

A new way of Perception

Experiencing music through multi-sensory architecture

AR3A010 Research Plan
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Problem Statement.

Our environment is changing faster than ever, due to the transformations of economic, cultural, and socio-political dynamics. As a result of the expansion and transformation of the major Dutch cities, former industrial areas that used to be outside the cities, such as Binckhorst, are now being absorbed and transformed by the cities.

While our environment continues to change, the music industry is also asking itself how music should transform with the present changes. Today, music is tangible for everyone, and it is impossible to imagine our lives without it. Music buildings today, therefore, require a certain list of requirements to be met to be able to listen to or play a concert. However, music buildings today cannot keep up with this demanded condition, multiplicity, and ever-changing character. Architecture for music has largely been transformed into an inanimate spatial form, characterised by its pursuit of timelessness, and limited to the perception of music. The architectural design of music spaces in our time is assisted, and often driven, by the science of acoustics, and the understanding of perception is often incomplete¹. The spatial requirements and design parameters of a music venue should be taken into question to meet the demanded multiplicity of today's music buildings. Therefore, this research questions the perceptions and experiences of music venues.

All our information about the world around us is obtained through our senses. All this information helps us to carry out more complicated processes such as perception and recognition. Listening to music is a multi-sensory experience. We hear, see, and feel “moved” by music that evokes memories, associations, and emotions. As such, architecture and the perception of space is equally a multi-sensory experience, the qualities of space, material and scale are evenly measured by eye, ear, nose, skin, tongue, skeleton, and muscles². The relationship between architecture and music is not limited to the creation of spaces for musical performances but should also be approached in a multi-sensorial way. This research aims to formulate design parameters that affect the perception of architecture and its contribution to the experience of music. This design **catalogue** will be used as basic guidelines for the design of Music Marvel. Having this as the theme of the research I intend to answer the following question: **how can multi-sensory architecture contribute to the experience of music and form the guidelines for the music marvel in Binckhorst?** With the following sub-questions:

What is a multi-sensory experience, and how is it motivated or demotivated?

How do the senses and their mutual relationships affect the perception of space (or architecture)?

How can architecture contribute to the perception of music?

¹ Oxenaar, A., Kloos, M., & Spaan, M. (2012). Music, Space and Architecture. Architectura & Natura Press.

² Pallasmaa, J. (2012). The eyes of the skin: architecture and the senses. John Wiley & Sons. p.41

Theoretical Framework.

The previously defined research question is approached from a phenomenological position because of the direct relationship of architecture to experience. This is the knowledge that takes an important place in the study of how an individual perceives a space or an object. This movement merges the physical aspects of the space with the experiences and emotional influences of the observer, creating a perception³. This perception is different for everyone. Phenomenology is a broad field of knowledge and is widely discussed by architects, theorists, and philosophers. This chapter will define which theory and ideas are adopted to frame the research and avoid any ambiguity.

Both the perception of architecture and music are conducted through the stimuli of multiple senses. For this research, broadly speaking, two theoretical themes will be approached and treated, respectively the multi-sensory effect on architecture and the perception of music through 'sensory' architecture. For the first theme, the theory of Juhani Pallasmaa with the book 'The Eyes of the Skin' and Peter Zumthor with 'Atmospheres' will be used. The second theme will primarily extract its theory and ideas from the book 'Music, Space and Architecture' by Aart Oxenaar, Maarten Kloos and Machiel Spaan. In brief, my understanding of the topics and theories introduced concerning the research question and the elaboration of the Music Marvel in Binckhorst is given below.

Sensory Architecture

Sensory architecture refers to an approach whereby human senses are stimulated through architecture. It refers to the process of implication that the built environment has on the user of a given space through the understanding of the different components of architecture: form, light, colour, texture, scale, and patterns⁴. The user analyses these architectural components through the five basic senses: sight, hearing, touch, smell, and taste.

Perception of space

Each person has their own perception of a space. The perception of space informs the user not only about the physical and emotional properties of such a space but also about the desired behaviour that is acceptable in such a space. The user will automatically adjust his general attitude and posture in that space⁵.

³ Spence, C. (2020). Senses of place: architectural design for the multisensory mind. *Cognitive Research: Principles and Implications*, 5(1), 1-26.

⁴ Canter, D. (1970). *Architectural psychology*. London: RIBA Publications Limited

⁵ Pallasmaa, J. (2012). *The eyes of the skin: architecture and the senses*. John Wiley & Sons.

Perception of music

A person experiences how strongly their perception is their own creation, based on the connections they make and filled with their own emotions, memories, and thoughts⁶. A process by which one arranges and interprets musical information through identifiable characteristics of music such as melody, harmony, repetition, and rhythm and is different from person to person.

Multi-sensory experience

Perceptions involve more than one sense. A single sense cannot form a perception. Pallasmaa argues that every experience of architecture is multisensory and describes that the qualities of scale, matter and space are measured equally by the human senses⁷. In addition, vision is seen as the most dominant sense and the ultimate physical loss, i.e., the senses themselves are equal neither in kind nor in range⁸. Architects must approach a design from all senses to motivate perception.

