FORM AS AN AMPLIFIER
RESEARCH PLAN

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Cover page background image: personal map of forms found in the Binckhorst. [by author].

FORM AS AN AMPLIFIER

PUBLIC BUILDING STUDIO
The topic of the 2021-2022 Public Building Graduation Studio is 'MUSIC MARVEL, Music & Popular Culture Re-Wired'. It explores the designing of a building for music in the Binckhorst area in The Hague. As is explained in the studio handbook by the AR3AP100 Public Building Graduation Studio 2021-22 (2021, p. 5), "the aim of the studio is to explore the vital role of music as a public event and it investigates how architecture can be engaged in music as an important part of civic life and urban milieu." A relevant topic is the experience a visitor has when visiting a concert. This would not only be about the musical experience itself, but also about how the architecture of the music venue is percieved and how it contributes to this whole experience of going to a concert.

THE PROJECT
The goal is to design a large and iconic hybrid music venue which can host multiple musical genres. The idea derives from the concept of a festival or a 'city-within-a-city', where several events can take place next to each other in an enclosed, designed space and where the whole is seen as one great experience. The music venue will be located in a future public park in a dense urban context. Because of the aim to mix multiple functions and musical genres, it is important that the venue can blend in with this site, to even further enhance the mixing of functions and its relation with the context.

AMPLIFYING
The idea of using the concept of an amplifier in the research is derived from the group abstract (see Appendix I). An amplifier is an electronical device used for making weak signals audible by increasing the power of these signals, as shown in the scheme below. With the group abstract, we propose to strengthen weak aspects from the design location using an 'amplifier', fitting within the theme of the graduation studio. If this metaphor of an amplifier is interpreted in its broader sense, one could say that something small is enlarged in such a way that it becomes observable, in other words: amplifying is about scaling up.

input: weak signal   add energy   output: strong signal
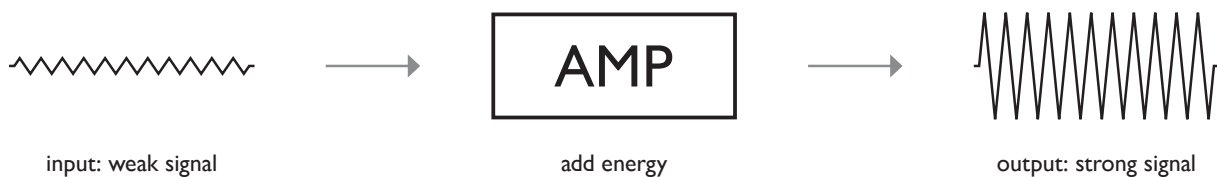
Fig. 1: Schematic operation of an amplifier. [by author].

This concept can be projected onto the field of architecture: applying an intervention (i.e. adding energy) to make certain aspects of a design or a physical location more prominently visible (note that in this example *audible* is substituted for *visible*, this would of course also be applicable to other senses).

AR3AP100 Public Building Graduation Studio 2021-22. (2021). *MUSIC MARVEL*. [Studio Handbook]. https://brightspace.tudelft.nl/d2l/le/content/398 796/viewContent/2481011/View

TOPIC: FORM

As a 'device' that strengthens the design for a music venue, and as a substitution for the metaphor of an amplifier, the concept of architectural form is chosen. Form is one of the most fundamental, if not *the most* fundamental element within the field of architecture. The essence of form in architecture, using two other highly related fundamental aspects, is described as follows by Bacon: "Architectual form is the point of contact between mass and space." (1967, p. 16). By consciously using such fundamental elements in the design process, in this case form, strong design solutions can be implemented in early stages of the project, resulting in a more convincing final design. This importance of form is explained in the following quote, again by Bacon (1967, p. 18):

> *"Architectural forms, textures, materials, modulation of light and shade, color, all combine to inject a quality or spirit that articulates space. The quality of the architecture will be determined by the skill of the designer in using and relating these elements, both in the interior spaces and in the spaces around buildings."*

The project will focus on relating the architectural element of form to the experience of a building for music, using the concept of amplifying. It questions: what if physical form or the appearance of a building is used as an amplifier to strengthen the vistor's experience of going to a music venue? In the scheme below the aim of this project is explained, using the format of an amplifier. Through amplification using form, eventually the goal is to create an iconic structure that offers an immersive experience.

experience
the notion of music
perception

opportunities   **design**   **immersive experience**

Fig. 2: Using the metaphor of an amplifier for the design process of a building for music. [by author].

