure, this building cannot be created. In the third case the volumes of the determined building geometry and the usage based spatial structure are the same, in which case the reserve appears on the surface of the spatiality. In the case of built architectural creations, the reserve can be interpreted in all cases.



[7]
Sports Centre, I. phase,
Csomád, site plan

Masterwork

Sports Centre, I. phase, Csomád, 2014.

architecture: KOLOSSA, József DLA; WEISZKOPF, András

associate architects: KOLOSSÁNÉ BARTHA, Katalin; ÁRKOVICS, Lilla; BABOS, Annamária; exterior graphics: MÁTHÉ, Dóra;
structural engineer: MÓZES, László; mechanical engineer:
MANGEL, Zoárd; electrical engineer: PILLER, Tamás; construction:
KERESZTES, Kristóf, Tildi Bau Kft.; building inspector: ÁTS, Géza;
client: Csomád Municipality Mayor's Office, Mayor KLEMENT, János

next page [8]
The space in front of the
entrance to the changing
rooms, the football as
well as the futsal court
can be watched from here.



List of buildings

[1]KÁRMÁN, Géza Aladár – ULLMANN, Gyula: *Fischer department store*. Budapest V., 1912. [2] ELEMENTAL: *Quinta Monroy*. Iquique, 2003. architecture: Alejandro ARAVENA, Alfonso MONTERO, Tomás CORTESE, Emilio de la CERDA; engineering: Juan Carlos de la LLERA & José GAJARDO [3] KEREZ, Christian – JANS, Raphael: *House with a Lake View*. Thalwil, 2013. [4]BRANDLHUBER+ EMDE, BURLON: *Antivilla*. Krampnitz, 2015. architecture: Arno BRANDLHUBER, Thomas BURLON, Markus EMDE, Elsa BENIADA, Peter BEHRBOHM, Klara BINDL, Romina FALK, Victoria HLUBEK, Tobias HÖNIG, Cornelia MÜLLER, Markus RAMPL, Paul REINHARDT, Jacob STEINFELDER, Caspar VIERECKL; Karin GUTTMANN, Robert HARTFIEL, Andreas SCHULZ (Pichler Ingenieure) [5]PEZO VON ELLRICHSHAUSEN: *Wolf House*. Andalus, 2007. architecture: Mauricio PEZO, Sofia VON ELLRICHSHAUSEN [6]BRANDLHUBER+ EMDE, ERA, BURLON: *Brunnenstrasse 9*. Berlin, 2007-2010. architecture: Arno BRANDLHUBER, Thomas BURLON, Markus EMDE, Thomas BANEK, Silvia FARRIS, Christian GEISSER, Tobias HÖNIG, Andrjana IVANDA, Katharina JANOWSKI, Chrissie MUHR, Jan WINTERSTEIN; Marc BAIN (Kunst am Bau); engineering consultant: Jürgen BERNHARDT; structural engineer: Thomas FELLERHOFF; fire safety: HALFKANN + KIRCHNER; landscape architectue: TERRAFORM [M]KOLOSSA, József DLA – WEISZKOPF, András: *Sports Centre, I. phase*. Csomád, 2014. architecture: KOLOSSA, József DLA; WEISZKOPF, András; associate architects: KOLOSSÁNE BARTHA, Katalin; ÁRKOVICS, Lilla; BABOS, Annamária; exterior graphics: MÁTHÉ, Dóra; structural engineer: MÓZES, László; mechanical engineer: MANGEL, Zoárd; electrical engineer: PILLER, Tamás; construction: KERESZTES, Kristóf, Tildi Bau Kft.; buildings inspector: ÁTS, Géza; client: Csomád Municipality Mayor's Office, Mayor KLEMENT, János.

List of images

[1]WEISZKOPF, András, 2021. [2]ELEMENTAL, 2016. ARAVENA, Alejandro – IACOBELLI, Andres: *Elemental : Incremental Housing and Participatory Design Manual*. Ostildern: Hatje Cantz, 2016, 37. drawing: WEISZKOPF, András [3]KEREZ, Christian, 2015. KEREZ, Christian: *House With a Lake View*. El Croquis N. 182 Christian Kerez 2010 2015 Junya Ishigami 2005 2015, 2015/4, 22. drawing: WEISZKOPF, András [4]BRANDLHUBER+, 2018. <https://bplus.xyz/projects/0131-antivilla> (downloaded: 10. 08. 2021.) drawing: WEISZKOPF, András [5]PEZO VON ELLRICHSHAUSEN, 2007. <https://divisare.com/projects/109796-pezo-von-ellrichshausen-cristobal-palma-estudio-palma-wolf-house> (downloaded: 10. 08. 2021.) drawing: WEISZKOPF, András [6]BRANDLHUBER+, 2018. BRANDLHUBER, Arno: *Brunnenstrasse 9, Gallery and Atelierbuilding*. El Croquis N. 194 Brandlhuber+ 1996 2018, 2018/2, 111-114. drawing: WEISZKOPF, András [7]KOLOSSA, József DLA – WEISZKOPF, András, 2014. [8]WEISZKOPF, András, 2020.

András Weiszkopf:

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