

Sonic Act

Designing with Sound
Research & Process

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Research & Process

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Methods & Analysis
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THE COMMONS OF VALPARAÍSO

Constructing the Commons in the Latin American Metropolis

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*Positions in Practice : Constructing
the Commons in the Latin American
Metropolis*

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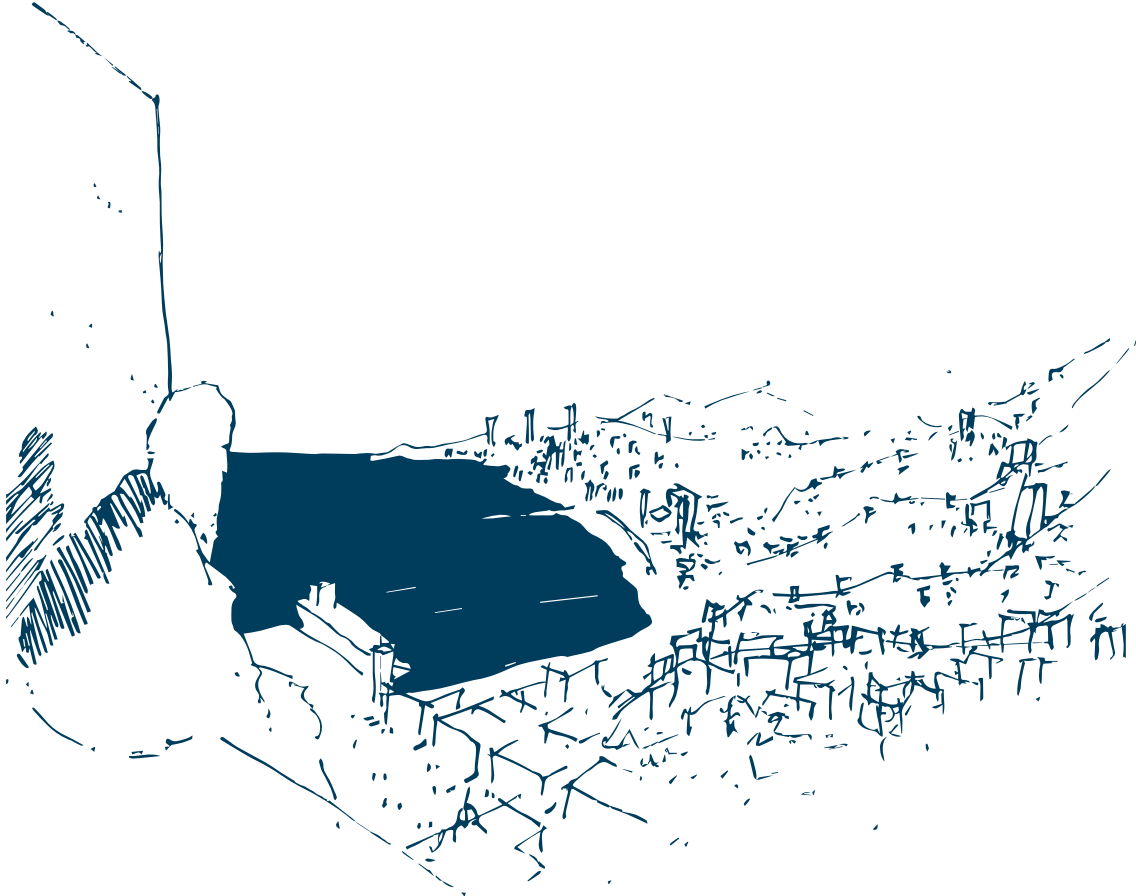
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1. Listening to the City
- a moment of respite
that is embedded in
the act of intermission



Introduction

Designing is an inherently iterative process of research. It draws on many frames to inform the outcome of an architectural project. As with any research endeavor it is the primary question or intent that forms a guiding supportive frame, steering the academic endeavor. This fundamental question underpins the Methods and Analysis chair in which the following project, *A Sonic*, was conducted as a graduation project. The leading question positioned is; How does the sonic act inform an architectural project? By association a secondary question being; how can sound be used as a mechanism for architectural design? The premise of the intent to form an architecture developed through a process that questioned sound's role in design, stems from the field research as sound was a notable characteristic of the city, Valparaiso.

Presented in the first research article, *Sonic City*, soundscapes were not only a defining feature of Valparaiso but highlighted the significance of an experiential quality. The diversity of sound in the city was incalculable and ineffable yet cases such as the natural museum's diverse recordings of the landscape of Chile, or the bustling fish market, quiet cemeteries, sacred monasteries, joyful cultural park

compared with the noise of the harbor and the street or shopping center; emphasized that design really does matter. Yet the research also realized that fundamental to the phenomenon of sound was the act of sound. In this sense the sonic act is the determining element defining soundscapes. This understanding highlights that rather than an acoustic endeavor the project followed an interrogation of acts and their manifestation as form. Rather than a study of phenomenon, it is a study of praxeology.

The sonic act expanded the role of sound, drawing forward notions of agency, occupation and most importantly the role of architecture in being essential to the realization of experiential environments. However, without the underpinning frame of creating an experience, the realization of an architectural design project has often unintended and adverse effects. The compilation of works in this report aims to document the process of research and thought that informed the design outcome (published in book three).

The first segment draws on theoretical frames of articles and research that were fundamental to development of the project. From articles, to research each contribution is a significant part

to the process of developing knowledge around sound and the act with regards to architecture and the project. Finally a diary of design decisions are presented as a documentation of a design led research process that stemmed from the theory.

2. Concept drawing of
the project drawn in
February 2018



Perpetually afoot

Competing sounds
A rushing street
shouting vendors
blaring music
an engulfing encounter

A turn away
and through we go

A turn away
and out and in?

A turn away
and ascend we shall

front to back
performer to spectator
dancing feet
to a pattering beat
act as appearance

Suddenly Imperceptible
eavesdropping from below
finally quiet
unable to intervene
meditative reflection

gaggles and giggles
ineffable moments
distant humm, bark & chirp
enclosed to exposed
pockets of association

A turn away
And up we go

Aside the unyielding climb
An agonising funicular
it's mechanical struggle-
a rumble, permeating
a lush precipice

A turn away
and in we go

A turn away
and up we go

A turn away
and here we are

Buenos Dias, Hello Hello
An embracing chamber
the Sonicity evicted
one on one
the welcoming junction

Step by Step
unfolding rhythm
dialectic presence
oneself & the city
a public intermission

sonic array
immersive appearance
Collectivo! fruit and veg
a youthful presence
the cultural confluence

A turn away
and in we go

echoing cutlery
distant screams
a notable respite
a chipper beat
an intimate court[ing]

A turn away
and in we go

A turn away
and in we go

A turn away
and away we go

studious whispers
the turning of pages
tip toeing
hush hush
a divergent volume

a resonating hum
playful mediation
youthful oratory
familiar and engaged
the collective

overlook and overhear
a distant presence here
rustling leaves in earthen cavities
frame the city
sonic vantage

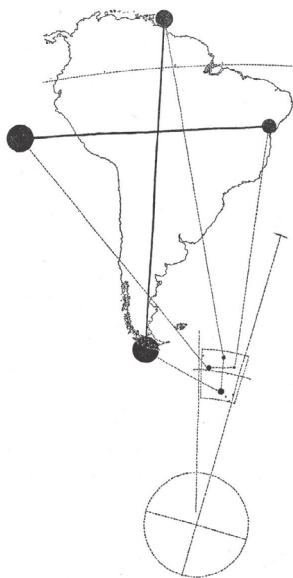
The Road is Not the Way

The following is an extract of an article written for Atlantis magazine - issue 28.4

3. South America - An extract from the poem the Amereida, 1967

8

A mystical spirit shrouds the Open City. On the Pacific Coast, in a remote dune landscape, the experiment of several decades continues to draw global attention. Envisaged and built by the faculty of architecture of the Catholic University of Valparaiso, Chile, the project has no end. It is a laboratory that is iteratively challenging the core of architectural proposition –how, why and who does architecture form?



“The road is not the way” (Amereida, 1967), the last line of the poem that saw the inception of the school, the Open City and an alternative pedagogy is perhaps the most poignant - an affirmation that calls for probing the unknown. It is this position which situates the Open City as theoretical experiment made physical, as a methodology which is constantly unfolding, as a collaborative exercise with no leader. In the words of Oscar Castro (2017), “because the unseen horizon is unknown the methodology is not projected and is speculative.”

The transformation of the school, by notable proponents such as Alberto Cruz, positions three underpinning practices that form a philosophy – the poetic act, the Ronda, and a way of life.

The poetic Act, in stark contrast to architectural practice world wide, in itself question the origin of architecture. In standard practice the profession relies on a brief, mechanisms of analysis, guidance of policies and the list goes on. It is not that the School rejects these mechanisms and tools but rather positions that an idea - an architecture – is born of our imagination. If this is true, then the poetic act is a means to explore the imaginative possibilities beyond

what is known. The result has been that embedded in the Open City and the school are poets, integrated as being fundamental to the architectural process. This process is performed through a methodology of acts of which poetry is part of but not exclusively, as an act is a process of doing. Thus, the school engages in simple activities that draw out new possibilities and an alternative understanding of space. As an example, a group of people, intending to intervene in a space could each hold a piece of rope. The rules being that one could only walk 5 paces but if one would cross another rope one could walk 5 more – and a plan is born (or at least a logic of space that can give birth to something else).

The Ronda, inspired by a circle in which children play, speaks of the collective – the common act of man and the possibility to do something amongst many. Underpinning the act of the collective, Cruz speaks of the body of architecture as being an on-going collaborative pursuit. A temporal student population who come and go; and a more permanent residency of professors, poets, engineers, biologists and families inhabit the Open City. The Ronda’s manifestation in the Open City and the school has been that there is no authorship of ideas but a continuous appropriation.

Considering the Open City, a laboratory of alternative practice

Those who reside in this space give form to it through a collaborative process of an evolving architecture. Ronda's are either formal as a meeting or informal as a discussion over food. Highlighting the continuous evolution of thought and projects, such as the originally envisaged library being transformed into the house for the poet Morales halfway through its construction.

Architecture as **a way of life** - to live, work and study – is a third critical position. The notion is that architecture emerges through daily practice and from ones frame of reference. Although the Open City holds various traditions that have evolved over the years, by no means is it a monastery, but rather a cultural islet that has self-manifested. It draws together the scientific tradition of observation and experimentation with art and life – enacting the methodology as a creative act. From those annual events that involve the entire school, or the daily affairs such as celebrating a birthday to the development of colloquial hand gestures as an informal language that has been passed on through the generations of students, the Open City is the manifestation of way of life. It transcends the practice of studying and creating architecture and advocates for complete immersion.

The second element to this is that of the *travesia*, directly translated as crossing, it's intent is to learn from others and broaden ones frame of reference. As a unique endeavour- the school sends students to work in a hands on manner in various situations across the continent. From the urban to the rural, the *travesia* is an exploration imbedded in learning from traditions and practices of South America as a continent (“the interior ocean”) – it is mechanism for self-exploration and examination.

Searching for the continent

The philosophy of the *Ameraida*, the University and Open City, is ultimately a scientific one, fundamentally routed in observation and experimentation. Although the practices it involves itself in and advocates for undoubtedly raises the ire of some to be discarded as ‘alternative’, the Open City is a laboratory that is intended to challenge convention. The focus on the Act as a study and exploration of praxeology (the science of human action), has created unprecedented forms and spatial responses that litter the dune landscape. These are not follies – but an insightful exploration of mans occupation of the world. There are no failures as the project is never complete. As Cruz aptly states, “failure

creates the frame for creation”. Embedded in the work of this incalculable collective, there is another goal, one which seeks to find it's own path instead of that advocated by the Global North – it seeks to rediscover the South America and in so doing reconstructing the traditions of practice. •

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Sonic Space

The following is an extract of an article written for Atlantis magazine - issue 28.4



“The most essential auditory experience created by architecture is tranquillity. Architecture presents the drama of construction silenced into matter, space, and light. Ultimately, architecture is the art of petrified silence.”

- Juhani Pallasmaa, architect

Pallasmaa (2017) positions that the history of sound being incorporated into design thinking has a long lineage with many prehistoric structures theorised to be designed for harmonic qualities. Yet, the shift to visualizing architecture has come to an age where it dominates the city – where vision gives order through form and proportion. The dominant contemporary narrative no longer judges architecture by experiential qualities, Pallasmaa’s tranquillity, but rather by means of the render and photograph. The dominance of the visualization of our built environment however negates experience, as sensation and action fall by the way side. Affect has become increasingly recognized as being critical to experience and far more impactful than the image. As technology has advanced, the realm of affect and phenomenology has increasingly become a science – tested, understood and replicable. In advocating for a return to experiential thinking and designing, we need to reflect on those principles that form our experiences. In understanding sound and form, its influence on forming environments and ourselves, the graduation thesis, Sonic City, puts forward five underpinning principles in order to give guidance to sonic space and concludes by positioning the notion of presences as an act that we continuously engage in.

Stemming from field research in the vibrant cultural capital city of Valparaíso, Chile, the research was inspired by the dynamic audio landscapes that continuously bombarded the citizen. One moment bus horns are screeching, informal retailers are shouting, Despacito blares from a store front nearby and then, suddenly, silence offered by a narrow turn into a lush alleyway climbing the hill. The contrast in the sonic landscape is striking – constantly stimulating the senses. It was this experience that sparked a fascination with sound and the city – returning to an understanding that space is fundamentally affective.

PRINCIPLES

Sound = Sonic element

In the complex sonic environments that we inhabit, one is constantly bombarded by an array of sounds. Analysing them as waves and troughs highlights the overlap and seemingly unidentifiable jumble of noise that meets our ears. Recording studios go to great length in isolating sound, designed to minimise reverberation and exclude and separate various sounds. Yet – astonishingly – we can discern varied sounds in a complex sonic environment. We can have in-depth conversations in the most unsuitable situations. This is due to the brain's unique ability for pattern recognition. Sounds are discernible and in this sense have a strong link to those elements that they are associated with: sonic elements.

Soundscapes situate & orientate

Soundscapes exist beyond the visual realm. They are composed of varied sonic elements that form an environment, a spatial composition. These ensembles are composed of how sounds interact with an environment and intuitively offer an understanding of dimension, materiality and space. As Pallasmaa (2017) describes, the ability of sound

to orientate and situate, he highlights how in the dark the dripping of water carves out a void in our imagination – sound gives form. Yet soundscapes also place one in the world – in our socio-cultural landscape. Sound as a composition constructs a sense of place – it not only positions one in space, but also gives an understanding of what that space is. It allows one to form a nuanced awareness that is unattainable through sight.

Soundscapes are Affective

Blesser (2009) draws a clear distinction in defining aural landscapes as a phenomenon of experience - that sound is able to be measured and quantified. Yet it is the intangible ability of sound to AFFECT us, which is critical for architecture. It's affective quality not only influences how one feels, but also how one acts in response. It reverberates through us physically, directly engaging the body and influencing how one physically feels. It also stimulates memory, drawing on past experiences as well as engages our sense of being, stimulating emotional and cognitive responses. Collectively, these attributes of sound position soundscapes as highly experiential and in turn impactful environments.

4. A Vantage point in Valparaíso drawn on Site during field Analysis

Sound as an Act

To listen and to make a sound is both an act. Underappreciated, these acts are fundamental to how we navigate the world and this has been informed from a long lineage of cultural influences. To walk softly in a library or scream at the top of one's voice in a protest, to change the way one talks in a crowded elevator. These actions seem natural - unconscious - however, they are closely linked to behaviour in social and environmental circumstances. We readily adjust the tone and level of our voice or the manner in which we listen according to the situation. Granchow (2017) highlights how we do not simply listen, but actively listen by making gestures and sounds that denote the act. During an a cappella performance in a small space or a church, this is pronounced as one is aware of one's own presence - holding in the sneeze to the end of the performance. The extreme situation, however is true of the everyday as one navigates one's own interaction with collective sounds and society. The notion of presences is linked to the act as to make a sound is to alter the soundscape and denote one's existence. In this sense sound as an act is closely linked to behaviour and presence.

Soundscapes as spaces of appearance

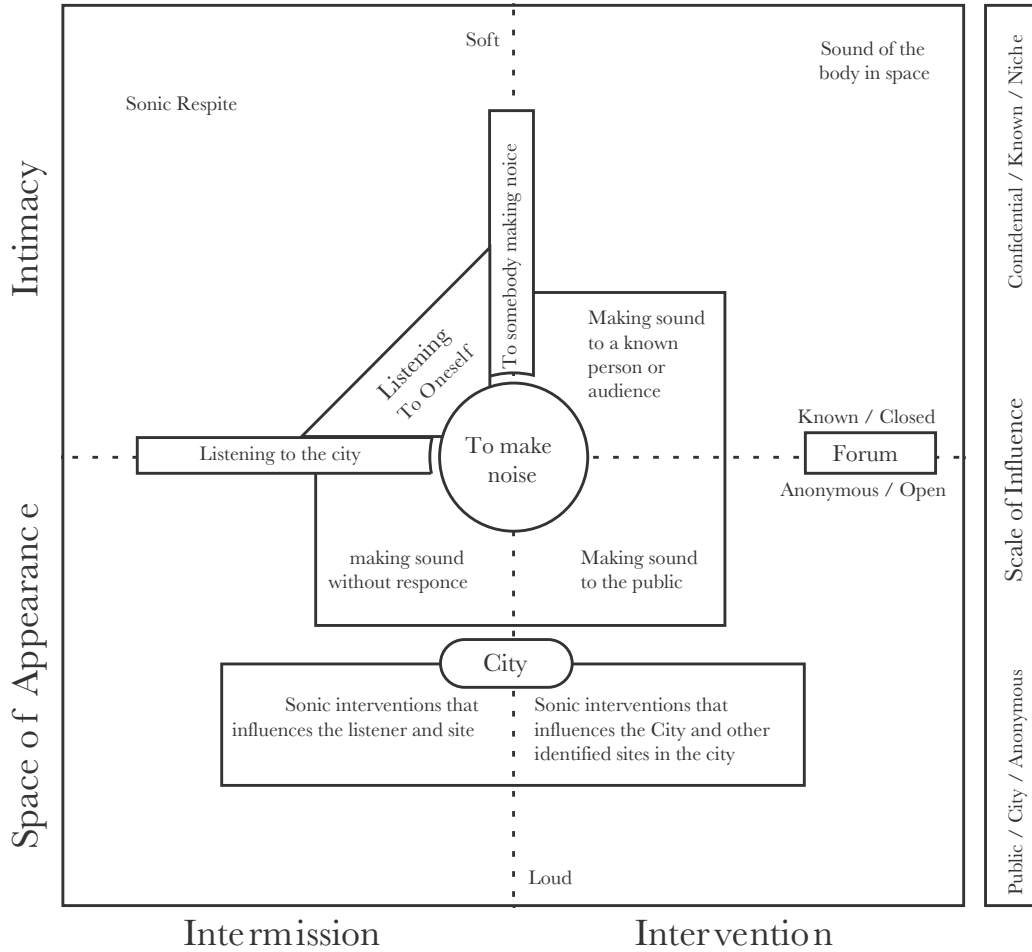
The space of appearance as the public body, a temporal definition of seeing public space as a verb rather than a noun, draws forward the interaction of sound in the landscape of the city. Sound as an act, drawing forward the notion of presence, highlights how individuals create the public through their interaction with it. Examples in Valparaíso are: the beginning of the student protest where the hills and city both filled with the sound of clanging metal as citizens throughout the city supported the demonstration; or the end of the America's cup where blaring horns and shouting resonated through the city as the city becomes an amphitheatre for celebration. Sound expands the public realm into the home as it permeates walls and one's private domain. It is the everyday where sound as an act is seen as a constant mediation of society. In the words of historian Peralto (2009), "Valparaiso is place of harmonic disorder", where chaos remains in careful balance.

THE SONIC ACT

As an act, presence is underpinned by a relationship through which sound is a medium. To listen and to make a sound is a means to engage this medium and draw attention to presence. Presence as an act, is composed of two counter acts. The first is focused on oneself as being (the Act of Sonic Intermission) which is opposed to the second that is external and orientated to being present in the world (the act of Sonic Intervention).

Sonic Intermission

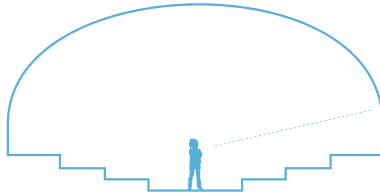
Pallasmaa (2017) advocates that forming tranquillity is one of the objectives of architecture. The notion positions quietness as being an act that draws attention to being. Expanding on this, Granchow (2017) defines quietness not as the lack of sound, but rather the lack of response (Granchow, 2017). The position situates the auditor in a reflexive environment, where presence is orientated on oneself. Importantly, quietness is situated not as a space devoid of sound, but rather emphasises the act as simultaneously being separated from the world unable to intervene in it and being witness to it in a state where it does not respond to the auditor.



- 6. Intermission and Intimacy diagram
- 7. Intermission and the Space of Appearance
- 8. Intervention and Intimacy diagrams
- 9. Intervention and the space of appearance diagrams

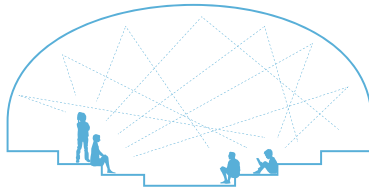
Intermission + intimacy

The act of recognizing ones own presence, as the sound of the body is recognized



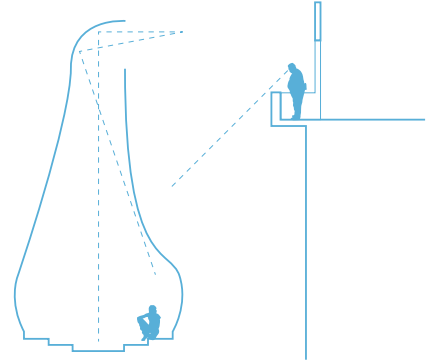
Intervention + Intimacy

Able to manipulate and /or influence the sonic composition which takes place in an intimate setting - small space, amongst known people, familiar



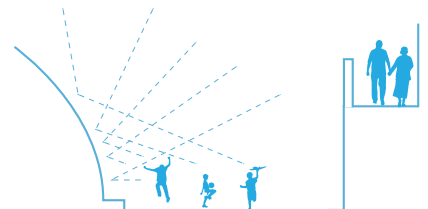
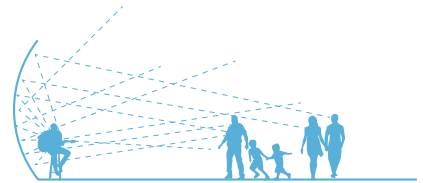
Intermission + Space of Appearance

In a state of silence, lacking any response, Intermission in the space of appearance is seen as recognising ones on presence within the public sphere, without being able to alter space of appearance.



Intervention + Space of Appearance

Able to manipulate and /or influence the sonic composition of the public realm - a common space for all.



The act manifests in daily life in numerous ways and is orientated toward the notion of intermission as being an intentional break as a moment of respite. Going to the church, sitting and watching over the city or walking along the promenade and even the bombardment of the electro dance floor when dancing by oneself are all such moments of intermission. Here the research positions the interaction with sound as being not quiet, in the strict definition of the word, but rather sound that one cannot intervene in and rather only be affected by. The position seems counter intuitive, yet the notion of tranquillity as Pallasmaa (2017) positions is to draw emphasis on being and thus it is rather a tranquillity of the mind and self, in a state of meditative reflection.

Sonic Intervention

The act is one of intentionally intervening in the sonic landscape. The definition is broad and encompasses a wide range of interventions, from performance artists, installations, protests and even less noticeable interventions such as altering the ambience of space. Those engaging in the act are positioned as composers due to the notion of sound being part of the space of appearance – the public realm. These acts intend to

affect and alter group behaviour. The sonic intervention is thus closely linked to the commons, as it becomes a collective act whereby the composer is in constant dialogue with those who are interacting with the sonic alteration. Opposed to the act of intermission, intervention calls for response.

To make a sound is to draw attention to one's presence while to actively listen is to recognise that presence. Sonic intervention is thus a relationship. Sound's ability to exceed the normative notions of the public realm situates the act as not being defined by public or private boundaries, but rather is seen as a common – a space of sonic mediation. Any sonic act, including silence, is in itself an act when seen to be deliberately and part of the collective. This positions the commons as being a navigation of various sonic instances and actors. Appropriation through sound is widely accepted in Valparaíso, as various composers of space exist.

Final remark

The article draws forward various understandings of sound and how architecture could be informed by it. In taking one step further, the research positions a normative diagram that synthesises the notion of the act and its relation to the

public sphere, in offering a tool for designers thinking of working with sound. The Y axis represents spheres of the commons from intimate to public, while the X axis represents the act-presence. In positioning this tool, I hope that it may give guidance to further exploration in understanding how experience informs the world in which we inhabit. •

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Resilience

A methodology of spatial appropriation

Valparaiso is a city undergoing socio-economic transformation that is causing unforeseen and rapid transformations in both the city fabric and its demographics. The recent influences guiding these changes are fundamentally linked to the city's cultural legacy and its historic importance, romanticising its life to the detriment of its local permanent population. The temporal population, consisting of students and tourists alike have fundamentally altered the liveability of the city for its lower income residents. As a result many permanent residents have chosen to move to neighbouring areas, opting for longer commutes and a more cost effective lifestyle.

Underpinning the architectural intervention proposed in this document is a response to this situation that is orientated toward a holistic environment, which seeks to balance the inertia that is linked to urban blight and to counter the dominance of the temporal population. In positioning this argument, the notion of the user-generated approach is positioned as a means to afford permanent residents the ability to access the city's potentiality. As a strategy to afford permanent residence a means to remain in the city, several core topics will be introduced and contextualised to position and argue for spatial appropriation as an urban strategy, that underpins the development of the city.

The Temporal City

From the first inhabitants, the indigenous Chango people, who depended on the ocean for their survival, to the city as a port city trading with the rest of the world, and now as a cultural hub nestled between water and hills – Valparaiso has formed as a dialectic between ocean and land – as a junction. It is a city that for generations has been romanticised by poets and renowned for its varied cultural influences. In this sense Valparaiso owes its position, as the cultural capital of Chile, to its position as place of cultural exchange. This position had been firmly situated due to the many immigrants that had moved to the city during the peak operation of the port, prior to the opening of the Panama Canal. During this era, the city experienced rapid and varied development, due to its economic position and diverse influences.

The lasting legacy of this growth has positioned Valparaiso as unique in the landscape of Chile. The city hosts various universities and has become a major tourist attraction. Tellingly, this is reflected in its population, as it is the third biggest city in Chile. Although the role of the port has fundamentally changed in the twenty-first century with regard to its interaction with the city and influence on culture no

longer being so strong, Valparaiso remains a transient city. The reason for this is that the city is still dominated by a temporary population, as tourists and students are estimated to account for 1 040 000 people annually, while the local population is estimated at just over 300 000. In turn Valparaiso remains a city highly influenced by external factors and thus its culture remains one of constant exchange.

