ARCH 9111 Research Project

Bigness in Architecture

# 1224324

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Abstract

This research project is about how we should be designing big buildings in big cities. In general, big buildings tend to ignore their context by becoming independent objects in space. These objects, or space occupiers, are inwards focused, and do not create any form of external place for people to dwell. They transform the city from a place of public activity to become a place driven by efficiency and profit, a place absent of experience and quality; the street has become a residue. Nevertheless, we will never stop designing big buildings, but I suggest that the way we do so should consider the city as an entity, highlighting public activity, quality, experience and formal expression. In other words, there is a need to reduce big building’s impact without reducing their size.

Through a critical analysis of Rem Koolhaas’ theory *Bigness or the problem of Large*\(^1\) from his book *S, M, L, XL* (Köln, Germany, Benedikt Taschen Verlag GmbH, 1997) p. 495, I have developed a counter argument to the theory, resulting in one alternative method of designing large-scale buildings. This method, fragmentation, makes it possible to design a big building that does not reject its context, but merges into it, creating places of public interest. The idea is to divide the building into smaller pieces and rearrange them in a way that their totality cannot be perceived from any point of view, making it appear smaller than it actually is. However, the research shows that fragmentation needs a specific system that determines where, when and how it happens. Based on the system of a rhizome, the final building extends into the city, making logical connections, formally and programmatically. This method has been thoroughly tested through physical model exercises, sketch analysis and computer aided design (CAD). The result is a big building that is not perceived as big but blends into its context, creating external spaces for public activity.

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\(^1\) Koolhaas, REM. *S, M, L, XL*. (Köln, Germany, Benedikt Taschen Verlag GmbH, 1997) p. 495
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Bigness in Architecture

“Bigness no longer needs the city; it competes with the city; it represents the city; it pre-empts the city; or better still, it is the city.”

How can a type of bigness be created which does not reject its context, but merge into it by fragmentation; where each fragment is committed to the whole, perceived as one? How can this fragmented mass be a part of the existing city, rather than being a city by itself?

Ever since the technological big bang of the industrial revolution, the city has been undergoing a steady transformation from being a place of public activity to becoming a privately owned, profit driven, accumulation of independent big buildings, which ultimately is what bigness is all about. What they all have in common is their ignorance of the external context, and as they grow bigger, their program becomes more diverse, and in the end, the buildings turn out to be cities in their own right. More than often, these miniature cities are focused inwards to its own centre, rather than outwards to the city. The Dutch architect Rem Koolhaas talks about this in his book S, M, L, XL, devising his theory of bigness. He states that: “Bigness is no longer a part of the urban tissue. It exists; at most it coexists. Its subtext is fuck context.”

Essentially, the problem is the idea that profit precedes anything else. More than often, the developers do not care what the building looks like as long as it is not possible to make more money out of it. Part of the problem lies in the high value of properties in the city. Why build a 10 story building and get 10000m² of floor space when one can build 100 stories and get 100 000 m²? It seems that in the city, space has been reduced down to a number that does not include light, air, vistas, or any other spatial qualities. “The new urban space is just a plane on which either big objects or lite tissues coexists according to the rules of politics, of money, of infrastructure, but no longer, ever, according to the rules of the eye or perception. Anything can be anywhere.”

The result of this is often an extrusion of the site, as high as allowed, identical floor slabs, wrapped in a tinted glass façade, an object in space.

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2 Koolhaas, REM. S, M, L, XL. (Köln, Germany, Benedikt Taschen Verlag GmbH, 1997) p. 515
3 Ibid. p. 502
http://findarticles.com/p/articles/mi_m0268/is_n4_v33/ai_16547724/pg_14/?tag=content;col1
In his article “How Big is Bad?” Charles Jencks also criticizes bigness in regards to boredom: “With large impersonal offices filling up the city, ennui might be caused by corporate drones asking for mirrormaple boxes that matches their taste... Or, perhaps, boredom was caused by the speed at which mega-buildings were dropped on to a rich, unsuspecting site. Either force might freeze architecture into what was called the dumb box.”

However, I suggest that the problem is not necessarily the overall form of the building as a dumb box; it is the relationship between them that is really the problem. Replacing these dumb boxes with new and experimental form of architecture does not necessarily make anything better, as proven in Dubai’s display of extravagant new form of skyscrapers. Here, the dumb boxes have been replaced by giant sculptures that, ultimately, reject their context just as much by remaining independent objects in seemingly empty space.

Figure i: Dubai skyline

Colin Rowe declares the same problem in his book Collage City. “…rather than hoping and waiting for the withering away of the object (while simultaneously manufacturing versions of it in profusion unparalleled), it might be judicious, in most cases, to allow and encourage the object to become digested in a prevalent texture or matrix.”

So, in order to make the city less of an arbitrary collection of independent giant artifacts, I propose that the buildings should not just occupy space, but also define space.

This idea of the building as a space occupier and space definer at the same time is evident in a housing project for South-Tegel, Berlin by Hans Kollhoff. Here, the building fluctuates between occupying and defining space. (Fig. ii)

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http://findarticles.com/p/articles/mi_m3575/is_1266_212/ai_90684526/?tag=content;col1

Although this project was never realized, the same principle is demonstrated in earlier buildings such as Manica Lunga, Rome, where the building on one side contains the street, while the other defines a public realm. The result of this, I suggest, is a more coherent city structure where space can be contained.

![Figure ii: South-Tegel housing project, Berlin and Manica Lunga, Rome.](image)

However, these buildings require much more space than the typical space occupier, and in the city, space is not easy to come by. So, how should we then design large buildings? Many architects are perplexed about what to do with bigness, not knowing where and when to use it, and even more important how? The way we approach the design of a big building is fragile matter as their impact reaches much further than just the immediate street and the neighboring buildings. As Rem Koolhaas puts it: “Big mistakes are our only connection to Bigness.” Bigness influences the city as a whole and it should be dealt with in such a way that it does not compete with it, but by becoming a part of it, digested into the urban texture. To make the city structure more coherent, buildings should not diminish its surroundings, but interact with it in such a way that they both compliment each other.