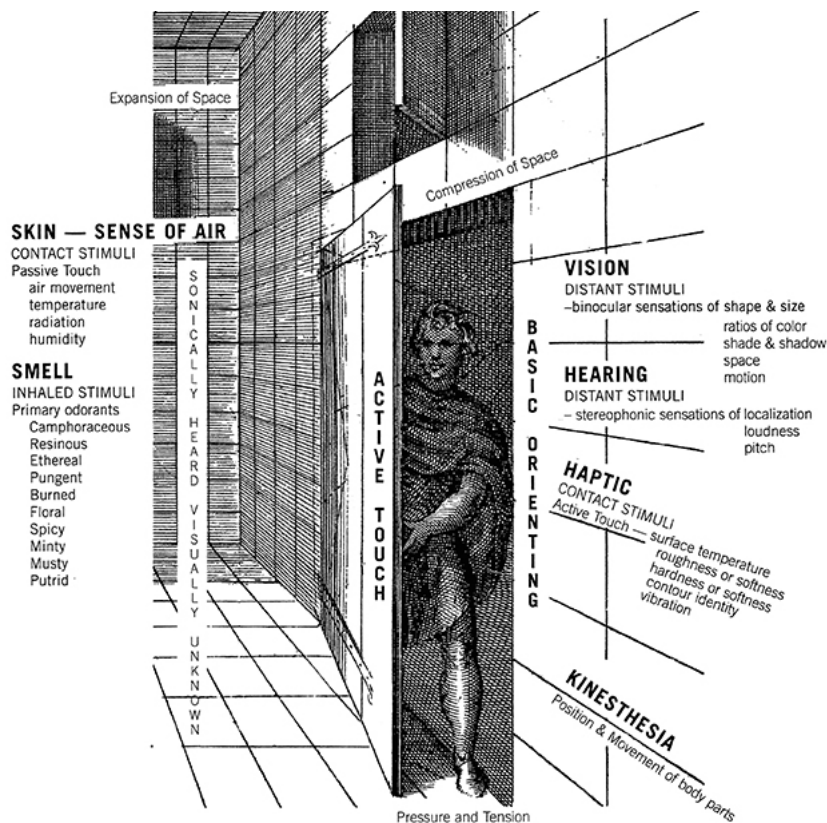


Figure 1: Range of the senses, Created by Joy Malnar and Frank Vodvarka. The senses themselves are equal neither in kind nor in range.

⁶ Oxenaar, A., Kloos, M., & Spaan, M. (2012). Music, Space and Architecture. Architectura & Natura Press. p. 57

⁷ Pallasmaa, J. (2012). The eyes of the skin: architecture and the senses. John Wiley & Sons. p.21

⁸ Malnar, J. M., & Vodvarka, F. (2004). Sensory design. U of Minnesota Press. p.152

Methodological Approach.

This research will be conducted through multiple qualitative research methods, including literature research, case studies and field research. They will provide the instruments to build a design **catalogue** that will define the multi-sensory architecture and its experience of music for the music marvel in Binckhorst.

As previously described, this research roughly consists of two themes to answer the research question: the multi-sensory effect on architecture and the experience of music through 'sensory' architecture. Both themes will be investigated utilizing literature research to formulate ideas and theory. For the first theme, the application(s) of each sense on the perception and atmosphere of a space will be investigated, resulting in an enumeration of potential methodologies for multi-sensory architecture. This could be, for example, the texture and materiality of a space, the form or the analysis of light and colour and their sensory effect on a space. The second theme will be approached more from a musical perspective to investigate the experience of music through architecture. With this, literature will be used to compile a list of which architectural interventions affect the perception of music and vice versa.

To bridge the gap between the theoretical approaches and the practical, relevant case studies will be used. These case studies will relate to the two themes and will be used to extract practical information. Case studies related to multi-sensory design are Olafur Eliasson's previous exhibitions⁹, Daniel Libeskind's Jewish Museum, or an Anechoic Chamber. For the experience of music through architecture, a wide range of case studies and experiments can be selected to analyse, concretise, and conclude.

Both the literature research and the case studies will be used to compile the **catalogue** of design parameters and form the basis for the new music marvel. This **catalogue** is designed specific and needs to be related to the Binckhorst environment. To make this connection, field research will be conducted on the Binckhorst to make an optimal synthesis between the composed design parameters and the Binckhorst environment. This field research will be done by observation, sensory mapping, and notation. Preliminary research has already been carried out as a group during the P1 period. The extracted information is already documented and will be used during this research. Through this field research, the context of Binckhorst will be crystallised based on sensory perception.