Today the city hosts the most festivals in Chile and is regarded as an international capital for graffiti. In 2003 the historic quarter of the city was declared a world heritage site. A leading reason for the declaration was due to the amalgamation of elements constituting the region that set it apart as a notable case for preservation. Yet, from various perspectives these conditions of the modern day Valparaiso have sparked numerous debates. The most critical of which have highlighted an “invention of culture” - a forced incentive that has not been developed locally. The high levels of youth combined with a culture of revelry and ‘carnivalisation’ of the city, which seems festive at the surface but lacks substance and is a constant nuisance to the local population, has been met with resistance.

The seemingly altruistic efforts

by government in repositioning Valparaiso as an attractive destination has been gilded in controversy – a golden lining hiding the issues that lie beneath. The temporal population is a major economic sector for the city; bring much needed revenue streams into the heart of an urban area that is otherwise struggling to define primary industries as the relation to the port diminishes. However, comparing the socio-economic mapping of the city and tourist activity in the city there is a strong overlap with the most sensitive groups in the old centre. This focal pressure has created gentrification (such as the case of Cerro Alegre) as the temporal population brings with it a rise in living cost and a demand for space. This dynamic is critically threatening the local populace with in these areas. The position, like many cases of gentrification- is a catch twenty two, between much needed revenue and the livelihoods of local residents.

Resident and artist, Gonzalo Ilabaca, highlights that in principle there is nothing wrong with this carnivalisation culture. However if it is to become inclusive it must be underpinned by dignity – to make events for all the residents of the city. In supporting this line of thought, various local

organisations regularly build events centred around local communities of the hills. Unlike the citywide events, these events are carefully born from community advocacy, aiming to build stronger and more resilient communities. Although these efforts have made a significant difference by building up varied local organisations that are closely linked to residents and serve various needs of the community, the economic pressure remains.

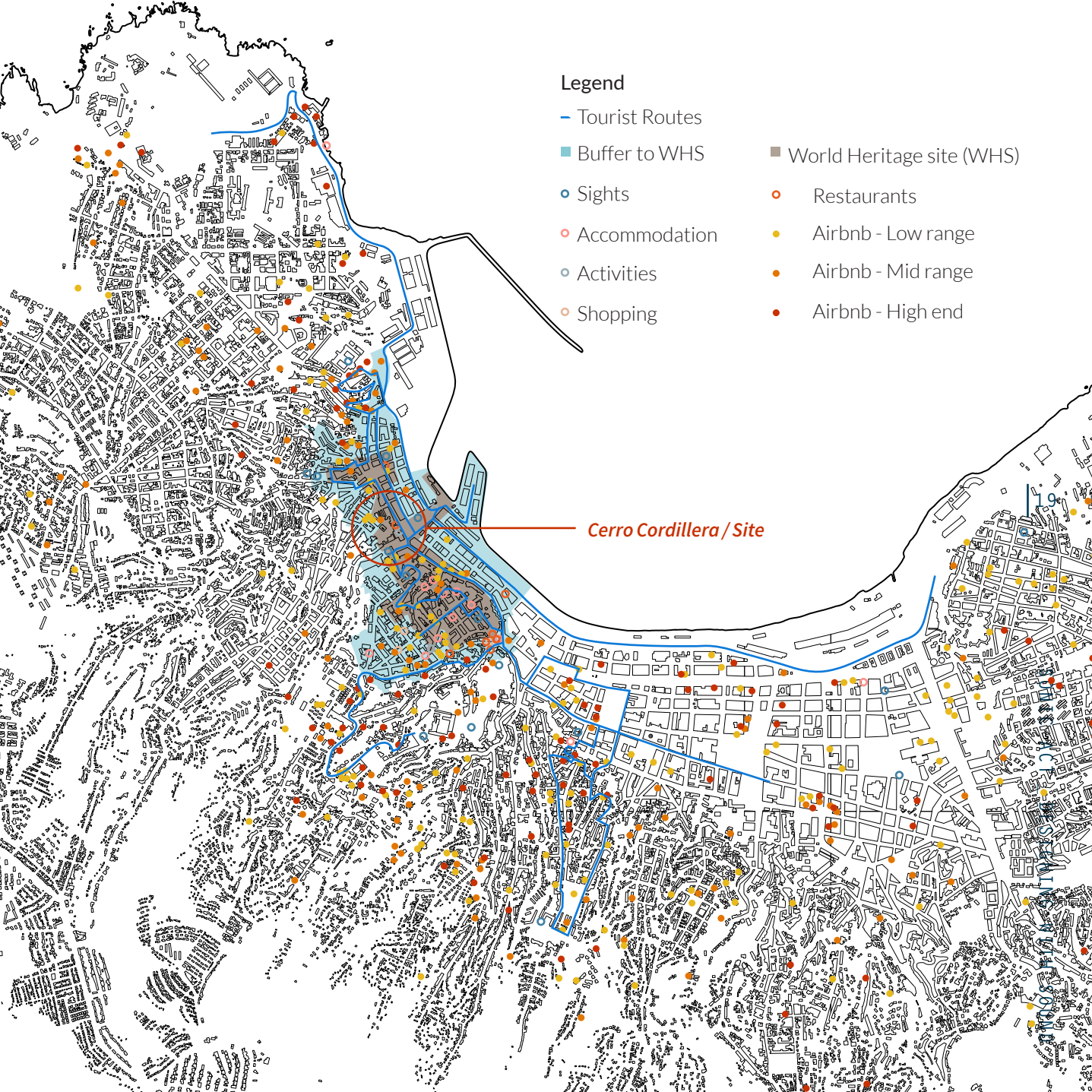
For many low-income and sensitive residents, living in the costly and fluctuating temporal city is unsustainable. In recent years this has resulted in a migration away from the urban centre, either to neighbouring urban areas or toward the fringes of the city. The cause of this migration is multifaceted. Apart from the living cost in the urban centre, many residents are opting to seek the economic reward of selling sought after land in the centre or alternatively renting. A key part to this dynamic is the large amount of vacant and derelict land within the urban centre, locked in a state of stagnation – causing a counterintuitive affordable housing crisis. A second factor

influencing the dynamic is that the plan is orientated to citywide infrastructure. The result is that the plan itself lacks the qualities sought after for residential purposes and thus forms a mono-functional commercial zone. The urban issues resulting in this situation are complex in themselves yet it is clear that the current situation is negatively effecting the most marginalised in society – the permanent resident.

The focal area of the graduation project is centred in the heart of the old city, the threshold between hill and plan, where Cerro Cordillera meets Sotomayor plaza. It is here that the effects of the dynamic is most apparent as Cordillera, an old residential area is predominantly formed by low-income residents, yet they lie within the heart of the pressures of the temporal population. The surrounding fabric in the plan, is derelict with many vacant sites, many historic buildings in disrepair and a low residential population. It is this area, which marks a precedent in dealing with the issues faced across the city as the problems are most acute. With the aim of affording permanent residents a foothold in this temporal territory, the strategy looks toward how government interventions can aid in situating residents while accommodating the needs of the

temporal population through careful interventions aimed at stimulating locally focused private development.





Legend

- Tourist Routes
- Buffer to WHS
- Sights
- Accommodation
- Activities
- Shopping
- World Heritage site (WHS)
- Restaurants
- Airbnb - Low range
- Airbnb - Mid range
- Airbnb - High end

Cerro Cordillera / Site

The user-generated approach, a notion positioned by Robert McGaffin (de Beer, 2014), advocates that to unlock the potential of urban development in any area, the relationship between developers and users must be carefully considered. In this sense the approach positioned in the City Vision (de Beer, 2014), is underpinned by understanding the role of government in enabling more resilient communities. Critically the approach is a strategy to unlock the potentiality inherent in any area by leveraging various factors from an urban perspective in order to build confidence in the private sector to develop in a specific way.

The underpinning premise being that private interests largely build our cities. Developers are driven by demand, while users and firms create demand. Although simply stated here, the premise begins to situate a key interaction to how development occurs within an urban context. Critically, developers are inherently self-interested with development being fundamentally linked to capital flows and profits. This calls for institutions to give guidance to the manner in which development is allowed to occur. Simple instructive documents such as regional plans and zoning give such guidance, however the user-generated approach advocates that



this is simply not enough. If one is to see long and lasting change in an urban scenario, active interventions by institutions, need to carefully deliver through a range of tools that are orientated toward interacting with users. In this sense urban interventions ought to influence users as a way of directing growth and stimulating private investment that is aligned to specific objectives.

The mandate is clear, institutions must actively intervene- however applying this to a specific situation requires an inherent understanding of the space and the users which informs a goal – a vision. In the case of Valparaiso – how does one protect the fragile communities in the temporal urban centre?

This frame of reference around why and how people use space is a tangible means of influencing economic opportunity and sustainable growth. Informed by the extensive study conducted by the Methods and Analysis studio on Valparaiso, the approach positioned here draws on practices and qualities in the city while reacting to the status quo – urban scenario. The position advocates for curbing the migration pattern by focusing on peoples needs in the centre. In this sense government is seen

as a critical pattern in introducing key infrastructure and amenities that afford local stakeholders and residents a means to access opportunity and afford liveability to the poorer communities. In this sense, the strategy is seen to incentivise residents to remain and move to the area. A critical step in enabling this development would be the need for social housing, which is seen to be able to be provide if tax and other financial mechanisms are used to incentivise developers to construct homes within the plan. The double-pronged approach aims to offer users - residents – an incentive to remain in the area, while financial incentives may give developers the additional leverage needed to invest in development. With this goal, the critical question is HOW does this strategy get implemented.

Recent efforts by local organisations have offered communities an increased incentive to stay - as self-organised community building has become central to community life and in turn has offered residents an incentive. Yet these organisations remain underfunded and could do with stronger support and partnership from local government. This would be the first goal - to support existing initiatives through funding and infrastructure. The second step is an active infrastructural project

that aims to afford residents a better life within the city and transform the vacant plan area into a thriving neighbourhood. No small feat. The initiatives must be rooted in understanding the lifestyles of residents and providing not only core infrastructure such as schools but also soft and hard infrastructure that enables residents to easily appropriate the city fabric – a tradition within the city. Such appropriation should be focused on two objectives; to provide services to communities; and afford low-income residents access to capitalise on the city. In lieu of this approach a multi-pronged project ought to take place, which invests in the public realm as well as providing core infrastructure. It is this approach that informs the surrogate context in which the graduation project proposed is situated as a project that is part of a larger urban initiative. The graduation project serves as means to explore what such an urban strategy may be when translated into an architectural project.

Project objective and program

12. Building Program

Positioning the graduation architectural project within this larger urban approach – the site and program developed an aim to contribute a school and learning centre as core infrastructural amenities to the development of the neighbourhood, however critically this initiative must be focused on the mandate laid out in the approach. Various spatial and organisational models must be incorporated into the architecture to afford the surrounding fabric access and opportunity to livelihood and income. Embedded in the design of the school is a need for a complex urban realm development project, focused on the needs of the community and organisations that work in the area.

The objective is counter-intuitive, in the sense that learning environments are predominantly seen to be places that lack disturbance, while the program calls for the introduction of diverse activities. However, the graduation projects research and focus on sound offers an opportunity to deal with a complex sonic environment on sound – which in turn is embedded in the mandate of a school and the urban strategic approach.

Drawing on the research development on sonic principles, the development of the program of the intervention has been placed in the box diagram to the right. The fundamental purpose of developing a program through sonic awareness is critical and advocated by best practice standards for schools (Channing, D. etc. 2015). In doing so program development is closely linked to the sonic impact and qualities of varied spaces. By diagrammatically exploring the varied spaces relations with each other the program is spatialised to consider how spaces function, their associated activities as well as the sound that these spaces make and the intended quality of these spaces. Drawing together best practice standards and the core research on sound that had informed a means of working with sound – the diagram as a tool – the program is abstractly spatialised through the diagram. The method is critical in developing a holistic environment that aims to be not only contextually sensitive, but both function optimally and provide for the core objectives of the urban strategy proposed.



The Act

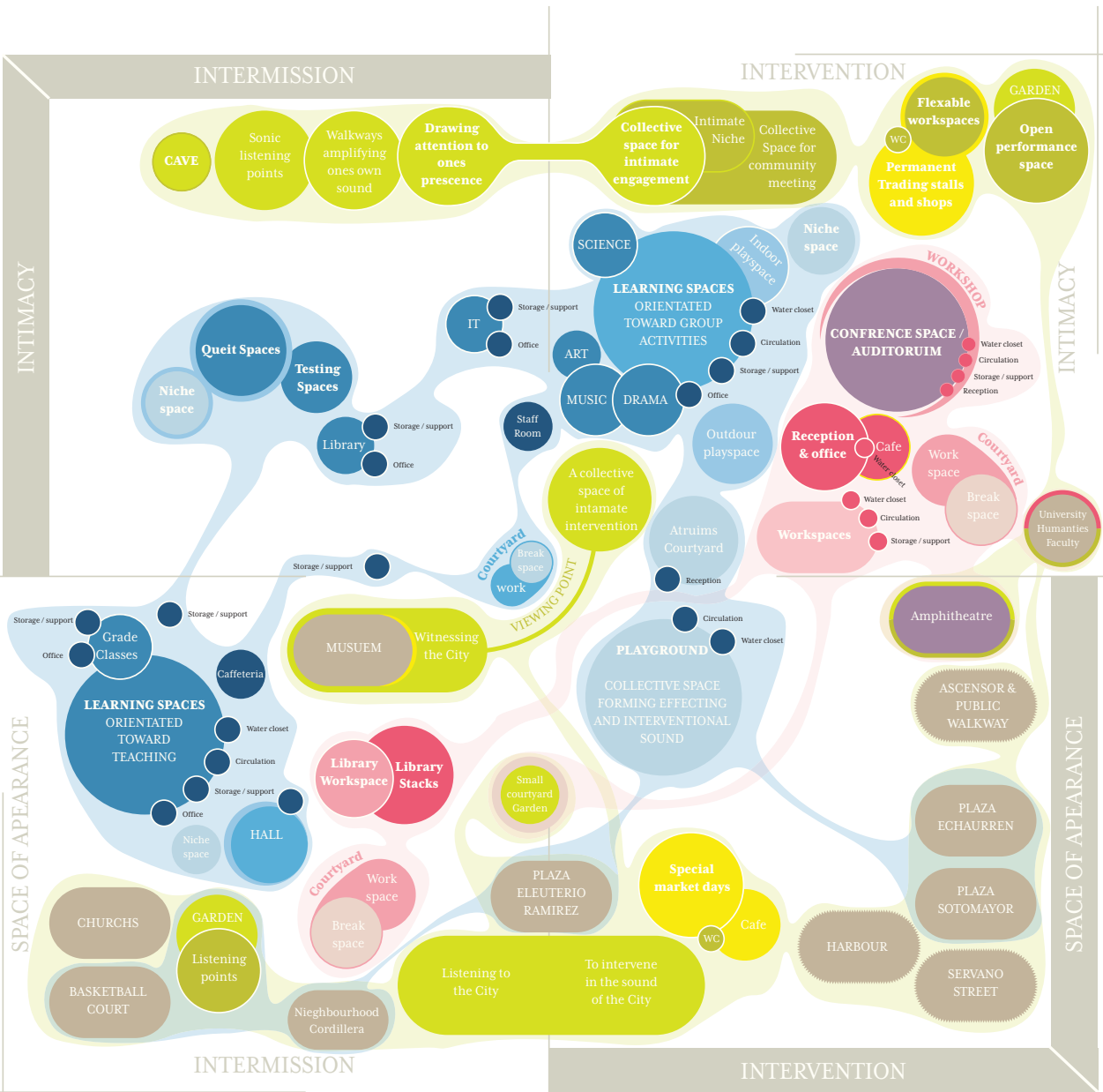
Intermission

Intervention

Realm

Intimacy

Space of Appearance

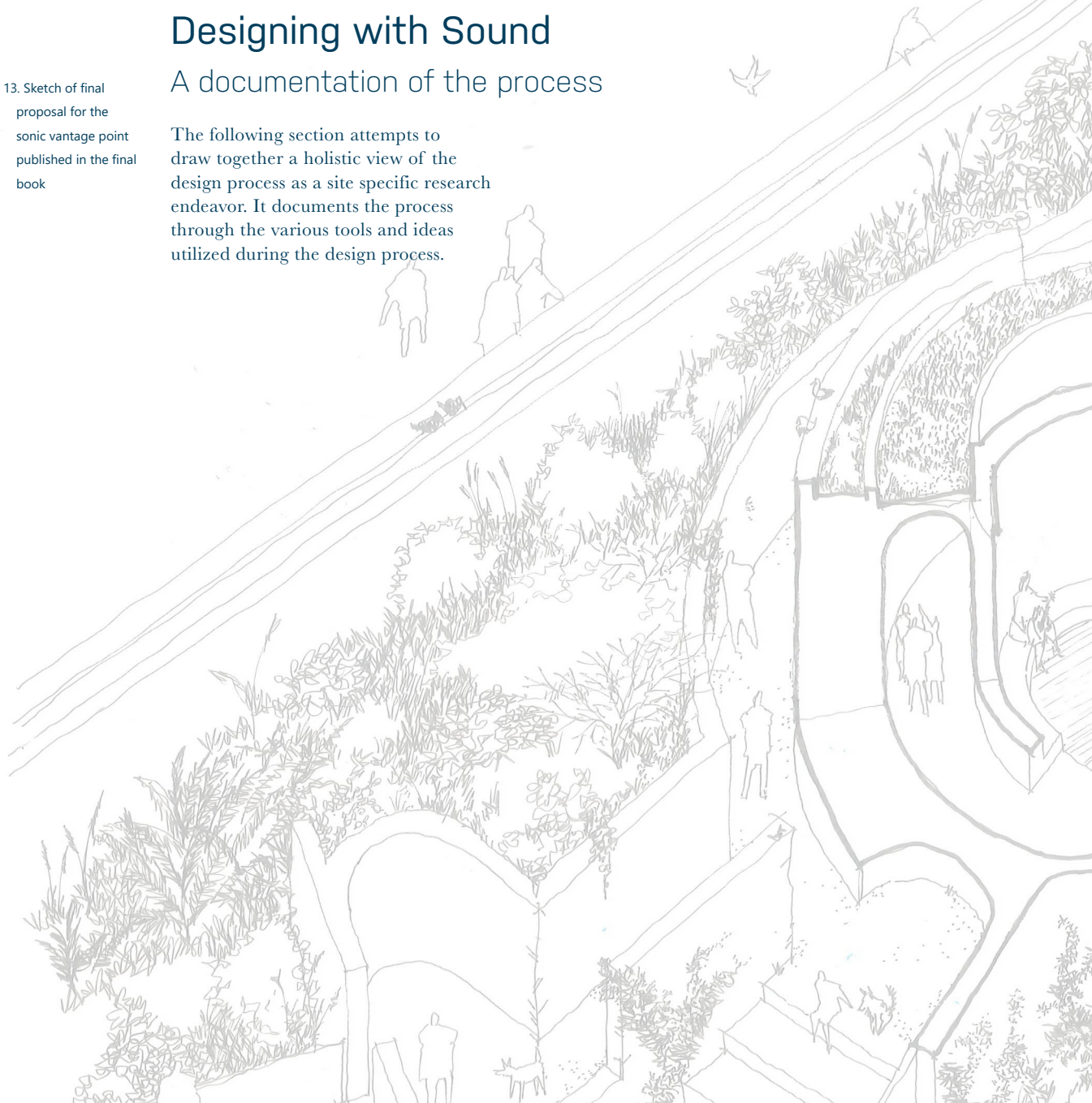


Designing with Sound

A documentation of the process

13. Sketch of final proposal for the sonic vantage point published in the final book

The following section attempts to draw together a holistic view of the design process as a site specific research endeavor. It documents the process through the various tools and ideas utilized during the design process.



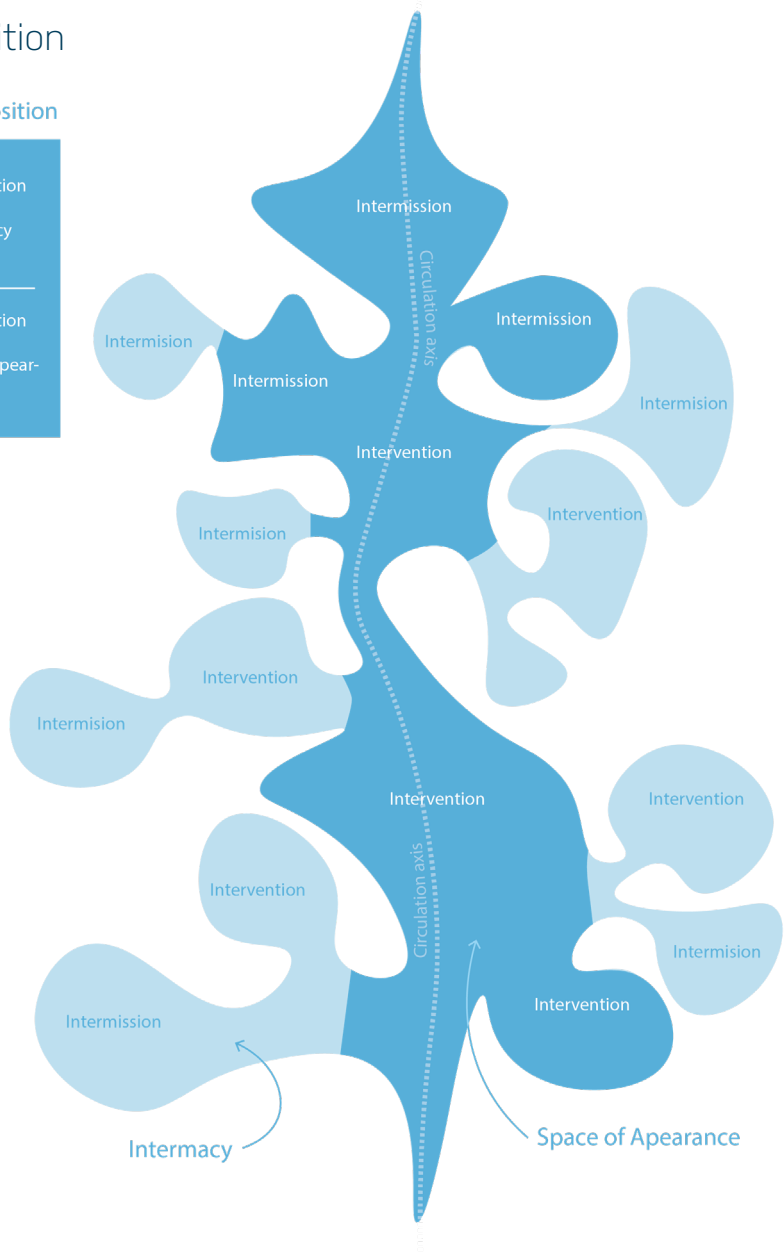


Sonic composition

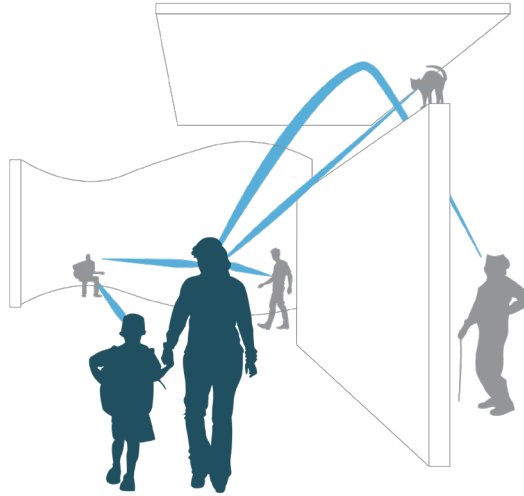
14. How sonic spaces may be interconnected with the space of appearance being the spine on which intimate spaces connect. Therein acts of intervention and intermission may occur throughout.