Next to the theoretical relevance and fundamentality for using architectural form as an 'amplifier', the choice for concentrating on form comes from a personal approach. In my design process, I often use the abstract concept of form as the leading design principle. I believe that a spatial composition, using archetypes and designing with pronounced shapes within these compositions can contribute to strengthening typologies.

Bacon, E. N. (1967). *The Design of Cities*. Thames & Hudson.

RESEARCH PLAN

PROBLEM STATEMENT
The three main aspects discussed before combined are the basis for the project and the research. Firstly, in accordance with the theme of the graduation studio, the research will be about buildings for music. Next, taken from the overarching theme of the group abstract (see Appendix I, about an amplifier as a concept to strengthen a weak signal), the focus will be on amplification or scaling up. Finally, using a fundamental element in architecture and coming from a personal approach of using form as the leading design principle, the scope of the research will be narrowed down further by focussing on physical form. These three aspects then lead to the following research question:

How can form amplify a building for music?

With this leading question, other questions arise, such as: what can physical forms do for the perception and experience of a structure? What key elements does a building for music *need*? Or: what aspects of a building for music can be amplified? And: what forms can contribute to amplifying a building for music, and how? To answer these questions, the project research contains three parts:

1. Form theory: what do physical forms do in the sense of perception and experience?
2. Music venue typology: what aspects of a building for music can and need to be amplified?
3. Combining: how can specific forms amplify these aspects of a building for music?

Next to this, directly related to the specific site conditions for the design project of the graduation studio, an inventarisation of both present forms and (weak) qualities of the Binckhorst in The Hague will be made (see Appendix III: Binckhorst Forms) and research will be done on how to amplify these qualities. This research will mainly take place within the program of the Theory Research (TR) sub-course and the Delineation Research (DR) sub-course, both within the Public Building graduation studio. The notational system created within TR emphasizes the present forms and the final manifesto within DR will stress the need for amplification within the site. The output of this can be directly used in the design project of the music venue in the Binckhorst, to establish a stronger relation between the future music venue and the direct context. In the diagram below, the complete structure of the research is explained, a further explanation of this structure will be given on the next page.
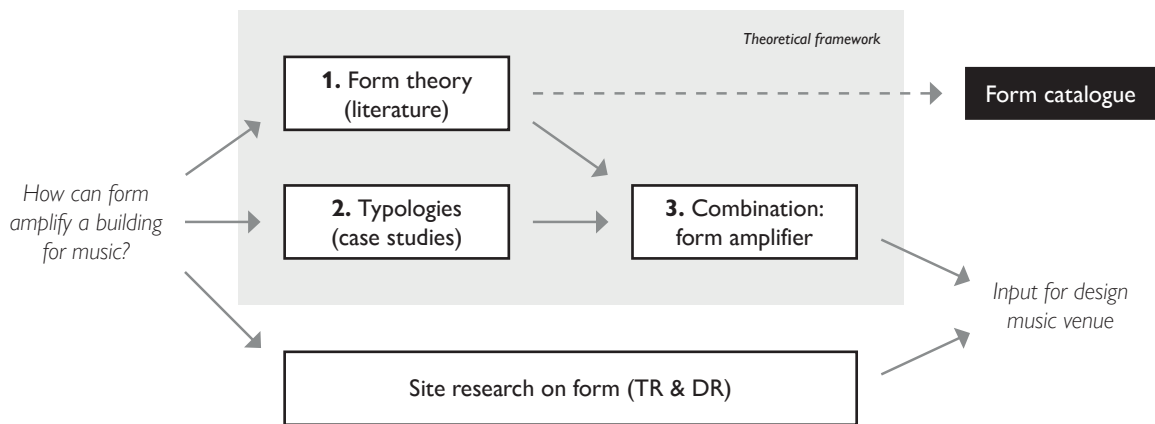

Fig. 3: Structure of the research on form as an amplifier. [by author].

RELEVANCE

The research will investigate if and how architectural forms can be used consciously to 'amplify' the visitor's experience in a design. With amplifying, strengthening or scaling up relevant aspects, the notion of an icon as well as the cultural importance of a building can increase and therefore it can make a design more convincing and more resilient. The outcome of the theoretical framework (i.e. the three parts of the research excluding the site specific research) and the research on forms that are present in the Binckhorst together form the direct input for the design of the music venue.