Taken this into account, I want to re-examine some aspects of bigness, devising my own take on the theory. This will be the foundation for the design of a big building that does not reject its context, but merges into it, hence, avoiding architectural selfishness. The aim is to enhance the social activity in the city and contribute to a more coherent urban texture.

To do so, I suggest that three issues of bigness must be resolved, *Automonument*\(^8\), *Lobotomy*\(^9\) and *Schism*\(^10\). Rem Koolhaas was the first to use these terms in the field of architecture as a way of theorizing bigness, latent in his retroactive manifesto for Manhattan: *Delirious New York*.\(^11\)

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7 Koolhaas, REM. S, M, L, XL. (Köln, Germany, Benedikt Taschen Verlag GmbH, 1997) p. 510
9 Ibid. p.100
10 Ibid. p.105
Automonument

Beyond a critical mass, a building not only becomes big, but also monumental. These two properties seem to have an unbreakable link, the automonument, meaning that the sheer size of a big building automatically turns it into a monument regardless of form and materials. When designing the Centre Pompidou, Richard Rogers and Renzo Piano tried to avoid making a monumental building, but could simply not avoid it due to its enormous size. Monumental buildings are monumental because they stand out, rejecting their context by being something different from anything else. Nevertheless, there is nothing wrong in being different, but being different at the cost of others is.

Lobotomy

When a mass increases, so will its surface, and beyond a certain point the distance from the surface to the core gets so great that the exterior can longer speak of what is happening inside. This is described by Koolhaas as architectural lobotomy, separating the exterior from the interior; “…what you see, is no longer what you get”12, defusing the old doctrine of form follows function. But is this traditional concept really futile in bigness? Is it really so that the exterior must be entirely dedicated to formalism and the interior to functionalism? The idea of the city as an accumulation of mystery objects does somehow seem intriguing, but the reality of it is quite different. Instead of having one natural city center, each building now has their own centre, totally oblivious to each other’s existence. This strong inward focus of these buildings turns the streetscape into a residue, merely a link between independent islands. In the traditional city, the street is what binds it together, while in the modern city, the street separates.

Schism

Disconnection does not only happen externally, but also occurs internally; schism. Identical floor slabs separate all activities within the building, and the only connection between them is the elevator. Ultimately, the floors are now also becoming independent islands, unaware of each other’s existence.

So the problem emerges; how do we create large-scale non-monumental architecture that does not disconnect itself from the city nor from its own program?

As a method of solving these three issues I want to test the idea of physical and programmatic fragmentation. I propose that as long as the totality of the mass can be perceived as one, it can be broken up and rearranged in such a way that each part can define its own spaces and have architectural autonomy.

12 Koolhaas, REM. S, M, I, XL. (Köln, Germany, Benedikt Taschen Verlag GmbH, 1997) p. 501
In this way, it may be possible to create a big building controlled by different architectural gestures, regulating the external interaction with the internal. I also propose that the rearrangement of fragments can compose a building that cannot be entirely comprehended from any point of view, hence gives the impression of a smaller building that has a greater potential of becoming a part of its context.

This method however, brings up some important issues that must be resolved. If the building as a whole cannot be comprehended from any point of view, will it still be big?

There is also an underlying contradiction in this project that ultimately breaks down the research question to this: How can we make something big small?

To answer these questions it is key to understand what big is in the first place, and how big it actually is. This includes an understanding of our reactions to the different aspects of size, such as height, mass and volume.

Methodology

The main goal for this project is to find an alternative way of designing large-scale buildings in large cities. To do so, it is necessary to understand the theory of bigness and how it affects the city.

Based on this understanding I will design a large-scale building in Auckland that proves or disproves that it is possible to create a big building that does not reject its context, but becomes a part of it, physically and programmatically.

Whether or not such buildings can improve the social activity in the city by creating internal and external spaces of public interest is also to be investigated.

In essence this project is based on a critical analysis of bigness as a theory, with special regards to Rem Koolhaas’ written theory Bigness or the problem of Large from his book S, M, L, XL. This text becomes important for this project, as it is the most thorough theory to this date.

However, the scope of this theory covers a generic type of bigness only, leaving much room for an alternative approach to the topic. The outcome of this analysis is to be the foundation for two different model exercises. The first model exercise is a formal investigation of fragmentation and rearrangement of parts. Through physical model making I intend to test the different ways of breaking up the mass by analyzing the various outcomes, leading to one method in particular, forming a language.

13 Koolhaas, REM. S, M, L, XL. (Köln, Germany, Benedikt Taschen Verlag GmbH, 1997) p. 496
The second model exercise will be based upon a refined method of fragmentation, but will also take into account the more specific issues of architecture such as site, conceptual idea, program, economic model and structure.

The underlying idea of this methodology is to divide the project in three stages where the first stage creates the foundation for the next and so on. In this way, there will be a natural development throughout the project, keeping the possibility of altering the previous stages.

The purpose of the project is to investigate the possibility of generating a large-scale building within an urban context that does not reject its surroundings, but include the cityscape into the building, diffusing its boundaries. This will serve the purpose of creating a more coherent cityscape, and better social interaction between people and the city. By allowing for people to utilize more of the building on a social level, the building itself will attract more attention, creating movement within.
What is big?

Initially, there is a need to establish a platform to work from; a thorough understanding of size and how it is perceived.

Rem Koolhaas asserts that "Beyond a critical mass, a building becomes a big building..." But he does not define how big that critical mass actually is, nor does he state what it is. Clearly there are different aspects of big, such as height, width, mass and volume which all have different effects on people, raising another question; what is essentially big?

According to the New Oxford American Dictionary, big is ‘something of considerable size’, considerable is ‘notably large in size’, and size is ‘the relative extent of something.’ So in the end, big seems to come down to the matter of relativity, it depends on whom, what and where we are.

To put it in perspective, we can look at the example of the bug and the elephant. A bug can be dropped from heights a thousand times its own size without the bug getting injured, while an elephant would be totally obliterated if dropped from less than its own height. Clearly there is a relationship between mass and height. If a man fell from a three-story building, he is likely to sustain serious injuries or even death, but that does not imply that a big building is no less than three stories.