Sonic sequence composition

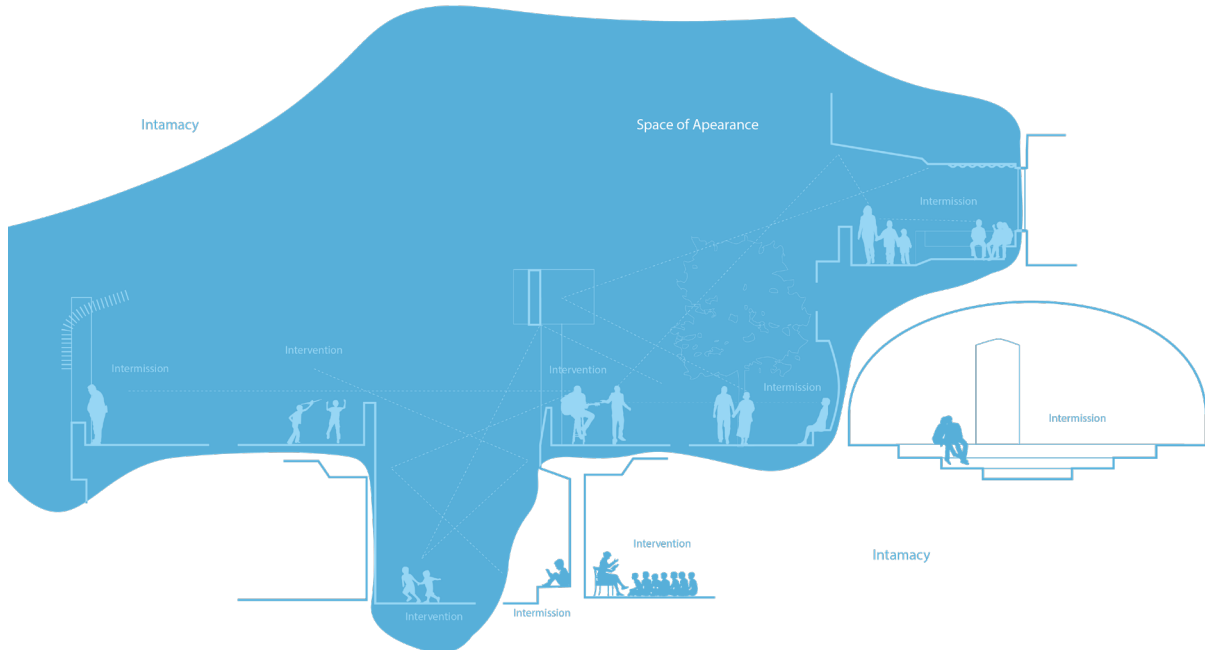
Intermission + Intimacy	Intervention + Intimacy
Intermission + Space of Appearance	Intervention + Space of Appearance



The framing element enables the act Whether contained or open the composition of the frame and its materiality form the sonic experience and intern the act - presence



- 15. Spatial elements as frames of relation. Implying acts an informing soundscapes
- 16. Composite image showing the application of frames on the site to create a varied environment

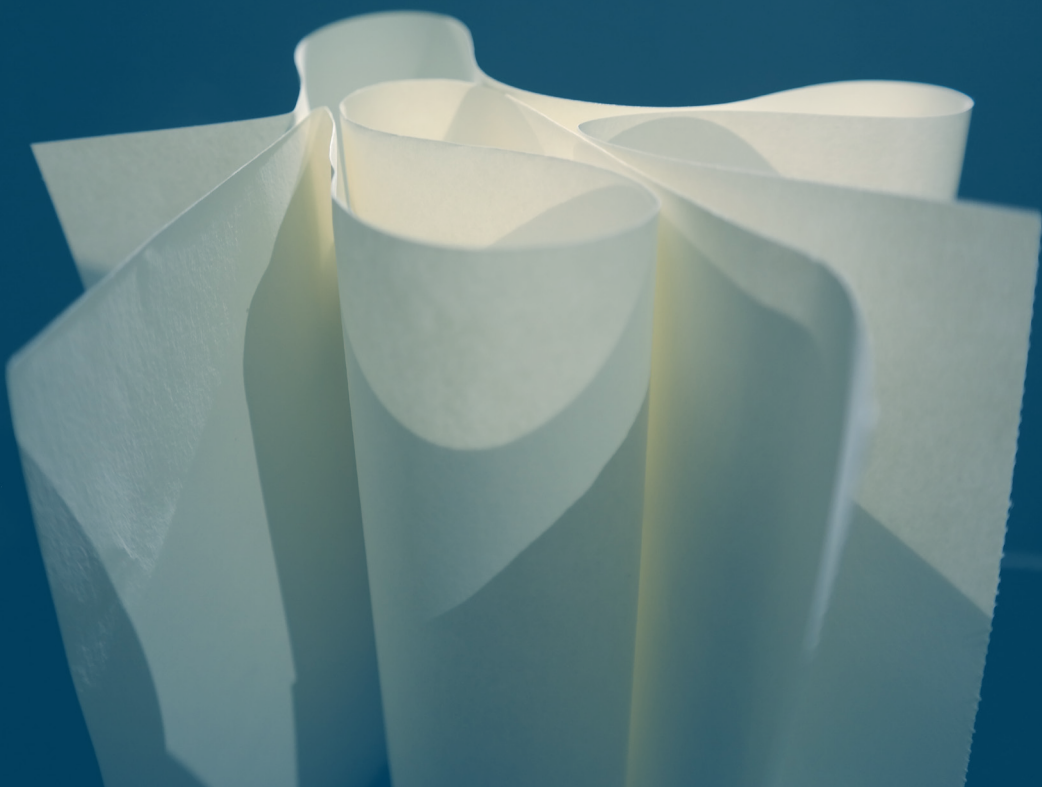


Abstract intentions

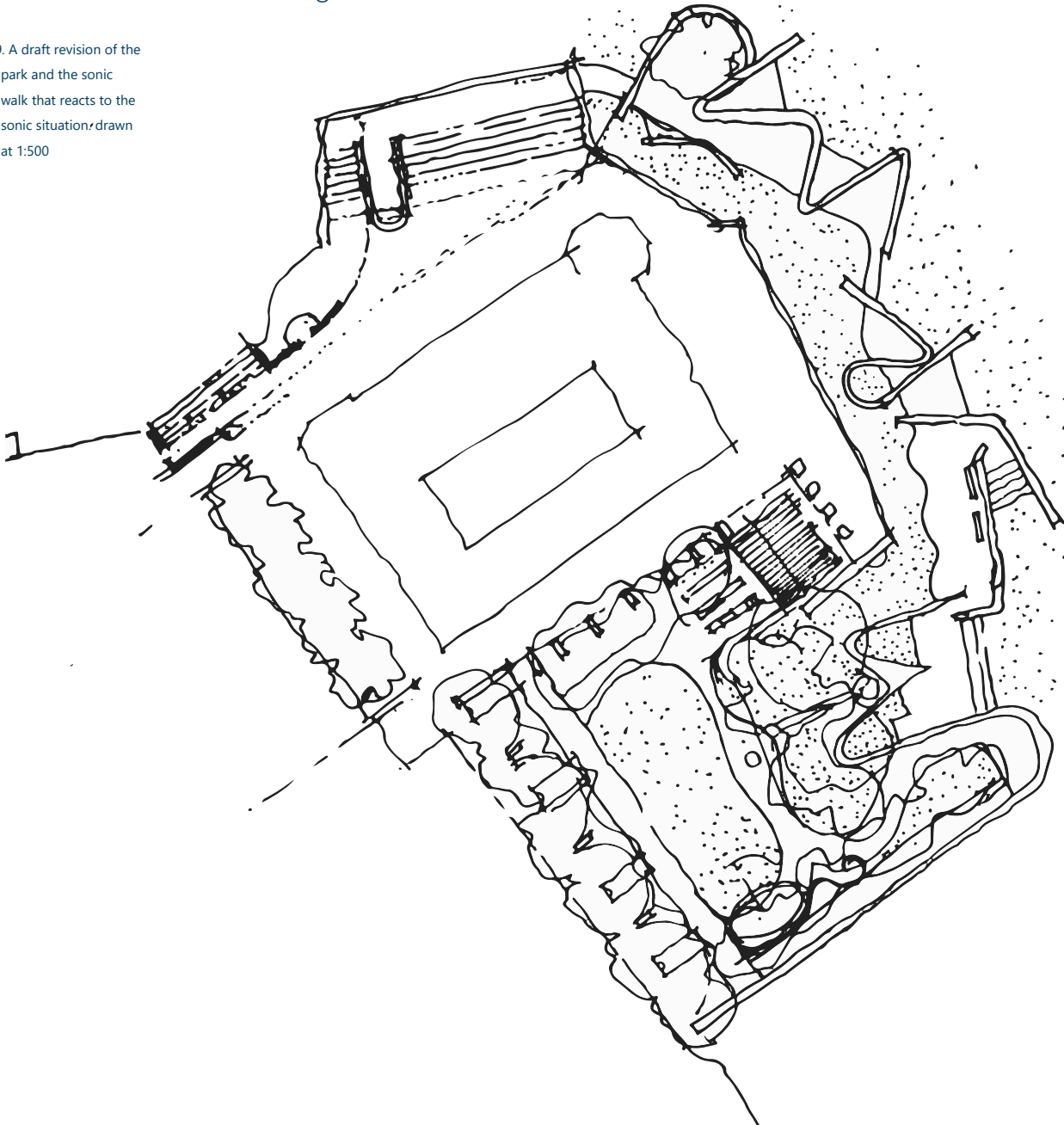
17. A Poetic act of folding paper

An initial poetic act, an exercise in encapsulating the projects intentions with a piece of paper by folding it. The exercise is seemingly simple but intrinsically complicated. The outcome aims to give form to the sonic act. By creating an object which embodies both projection and intimacy through the folding of paper, the sculpture shows an intention in form and the act of presence.



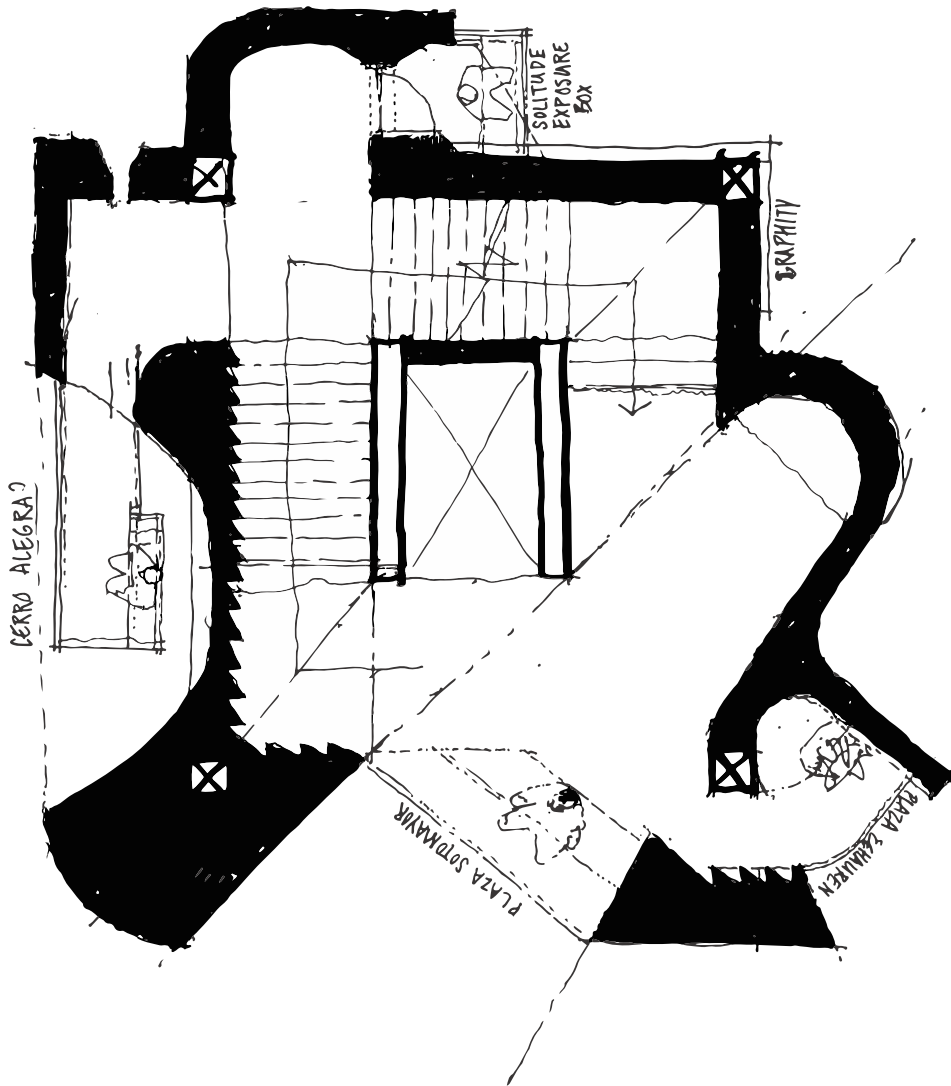


19. A draft revision of the park and the sonic walk that reacts to the sonic situation drawn at 1:500



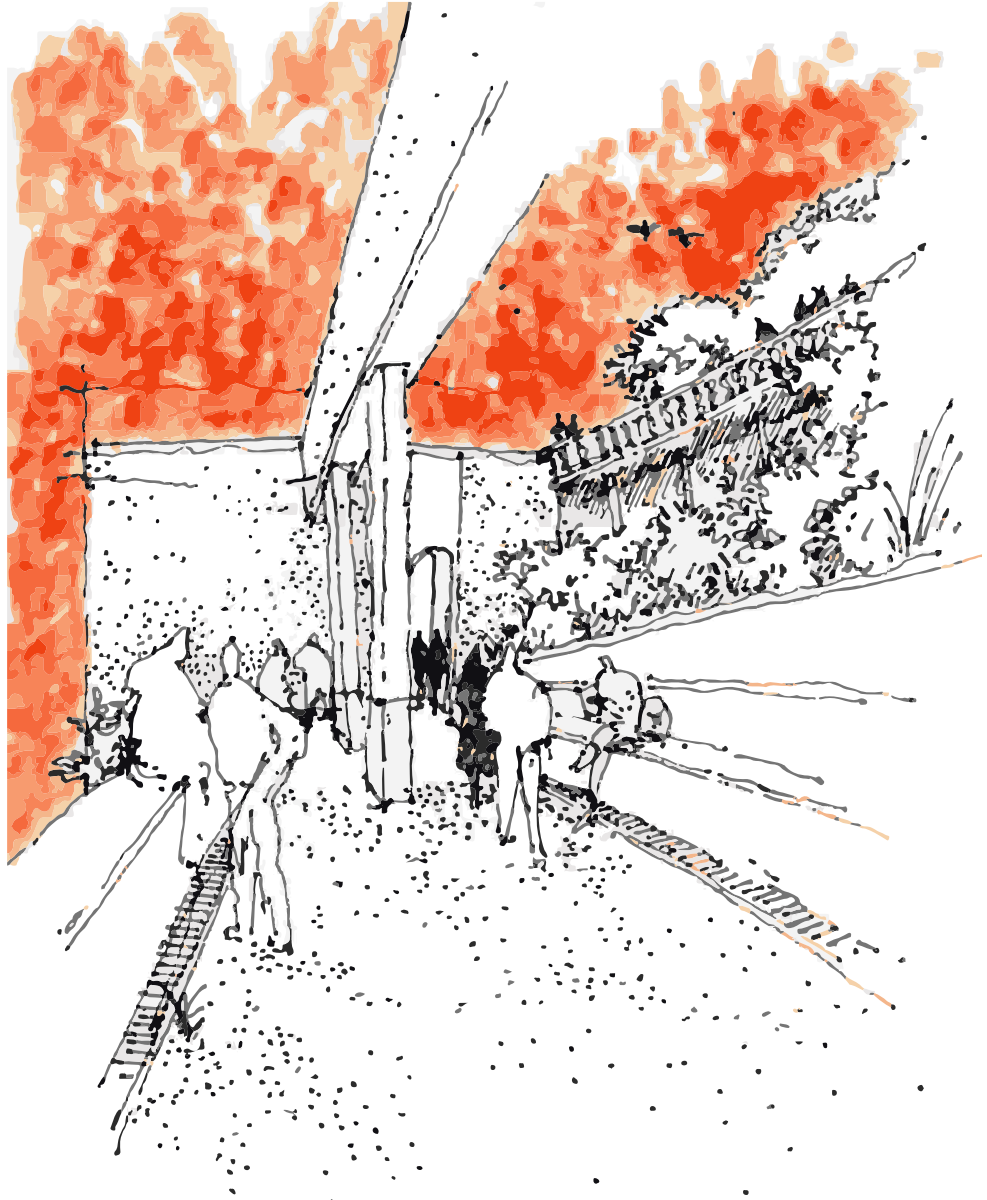
2018/02/15

20. A conceptual 1:50 exploration of the tower component of the design, which was to be later removed from the project, but holds an implicit spatial quality that remained in the sonic vantage point



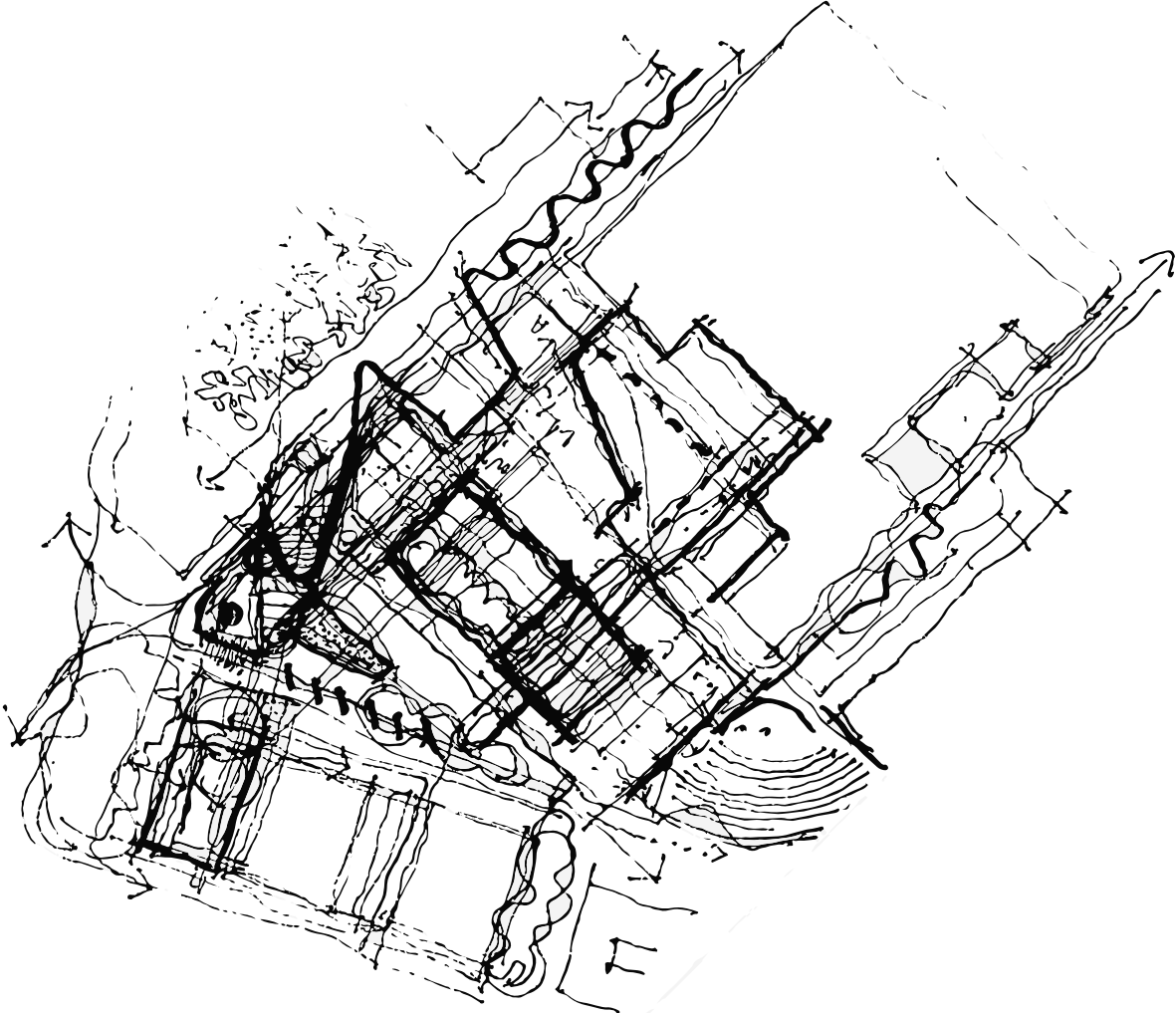
Tower Floor Plan.
15.02.2018

21. An early sketch of the sonic vantage point and the quality of the space as people sit and talk amongst the framing forms and natural landscape overlooking the city below

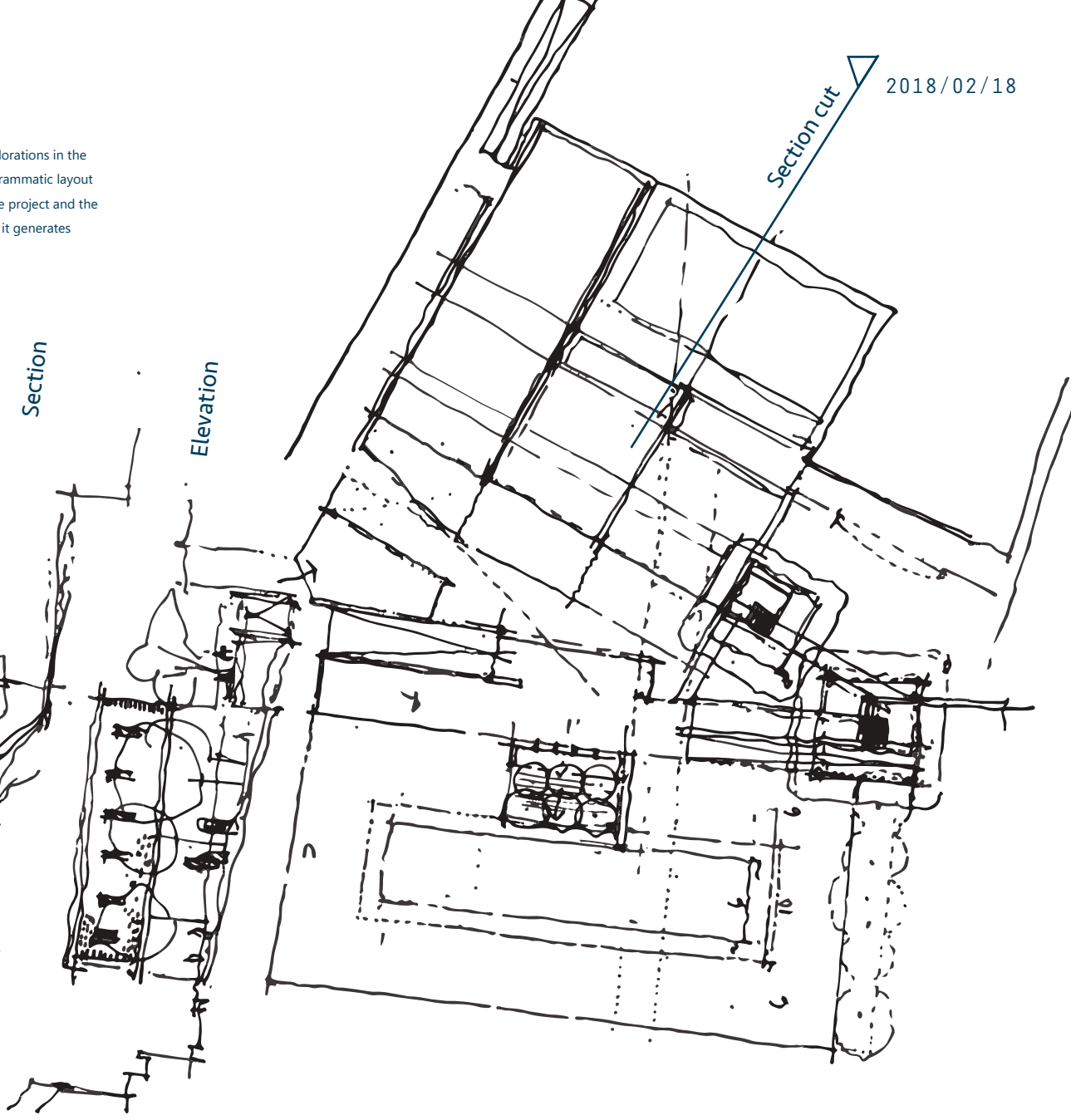


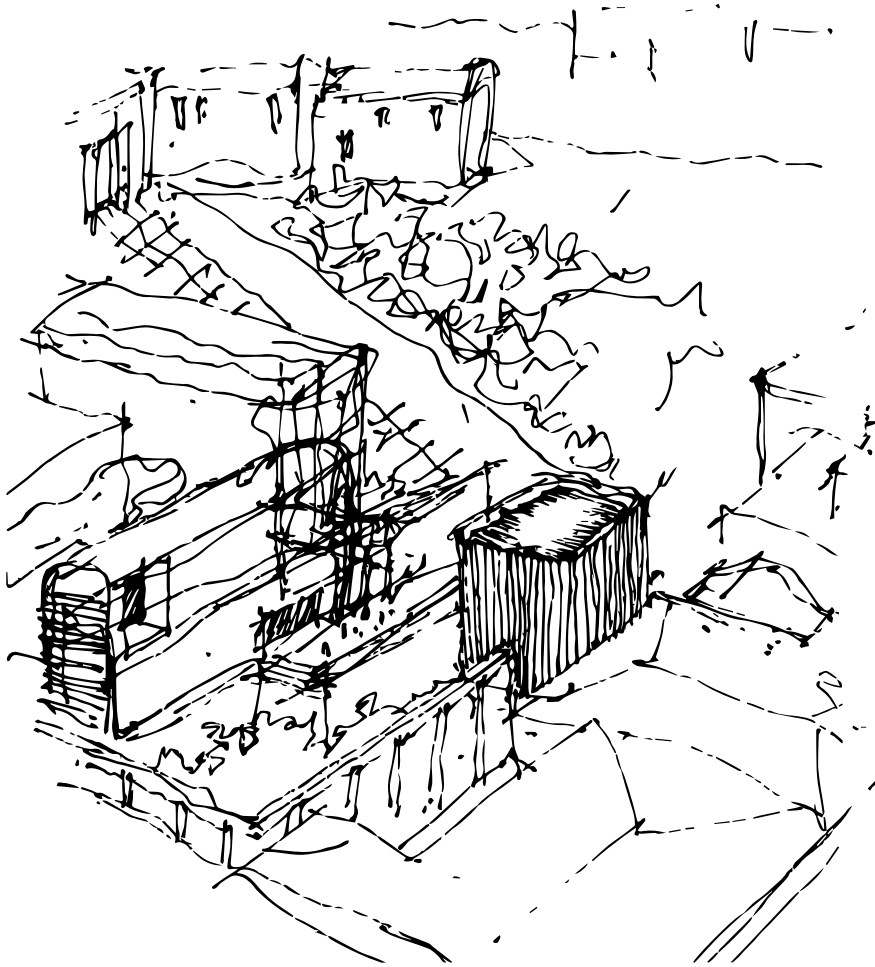
Developing the framework

22. Site development
framework highlighting
sonic elements as bold
lines define the forms
that sit within



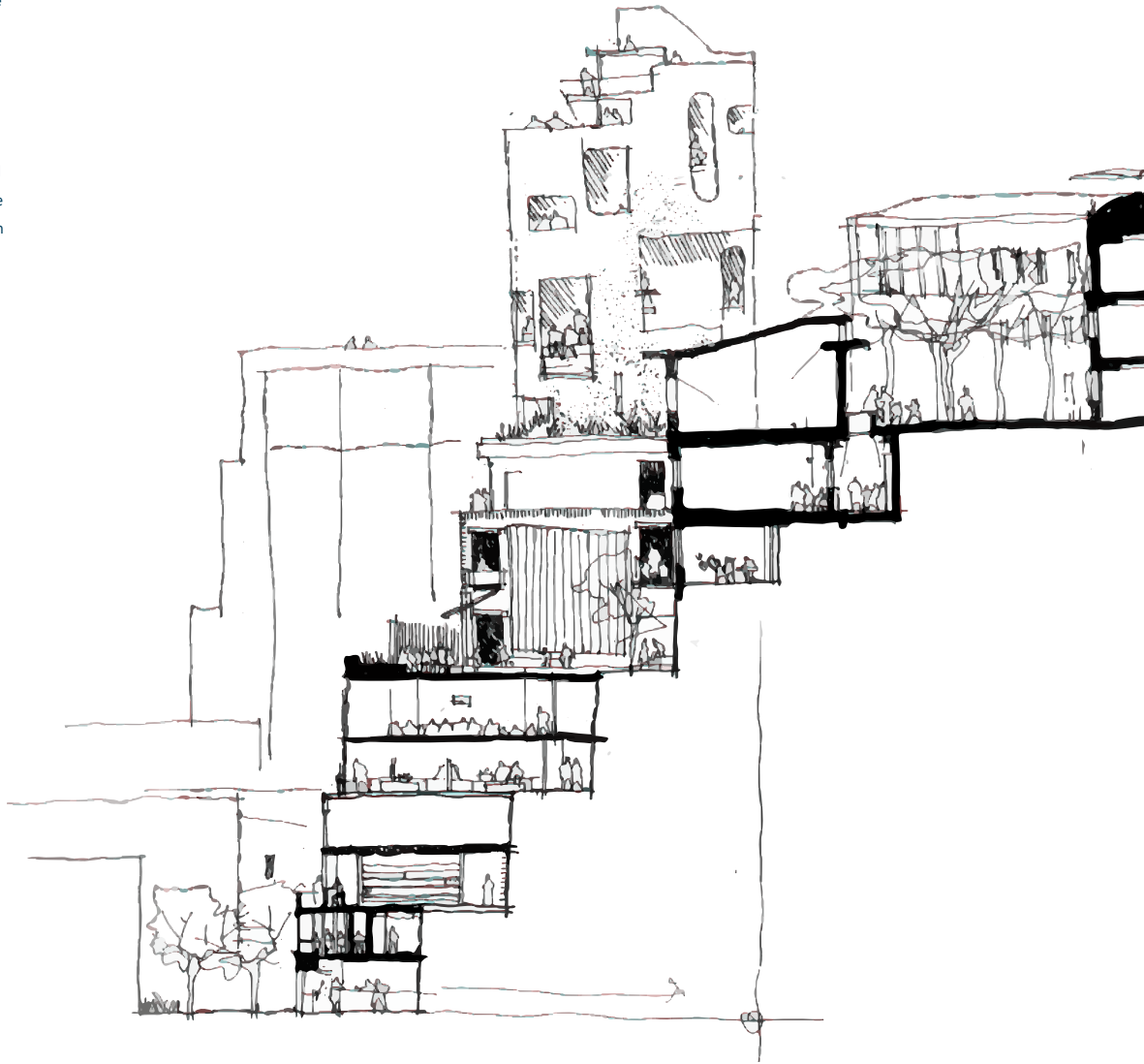
23. Explorations in the programmatic layout of the project and the form it generates

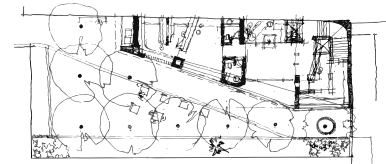
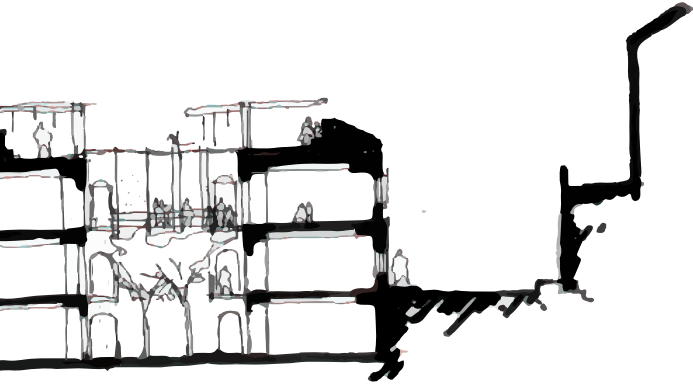




24. Sketch of the development on the site. All though this was completed during a later stage of the project, it still holds key spatial elements of the site and the building

25. Drawn at 1:200, the section and plans explore the spatial implications of the design decisions on the site. The exploration is critical in understanding the relationship between the various floors within the building.