Next to that, the methodology of this research can be applied in a broader field, in other words: it can be used for strengthening aspects of other typologies as well (not only that of buildings for music). The first part of the theoretical framework, on form theory, can act as a basis for understanding the effects certain forms can give when it comes to experiencing a structure and provoking certain feelings. The second part, about what aspects of a certain typology can and need to be amplified, focusses on the specifics for a certain project and can be substituted for other types of buildings. The third step, of combining the form theory and the research on specific needs for typologies, together the theoretical framework (see diagram on the previous page), can be repeated.

METHODOLOGY

For the project research and the design process, several methods will be used. As introduced in the diagram of the research structure, the first part of the research will mainly consist of literature research on what architectural forms can do for the experience of a visitor of a building. Mainly classic theoretical pieces (see the paragraph on bibliography) within the field of architecture will be examined to establish an understanding of the relation between form and experience. The second part of the research will make use of case studies. For practicality and relevance, the same case studies will be used as have been analysed in the first quarter of the studio, for Project Design. With analysing these case studies on form, more knowledge will be acquired on typical forms, why they are used and what experiences for the visitors they potentially evoke. Main questions that will be asked with analysing the case studies on form are: why does it look like this? And: what do the shapes do (in the sense of experiencing the building)?

Fig. 4a (left): Walt Disney Concert Hall / Frank Gehry. From "Archdaily," by P. Rümmele, 2013 (https://images.adsttc.com/media/images/5264/ac6c/e8e4/4e88/a000/01ff/large_jpg/Gehry_PhilippRuemmele_riotphotography.com.jpg?1382329446).

Fig. 4b (right): Abstraction of the forms of the Walt Disney Concert Hall by Frank Gehry. [by author].

Next to this, during the design process for the music venue in the Binckhorst, research by design will be done to get an understanding of the context and to implement the theoretical research findings in the design in order to find more profound design solutions that are specific for the site. The research within the TR and DR sub-courses (which is partially already done, see Appendices II, III and IV) will, as part of the analysis on the design location, contribute to the design process of the music venue.

Rümmele, P. (2013). Walt Disney Concert Hall / Frank Gehry. [Photograph]. https://images.adsttc.com/media/images/5264/ac6c/e8e4/4e88/a000/01ff/large_jpg/Gehry_PhilippRuemmele_riotphotography.com.jpg?1382329446

OBJECTIVE

The goal is to get a better understanding of the influence of architectural forms on the perception of a building, as well as to find clear answers on how these forms can contribute to creating a more immersive experience for visitors of a music venue.

Next to that, the first part of the research project within the theoretical framework, about form theory, leads to a 'catalogue' of forms, providing knowledge on what kind of forms can evoke what kind of experiences. The goal with this catalogue is to present a general conclusion which will be widely applicable within the field of architecture. The catalogue will be presented in a matrix-like way, showing fundamental forms and a list of experiences (or feelings), for example giving information like: "shape X may provoke feeling Y, therefore adding to the experience of Z".

CONTRIBUTION

As written in the paragraph 'Relevance', amplifying a design can increase the notion of an icon and the cultural importance of a building and therefore it can make a design more convincing and resilient. Besides, the research method is set up in such a way that it can be applied to and repeated for other disciplines or projects within the field of architecture. The catalogue of forms directly contributes to the broader discourse of the discipline by giving a clear overview of fundamental forms related to experiences and feelings one might have when interacting with a structure.

BIBLIOGRAPHY

The books presented below will be used for the literature research on the relation between form and visitor's experience of a building. This list is a proposal of (classical) theoretical books within the field of architecture of which I think are relevant for the research project. Throughout the research process, this list will probably be extended.

Alexander, C. (1964). *Notes on the Synthesis of Form.* Harvard University Press.

Alexander, C., Ishikawa, S., & Silverstein, M. (1977). *A Pattern Language: Towns, Buildings, Construction.* Oxford University Press.

Bachelard, G. (1964). *The Poetics of Space.* Presses Universitaires de France.

Bacon, E. N. (1967). *The Design of Cities.* Thames & Hudson.

Ching, F. D. K. (1979). *Architecture: Form, Space, & Order.* John Wiley & Sons Inc.

Corbusier, L. (1985). *Towards a New Architecture.* Dover Publications.