In the context of architecture it seems that big is not a static property, but a dynamic one, always in a state of flux; what is big today is not necessarily big tomorrow. Somehow, all the buildings on the Auckland skyline used to be a lot bigger before the Sky Tower was erected. Its height surpasses anything else in the city, so that the buildings that used to be big before the tower was erected are now small in comparison. All buildings in the Auckland skyline are measured against the tower, and the effect it has on the city is paradoxically the opposite of its intentions of symbolizing a big city. But is it really a big building? It is by far the tallest one in Auckland and it gives the character of a big city, but in terms of mass, it is not big. It is only a small building on top of a long needle. The fact that it is visible from practically anywhere in Auckland does not necessarily make it a big building, but a tall one. Ultimately, what makes a big building is its total mass.

Internally, size is quite different. Since we can no longer use anything external, such as other buildings to compare its dimensions, we are left with our own bodies.

If we picture Notre Dame next to The Empire State Building, Notre Dame as a big building will not be apparent until we step inside, as we can no longer see the skyscraper. Can we then conclude that size is static while our perception of it is dynamic?

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14 Koolhaas, REM. S, M, I, XL. (Kön, Germany, Benedikt Taschen Verlag GmbH, 1997) p. 499
**How big is big?**

Koolhaas’ *critical mass* may be when the occupier becomes so small that he or she can no longer be used as a measure, they disappear. When this happens, the surrounding buildings takes over as a measure, and when even they become insignificantly small, something seems seriously wrong, it becomes *too* big. I propose that there is nothing wrong in making the occupier small, or big for that matter; a variety of form make the city dynamic. However, the problem occurs when a building’s size alone totally surpasses its neighbors, or even purposely tries to diminish them. At this stage, the occupier also becomes insignificant and all sense of human scale is lost.

From an internal perspective, Charles Jencks formulated a law in the mid 1970’s stating that the bigger a building gets, the more boring it will become. He called it “the Ivan Illich Law of Diminishing Architecture” and is as follows: “For any building type there is an upper limit to the number of people who can be served before the quality of the environment falls.” He uses an example where 3000 tourists in a hotel are *swarming* for lunch, which somehow is self-explanatory.

**Paradox**

Somehow it seems that essentially, the research question can be broken down to this: *How can we make something big small?* In order to find a way to solve this paradox, it becomes useful to look at the way we perceive architecture in the first place. The way we perceive architecture is not just based upon what we can see, but is also based on what we know.

The Italian Renaissance painter, sculptor and architect Michelangelo Buonarroti was famous for his preoccupation with new concepts of scale and space. He was the inventor of the giant order, and used these double height columns in St. Peters Cathedral in Rome. Columns of this size were new to the time, as columns defined one story only. Seeing the building from a distance would give the spectator an impression of a one-story building, hence smaller than it actually was. On the other hand, they also gave the impression of a much bigger building than expected when moving up close.

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15 “the Ivan Illich Law of Diminishing Architecture” after the man who discovered counterproductive growth in other fields.

If we look at a skyscraper from one side, we can expect it to look the same from the other side as well, and a mental image of its total form and size is immediately constructed. However, this image is based on what we have seen from one side only, the rest is just assumed from our general knowledge that a skyscraper looks the same from all sides. A building of a less obvious form needs to be experienced in space and time for a proper mental image to be constructed. If we have no knowledge of what the overall form might be, we can only base our perception on what we can see. Thus, if we cannot see the whole building, the rest of the building may as well not even exist. In other words, if we cannot determine the building’s total form, we cannot determine its size; it might as well be small. Although we can no longer comprehend the building’s total size, ultimately, it does not make the building any smaller. The total mass may be equal to any big building, but our perception does not recognize it as big until we have explored it all, as a total contrast to a skyscrapers immediate revelation of size. With this I suggest that bigness is not necessarily the instant impression of size, but also something that can be discovered in the course of experience. Even then it may not be possible to visualize its total form. Like an airport, where you cannot get the total impression of form until the plane takes off and you see the whole from the air; you suddenly realize its dimensions.

From this point of view, it seems that, through our perception, it becomes possible to make a big building small. Nevertheless, this proposition must be tested before it is can be fully understood.

**Critical analysis of ‘Bigness’**

In order to test my thesis, a critical analysis of existing theories on bigness is necessary. Rem Koolhaas’ theory *Bigness or the problem of Large* is the main focus. The theory, based on a latent conjecture earlier implied in *Delirious New York*, is made up from five theorems, each describing different aspects of bigness. Seemingly, bigness according to Koolhaas concerns a general type of big building only, leaving room for speculations and reinterpretations.

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17 Koolhaas, REM. S, M, I, XL. (Köl n, Germany, Benedikt Taschen Verlag GmbH, 1997) p. 495
Koolhaas’ theorems:

1. “Beyond a critical mass, a building becomes a Big Building. Such a mass can no longer be controlled by a single architectural gesture, or even by any combination of architectural gestures. This impossibility triggers the autonomy of its parts, but that is not the same as fragmentation: the parts remain committed to the whole.”

Due to the enormity of the object, it can no longer have any form of overall autonomy. Its success now depends on more than just architecture. Exterior cladding, interior fit out, mechanical, ventilation, sustainability and so on, all become separate projects that are somehow still linked to the whole.

As long as the total mass can be comprehended as one, can it not be broken up into smaller physical parts that can be controlled by a single or several architectural gestures? Fragmentation divides the building into a number of smaller buildings, all controlled by one, or a combination of architectural gestures. These fragments are physically connected to each other, forming a big building. I propose that these fragments can have their own personality expressed through materials and form, yet their overall commitment remains true to the whole through one common characteristic. However, it really becomes important that the connections between these fragments are strong enough to prevent the whole building from dissolving. Hence, it seems necessary to maintain one architectural expression throughout the whole that ultimately binds the fragments together. Fragmentation, as suggested by Koolhaas, turns the particular into a system in which the old form-follows-function doctrine is made possible, for better or worse.

