

POTENTIALS OF ARCHITECTURE ARCHIVES FOR ART EDUCATION EXPLORING CONCEPTS OF MODERN ARCHITECTS FROM BRAZIL AND GERMANY THROUGH DIGITAL AND PHYSICAL APPROACHES ON ARCHIVAL MATERIAL

Potenciais dos arquivos de arquitetura para arte-educação

Explorando conceitos de arquitetos modernos do Brasil e da Alemanha por meio de abordagens digitais e físicas sobre material de arquivo

Potenciales de los archivos de arquitectura para la arte-educación

Explorando conceptos de arquitectos modernos de Brasil y Alemania a través de enfoques digitales y físicos en material de archivo

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ABSTRACT

This article presents innovative approaches to bring art students from secondary school in touch with archival and architectural working methods. This is achieved by analysing and comparing digital and physical archival material that can be found in the Acervo arquitetônico de Oscar Niemeyer in Brazil and the Hamburg Architecture Archive in Germany. The students work practice-based on different research questions focussing on the developments of architectural concepts and their realization.

Keywords: art education; archives; architecture; Oscar Niemeyer; esthetical research.

RESUMO

O artigo apresenta uma nova abordagem para, no estudo de artes, aproximar estudantes de ensino médio com os métodos de trabalho da arquitetura e dos arquivos. Tal possibilidade se realiza pela análise e comparação de materiais de arquivo, físicos e digitais, que se encontram no Acervo arquitetônico de Oscar Niemeyer, no Brasil, e no Hamburg Architecture Archive, na Alemanha. Os estudantes trabalham, por meio de suas práticas, em diferentes questões de pesquisa, com foco no desenvolvimento dos conceitos em arquitetura e em sua realização.

Palavras-chave: arte-educação; arquivo; arquitetura; Oscar Niemeyer; investigação estética.

RESUMEN

El artículo presenta un nuevo enfoque para, en el estudio de artes, aproximar a estudiantes de secundaria del contacto con los métodos de trabajo de la arquitectura y los archivos. Esta posibilidad se realiza por el análisis y comparación de materiales de archivo, físicos y digitales, que se encuentran en el Acervo arquitetônico de Oscar Niemeyer, en Brasil, y en el Hamburg Architecture Archive, en Alemania. Los estudiantes trabajan, a través de sus prácticas, en diferentes cuestiones de investigación, con foco en el desarrollo de los conceptos en arquitectura y en su realización.

Palabras clave: arte-educación; archivo; arquitectura; Oscar Niemeyer; investigación estética.

INTRODUCTION

Traditionally, archives are physical places where primary source documents or artefacts of a purely documentary nature are stored meticulously. Their function is to save these unique records that have been selected for long-term preservation by virtue of their enduring and outstanding cultural, historical, or artistic value and transmit this heritage to posterity.

With regards to art educational purposes, archives are – similar to museums – highly suitable as areas for out-of-school learning. They provide possibilities to get in touch with the tangible “aura” (Benjamin, 1968, p. 222) of original archival sources and to make new experiences by engaging several senses while handling handwritten and hand-drawn books or sketches, listening to audio materials, watching daguerreotypes or lantern slides, smelling silver-gelatin printed photographs or feeling different textures of paper from codices to blueprints. On the one hand, researching in archives enables students to gain knowledge about the past, about other people, about the development of ideas, technologies and problem solving, and on the other hand archival material can be a source of inspiration (Hibben, 2015) and a record of cultural identity. As a storage of individual and collective memories, archives and their practices such as collecting, storing and archiving last but not least became very important as models for artistic strategies and concepts of memory work in contemporary art (Schaffner; Winzen, 1998).