Forsyth, M. (1985). *Buildings for Music: The Architect, the Musician, and the Listener from the Seventeenth Century to the Present Day.* The MIT Press.

Lynch, K. (1960). *The Image of the City.* The MIT Press.

Ungers, O. M., Koolhaas, R., Riemann, P., Kollhoff, H., & Ovaska, A. (1977). *The City in the City - Berlin: A Green Archipelago.* Lars Müller Publishers

Zumthor, P. (2006). *Atmospheres.* Birkhauser.

APPENDIX I: GROUP ABSTRACT

Zsa-Zsa Brouwers, Z.O.I.L.Brouwers@ student.tudelft.nl
Chris Huisman, L.C.Huisman@student.tudelft.nl
Phat Ho, P.T.Ho@student.tudelft.nl
Edgars Jane, E.Jane@student.tudelft.nl

Amplifier: Abstract

1900 saw the first 'technological' amplified concert hall, enabling scaling of music.[1]
How can amplification as a method inform and scale our approach to architecture?

The Binckhorst is an underdeveloped area of contaminated potential. The irregular decay of its own industrial heritage has generated an overall monotony of character. We approach this project as if it was a network of obscured signals that are in an acute need of amplification. It's not that there is a lack of them; it is more that their dimensions have limited correspondence with the human scale. When amplified, these signals begin to resonate with a broader spectrum of scales of experience. By enlarging and enriching the legible field of available specificities, an opportunity for a re-association of the character of Binckhorst emerges. Analogous to the field of modern music, the challenge lies in 'regulating' the found noise in order to produce emotional engagement. How to transform monotony into excitement in a meaningful way?

The Music Marvel is an operation of large-scale mass coordination. The truth of any mass event is that a great number of people are influenced by the decisions of a few. The knowledge about crafting a welcome space as an 'open envelope' therefore takes a central role. That is the responsibility. Visitors are as much of a guests of the event as of its surroundings: a *double engagement* with a place. That dictates the Music Marvel to recognize the necessities of a mass-venue from a qualitative viewpoint, beyond the programmatic complexities of the event.

The status of pop-culture as a dominant shaping force of mass behaviour is becoming more evident. In line with that, perhaps, the way to approach a Music Marvel is to take on the role of a *curious amplifier* by detecting the invisible. To imagine space from within and not from alongside: like a composer.[2] Mediating between 'collected noise' and 'processed compositions' we aim to distinguish and collect a set of operational tactics that are used for shaping mass-events on a variety of scales. Such systematic observation will result in a deeper understanding of the inherent limitations and possibilities of determined programming of an envelope for gathering. This will lead to a firm grasp on the spectrum of the 'music envelope': from an open air festival to an impromptu flash mob.

Interested in the hybridity of music envelopes, we pose a question to ourselves: "How can the Music Marvel, as an amplifier, blend the qualities of musical archetypes in order to enlarge interaction between unexpected crowds?" The area's proximity to the 'center' of the Hague supports our speculations on intensifying these relationships. In short, the objective is to substitute the blandness of monotony with a composition of exciting specificity.

This project will contribute to the understanding of the elasticity of a built music venue by experimenting with 'dialectic clashing' of both building and musical genres. In other words, an architectural mashup—used productively. Our project sets out to challenge the prevailing methods of space-production and will rigorously present the alternatives of substituting *architectural creation* for *compositional invention*. It is an exploration into the power dynamic between cultural expression and commercial adaptation.