What I am suggesting is that instead of making the parts of the building, (exterior, mechanical, interior and structure) separate projects, it may be possible to physically split the building into a number of smaller buildings. Removing and replacing segments of the total mass may result in a lighter and free-flowing whole that can easily be merged into its context.

18 ibid. p. 499
One approach may be to start off with the generic extrusion of site to be modified by the physical and non-physical forces of the context. Movement of people, external program, vistas and views, terrain, surrounding buildings, climate, private and public activities, future plans and regulations are examples of forces that can influence the form that in the end, becomes a form generated by the city.

Figure iv.

2. “The elevator with its potential to establish mechanical rather than architectural connections and its family of related inventions render null and void the classical repertoire of architecture. Issues of compositions, scale, proportion, details are now moot. The “art” of architecture is useless in Bigness.”

Seemingly, the vertical connections between floors in bigness are no more than mechanical solutions to achieve maximum efficiency. Hence, bigness is not just about sheer volume, but also about cost and turnover. In other words, bigness is quantity rather than quality. So in the general big building, the regular repertoire of architectural connections is useless. However, in a building where quality is equally or even more important than quantity, it is possible to justify the use of more architectural connections. Fragmentation opens up the possibility of alternative forms of transportation between the fragments such as stairs, ramps and bridges.

The journeys between spaces become more important as they can start to expose unusual views of the building and the city, as opposed to a typical elevator, where the goal is to transport people from one floor to another as quickly as possible. Here, the transitions between spaces are invisible, and the experience of traveling is reduced down to a simple waiting exercise. This serves to quantity only and have no specific factors of excitement.

19 ibid. p. 500
3. “In Bigness, the distance between core and envelope increases to the point where the façade can no longer reveal what happens inside. The humanist expectation of “honesty” is doomed: interior and exterior architectures become separate projects, one dealing with instability of programmatic iconographic needs, the other – an agent of disinformation – offering the city the apparent stability of an object. Where architecture reveals, Bigness perplexes; Bigness transforms the city from a summations of certainties to an accumulation of mysteries. What you see is no longer what you get.”

When the volume of a three-dimensional object increases, so will its surface. The surface increases by squared increments while the volume increases by cubed leaps, meaning that less and less surface has to represent more and more interior activity. As suggested by Koolhaas, there is a certain point where the exterior can no longer correspond to what happens inside the building, resulting in lobotomy, separating the inside from the outside. In some respect, lobotomy, as a disconnection of interior and exterior, leads to an interesting concept of a city as an accumulation of mysteries, where one never knows exactly what to expect. The idea of not knowing what to expect seems appealing and adds to the mystification of the city by not stating the obvious.

However, if a whole city is entirely made up from these mystery objects, all disconnected from the external context, one can ask: what is left of the city? It would be like going to a party where everyone is lobotomized. On the other hand, if buildings reveal too much, they start to become too predictable, as there are no unexpected events. I suggest that there might be a balance, where the building can reveal some program and human activity without becoming too obvious.
If a building is broken up to the point where there is no specific core, the façade may again be able to speak of what happens inside, if that is the intention. In the generic big building, a core is necessary for vertical transportation, structure, services and ventilation, normally located in the centre of the building. In a fragmented scenario, a building may have more than one centre, or it may not even exist, all depending on the degree of fragmentation. (Fig. vi) The main idea is that the humanist expectation of honesty is not ‘doomed’, but becomes a choice. It is now possible to strategically choose where and what to reveal, so that the functions are neither exposed nor revealed. This, I suggest may enhance the building’s ability to work with the context, as it no longer shuts it out, while at the same time perplexes enough to maintain the uncertainty of its program. An exciting city is neither a summation of certainties, nor is it an accumulation of mysteries.

Figure vi.

4. “Through size alone, such buildings enter an amoral domain, beyond good or bad. Their impact is independent of their quality.”

In bigness, size seems to become so overwhelming that the actual quality of the building becomes something else. It really does not matter if the building is good or bad because ultimately, it is the size that dominates our impression of it. When standing at the feet of a 500-meter tall building, it is difficult to think of anything else but its overpowering size. Through fragmentation, I suggest that the total size of the building may be difficult to comprehend, shifting our focus from size to quality.

21 ibid. p. 501
5. “Together, all these breaks – with scale, with architectural composition, with tradition, with transparency, with ethics – imply the final, most radical break: Bigness is no longer a part of any urban tissue. It exists; at most it coexists. Its subtext is fuck context.”

If Bigness is no longer a part of any urban tissue, what is the point of having it in an urban context? Its location might as well be totally arbitrary. Does it also imply that if a big building is part of an urban tissue, we are no longer dealing with bigness? If a large-scale building is fragmented in such a way that it becomes a part of the context, the building can no longer reject it.

Bigness separates itself from every architectural aspect of the city, raising the obvious question: is it really architecture? Or is it a machine for profit making? Eventually, bigness is not about size in general; it is about quantity and profit. Interestingly enough, to gain maximum profit, bigness also embraces smallness. Lower floor to ceiling heights means more stories, more floor space and more value, in terms of money that is. Ironically, in bigness, human scale is totally lost from an external point of view, while internally it is all too apparent. More often than not, the internal space ends up being the minimum of what we can handle without feeling claustrophobic.

In the end, it probably becomes more correct to ask: how can we create a big building without bigness?

To what extent it is possible to achieve this through fragmentation, will be tested through two investigations of physical model making and sketch analysis. The first exercise will be mostly concerned with the formal implications of fragmentation, while the second exercise will include the more specific issues of site, conceptual idea, program, economic model, structure and external spaces.

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22 ibid. p. 502
Massing exercise 1

In order to find a way to break down the typical mass of a large building into a lighter, more interconnecting whole, an investigation through physical modeling is undertaken. This exercise pushes the extremes; to see how much can be removed or displaced while the totality can still be comprehended. This exercise is generally not concerned with any specific site, but exploits a context not unlike Auckland CBD. This investigation is strictly formal, where the aim is to establish a language that will be the foundation for the second investigation.