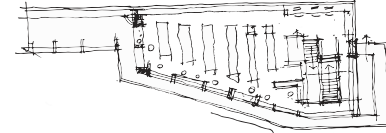




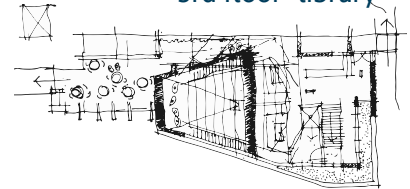
Ground Floor



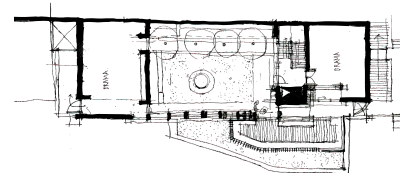
1st floor - work space



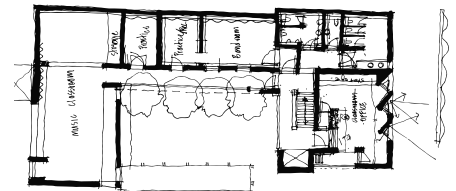
3rd floor- library



5-6th floor - auditorium



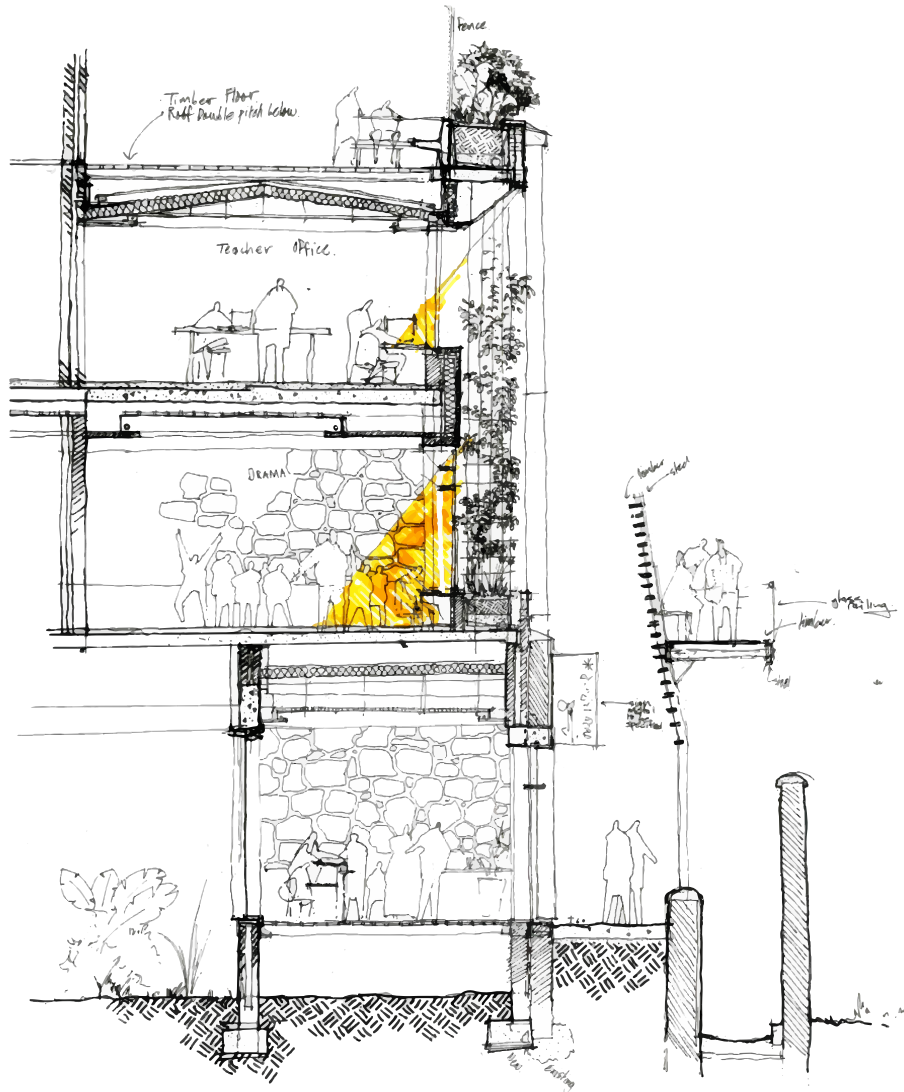
7th floor - drama and arts

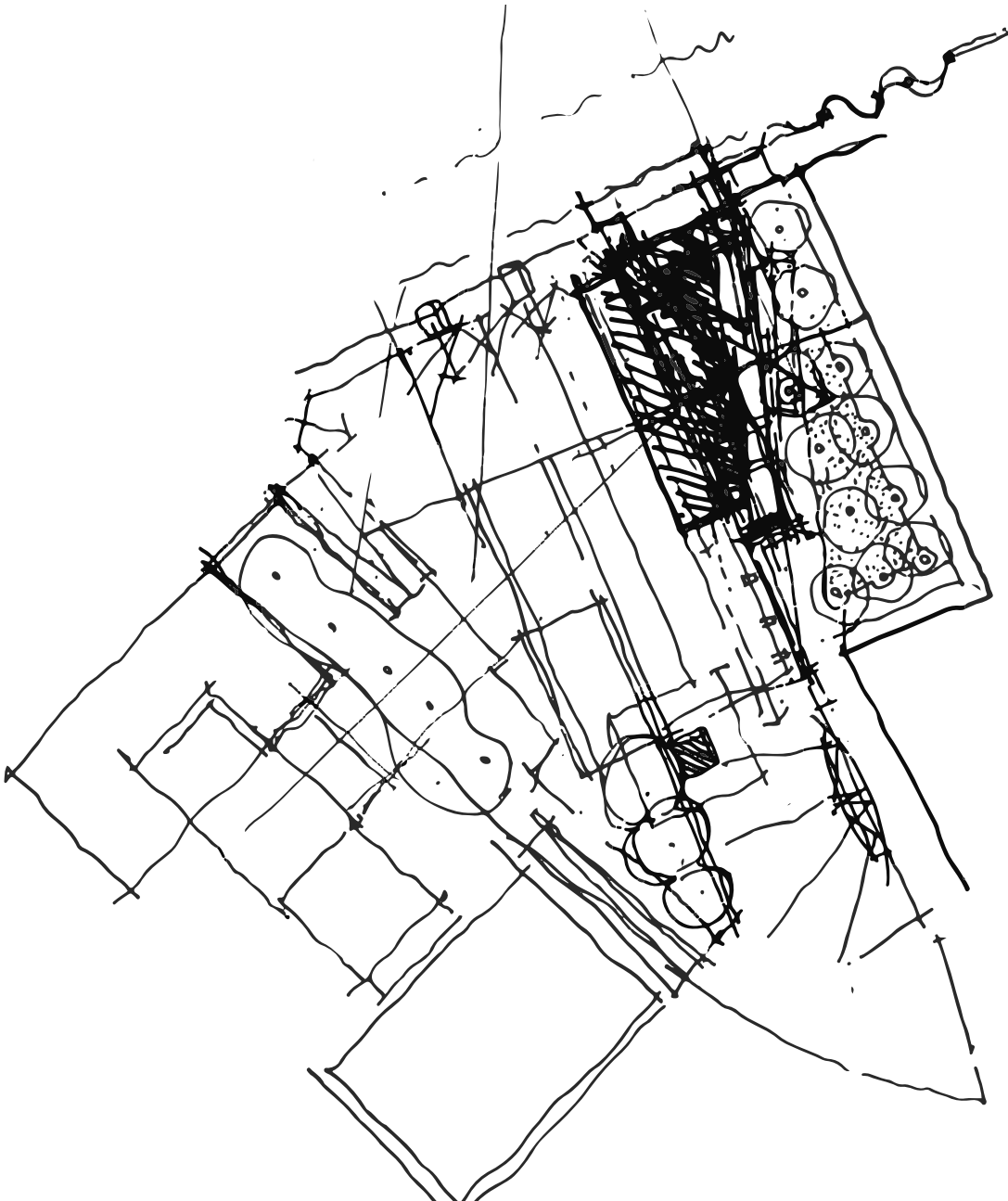


8th floor - Music

Detail Exploration

26. Designing being iterative it was important to continuously jump scales in order to get a sense of the implications of material decisions in a spatial sense. Also these 1:50 explorations talk of inhabitation, occupation and activity. How is the site activated.



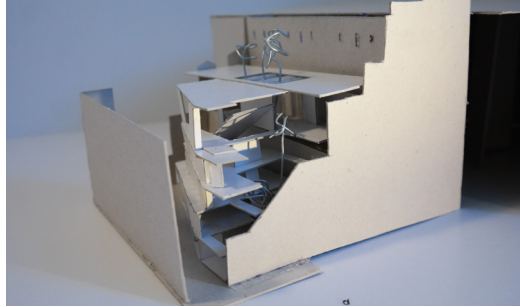
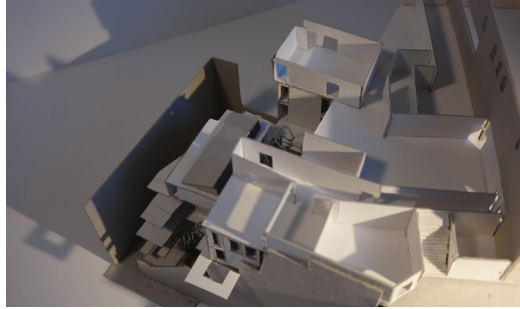


27. Throughout the design process, decisions are reintegrated into the framework through sketches that document the development of the design at a framework level.

Finding Form

28. Model of building as
it developed

Modeling formed a critical part of the project. As iterations in the design were explored in sketches they were then incorporated into the model. Several iterations allow for the development of form within the space, understanding the multi-dimensional quality of the site being 30m-40m in difference from top to bottom. This was especially important in understanding the implications of design decisions.



2018/02/22 - ONGOING



2018/03/5

LOWER SCHOOL LEARNING ENVIRONMENT

2018/02/28

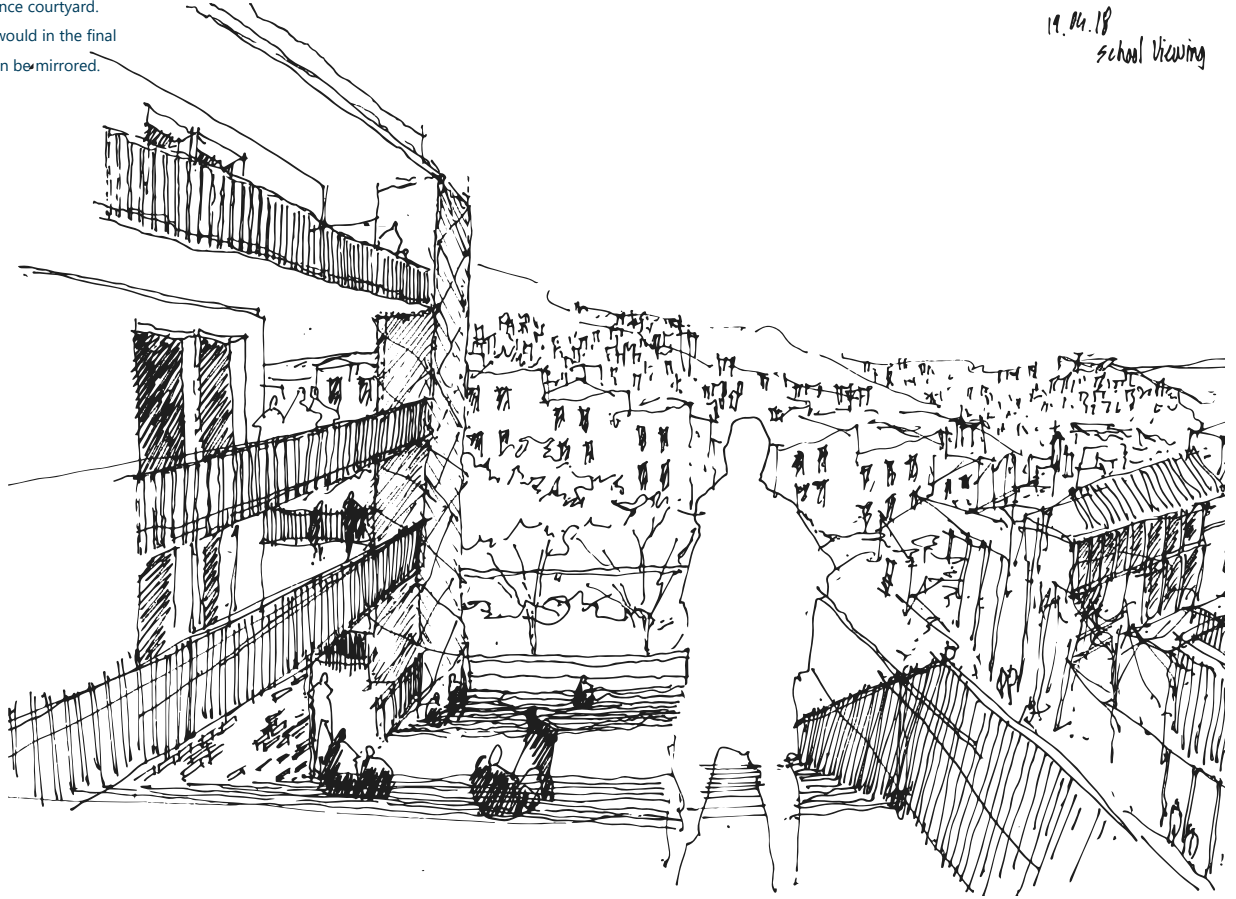
SCHOOL - ARTS DEP.

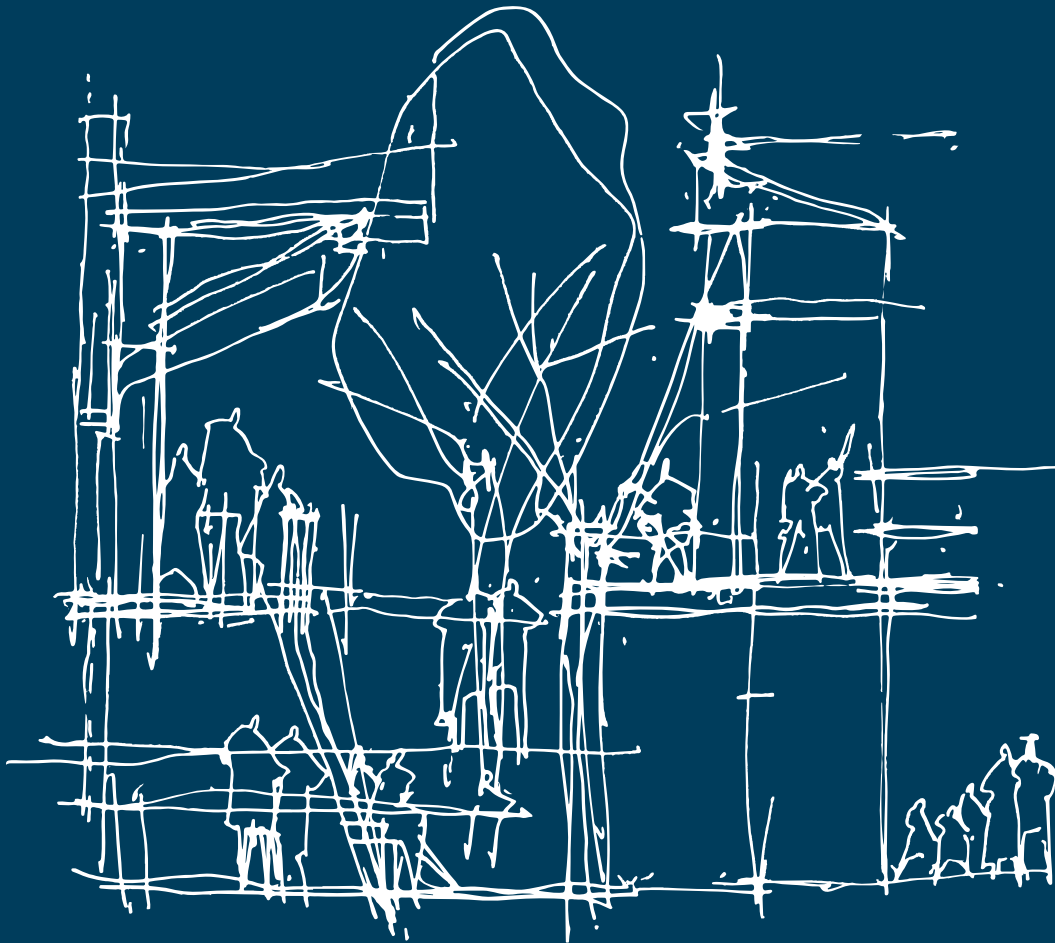
2018/02/22

LEARNING CENTRE

29. Sketch of the upper school looking down the larger staircase toward the old city on the hills, and below the entrance courtyard. This would in the final design be mirrored.

19.04.18
School Viewing



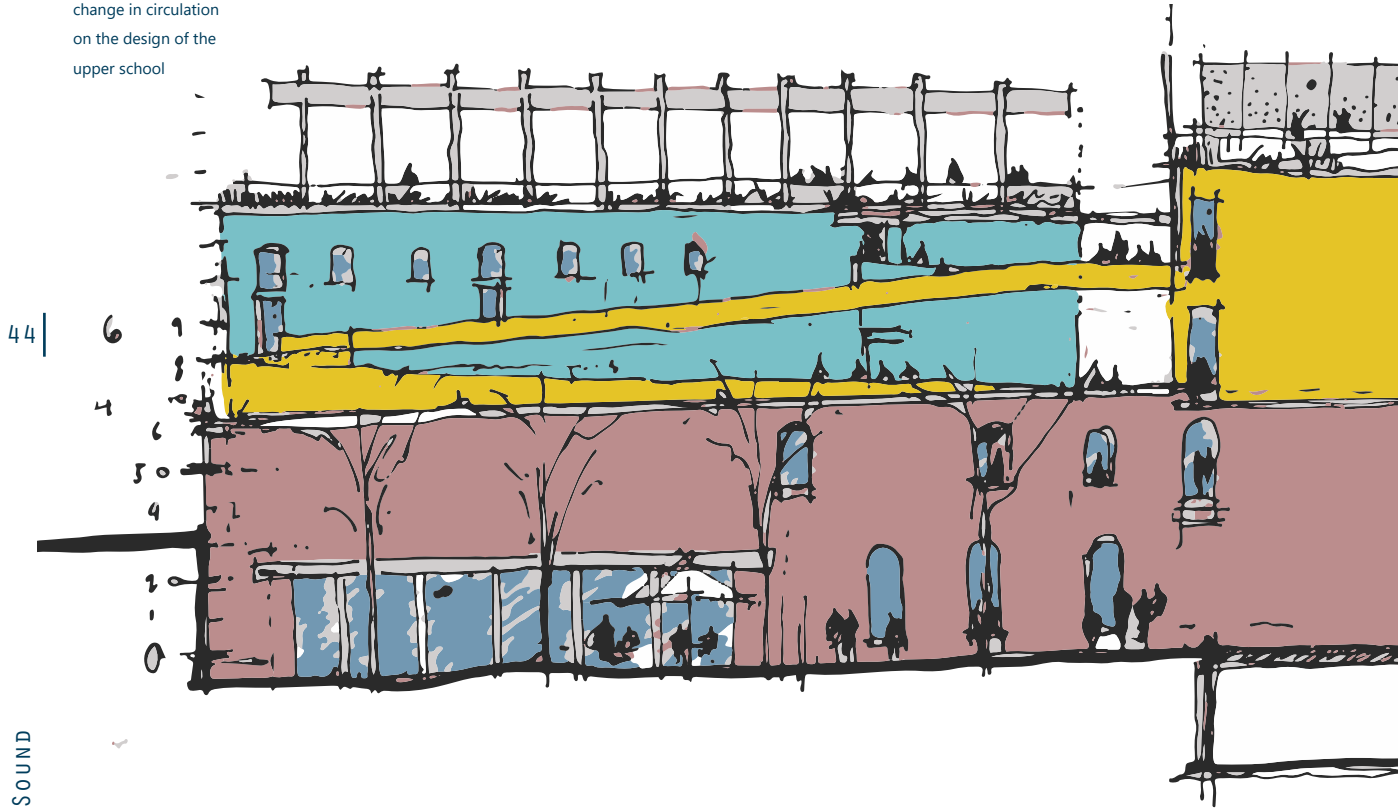


30. A critical step in the design was the incorporation of courtyards. This was initially inspired by the wider spread use of this typology throughout Chile. However, courtyards formed a major design alteration as the building then stepped back from the steep slope. As a result unique spaces could be formed in various ways that spoke of the innate spatial and experiential intentions of the project. This alteration in design became a key mechanism in dealing with sonic spaces and varying the spatial sequencing that draws from space of appearance and intimacy.

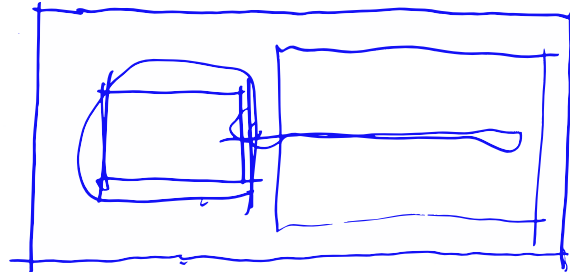
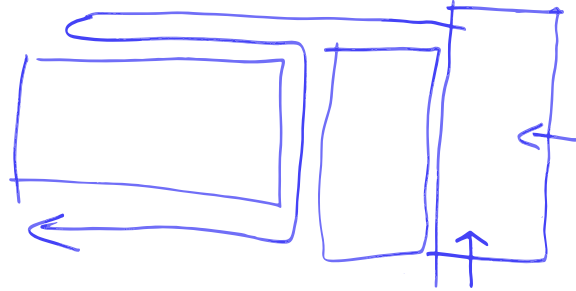
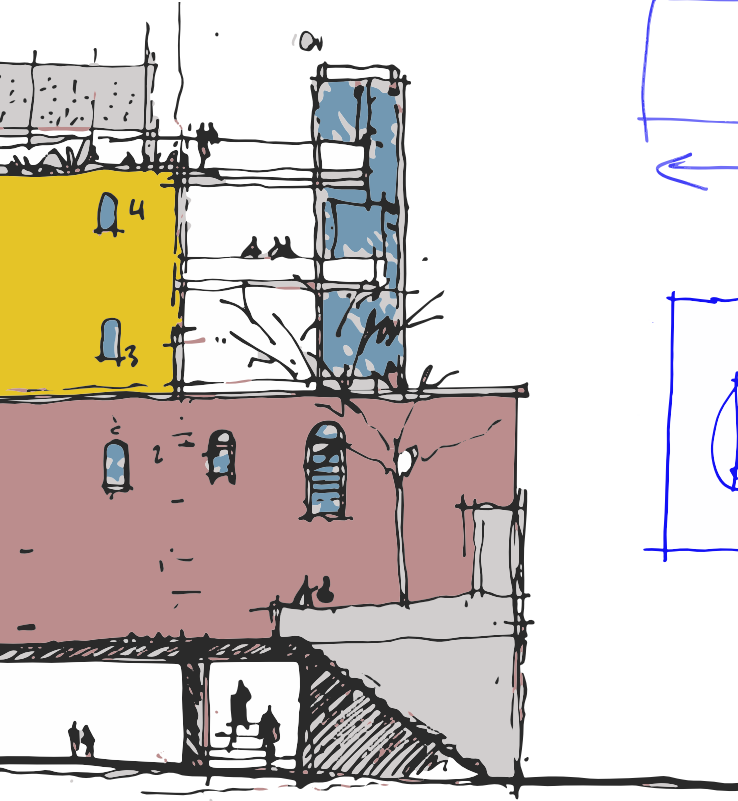
The Upper School

31. 1:200 exploration of the elevation of the upper school.