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[1] "The 20th century started with the 1900 dedication of the first 'technological' concert hall, the Symphony Hall of Boston." Ignacio G. Pedrosa in 'Buildings for Music Since 1950'. *Arquitectura Viva*. 30.04.2017.
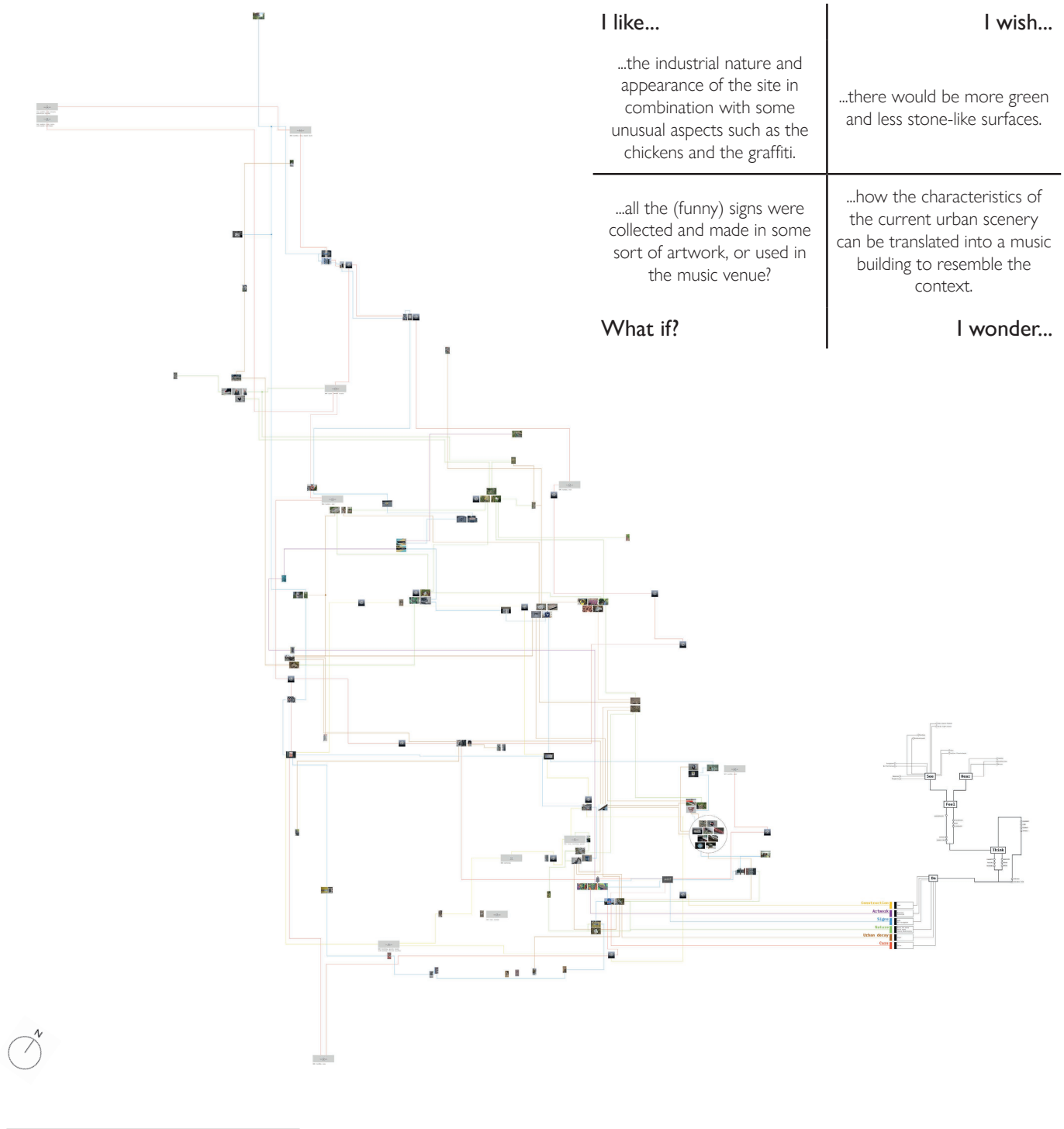[2] The composer does not have in mind the representation of a specific content. Otherwise he has the wrong standpoint: *alongside* music instead of *within*. "His composition becomes the translation of a program into tones, which then are unintelligible without the program [...] no amount of 'intention' can replace invention!" Eduard Hanslick, *On the Musically Beautiful*.

Abstract of Group 3 (Zsa-Zsa Brouwers, Chris Huisman, Phat Ho & Edgars Jane) on the use of an amplifier in relation to the creation of a music venue in the Binckhorst. Several ways of 'amplifying' are suggested in order to allow for personal fascinations to amplify with.

APPENDIX II: SITE & EMPATHY DIAGRAM

| I like...	I wish...
...the industrial nature and appearance of the site in combination with some unusual aspects such as the chickens and the graffiti.	...there would be more green and less stone-like surfaces.
...all the (funny) signs were collected and made in some sort of artwork, or used in the music venue?	...how the characteristics of the current urban scenery can be translated into a music building to resemble the context.
What if?	**I wonder...**

Site diagram of Group 3 (Zsa-Zsa Brouwers, Chris Huisman, Phat Ho & Edgars Jane) and the personal empathy diagram of what struck me about the site. The group site diagram is a visual representation of all (weak) signals or noise samples found in the Binckhorst, put in their exact location and visualised as if it were a circuit board. All samples are interconnected or 'wired' through one or several of a total of six different categories.