Accompanied by digitization projects in the humanities and the heritage sector, more and more archives create digital representations of their collections both for preservation purposes and to democratise their resources and make them available to everyone – online and unaffected by time and space (MacDonald, 2006). Having convenient accessibility to the digital versions of physically rare documents with a high artistic value, such as sketchbook, film, photo, script or design collections, holds great chances or learning about and through Open Access archival materials under art educational aims. Especially when there is a lack of financial resources, time or travel opportunities (especially with large groups) to visit the physical archive, working with digitised artistic archival sources “displayed” on-screen can be a good alternative. Of course this could not be a replacement for experiencing the presence of an original rare document, that provides the visitor “access to something valued or special”, but it will help to engage students in archives, their intentions and the documents that can be found there. In this context, the digitised archival version can fulfil other functions and enable behaviours the physical one cannot (Hubard, 2007, p. 260). Apart from the ability to do research away from the archive, it is also not necessary to treat the digital surrogates as carefully as the physical one. This brings more opportunities to comment on, manipulate, arrange and zoom in on the archival material in new contexts or examine them with other archival material (Shaw; Wagelie, 2016): “Digital image collections on the web are becoming important as quick reference sources as well as the first step in the research process. Manipulation and/or enhancement of digital images has permitted new arguments in stylistic and comparative analysis” (Graham; Bailey, 2006, p. 23).

The aim of the following article is to outline some creative approaches to give an example of how the rich records of architectural representations and sources that can be found in the Architectural Archive of Oscar Niemeyer (Acervo arquitetônico de Oscar Niemeyer) in Brazil and the Hamburg Architecture Archive in Germany can be used in tandem for art educational contexts in schools.

ARCHITECTURE ARCHIVES AND THEIR POTENTIALS FOR ART AND ARCHITECTURAL EDUCATION

The floor, construction and site plans, photos, models and architectural drawings that are collected in the Hamburg Architecture Archive give the visitors deeper insights into the different ways of architectural working methods and their conceptual meaning. The archive was created in 1984 to collect, conserve and promote the use of architectural records that mainly document the architects and architecture of Hamburg, the second largest city of Germany. The collection is particularly strong in architectural material that documents the reconstruction of Hamburg after the Second World War, but it also includes projects from all around the world.

From a regional and historical perspective, these records allow to trace how local architects have developed, expressed and varied ideas in a design process before their visions and intentions were translated into the finished physical buildings that characterize the face of Hamburg till today and that every student in Hamburg knows and maybe passes every day. The material documents how the architects were influenced by actual construction or design trends, user requirements and structural demands as well as the area's environment, topography and climate.

From a more general point of view, these resources also give an exemplary impression of the changes of urban living space and its use in context of modern structural and social challenges, e.g. housing development, business and office block building as well as the creation of public buildings and landmarks. These developments show that architectural design decisions often are a product of consensus on building processes by different interest groups like owners, clients, contractors, politicians, town planners, heritage specialists and the general public.

Furthermore, these documents are representations of the highly aesthetic and refined culture of architectural forms of expression (Gerald, 1981).

This also counts for the materials that are stored in the Architectural Archive of Oscar Niemeyer (Acervo arquitetônico de Oscar Niemeyer) (find them e.g. here: Itaú Cultural, 2014). The Brazilian architect Oscar Ribeiro de Almeida Niemeyer Soares Filho (Figure 1) was born 1907 in Rio de Janeiro and died there in 2012. He is considered to be a pioneer of modern architecture (Niemeyer, 2000). Some of his momentous constructions are the civic buildings for the Brazilian capital, Brasília, which were declared a cultural world heritage in 1987 by the Unesco. The use of abstract sensual forms, curvatures and curves as well as the refusal of the right angle and the use of white concrete as a building material was characteristic for his style.