32. Diagrammatic sketches of the impact of the change in circulation on the design of the upper school.

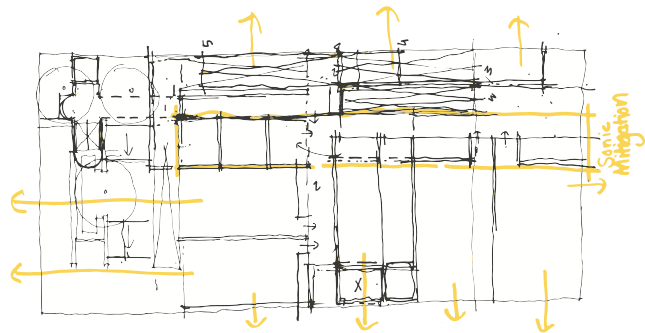
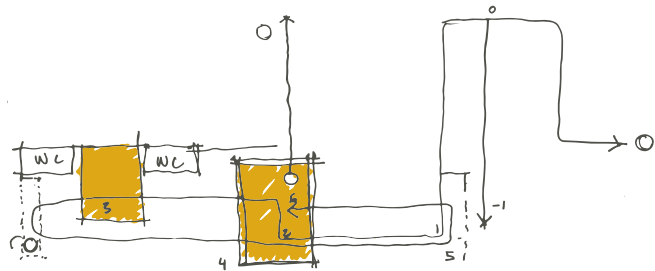
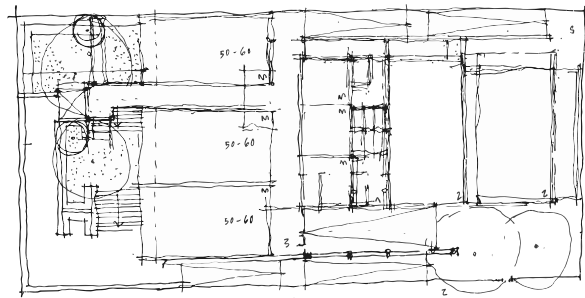
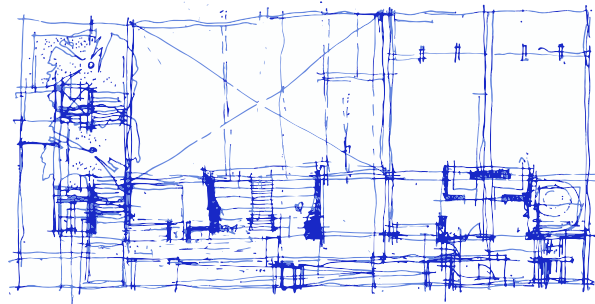


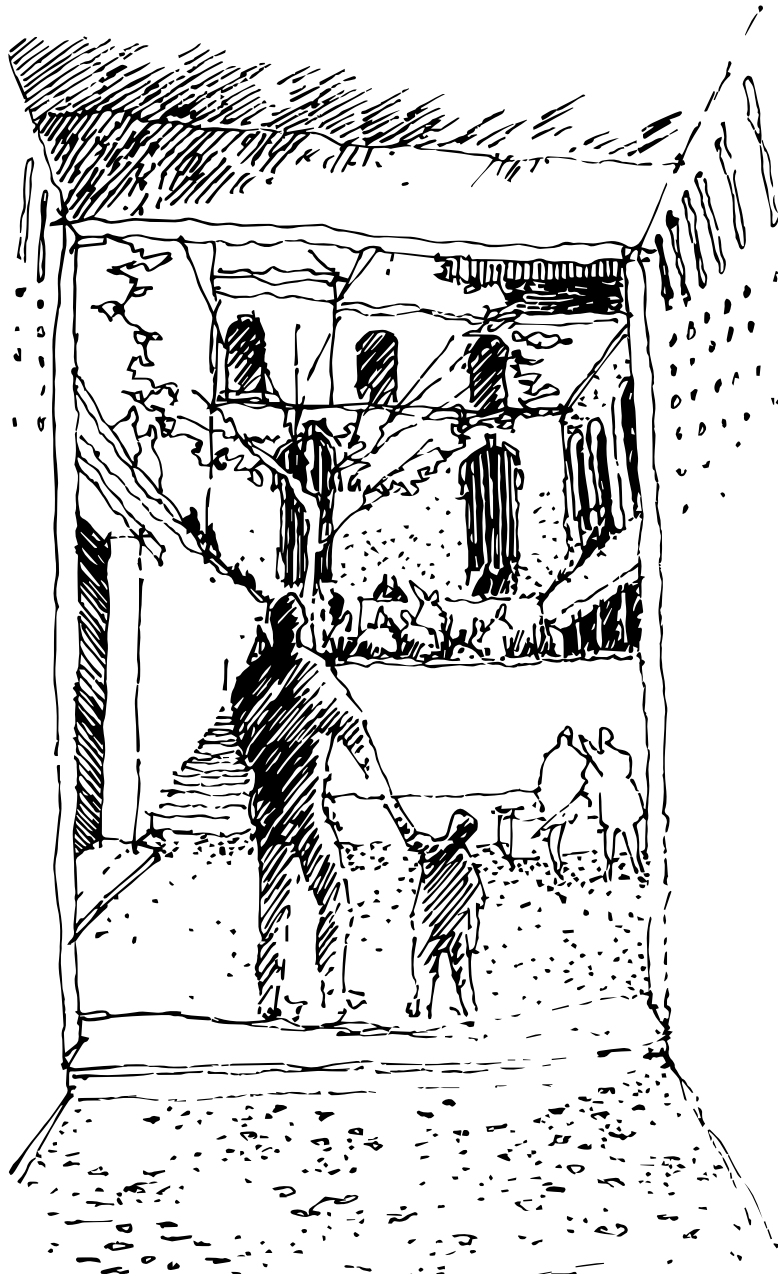
2018/03/09



33. Initial sketch design of the upper school that explores the sizes of class rooms and design of the layout
34. Change in circulation in response to sonic situation, resulting in the school being flipped on its axis.
35. The plan shows how support spaces allow for sonic insulation of programmed learning environments

The design of the upper school reached an advanced stage, however it soon became clear that this part of the school would become a programmed environment. Although sonic qualities were explored these related externally to the environment due to the high position of the school, however classrooms would all be regularly defined in a stacked form. Although critical to the functioning of the school, the exploration in sound reached a hypothetical glass ceiling which could not escape the proverbial box. As one would notice, in the final iterations of the thesis the upper school is almost completely passed over as other key areas became more significant in terms of the research inquiry.





36. Sketch of an entrance to the courtyard of the upper school that the hall and entrance to the school open up on.

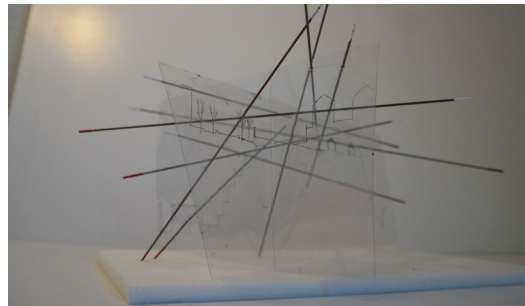
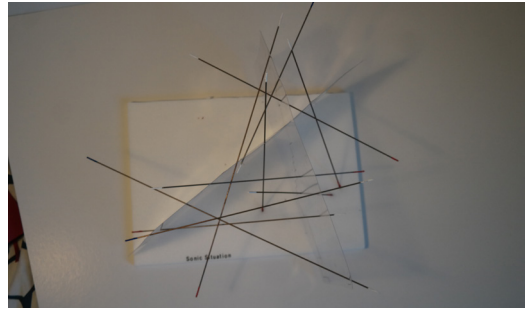
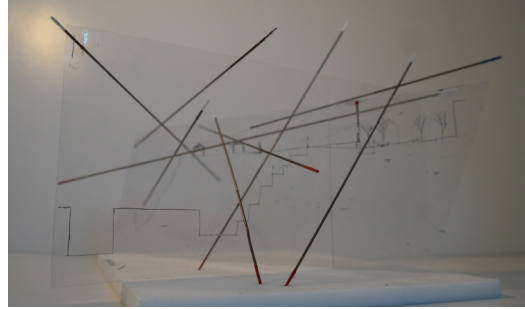
Abstract intentions

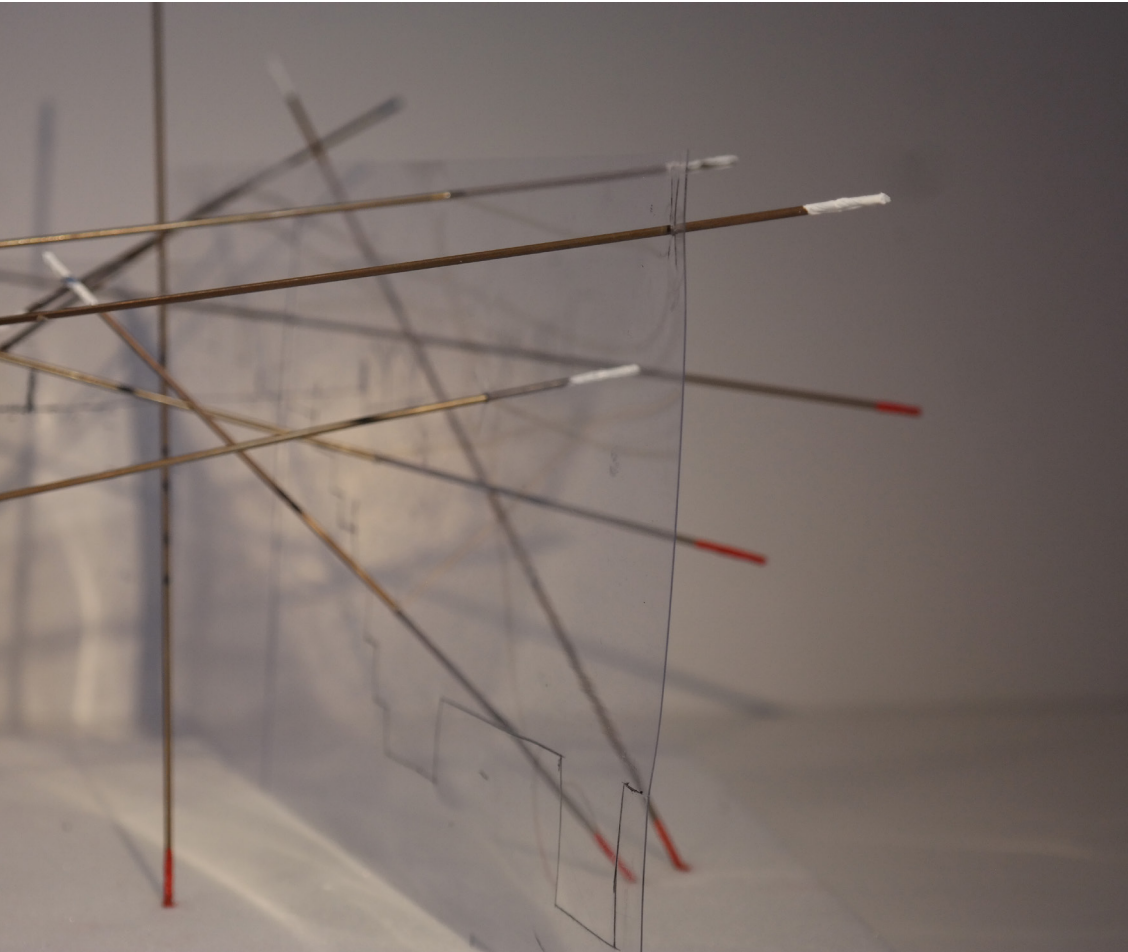
37. Sonic situation model

The design process had led to a stalemate as it began to be defined by program rather than by design. It became clear that a revision of the intentions were needed to draw the design back to initial sonic qualities.

This model aimed to spatialise initial sonic drawings of the site on a larger scale in order to stimulate a revised formal response.

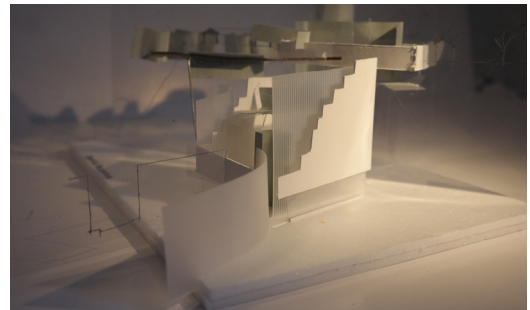
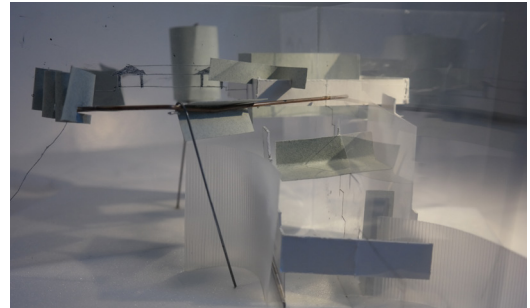
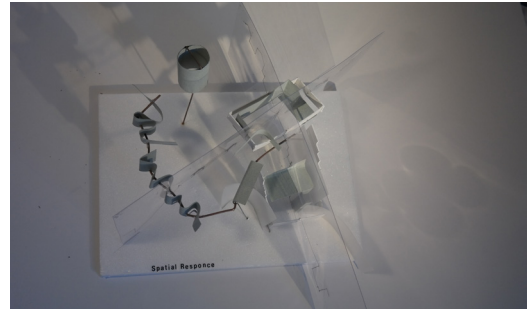
Composed of copper wires each designating the directionality of sound- with white representing the end direction and blue (pleasant) and red (unpleasant) representing the source.



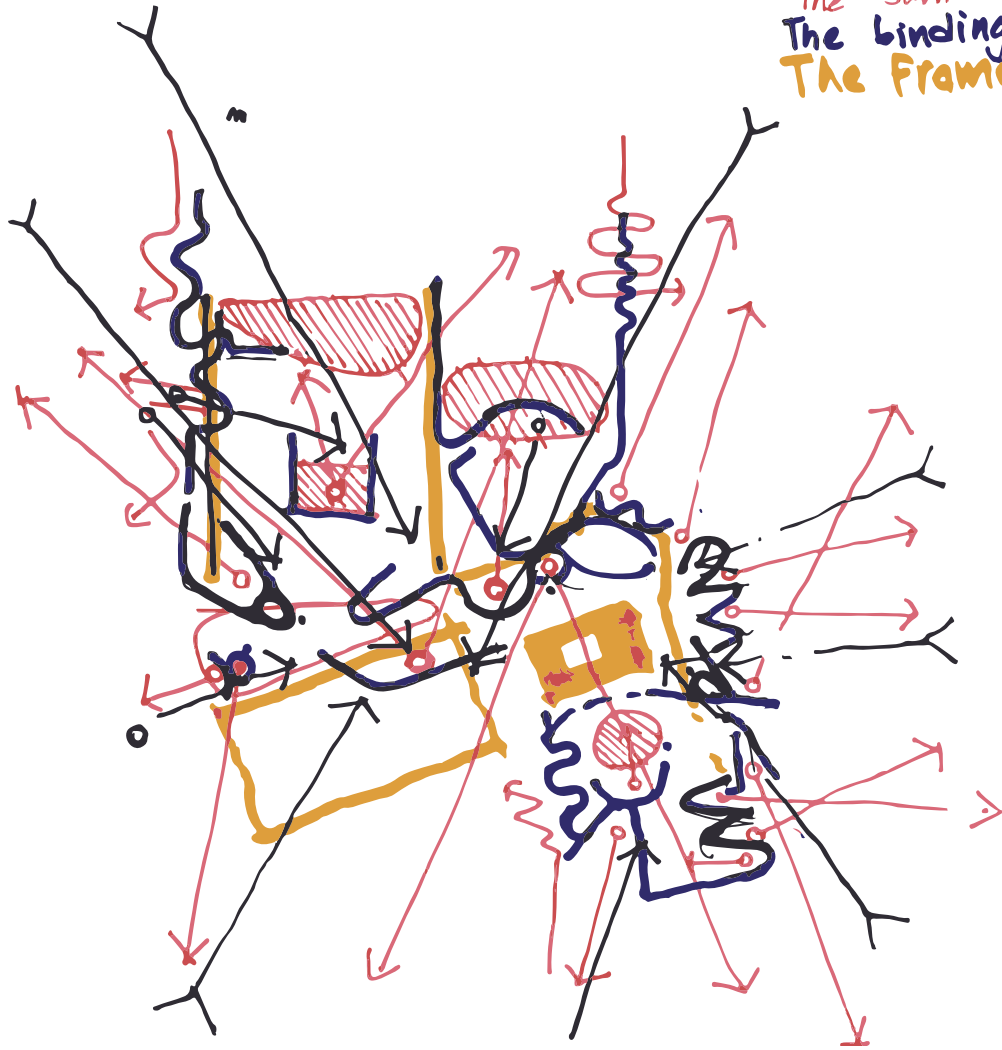


38. Model illustrating the sonic situation. The intention of the model was to understand the spatial dimension of the sonic relationship with the city - the space of appearance. The outcome transfer the approach to the project as the situation became an architecture of its own form.

- 39. Spatial response to sonic situation which was a programed approach
- 40. Sketch attempting to draw on the sonic situation and develop a sonic response instead of a programmed one



The situation.
The sonic response
The binding element
The Framework.

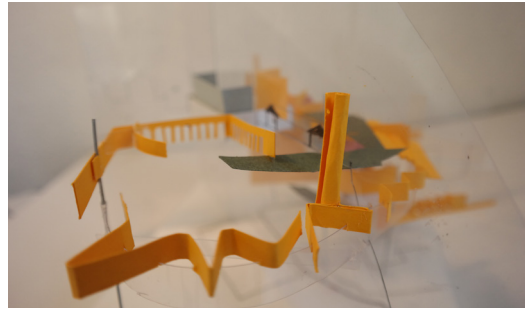
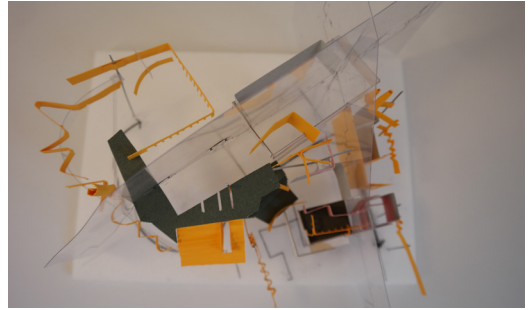


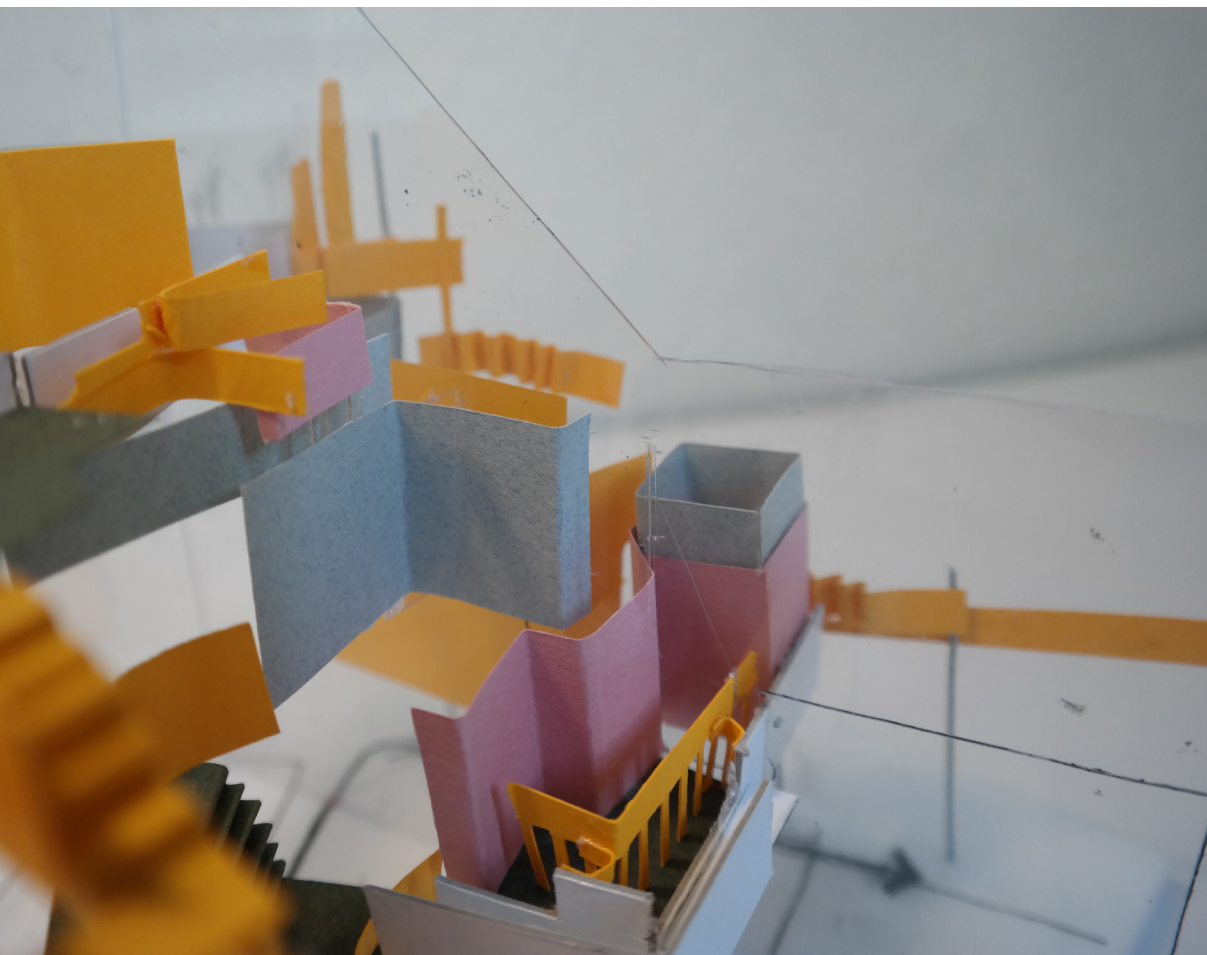
Spatial response 2 - A Binding Element

41. Image of response model. Showing a synthesized approach between ongoing design and sonic situation. Three core elements are shown here; 1. the sonic mitigating elements used to direct sound; 2. the direct elements within the framework; 3. the core elements of the site.

The initial spatial response lacked the sonic quality and only reacted in programmatic form to the sonic situation. The second model then saw the need for a binding element of sonic frames (in yellow) that would give a new spatial quality to the site that directly linked to the macro sonic situation of the city.

These abstract model explorations became fundamental to the development of the design as they were speculative and not defined allowing for a secondary exploration in form that would respond to the unique qualities inherent in the site to relate to the sonic act.

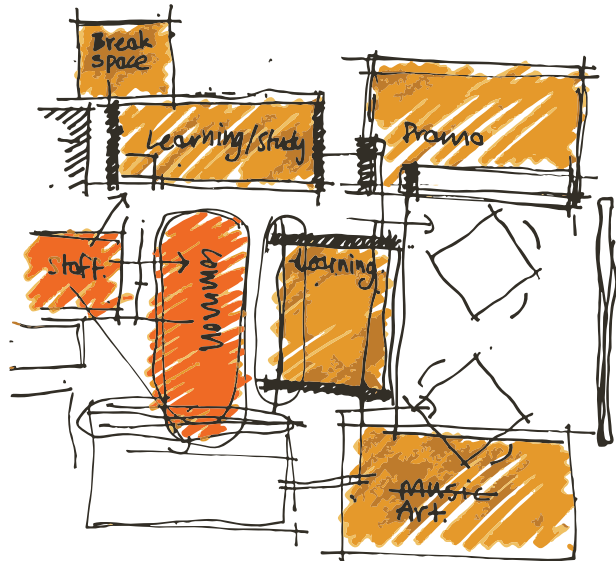
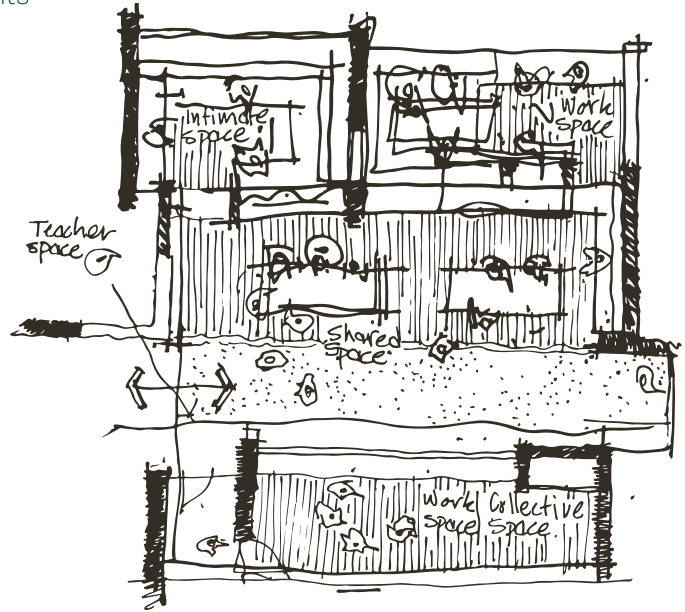


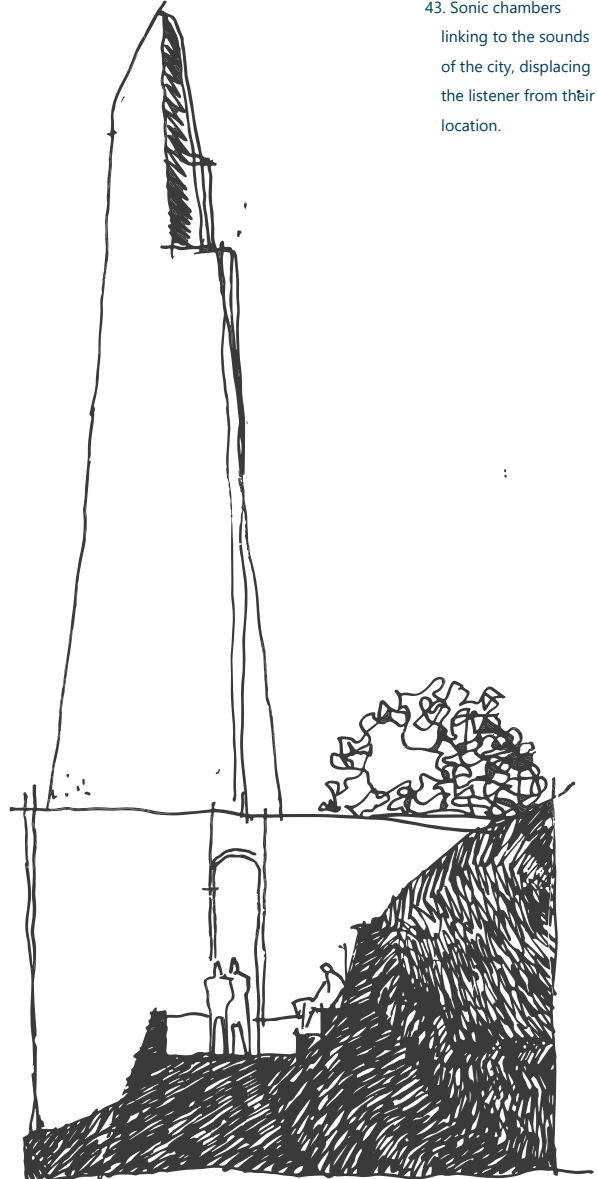
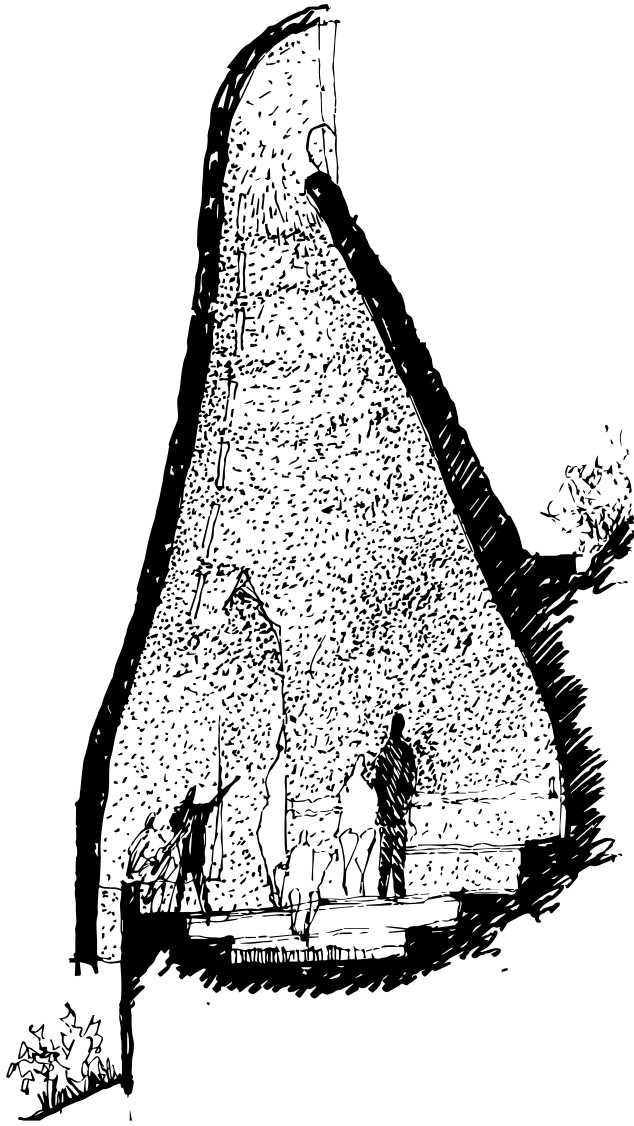


42. Collective school environment

Shared Learning Environments

It became clear that a return to a large scale was needed to leap from the design process. Returning to core principals of the sonic act - simple spatial intentions were developed that would later come to define the outcome of the project.