APPENDIX III: BINCKHORST FORMS
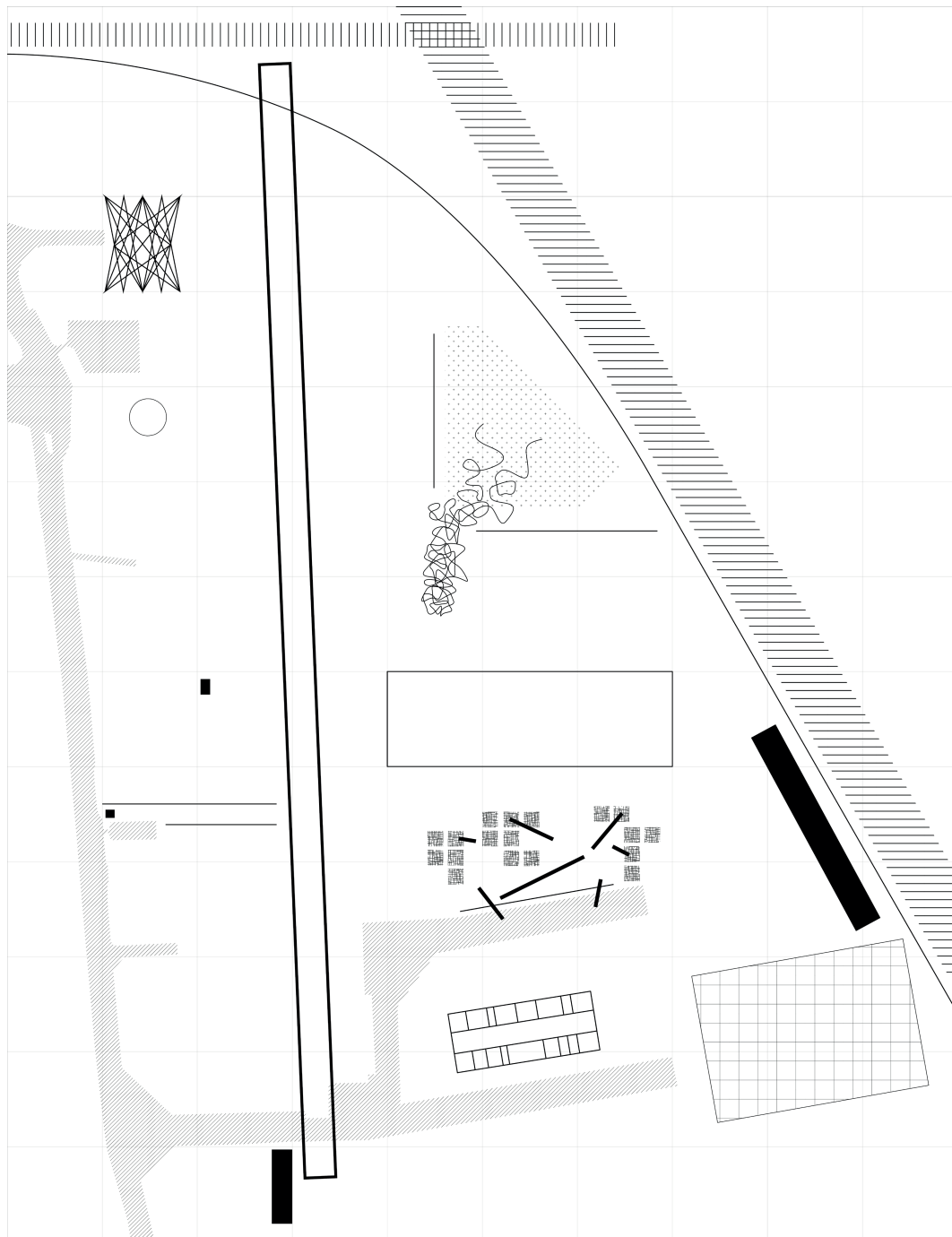
Notation of present and distinct forms that are found in the Binckhorst area. This abstract visualisation is one of the four layers of the group's notational composition (see Appendix IV), with the other layers being: Flexibility (by Zsa-Zsa Brouwers), Flow (by Phat Ho) and Frontiers (by Edgars Jane).