Model 1

Date: 06.03.2009
Site: Unspecific

This model shows one exploded mass scattered around several city blocks. The fragments are connected in three different clusters, all linked to each other with bridges. The fragments are more or less loyal to their original shape as boxes of different proportions, but they vary in materials. The variation in materials should make the fragments merge into the existing buildings, which is a part of the intention, but at the same time they seem less attached to the whole. Combined with their rather spread out formation, the whole is less readable as one, but rather as three different buildings. At this point the model fails because the number of architectural gestures are too many, giving the impression of more than one building. If the materials were exactly the same, the outcome might be different, as the totality of the building could more easily be comprehended. This model emphasizes a more camouflaged type of building, blending into the city, rather than standing out.

Figure viii: Model 1.
Initially, this model builds on the same idea as model 1, but the fragments have stronger physical connections. They also emphasize the same material, resulting in one distinguishable form, attempting to tame the moderately chaotic fragmentation of the previous model. These two first models are somehow the two extremes in fragmentation of a single mass, where model 1 corresponds to the maximum and model 2 to the minimum. This model, however, breaks form the city grid with its unconventional composition, resulting in an object that does not merge into its context, but separates itself from it. Ironically, it sort of says ‘fuck context…’\textsuperscript{23} Saying this, however, does not necessarily imply that the building should follow the regularity of the city grid, but to a certain degree should respect it.

\textsuperscript{23} Koolhaas, REM. S, M, I, XL (Köln, Germany, Benedikt Taschen Verlag GmbH, 1997) p. 502
Compared with the preceding model, this model also emphasizes strong physical connections between the fragments, but a variation in materials tests the idea of making the whole more open, by investigating transparency, translucency and shifting texture. Here, some fragments can be partly seen within other fragments, giving an impression of layers within—a break up of the façade as a barrier, blurring its boundaries. This variation in permeability test the idea of opening up to the context. The elongated top fragment consists of two smaller fragments spaced apart. Together with the mesh that holds them together, they define a third element, an open space in between. The two larger fragments underneath also follow this principle of fragmenting the fragments. This is an attempt to challenge totality by strengthening the fragments’ autonomy. The overall composition follows the city grid to some extent, but not enough to become a part of it, resulting in separation from context.
This model investigates how a further fragmentation of model 3 can create new connections between each fragment. In regards to materials, they are all different, making each fragment contrast with the next. When doing so, it seems important to maintain a strong physical connection between them, otherwise their unity will be lost. However, due to their elongated shapes and arrangement, each element, starts to act more like a bridge and less like a building. A square helix pattern emerges in this model, suggesting movement in one specific direction. It is almost like a skyscraper broken up in segments, twisted, but not separated. There is one obvious challenge with using different materials in regards to fragmentation, and that is that the fragments do not look like something that came from the same source; rather, the fragments are more like autonomous parts coming together in one new form.

Figure xi: Model 4.
Model 5

Date: 17.03.2009
Site: Unspecific

The helix form from model 4 gives an idea of how a building might connect with the ground. As already established, it is important that the building does not reject its context, but becomes a part of it. This model, not only shows how the building can potentially grow out of the ground, but also how the ground becomes a part of the building, sloping up on top of the roof. A building with the form of a helix has some potential in terms of the concept, but needs further investigation. In general, the form suggests movement in only two directions; up and down, and is programmatically less flexible than other simpler forms. The helix, however, implies a never-ending form, which in itself may be an interesting concept for a big building.

Figure xii: Model 5.
Model 6

Date: 20.03.2009
Site: Unspecific

This is one continuous form ‘carved’ out of one solid mass. It is a different approach than the previous models as there are no single independent parts. If the form actually had independent parts, the never-ending notion of the helix would not exist. Attempting to alter the idea that the ground becomes the building; this model incorporates a sloping ground. The slope is aligned with the rise of the helix so that as much of the helix as possible can connect with the ground. The model also gives another idea of blending building and context by creating an illusion that the building is pushed outside its site boundary by floating directly above a potential sidewalk. Pulling the sidewalk inside the site boundary gives the impression that the building floating above is on the outside of the boundary, hence blurring the external with the internal. (Fig. xii)
Model 7

Date: 27.03.2009
Site: 167 Victoria Street

This model tests the helix shape on a specific site to give it some more realistic context. Equivalent to model 2, this model is also recognizable as one form as it is also made of one material. Although its physical connection with the context is strong, it still seems to become a more or less autonomous object rather than a piece of the city. The lack of detailing and texture makes it too rational, and I suggest it needs some kind of inconsistency in order to blend in. The objective is not to camouflage the building beyond identification, but to make it fit within its surroundings on equal terms. This model is in fact not entirely a helix shape as the end connects with the beginning. Hence the form is more like a band that wraps around itself, although it still encompasses elements of the helix.

Figure xv: Helix-band.

The fact that a helix has no beginning and no end is still somehow apparent in this continuous band, but the building as a potential never-ending form is no longer possible. (Fig. xv) In terms of movement and vertical connection to the ground, the helix-band works well. It can be submerged into the ground and connect to the sidewalk on different levels strengthens the connection to the city, as if the street is becoming the building. In terms of movement of people there is a sense of logic about the central vertical axis, regardless of program.

Figure xvi: Model 7.
Model 8

Date: 03.04.2009
Site: 167 Victoria Street

This model investigates the possibility of breaking up the helix from model 7 using a variation of materials and textures. In this square shaped helix-band, the corners are the most obvious places to have a break, as they are already points of direction change. In an attempt to break up the mass without compromising the form, this model explores the same gesture as model 3, superimposing the parts. The materials are wrapping over each other to create continuity, yet at the same time representing a break in form. However, this experimentation of how materials and form can work with the existing context somehow seems relatively futile as the existing buildings in the model are all made from the same material.