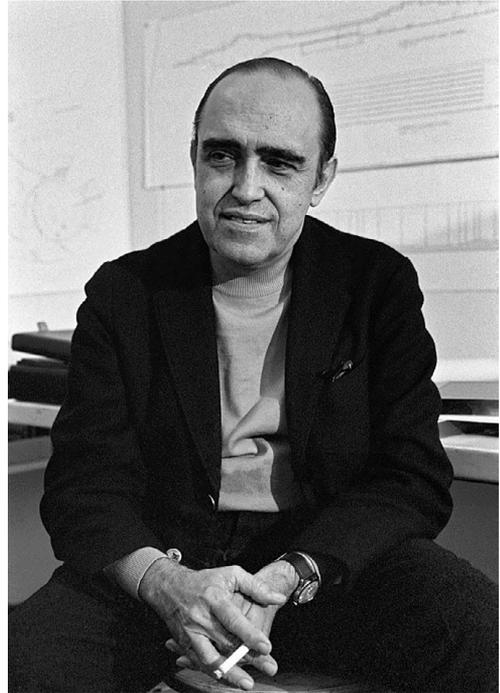


Figure 1 – Oscar Niemeyer, 1968. Source: Available at: <https://en.wikipedia.org/wiki/Oscar_Niemeyer#/media/File:Oscar_Niemeyer_1968b.jpg> Accessed on: 22 dec. 2018

The architectural expressions and estates of the Brazilian architect were inscribed into the Unesco Memory of the World register in 2013, too. The reasons for this decision were as following:

The collection consists of 8.927 documents, with boards of sketches sets, boards of architectural albums and boards of technical drawings which form a valuable record of the work of an artist who marked the international architecture of the twentieth century. In addition to primary research sources, many of these documents are true works of art. The sketches and albums are original documents, rare and almost entirely unique. They not only bring traces of free curves and poetic that marked the work of Niemeyer, but also reveal the architect's working method.¹

DIDACTIC CONTEXTS

The following approaches outline how the physical architectural archive material that can be found and explored in the Hamburg Architecture Archive could be used in a dialogue with the documents that are stored in the Architectural Archive of Oscar Niemeyer (Acervo arquitetônico

¹ Available at: <<http://www.unesco.org/new/en/communication-and-information/memory-of-the-world/register/full-list-of-registered-heritage/registered-heritage-page-1/architectural-archive-of-oscar-niemeyer/>>. Accessed on: 22 dec. 2018.

de Oscar Niemeyer) in Brazil by using online and offline research strategies in tandem for creative approaches to the architectural work in the higher grades (age 15-18) of secondary school.

By doing this, students should find out how these historical documents add value to their own lives. The constructed environment, for instance, in which students in Hamburg or Brasília grow up is central for their cultural and personal background. Furthermore, it is important to understand that cities are no fixed areas but are subjected to a permanent changing process, which is planned and executed by architects and urban planners and in which students can participate too (Shatry; Wagner, 2012, p. 453-454). The work of Oscar Niemeyer as well as the projects from Hamburg are excellent examples of these processes and developments. They show how the visions of architects and their ideas of cultural and social living combined can shape the face of a whole city or nation.