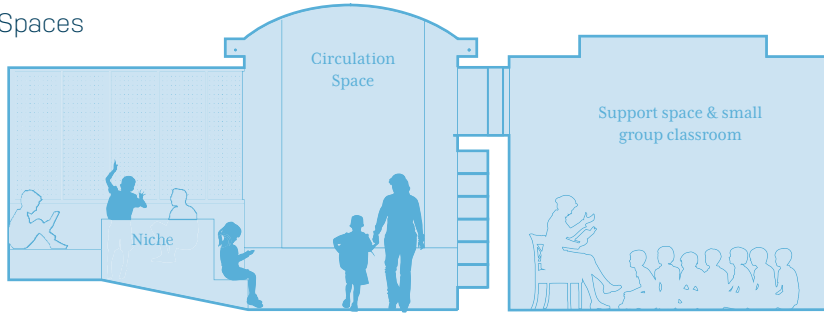
43. Sonic chambers
linking to the sounds
of the city, displacing
the listener from their
location.

Library

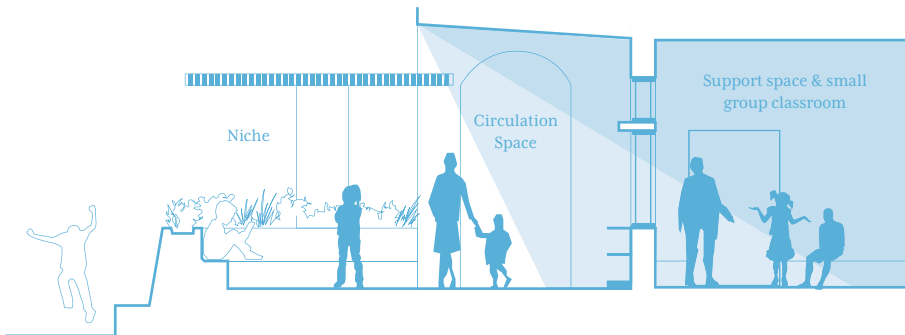
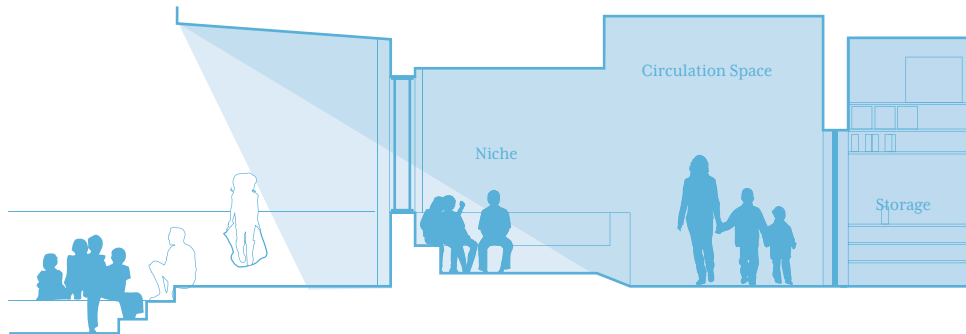
44. A 1:100 diagram of the intion of the library



Niche & Support Spaces

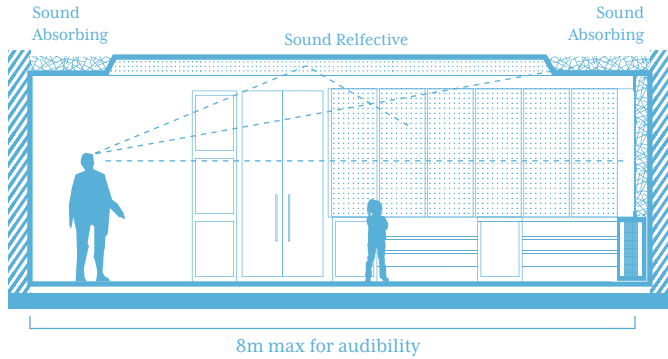


45. A key part of the project saw niche and support spaces as becoming primary design areas as places that hold significant importance with regard to the sonic act as well as acoustic qualities of the site.



Programmed Classroom

46. 1:100 programmed
classroom
environments



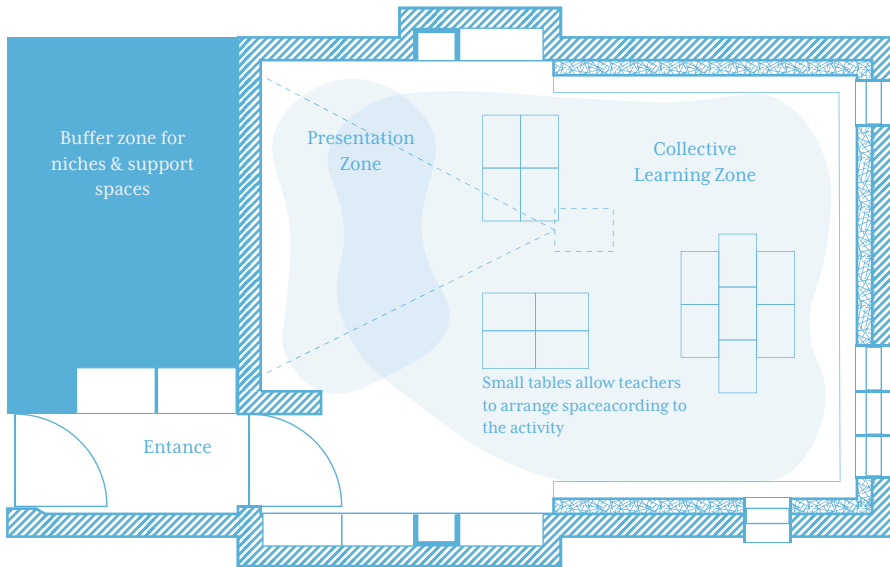
280 brick wall reduces up to 60 dBs of external noise- must connect directly to structural floor and ceiling

Sound absorbing panelled wall interior toward the back off the class room

Diaphragmatic box
absorbs low frequency sound
- incorporated into furniture

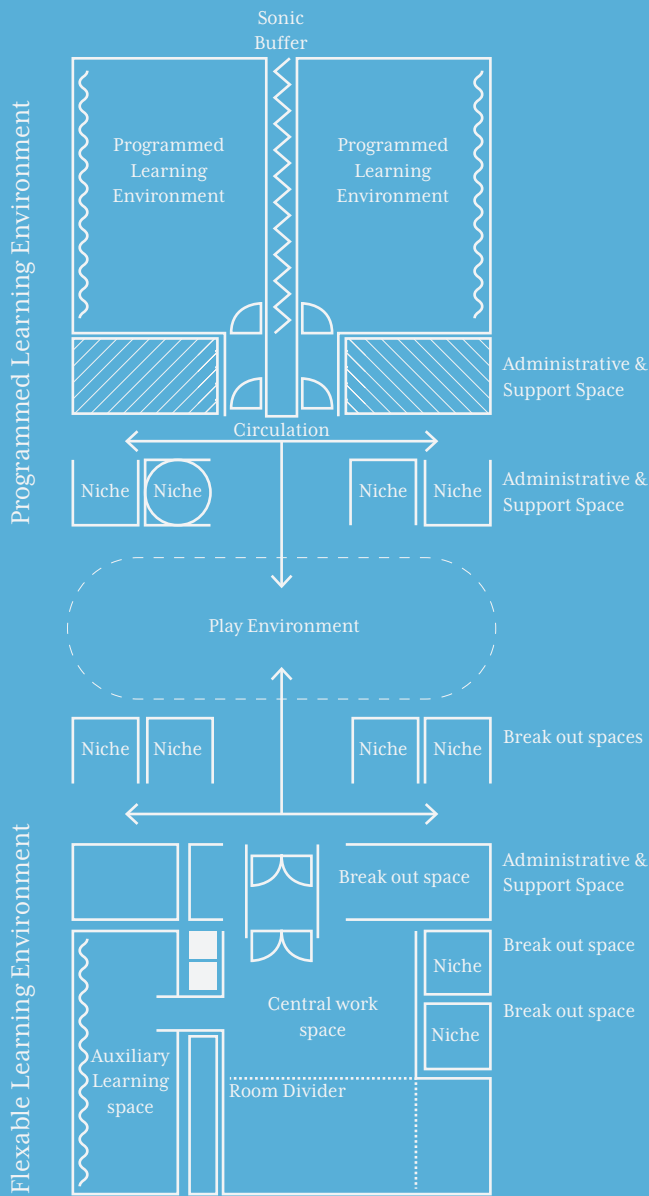
Section of Programmed Class Environment 1:100

58



Windows are 200mm thick with two built in panes to reduce sound transmission

Plan of Programmed Class Environment 1:100



47. Diagram of school showing an approach to how spaces are connected. Critically this is drawn from an acoustic perspective that emphasizes the importance of niche, service and circulation spaces in relation to core program spaces such as classrooms and play areas.



Upper School

Market

Hall

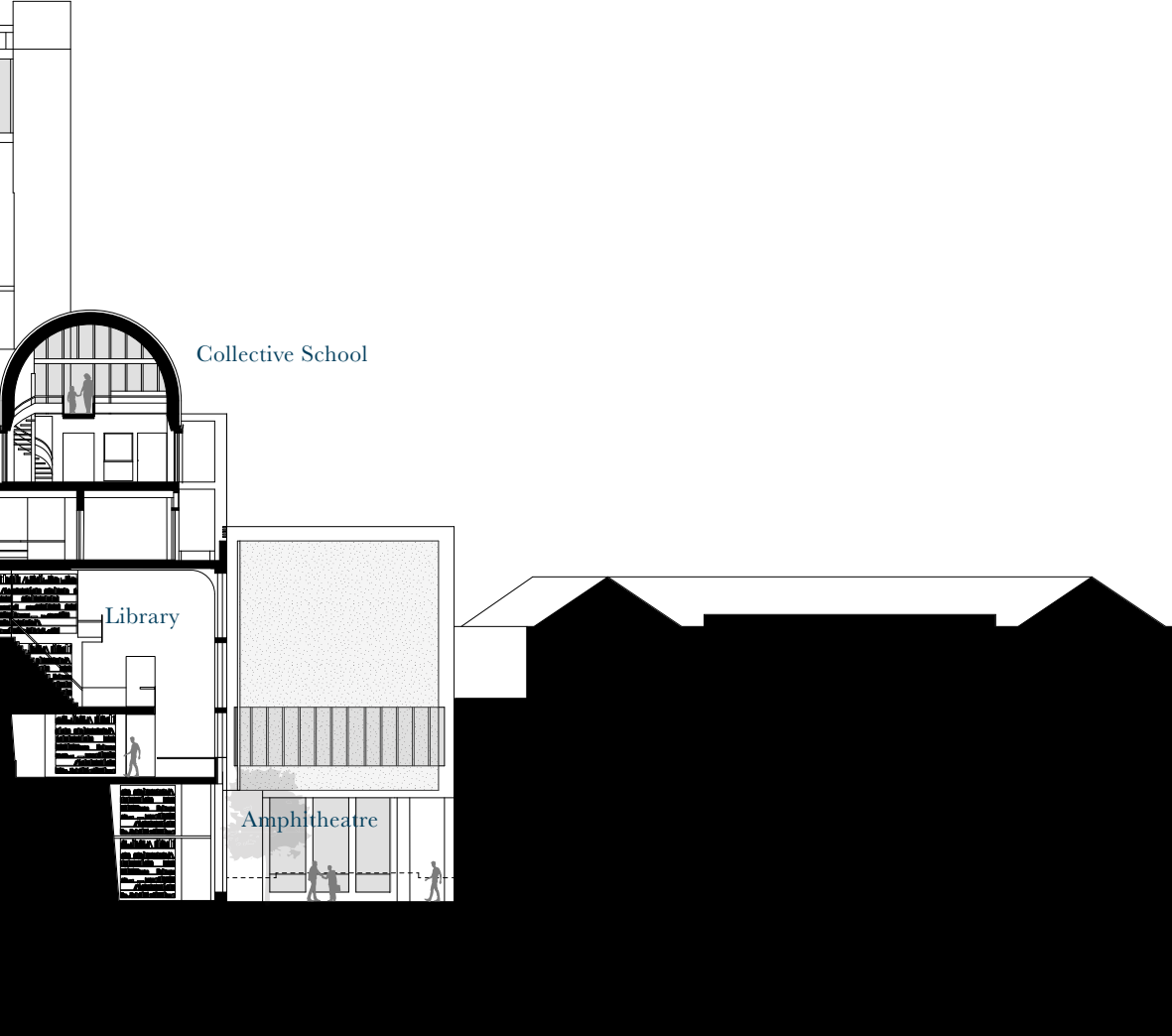
Childhood
development

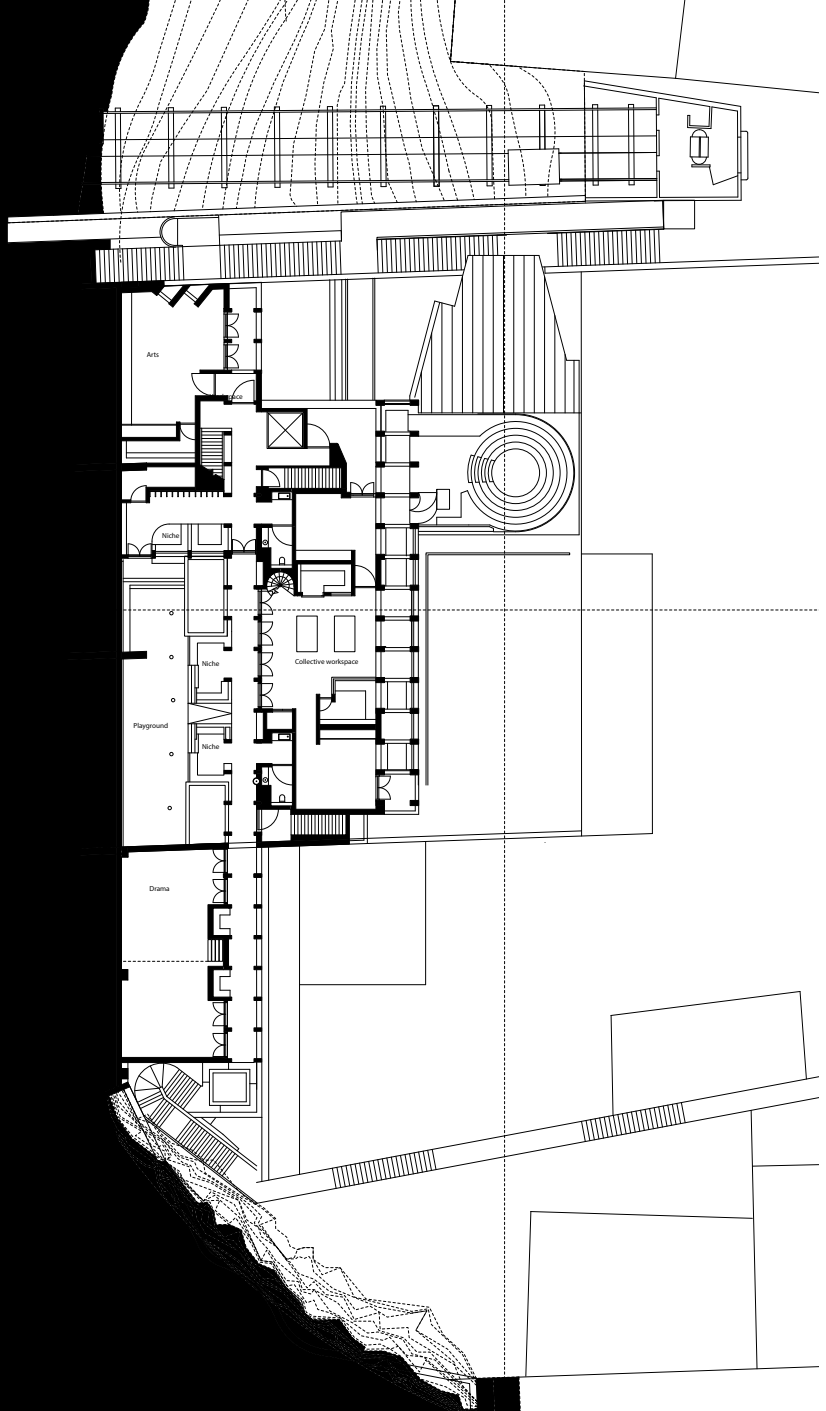
P3 building

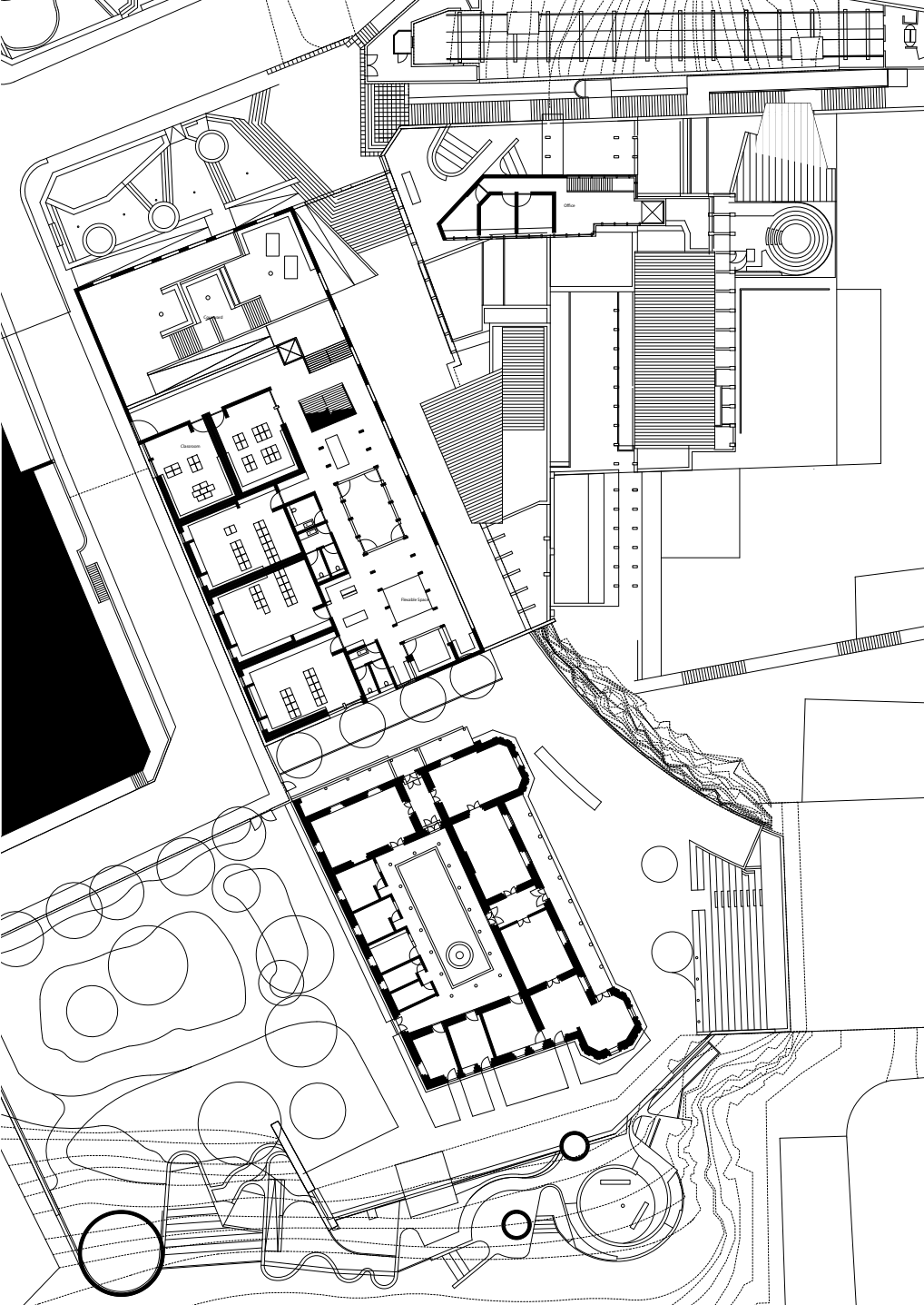
Section of entire site at P3

2018/04/18

48. Section of learning
centre, collective
school, and upper
school

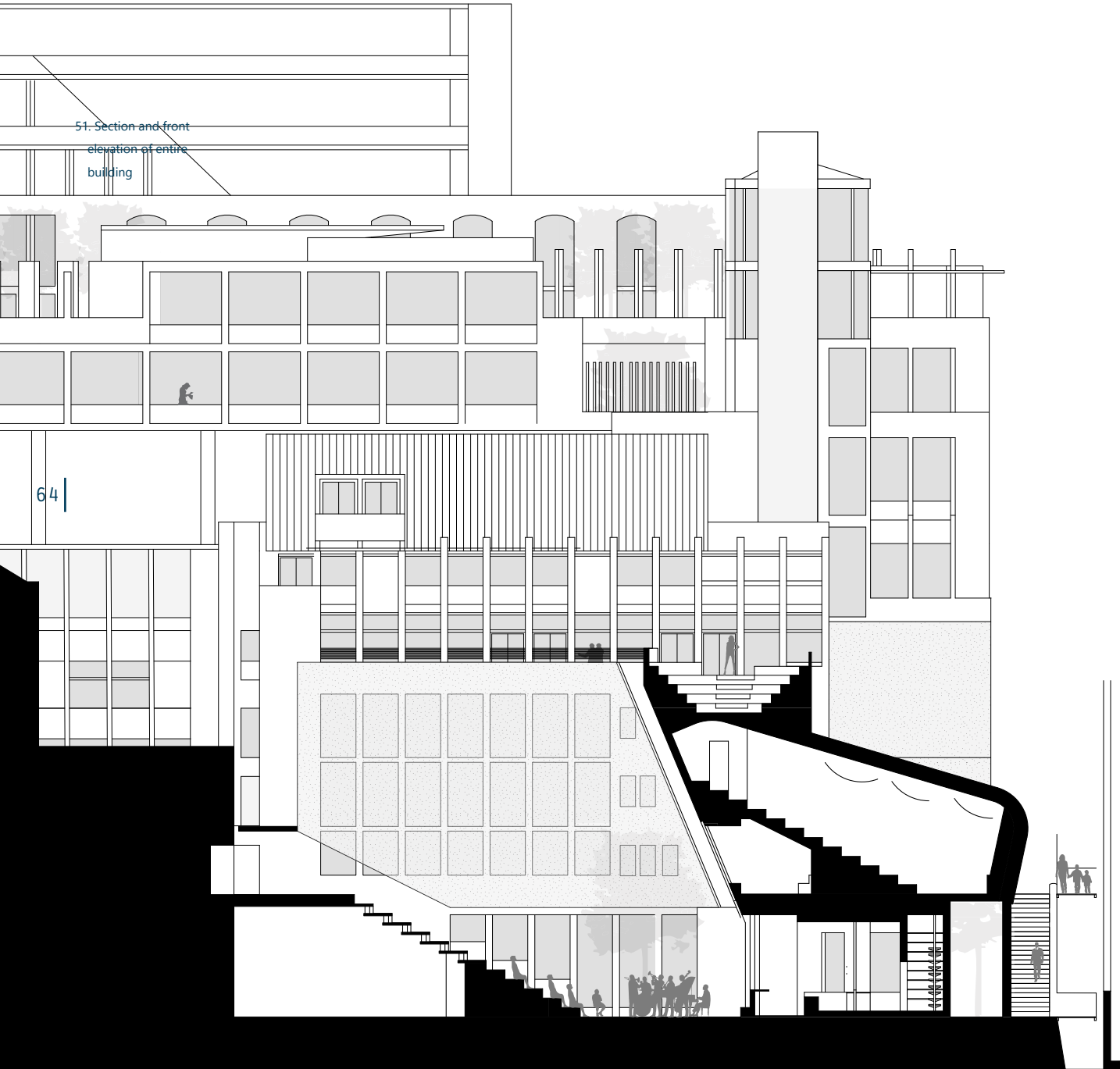






50. Upper School and Sonic Vantage point with learning centre and collective school below in elevation

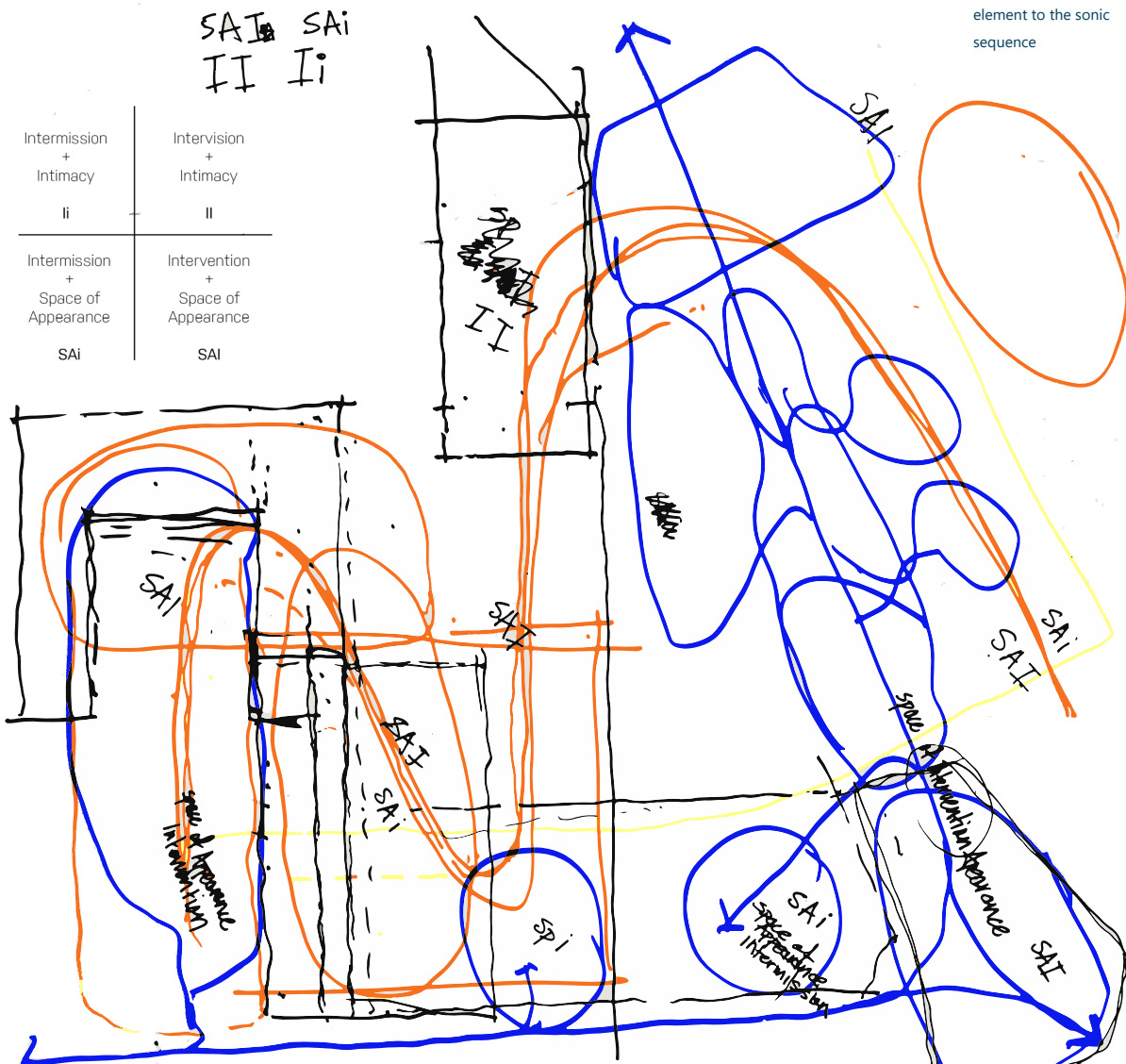
51. Section and front
elevation of entire
building