Figure xvii: Model 8.
Model 9

Date: 02.05.2009
Site: Unspecific

The last 7 models all appear to be quite unsuccessful in terms of creating something that exists with the city. None of them are actually able to break loose from becoming just another object in space, coexisting with context. Ironically, the very first model seems to be the most successful, as its internal connections were weaker and external connections stronger, making it easier to merge into its context. However, the model still looks like several buildings, rather than one single building. The problem might actually not be the building itself, but the context it was put in. The context in the model is more distinguishable than the building itself. The existing buildings were all made from the same material, misrepresenting the city by only showing its physical form, not its texture or colors. In materiality, model 10 is the reverse of model 1. In reality, the surrounding buildings vary in textures, colors and materials; hence, in order to test the idea that the form can be physically fragmented yet comprehensible as one, a more realistic model of context is needed. Here, the actual building is entirely made of blue Styrofoam, while the context is a random scramble of materials. In this way, the building distinguishes itself from the rest of the context through its material, while at the same time blending in through form and position. Physically, the building could potentially be as fragmented as it wants as long as the material it is made from can hold it together. Obviously, the more distinguishable the material is from its context, the more fragmentation the form can handle. This technique seems to have potential for solving the main problems, but needs further investigation.

Figure xviii: Model 9.
Model 10

Date: 02.05.2009
Site: Unspecific

This model demonstrates the same principles as model 10, where the form is broken up, but unified by one material. Taking fragmentation further, it also explores how the fragments can be physically disconnected, but still be comprehended as one. Being more grounded, the form is not only occupying space, it also defines it. The idea that a building can be a space occupier and a space definer at the same time seems to work well in terms of making the city less obvious. From any viewpoint, it would be impossible to comprehend the whole form at once, meaning that the buildings actual size could only be revealed through experience.

Figure xix: Model 10
Model exercise 1 conclusion

Most of these models display useful ideas and characteristics, all contributing to the research. The physical form of the fragments used in model 1, 3 and 9 all display a relationship with the city by reflecting its most common forms, the box. To some extent, the layout of these fragments should also pay some attention to the city grid to avoid separation from context. Model 4 shows how the total form seems less integrated with the other buildings by breaking away from the grid. How the arrangement of fragments can make the building become a part of the existing system is demonstrated in model 9, where the fragments almost start to link to the existing buildings. To extend this idea further, the physical attachment to surrounding buildings as seen in model 9, can generate new relationships with the city on a different level. However, these segments must maintain a strong link between each other in order to be comprehended as one and not several different buildings. Model 10 shows how this can be done using a distinguishable material throughout the entire building. If the material used contrasts the city enough, the fragments, even if physically separated, will still maintain their commitment to the whole. There are also some interesting aspects of the helix in model 5 to 8, maybe not so much the form itself, but its never-ending characteristic, which could have some theoretical assets. In essence, what to be drawn from this exercise seems to come down to a fragmented form, unified by material with some kind of never-ending concept.

Analysis

Although this first model exercise seems to work in regards to the theoretical issues, it still raises questions related to the functional and programmatic relationship to the city. Therefore, it can only be used as a rudimentary language of layout, forms and materials, laying down the principles of yet another exercise. This exercise sets out to solve more pragmatic problems in response to site, conceptual idea, program, economic model, and structure, which initially must be analyzed. The following analysis will define the project in more specific terms.
Site analysis
As discussed earlier, size is a matter of relativity, which is why the site becomes utterly important, as everything that is going to be built here will, whether one likes it or not, be measured against whatever exists in the area at that specific time. Size is always relative to what it is measured against, which in this case will be existing buildings, people, cars, trees, street lights; the urban substance. Ultimately, it is the context of the site that determines how we will perceive the building.

The initial site chosen for this project is 167 Victoria Street, a central, yet slightly removed location in the CBD of Auckland. (Fig. xxi) Some important qualities in the area are Victoria Park, Victoria Park Market, the harbor and Victoria Street; acting as a link between the city centre and Ponsonby. The north and western side of the site used to be the old shoreline, Freeman’s Bay, until 1930, when the land was reclaimed for industrial use.  

In terms of future plans in the area, Auckland City Councils has decided to transform Wynyard Point from a petrol and liquid chemical storage facility to a mixed-use residential and commercial area. The redevelopment will expand the city centre, making 167 Victoria Street more central.

24 The original shoreline until 1930 used to follow contour 10 on the site map. (Fig.8)
One of the proposed key moves in the plan is to establish a green link between the point and Victoria Park, which immediately connects the two sites. This link also extends to Albert Park, making Victoria Street an important connection between the three nodes. (Fig. xxii)

![Wynyard Point connection](image)

**Figure xxi: Wynyard Point connection**

The site was chosen because of its capacity to accommodate a large building, and its future potential for becoming an important node in Auckland CBD. Its location between Fanshawe and Victoria Street, two important arterial routes, gives the site great potential for access and connectivity. However, the challenge with this site is that the buildings surrounding the site are not very tall, ranging from 1 to 10 stories. This relatively low average building height makes it difficult to design anything large without diminishing the smaller buildings.

**Conceptual analysis**

A section through the site gives an idea of a maximum building height. (Fig. xxiii) This is based on the decrease of building heights from the top of Victoria Street towards Victoria Park, combined with the sloping landscape. Anything taller than 40 meters is likely to work against the city as an overall form, disconnecting itself from the rest.

![Building height](image)

**Figure xxii: Building height**
This ‘height restriction’ immediately excludes a type of bigness that can be revealed in an instance, such as a skyscraper. An alternative is needed, where the form of the skyscraper meets the direction of the endless shed, a ‘landscraper’ married into the physical body of the city. One could argue that the ‘height restriction’ forces the building to expand sideways, outside the boundary of the site. This opens up the possibility of using other sites nearby, linking the overall building together with its context. It may be compared to the growth pattern of a plant. If it meets a barrier, it just keeps growing sideways as far as the structure can carry it without lateral support, or it will sprout elsewhere.

‘The biggest tree in the jungle is the one that you cannot see.’

The largest tree in some tropical rainforests, climb the trunks of other trees and when it reach the top, it grows horizontally on top of the tree crowns, stretching out over enormous areas. Although it is impossible to comprehend the whole tree at ones, it does not make it any smaller. (Fig. xxiv) I suggest a similar approach can be useful for this project, where it becomes impossible to see the whole building from any point of view. Thus the only way to comprehend its total form and size is through exploration. In some respect, this approach also includes the idea of a never-ending structure, like a skyscraper vanishing into a cloud, we cannot know how where it ends.