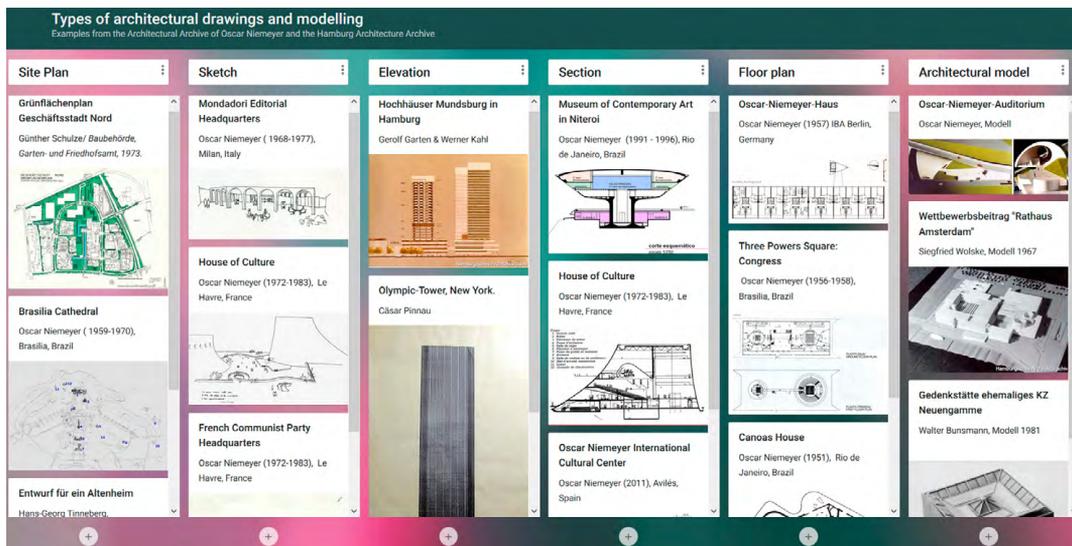


Figure 2 – Examples for traditional types of architectural drawings and modelling arranged on a digital pinboard made with padlet.com

PRELIMINARY PRACTICE: UNDERSTANDING TYPES AND PURPOSES OF ARCHITECTURAL DRAWINGS

Before the students start to explore and analyse the archival material, it is important that they are able to read the different types of architectural drawing methods and understand their purpose (Yee, 2012). To get familiar with this in a collaborative way, the students could be asked to search on preselected websites² for relevant (archival) material that represents the different types of (traditional) architectural drawings and modelling and arrange them with the appropriate definitions on a digital pinboard (Figure 2). Possible solutions could be:

2 E.g.: <<https://en.wikiarquitectura.com/architect/niemeyer-oscar/>>; <<http://www.architekturarchiv.de/>>. Accessed on: 22 dec. 2018.

- Site plan: shows the whole context of a building including property boundaries, accesses to the site and nearby structures. It also gives an overview of already existing streets, close-by buildings (if any) parking lots, trees and plants.
- Sketch: rapidly executed freehand drawing. It is used as a quick way to record and develop an idea or a concept, not to communicate the principles of a design in a finished work (like detail drawing or architectural perspective drawings).
- Elevation: represents a view of a building seen (frontal) from one side, to describe the external appearance of a building, its façade, in a flat representation.
- Section: represents a vertical plane cut through the object, showing the spatial structure and proportions inside the building as well as the relationship between different levels.
- Floor plan: represents a horizontal plane cut through an object, showing the floor space and the arrangement of rooms in buildings at a particular level, including walls, stairs, windows and door openings or other features at that level.
- Architectural model: a physical representation of a structure, built to study aspects of an architectural concept, like the interaction of volumes or different viewpoints or to visualise a final design true to scale (Klant; Walch, 1993, p. 10-17).

CONCEPTUAL APPROACHES

One possible way to explore and understand the deeper meaning of design concepts employed by different architects is to analyse and reflect on the balance between usage and aesthetic aspects. Although the functional and formal aspects of a building cannot be separated from each other, it is helpful to differentiate between functional and artistic concepts. Functional concepts start from a logical purpose that solves a design problem whereas artistic concepts rely on other elements for inspiration, e.g. artworks, nature, rhythms or technology. Oscar Niemeyer, for instance, declared in his memories about his own inspirations – in contrast to the work of Le Corbusier, by which he got influenced:

I am not attracted to straight angles or to the straight line, hard and inflexible, created by man. I am attracted to free-flowing, sensual curves. The curves that I find in the mountains of my country, in the sinuousness of its rivers, in the waves of the ocean, and on the body of the beloved woman. Curves make up the entire Universe, the curved Universe of Einstein. (Niemeyer, 2000, p. 62)

On the one hand, artistic concepts look more original and creative, on the other hand these projects sometimes can become very expensive and controversial. The following two approaches allow to enter into both working methods. The third one is focusing on the mutations and developments of architectural concepts by belated interventions after their realization.

1. Conducting a design process under functional aspects in a case study

In architecture, a case study is a practice-based research method which could be done in a more or less holistic way. Its function is to analyse projects in relation to the complex dynamics of their context by using multiple sources of evidence (Sarvimaeki, 2017). This could include data collection, occupancy evaluations, sketching, creating diagrams, taking photos, studying reference buildings, collecting data and researching all the information that can be found on this special topic. The aim is to understand various aspects and information that must be considered while designing. It is not only a study of the final product, it is also a study of approach towards solving special problems in a number of ways by deciding which elements are needed and which are not.