APPENDIX IV: NOTATIONAL COMPOSITION
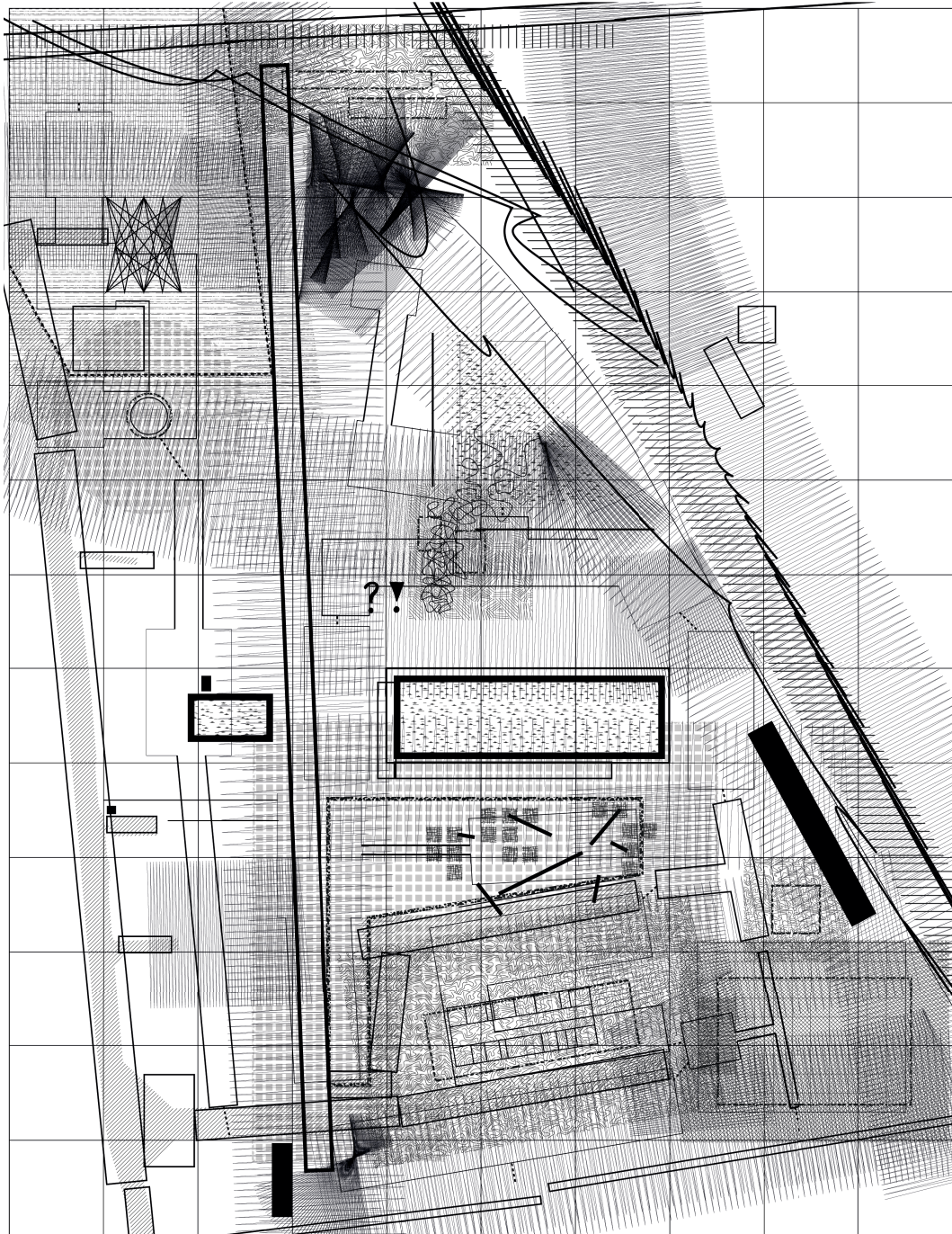
Complete notational composition by Group 3 (Zsa-Zsa Brouwers, Chris Huisman, Phat Ho & Edgars Jane) about the Binckhorst. The topics of the four layers of samples that can be amplified all come from a personal fascination, together creating a superimposed image of possibilities within the site that can act as an imput for amplification.