Figure xxiii

In order to make sure that the outcome of this concept not becomes completely arbitrary, it is necessary to generate a system that determines a logical expansion of the building. A rhizome, as “…an ever-reproducing uncontrollable system of growth without an inner formal logic” 25 may become useful in this task. (Fig. xxv) Despite the rhizome’s lack of inner formal logic, I suggest that there are external factors that determine its growth, hence making the actual intentions of the rhizome arbitrary, but not its events.

25 Schnoor, Christoph. Handout Theories of Rem Koolhaas. P. 3
Figure xxiv: Rhizome

The rhizome as a theoretical concept has been used as a strategy for several urban planning schemes such as Melun-Sénart by Rem Koolhaas. The idea is that we cannot plan the city anymore, like a rhizome, it grows out of control; all we can do is to stop the rhizome at certain points. ““To think big”… is to accept that cities are clashes of forces with unpredictable outcomes, loose assemblages from which new things and new connections derive, as if by alchemy.”" 26 This means that if we want to get somewhere in the planning of the city, we must first accept that it is an impossible task in the first place. Based on this acceptance, it becomes logical to design building that is able to change and adapt to the ever-changing urban texture.

In this context, it is impossible not to recollect the Japanese Metabolism Group from the 60's and 70's. Although most of their work was concerned with housing issues, the concept of large-scale structures and organic growth as a utopian model is present. Noriaki “Kisho” Kurokawa’s paper project Helix City, shows how the city grows in a rhizome like pattern in a natural environment, leaving empty spaces in between. (Fig. xxvi)

“What will be the final form? There is no fixed form in this ever-developing world. We hope to create something which, even in destruction will cause subsequent new creation. This “something” must be found in the form of the cities we are going to make- city constantly undergoing the process of metabolism.” 27 This is the idea that the world is a place where nothing is permanent and nothing can be controlled. Within this context, Helix City demonstrates a new structure for the city that is not fixed, but constantly changing without an inner formal structure. Ironically, in contrast to the traditional city, where everything sprawls naturally around a center, this new structure cannot have a natural growth pattern.

It requires a structured master plan of where the city is allowed to expand or not. If not, the open spaces it leaves in between the ‘stems’ will be filled in with buildings as the city expands, turning the structure into a traditional city.

Although this idea may not work as a structure for an entire city, it could be used as a model for a single building. If a building is allowed to grow horizontally rather than vertically, it may be legible to say it can re-connect the city, not just physically, but also through the program it contains. This implies a better comprehension of the existing program of the city and how that can influence the building itself.

In contrast to “Helix City”, it need no specific overall planning, as its expansion relies on the opportunities found at one specific time; the external factors, the city, decides where and when the building is allowed to expand. In some respect, this system also seems relevant in a way that the building itself can be allowed to grow independently of its original program.

This opens up the possibility of a never-ending project that can be extended at any point if desirable or necessary. The whole city then becomes the site. (Fig. xxvii)
Program analysis

As already suggested, not only the mass can be fragmented, but also the program. The diverse program of a typical large-scale building, the city, can be rearranged to suit the fragmented mass, and the mass can equally be rearranged to suit the program. A skyscraper is a city within a city, or a city without the city, concealing its program from the public in one single container. The different functions are evenly distributed over the total number of stories, each unaware of the other’s existence, described by Koolhaas as schism 28.

“First sight, the activities amassed in the structure of Bigness demand to interact, but Bigness also keeps them apart. Like plutonium rods that, more or less immersed, dampen or promote nuclear reaction, bigness regulates the intensities of programmatic coexistence.” 29 Despite the functions’ close proximity, they have little or no relationship with each other, and if it was not for the time spent inside the elevator, they might as well be separated for miles. These functions, often bizarre combinations only separated by floors, are linked with mechanical rather than architectural connections. In most cases, mechanical links, such as elevators reduce the experience of traveling from one space to another (through a third?), down to a simple waiting exercise.

I suggest that by separating the functions with more than just floor slabs, we can again utilize the classical repertoire of architectural connections such as bridges, ramps, stairs and underpasses, making the journey from one place to another more than just gazing in a mirror inside a box going up or down. If we break up the program into smaller parts, each containing its original function, they can start to form new relationships between each other and their context. One way of commencing the program development is to take a generic Manhattan skyscraper, the mystery object, shake it and rearrange whatever comes out. (Fig. xxviii)

Figure xxvii

29 Koolhaas, REM. S, M, L, XL. (Köln, Germany, Benedikt Taschen Verlag GmbH, 1997) p. 512
This method may seem superficial, but there are some interesting aspects such as the intriguing combinations of events that may be generated. What happens if two contrasting functions, the plutonium rods, which have been living in isolation suddenly comes together?

*Internal connections / Cross-programming*

The internal program as a reflection of the external fluctuating mystery / non-mystery concept, can create surprising and awkward combinations of functions; the reaction of the plutonium rods, such as a shocking encounter between a swimming pool and a library, or a tennis course in a shopping mall and so on. (Fig. xxix) Such unexpected combinations intensify the loss of certainty, inducing a sudden awareness in the experiencing subject who might decide to go for a swim after finishing the book. I therefore suggest that a type of cross programming can make more people use more of the building, simply by breaking up the boundaries. The links between the functions does not necessarily have to be direct or open, which for obvious reasons may not be practical as the humidity of a pool and a collection of books do not mix very well. I propose the links can be more or less visual, such as light filtered through the water in the swimming pool connecting the library. This early design method, *cross programming*, has been heavily theorized by architect Bernard Tschumi. In his book *Architecture and Disjunction* he talks about various forms of cross programming and their influence on the dweller. “Combining two programs, regardless of their incompatibilities, together with their respective spatial configurations. Reference: planetarium + rollercoaster.”  

Cross programming, I suggest is a direct response to the problem of *schism* as identified by Rem Koolhaas in *Delirious New York*.

![Cross programming](image)

*Figure xxviii: Cross programming*

Initially, there is a need to establish a general idea that ties the program and the city together. The nature of the city today is slowly moving away from being public to becoming a collection of privately owned places. In these places interaction requires a specific motive or a fee to be paid, resulting in exclusion of certain groups of the society. “The typical skyscraper, a tall building standing in a degree of isolation, attracts its own inhabitants, but limits direct communication with others.”