⁹ Olafur Eliasson's The Mediated Motion (2001) and Olafur Eliasson's The Weather Project (2003)

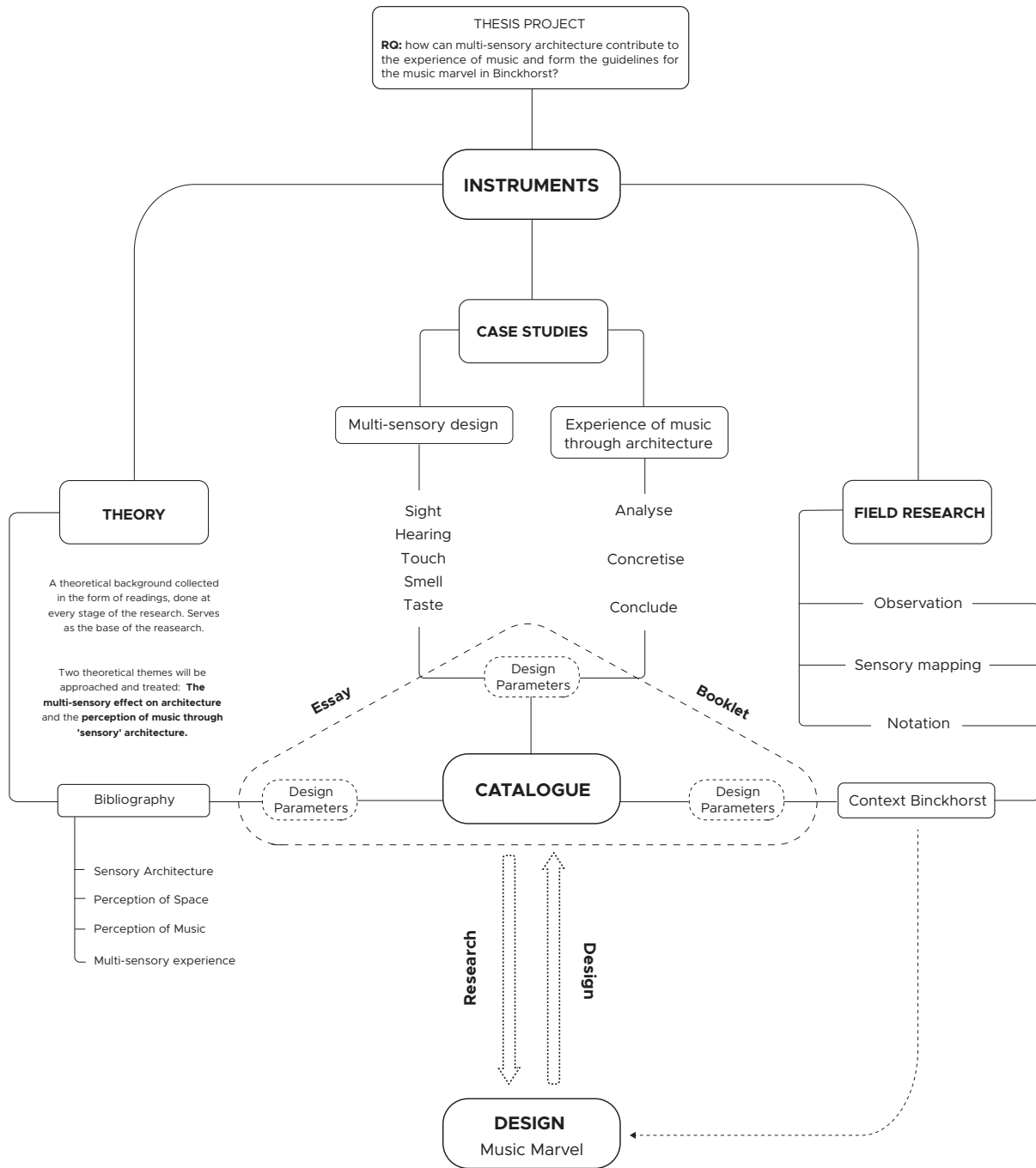


Figure 2: Main research diagram - Author's own work

Arguments on Relevance.

It is well-known that architecture and music are connected beyond form. The themes are inextricably linked but require a different discipline to study them further. In addition, it is evident that both disciplines are perceived through multi-sensory stimuli and that the experience of a space influences the perception of music. However, 'traditional' music buildings are designed purely on the perception of the experience of music. In my opinion, however, it is precisely the motivation or even the demotivation of sensory stimuli that can enhance the experience of music and the perception of the overall building. Traditional music buildings are often lifeless arrangements focused on serving one objective, providing a space to make or listen to music. Besides the acoustic qualities, visual and tactile qualities should also be considered to stimulate the experience of music.

The purpose of this research is not to indicate that there is the 'right' solution to the research question, it is too complex for that. This research tries to give a new perspective in architectural design practice by approaching music venues from the perspective of sensory perception and its architectural effect on the experience of music. Combining the collected information into design parameters will contribute to the discourse of new guidelines for designing music venues.

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Case studies, to be continued...

**~~“Architecture pleases the eye
while Music pleases the ear”~~**

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