1.1 Starting point

At first the students could be asked to classify the different buildings that are documented in both archives according to their using type (commercial, residential, industrial, educational, government, transport buildings etc.) and their main functions (sacred or profane, public or private, representative or social etc.). Criteria and the classifying categories must be introduced beforehand. After that, the students choose one building type (e.g. church, theater, high-rise residential or office building) which they want to analyse closer in a case study in tandems.

Then they could be instructed to interview different people (or users on-the-spot) to describe what they consider from this type of building in practice today.

1.2 Exercise

Having these user requirements in mind the student start to research and analyse all the information that the archives contain about the functional and occupancy aspects that were intended and considered by the architect for a special building and showcase them on an eye-catching presentation board.

Important things that could influence the use of a building are: existent and required space (e.g. in proportion to the human body), layout of the rooms, form (layers and outer shell), structure (collums, arches, roof), (people) circulation and accesses (vertical and horizontal), materials and colours, lighting, site analysis (connection of the building with its surrounding, climate, topography).

1.3 Evaluation

After presenting the information of the case study, the students could be invited to compare the architectural solutions with the requirements that are announced by the interviewed people or with reference buildings and discuss the benefits and disadvantages in this context. In addition they can develop ideas for corrections.

2. Reconstructing the design processes in a concept map

This approach is ideal for buildings that are characterized by a special form language (Figure 3). The extraordinary outer shell of a building could be the starting point for the

reconstruction of the design process in opposite order (Szepanski, 2015, p. 141-143). With the help of the different tools and documents of the architect, like sketches, models, plans, the students associate what could have been the basic idea or inspiration for the final building.

2.1 Starting point

To set the focus on the outer form of a building the students start with doodling famous buildings in Hamburg (or from Oscar Niemeyer) from imagination and letting them be guessed by their classmates afterwards (Figure 4).

2.2 Exercise

The students choose a building that is represented in the archive, research the original documents that are stored there and use them to reconstruct the designing process backwards step by step. By doing this they fill in the missing links with their own ideas, e.g. by inventing and producing additional or alternative models, material or colour studies as well as sketches or texts that clarify in a more or less fictive way which reference objects, impressions or topics could have inspired the architect by finding and developing the final form, the façade or other details of the chosen building.

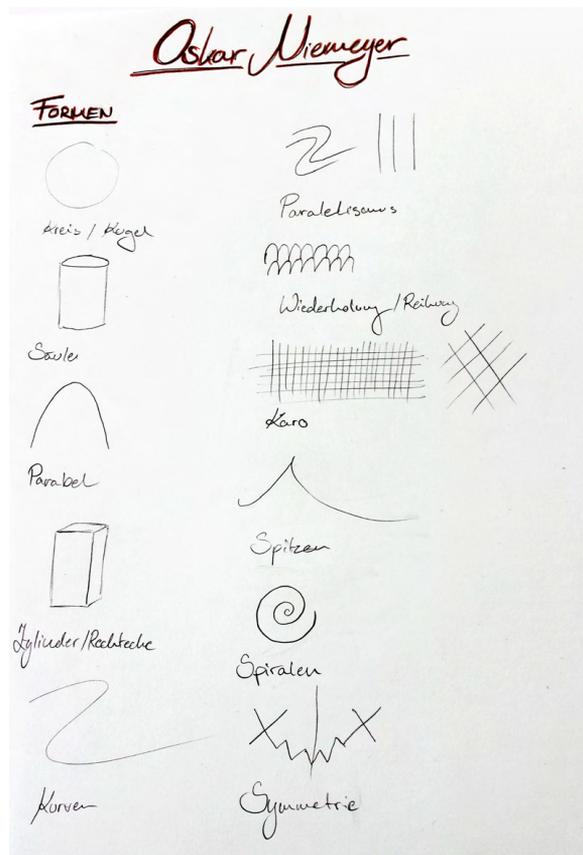


Figure 3 – Working out the central geometrical forms in the architecture of Oscar Niemeyer. Sketches by Moritz