64 |

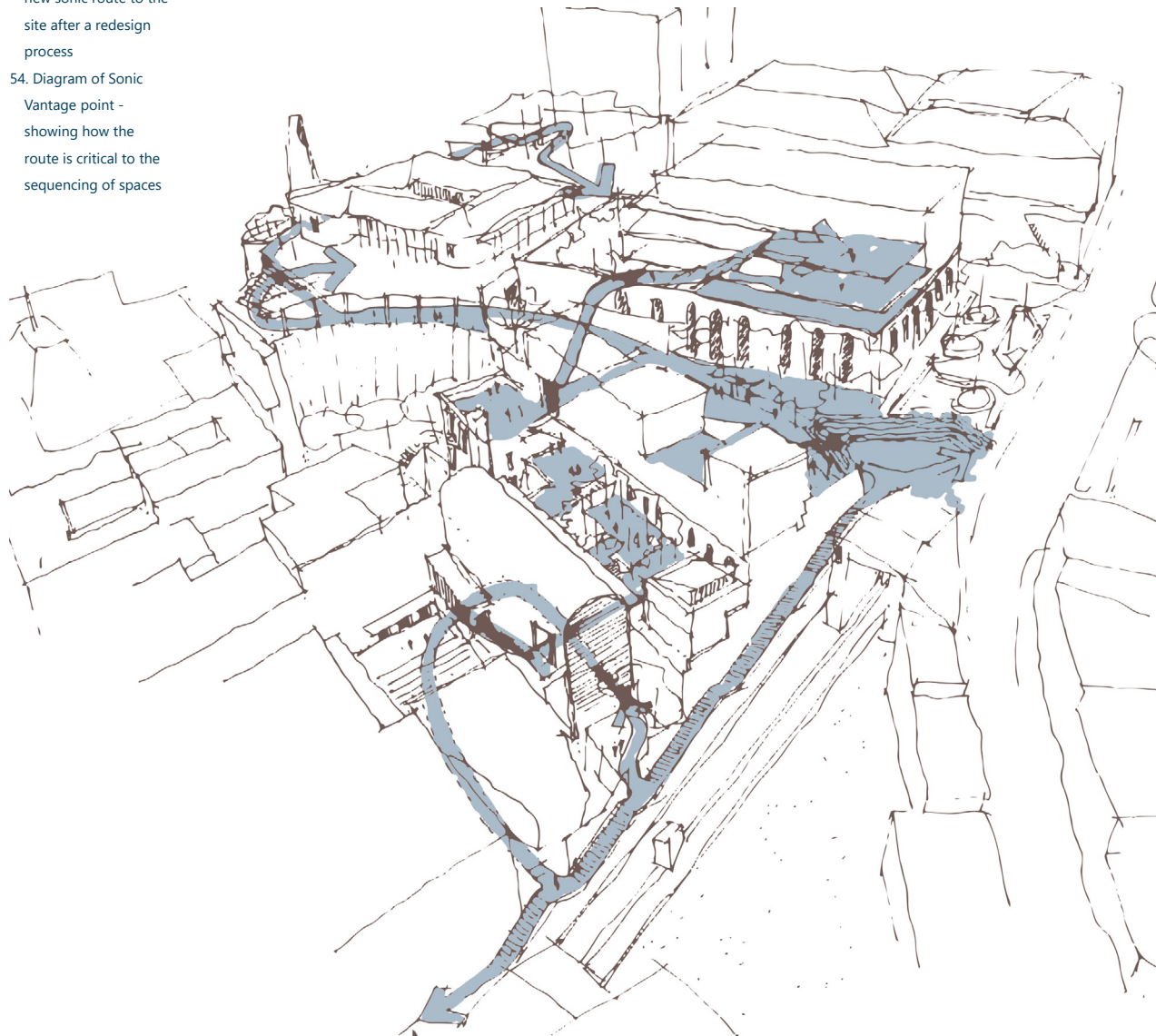
Reconsidering the route as a primary idea

52. Sketch of site looking at routes as a binding element to the sonic sequence



53. The application of the new sonic route to the site after a redesign process

54. Diagram of Sonic Vantage point - showing how the route is critical to the sequencing of spaces



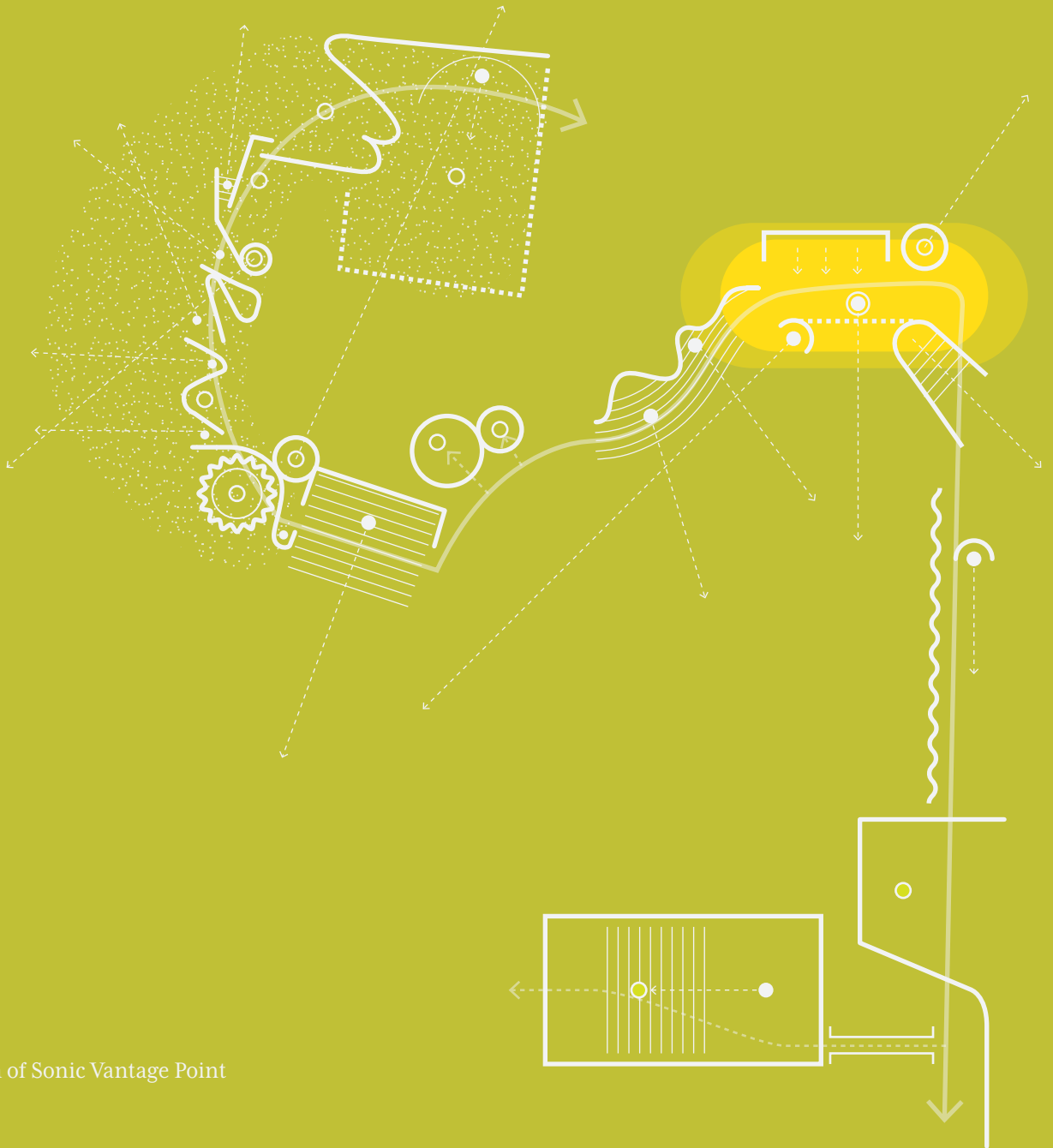
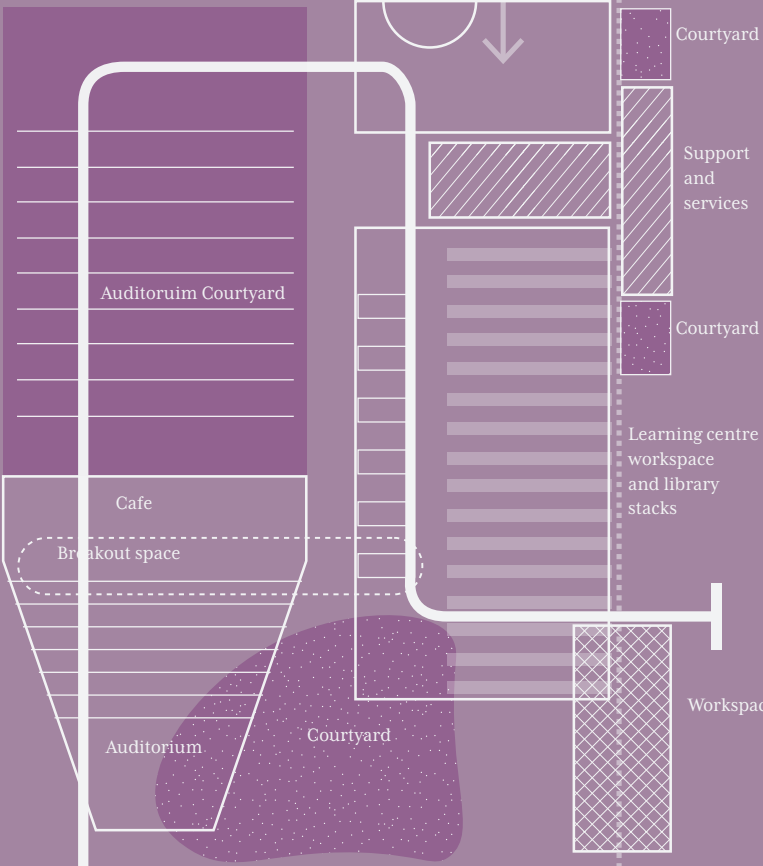
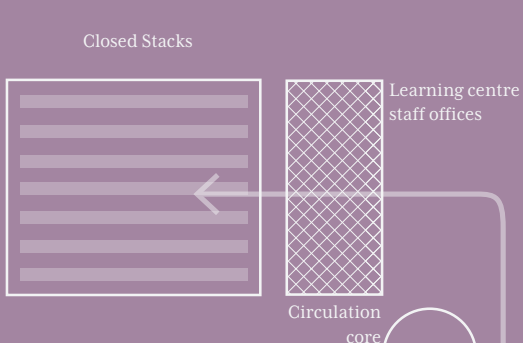
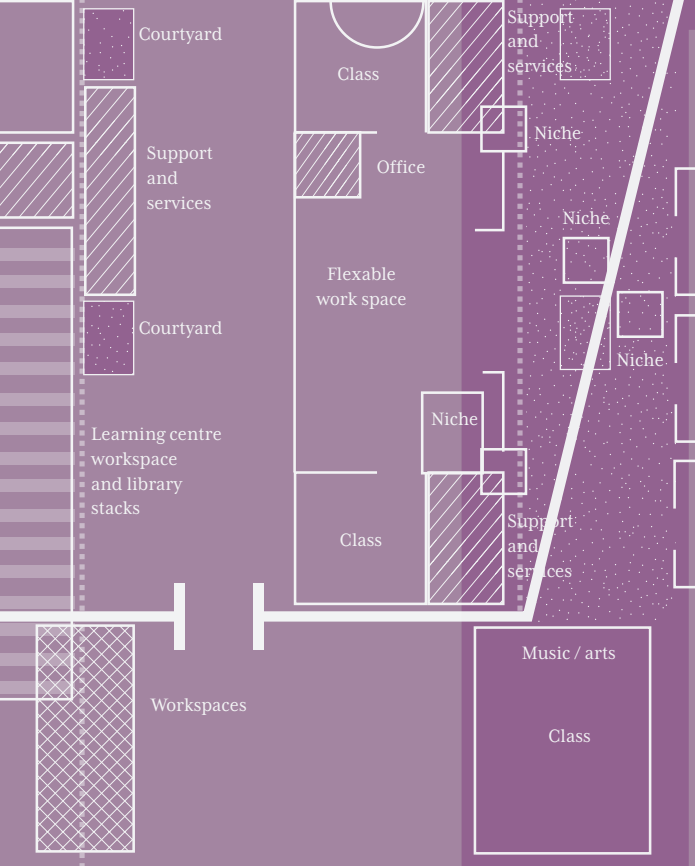
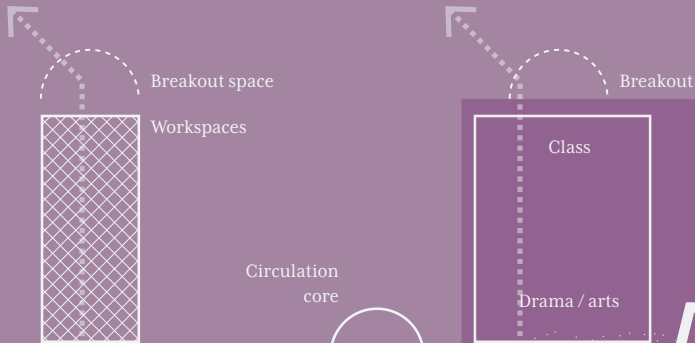


Diagram of Sonic Vantage Point

Learning Centre

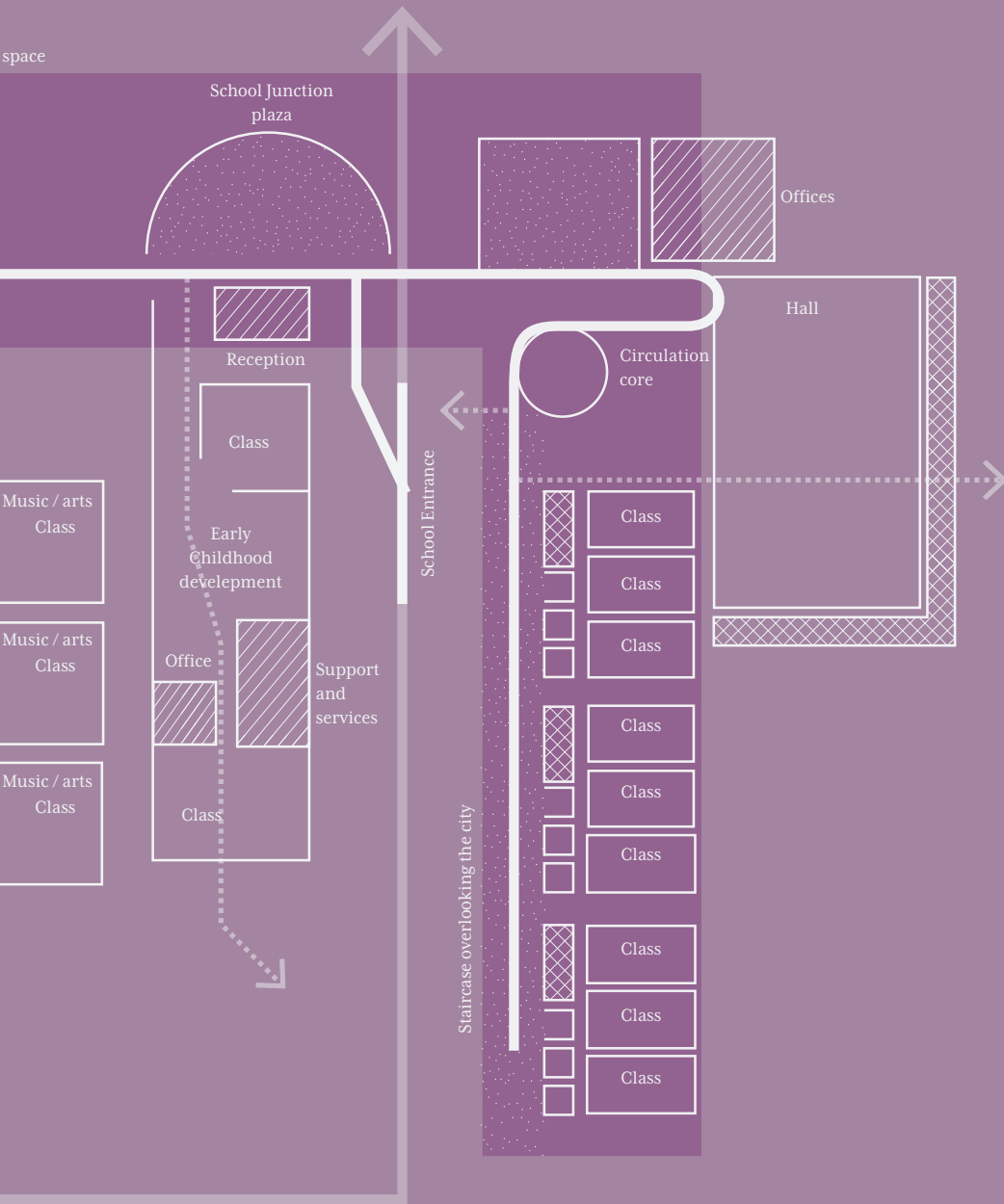


Collective School



Junction entrance and market

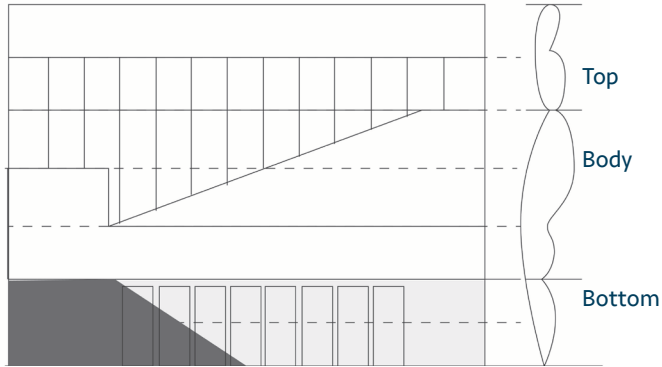
Programmed school



55. Learning center and school diagram. The diagram was critical in developing a spatial sequence to the school. This draws forward how the route is critical to the functionality of the development