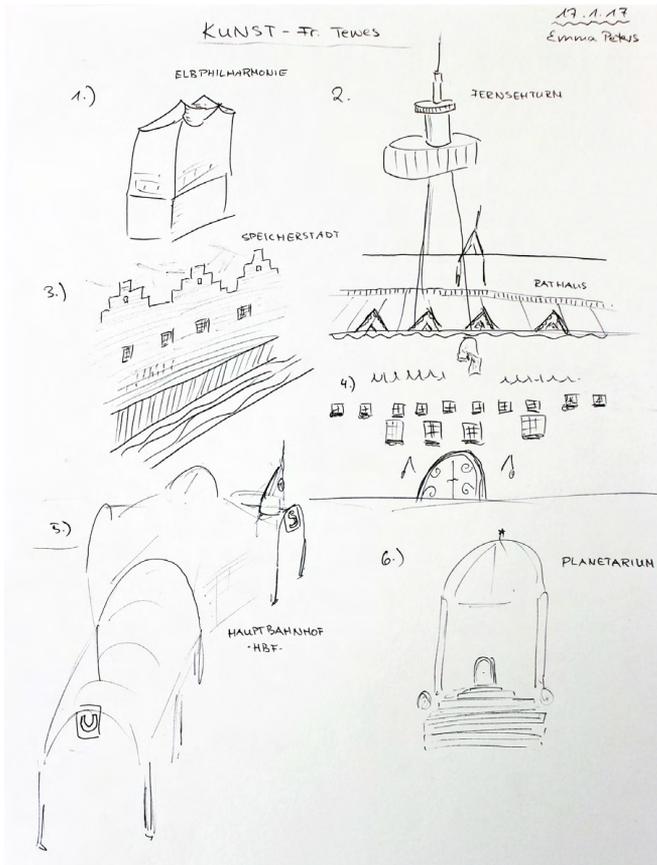


Figure 4 – Outline sketches by Emma

2.3 Presentation

The students document, structure and communicate all the ideas, information, associations, alternatives and variations that they have found during the reconstruction process either in form of an Iconic Concept Map (Penzel, 2016), which allows to show the idea development as process at a glance, or in form of diary, which helps to reconstruct and showcase the design process in a more linear, detailed and stepwise way.

3. Documenting what happens with architectural concepts after their realization

Over the years, many historical buildings were modernized, redesigned or completely demolished because of changing requirements in town planning and land use (e.g. due to urban renewal trends like sustainability aspects, designing accessible and universal spaces or the development of population and tourism). In Hamburg, the mutation of the "Kaispeicher A", a warehouse designed by Werner Kallmorgen between 1962-1966, to the Elbphilharmonie, a concert hall designed by the architecture firm Herzog & De Meuren and inaugurated in 2017, is a spectacular and representative but not the only example for these changing processes. These developments could be figured out by comparing

the original architectural design materials from the archives with the appearance of the building at present day.

3.1 Starting point

In the first step the students visit a building that is represented in the archive and document it as detailed as possible by taking pictures or producing videos.

3.2 Exercise

In the second step the students compare their material with the original documents of the building that are stored in the archive and identify interventions or changes that have been done afterwards. The results could be reported in form of an article for a magazine that portrays and discusses this development with its benefits and disadvantages. In a more creative way, the students can write dialogues or lead interviews to illustrate the reasons that have made the architectural interventions necessary.

In case the building does not exist anymore it is also possible to write a fictive description inspired by the material the students have researched in the archive or a diary entry of a person who has visited this building in former times.



Figure 5 – Photcollage by Lara and Marie. It showcases the modernization of the Hamburg Underground from 1960 till today by comparing archival material from the Hamburg Architecture Archive with own research material on a case study board

3.3 Evaluation

The articles and literary products can be published on a blog or presented in form of a podium discussion where different interest groups (e.g. town planners, heritage experts, politicians, users) argue their point of view.

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