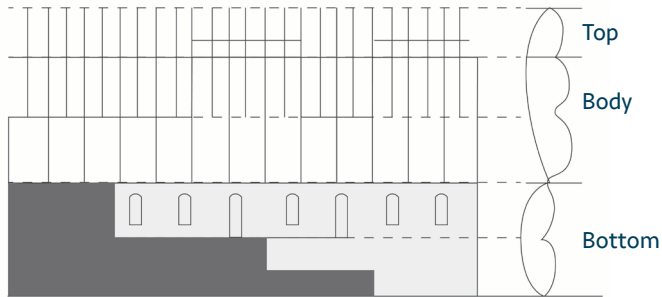
Form and Materiality

56. Reconsidering the form and materiality of the poroposed building

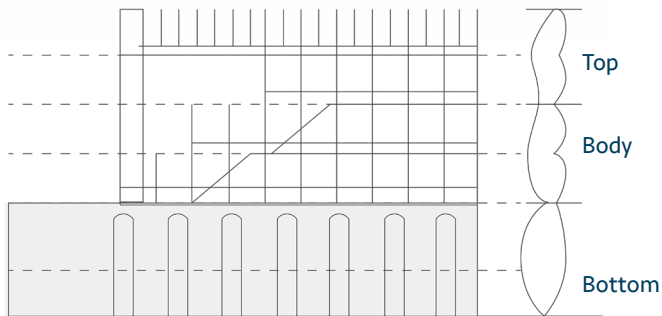


Library and Collective School

70 |

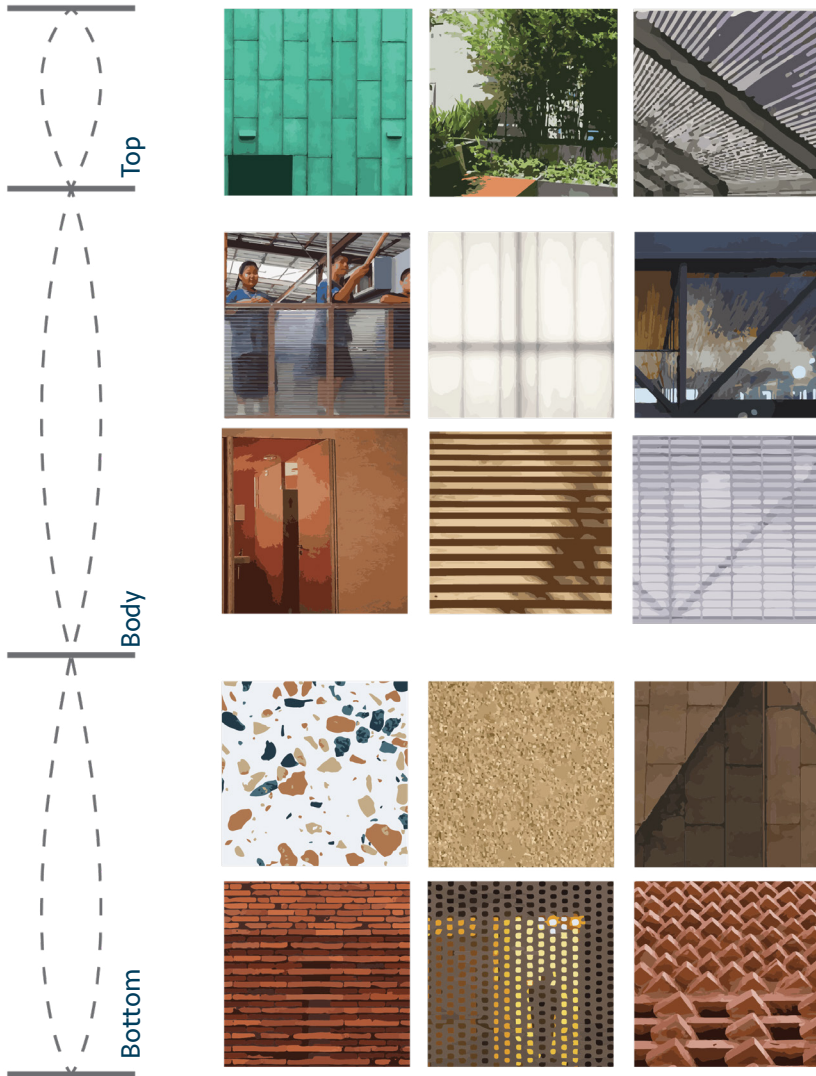


Market and school



Top School

57. Materiality of the
breakup of the building

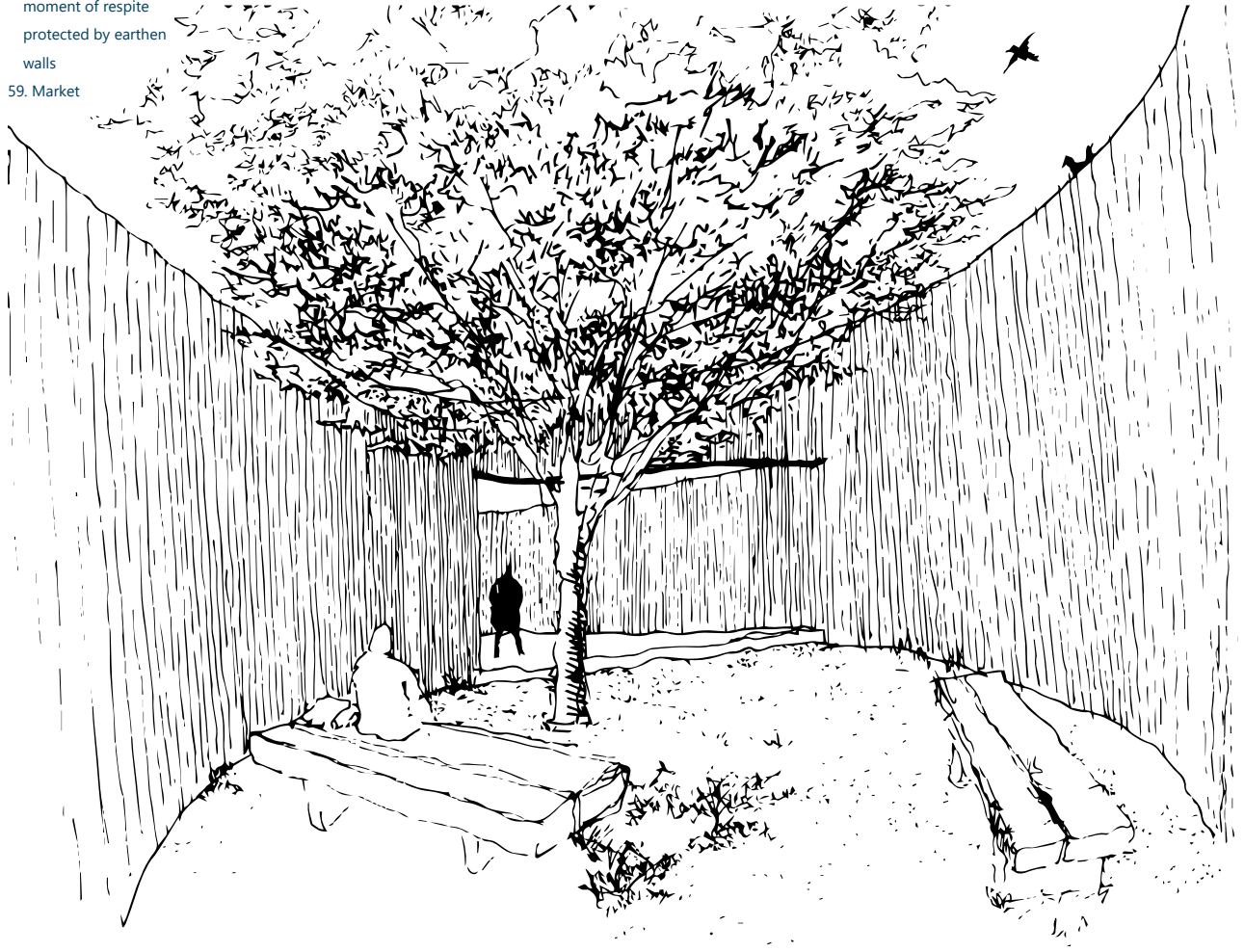


Sonic Quality

58. Sonic Vantage

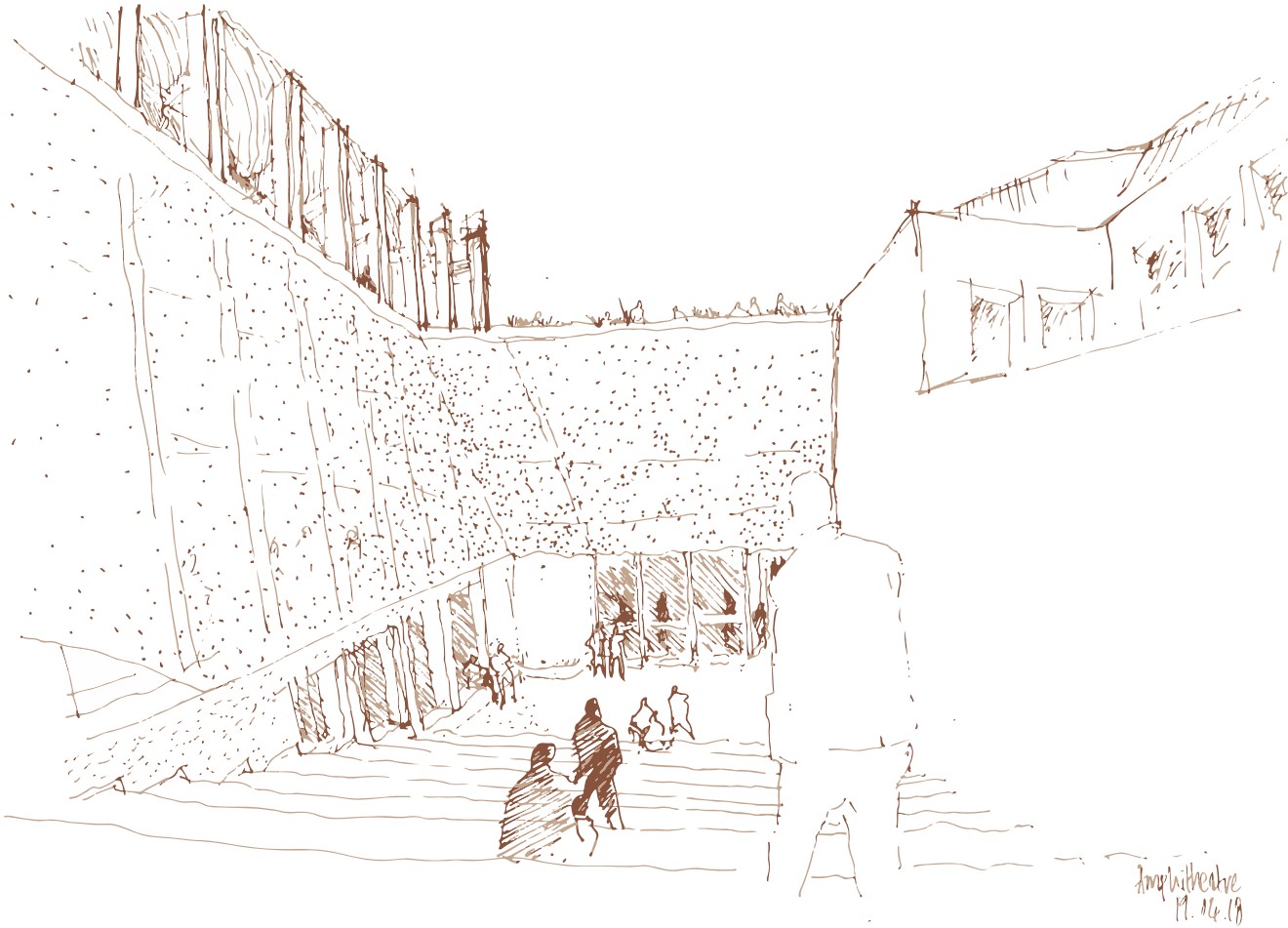
point sketch - a quite
moment of respite
protected by earthen
walls

59. Market





60. Amphitheater

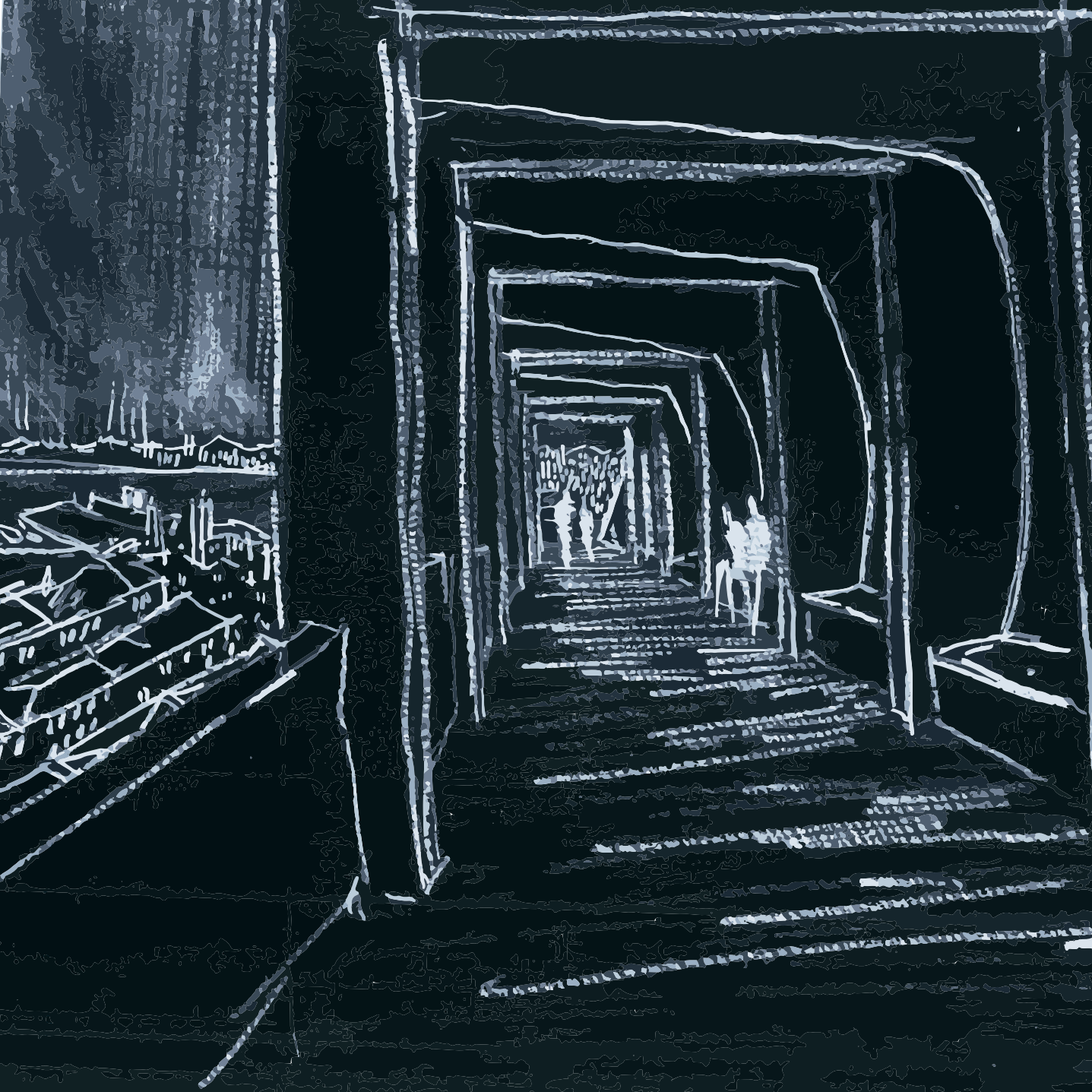


Amphitheatre
11.16.18

61. Collective school
courtyard

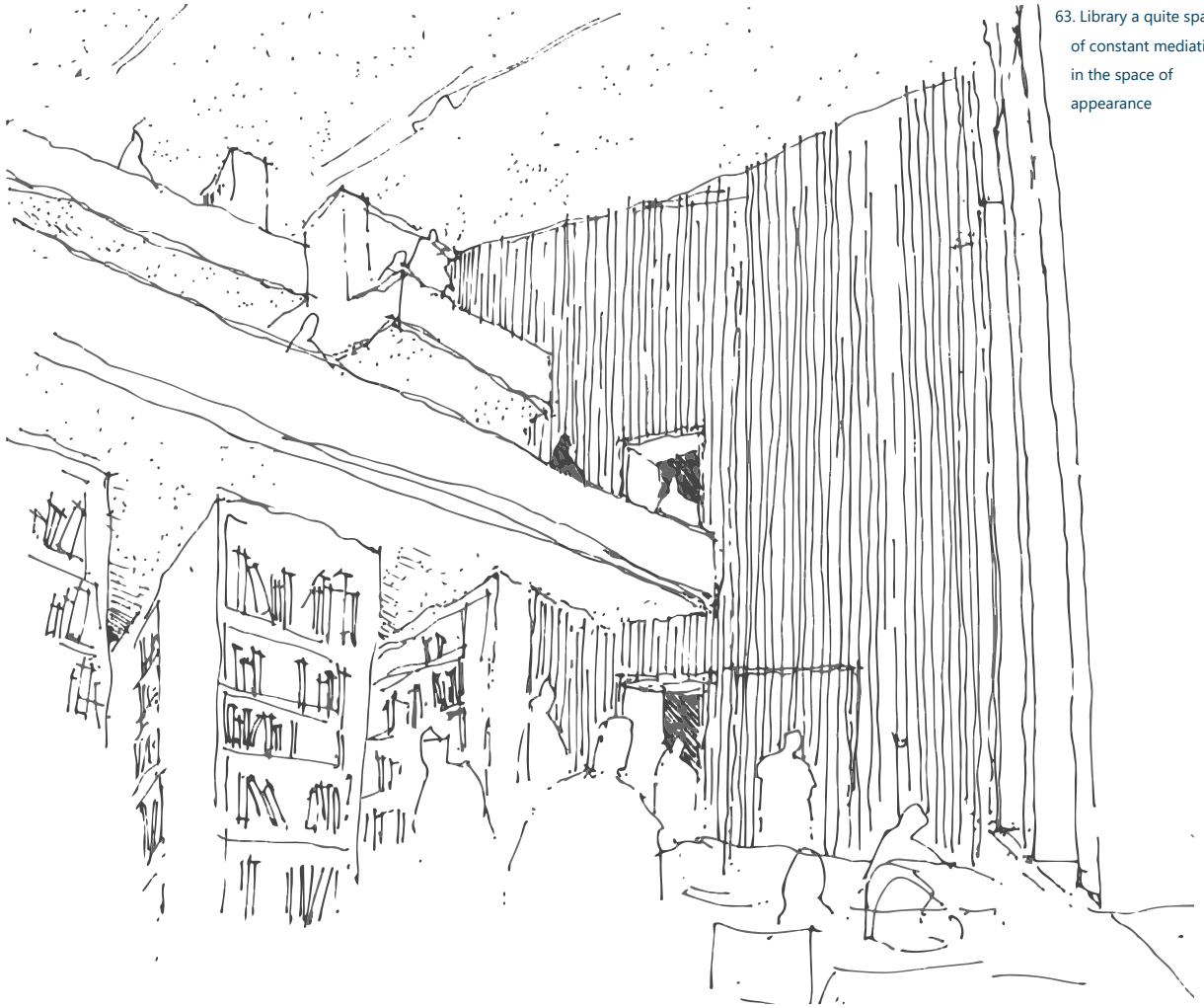


The In-between Courtyard
19.04.18



62. Sonic Vantage point
overlooking the city
below

63. Library a quiet space
of constant mediation
in the space of
appearance



Concluding Remarks

Graduation Reflection

64. Initial test renders
exploring the
visualisation of the 3D
model

Introduction

The architecture graduation project in Valparaiso, Chile, stems from a year long research led process. The project, consists of an urban framework of a learning centre, school and public space intervention with an architectural focus on the library and school. The site is situated on a central site within the city that climbs a steep slope between the old historical neighbourhood of Cordillera and Sotomayor square. The focus of the project has been on how sound is critical to how we understand and interact with our built environment. The methodology has used varied techniques to understand normative principles of sound - how form, materiality and programming is able to create intended sonic landscapes and situations as well as understanding the unique specific situation in which the project is situated. This methodologically-led research approach has informed the project through various tools that have explored different dynamics and thus given form to the project.

Theme of the graduation lab/chair

The Chair of Methods and Analysis - positioned amongst several studios at TU Delft - aims to form a critical body of knowledge on how architecture is formulated. The position is concerned with the quasi-autonomy (Standford, 2011) of architecture, which acknowledges that external knowledge bases^A influence architectural practice and theory. This however, positions a critical need to develop and understand those aspects that make up architecture's internal knowledge base^B. In doing so, the chair holds a particular fascination with the design attitudes, methods and instruments in practice and theory. Following the chair's focus and inquiry, the graduation project has been focused on

A: External bodies of knowledge; are bodies of thought that have occurred external to architectural theory and practice and have had an impact on the field.

B: Internal bodies of knowledge are those developments and theories that have occurred within the field. Examples of this range from the works of Palladio's to positions, theories and methodologies such as the 5 pillars of architecture developed by Le Corbusier.

the tools utilised in developing the research and design, while exploring the theme of the sonic city.

A second focus to the chair is the "idea that the city should be understood as the ultimate common socio-spatial resource" (Havik, 2018). The position that is drawn forward in the graduation project moves away from the socio-economic issues of the commons and focuses on collective action, or otherwise stated the commons as a space of mediation – space of appearance. Where the public realm is thought of as verb, an act occurring between a collective. In line with this focus the graduation exploration into sound has explored the act of sound. Sound permeates the public realm and in so doing is an action that draws attention to the commons as a space of sonic mediation between many actors. The project's intent is to acknowledge this dynamic and position the notion of advocacy as being a means for the community to engage sonically with the city. This deliberate intervention aims to give a voice to the community so to speak.



Research & design

The research process has been critical to the development of the architectural project. Three key research approaches have been used: the development of normative principles; the use of tools such as drawing and model making; and experiential techniques such as visualisation. These tools and techniques of enquiry have stemmed from the epistemological approaches of praxeology and phenomenology discourses. The two theoretical frames foci are on situating man within the world; as phenomenology studies experience and praxeology studies human action. The focus on these epistemologies has been informed by the architectural Chilean schools focus on the act, and how this forms an alternative mechanism for architectural understanding and design.

The critical stance by the Chilean school introduces the notion of observation and experimentation (also critical to the intentions of the Msc), as design is led not by intended outcomes but rather a process of exploration. The research process is not dictated by programmatic outcomes, but rather a research process of Acts that inform a design. Although the research processes

undertaken by the Chilean school in developing architectural projects are not suited to a TUDelft graduation project, due to time frame constraints and their collaborative aspects, the underpinning intent of observation and experimentation remains a core approach that the graduation project has utilised.

The initial P2 presentation, situated a research question: In the Cultural Capital of Valparaiso, how does sound contribute to a sense of place and how could an understanding of sound in the city develop an architecture that is situated and affective as well as forms a deliberate intervention enabling various sonic acts to occur harmoniously?

In answering the research question, the research has used model making and drawing exercises, to inform the design process. These inquiries each exploring alternative aspects of sonic relations to the site have given form to the design outcome. These exercises, not defined by programmatic intentions but rather an iterative process of observation and experimentation at various scales have enabled a research methodology that underpins a technical design process. In order to situate these exercises in the context

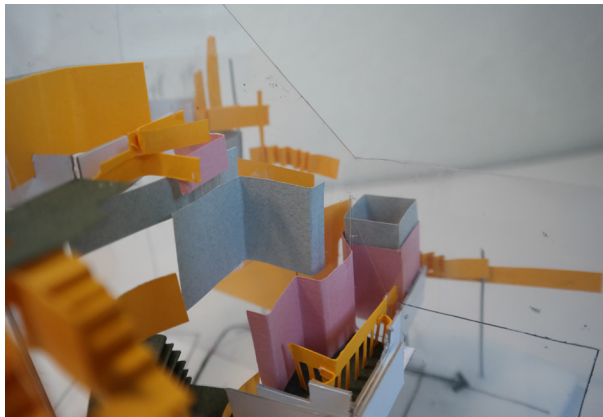
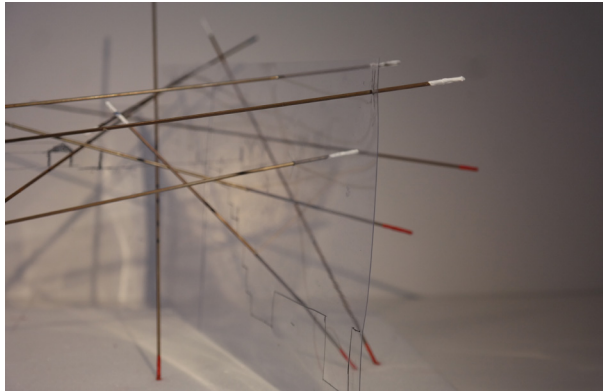
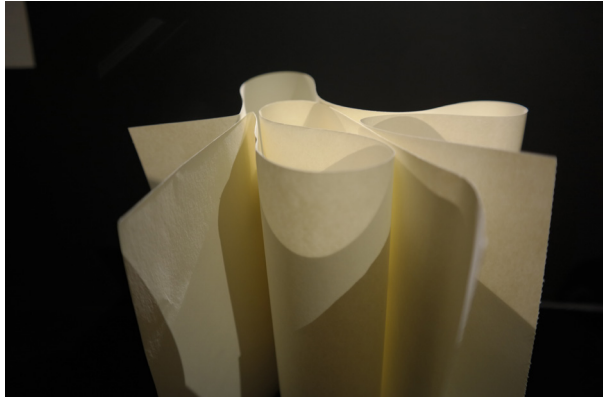
of the project, the development of normative principles have formed in parallel to the exercises - informed through an iterative feedback process. Experiments inform principles from which further experiments are conducted. In order to give guidance to this process and remain speculative about the outcome of the project, these experiments and principles have continuously been visualised, documenting the development of the spatial intention of the project (figure 1 and 6).

The normative principles have been a critical grounding for the project. Stemming initially from the P2 research presentation, normative principles have formed a means to distance oneself from the design process and reflect on intentions. One of the primary tools which has come from this research process is the development of the 4 square sonic act diagram, which continuously offers a tangible means to practically situate the project and smaller spaces within the normative framework of the project. Figure 12 does exactly this by situating the program of the development within the diagram to understand the relationship between sonic spaces and their functions. As a tool the diagram has offered a way to continually probe the types of spaces being created and their associated actors

engage with those spaces.

Finally, visualisation has remained a primary technique in developing the project. In doing so visualisation offers a view into those spaces being created. The intention is to convey the quality of these spaces. Although forming experience is fundamental to the project, it is clear that one cannot mimic the intended experience and thus the use of visualisations has remained a technique to trigger imagination and convey a sense of place.

However, it remains important to acknowledge that ones frame of reference remains a critical part of a design process. Thus in approaching the project it has also remained critical to draw on precedents and theoretical work. The primary references that have been utilised have been the ARQ ediciones a selection of literature published by the School of Architecture and Urbanism of the University of Chile. It serves as a critical base for the literature review. These academic papers reflect the discourse that is significant to the Chilean environment and architectural approach. As well as practical guides, such as a geometric, detail magazine and acoustics offer a reference for practical solutions to design issues.



65. Images of explorative models

The combination of tools and techniques as part of the research has highlighted the importance of research as a mechanism for design. True to the Chilean school philosophy, failures within the process offer opportunities for the project to evolve and continue. In this sense research and design are one in the same as a symbiotic process of observation and exploration. This stand point reflects the intentions of the chair but also has enabled a fruitful exploration in remaining aware of the importance of the process over that of the product.

Project development

Since the p2 presentation, the project has gone through three dominant design stages. Each of these informing the design stage to follow. Each stage reached a resolution at a 1:200 level. The critical mark defining the three stages where the foci under which each stage was informed, and thus the experiments, which had been undertaken to evolve the design.

1st stage

The first stage was primarily defined by two primary tasks, resolving the program of the building and exploring its resolution of the difficult

site. This development programmatically is still reflected in the current design stage of the project and originates from the 4 square sonic diagram exploration. Critical to this design phase had also been situating the socio-economic responsibilities of the project – as a site of opportunity orientated to residents of cordillera. In other words the site saw the inclusion of small shops and market activities within the proposed public space upgrading while functions such as the learning centre evolved as an extension of the university that would be open to the public.

2nd stage

The second stage was marked by a return the sonic qualities of the site with development of a series of model explorations (figure 3 and 4). In parallel visual representations of the site and further iterations of the sonic principles that underpinned the project saw a complete review of the proposed design. This second stage to the project followed an intensive design process that saw a detailed design of the entire project – resolved in plans and sections. This stage culminated in the P3 presentation. Critically the outcomes of the P3 presentation highlighted several issues, namely the scale of the project and the ability to represent and convey

the qualities of the project.

3rd Stage

Following the P3 presentation, it became clear that the project needed an element that bound the logic and the spatial design together. This third iteration saw the resolution of the design as being a route of sonic experience that altered the approach of the project. Rather than singular moments with a large project, the sonic experience would form a binding element to the entire project. The third phase also situated the project focus on the lower library and shared working spaces of the school with the intention of reaching a detailed design. In doing so the design was split into 2 components - that of the larger framework in which the route is situated and then the architectural resolution of a part of the framework. The 3rd phase of the project also took a step into the detailed material resolution of the design. This third stage saw not only the architectural resolution of the building but explored how materiality would be critical to achieve intended sonic situations.

Reflection

The process undertaken has been particularly fruitful, as it has allowed for continuous

exploration and refinement. With the guidance of the tutors, the development of the project has enabled an articulate response to the initial question and allowed for the development of a theoretical frame that would not have been possible in many of the other studios offered in the faculty. The methodologically led research process that has culminated in the proposal has been integral the design process and critically positioned HOW something is done as to the final product as being fundamental to both architectural design as well as research processes.

In hindsight the scale of the project and the difficulty of the extreme slope of the site had been a key challenge throughout the projects development. However, in many ways the varied qualities embedded in this difficult terrain has enabled the articulation of a project that is highly varied and diverse. This multifaceted result would not have been possible without the continuous iterations during the design process. However, reflecting on the process and the project: The first phase of the project had prematurely developed a design response which although offered meaningful inputs, it may have better been spent through sonic exploration that had begun only

in the second phase. The approach to the scale of the project had also for both stages 1 and 2 positioned that the entire project would and should be fully articulated into detail. It became clear that this was not only a massive task but in the short period of a presentation given to graduation projects, the scale and multifaceted design is difficult to convey. Had this been identified earlier in the project time-line, the focus and articulation of the design may have enabled an alternative exercises and tools to be developed in further the research and design process. However, the path the project has taken has successfully worked at various scales and given a holistic view of the intentions of the project. In this sense the project has successfully developed a multifaceted design that speaks to the intentions of the initial project at the P2 stage.

Ethics

Having only had short period of on-site research, the ethical issues of the project relate to the socio spatial qualities of the site and being able to draw conclusions from a brief on-site research phase. These ethical issues have been acknowledged as being due to the manner in which the studio operates, however in a practice scenario, community and

stakeholder engagement as well as further observation would be critical to the development of the project and its research.

Graduation Plan (@p4)

Following the P4 presentation the aim of the upcoming weeks would be to respond to and resolve key issues identified in the presentation.

The second objective will be to critically reflect on best way to convey the narrative of the research and the design into a holistic presentation.

The third would be to focus on the construction of models and drawing of the final building outcome and its representation. •

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