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The office tower is a classic example of this, as a place one can only enter if invited. It seems that the modernist dream of free movement through cosmopolitan space is slowly turning into a nightmare of segregation. This scenario is typical in most metropolises, even in Auckland.

The Sky Tower offers a remarkable journey in a glass bottom elevator up into the sky, a fantastic birds eye perspective of Auckland, and the possibility of dining inside a rotating restaurant 190 meters above the street, that is, for anyone who can afford to pay the $NZ 25 admission fee just to get in the elevator. Similarly, most museums and art galleries today also charge an admission fee, raising the question that they are more of a shop than a museum. It seems that every form of public activity in the modern city has more or less the characteristics of a shop. “Shopping is a parasite so successful it has become its host. It is the last remaining form of public activity.” The essence of the public is that it is free and accessible to everyone. Considering this, I want to create a program that contributes to the public activity in the city, by connecting not only the building’s physical form, but also the program it contains.

The idea that the building is able to grow over time suggests that the program development starts with one specific function that can be allowed to become something completely different further on. With a few exceptions of cross programming, the program development should not be totally arbitrary, but have a logic pattern that can denominate what follows. It therefore becomes important to look at other functions external to the site to determine how connections can be established. (Fig. xxx) In this way, not only the physical presence of the building blends in with the context, but also its activities.

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**Figure xxix: External program.**

Figure xxix shows the external program, which is quite diverse. It becomes important to understand what these different functions have to offer, and how they can be connected to the total program. The diagram also illustrates the most obvious links to be made.

As mentioned earlier, one route to take is to start with one specific function that has the potential of developing into something else. On the basis of creating a place of public interest, the program development will start with a public library. A library, as a body of knowledge and entertainment, has an immense potential of establishing links to numerous related functions. The program is also suitable to the project in terms of free urban activities in Auckland City, and combined with the plans for Wynyard Point, it increases the potential of becoming a central community.

But although a public library might be a good starting point, it is needs to be re-examined. What is a library today, and more important, what might it become in the future? Libraries have been natural meeting points in cities for thousands of years, but the public library today as a mere guardian of books, is not just threatened by the obviously increasing digitization, but also the decrease in public domain. Over the last decade, privately driven functions have slowly been replacing the public, introducing urbane forms of entertainment.

In order to overcome this tendency of the city becoming a private place, the public library has to deal with much more than just physically lending out books and magazines. It needs to become a civic centre that incorporates other functions as well. For this project I suggest that the library can physically extend into other functions in a way that they all become interlocked. In this way it may be possible to attract more dwellers than if the library was by itself. Here, the concept of cross programming becomes relevant in a way that the library is no longer just a library. To stretch the functions of the library further, its local network can extend, not just throughout the complex, but also to a wider external area such as Victoria Park. The wireless network makes it possible to use the park as an extended library, although it is not physically there.

The development of program starts with the library, extending into related functions that again are linked to the existing program outside the site. The scope of the total program for this project limits itself to a certain number of extensions; nevertheless, it still has the potential of further development in the future. Hence, this project becomes only a stage in time, not the final building. This method of program development makes the building and the city interconnected in a sense that the building eventually becomes the city. (Fig. xxxi)
Economic model
The concept of connecting can also be partly used as an economic model for the project. The core of the complex, the civic centre, is to be initiated and funded by the City Council, but as the program develops into the city, I suggest that the external participants who benefit from becoming a part of the centre will also be a part of the financial equation. It then becomes important to identify the potential opportunities in the area. (Fig. xxxii) Eventually, the building is to become a partnership between the public and the private.
**Structure**

“...in any large structure, the distribution of loads becomes bigger and bigger towards the lower part of the building, so that on the ground you are literally blocked by structural and mechanical “inheritance” that comes from “above.” You could propose a metaphor of a high rise building or any big building, as the systematic reduction of freedom towards where it matters the most, on the ground.”  

This describes the classic scenario in the generic big building, and particularly the skyscraper. As a contrast to this situation, I propose that the structure should demonstrate lightness throughout the whole building. Fragmentation allows this to happen as each part are now much smaller, and can therefore have a lighter structure.

One possibility is to make the structure in each fragment so light that it cannot support itself alone, but depend on the connecting fragment as a brace, which again is braced by the next and so on. The total building may end up being a giant reciprocal frame, where every fragment is necessary for the whole structure to work. In this way, the whole building could potentially become lighter on all levels.

This study of site, conceptual idea, program, economic model, and structure, will, together with the first model exercise, be the foundation for the last design exercise. This exercise aims to develop the final design of big building on 167 Victoria Street. This building will emphasize fragmentation in a way that makes the building appear smaller than it actually is by becoming a part of the city, defining as well as occupying space. The buildings system of expansion will be based on the rhizome where the external factors decide where and when it can expand. The program, starting with a public library, will follow the same system as it extends out into the city, making connections with the existing program, engaging other activities to become a part of the project physically as well as financially.

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**Model exercise 2**

This project is obviously too big to design everything in detail, so the main focus will be on the most important connections and spaces. However, a master plan will be laid out for the whole centre that will specify forms, material, program and external circulation. This method allows for an explanation of the concept from layout to the smaller details and internal space connection. Choosing the most vital part of the complex, the library, which embodies sections from the whole complex, gives a relatively precise idea of what kind of architecture that will dictate the rest of the complex.

**Model 11**

Date: 09.05.2009
Site: 167 Victoria Street

This model explores how it may be possible to get away from the independent object in space by moving outside the boundary of the site. The figure and ground illustration shows how this model starts to act as a space definer and a space occupier at the same time. From Victoria Street, building A acts as a space occupier, while on the inside; together with B and C, it defines the open space in the middle. (Fig. xxxiii)

![Figure xxxii: Figure and ground.](image)

However, the building’s ability to define the street is inadequate. The group of columns lifting the upper part of building A may in some respect project the street with an illusion of a facade, giving the street its necessary boundary, but the columns are too few in number and spaced too far apart to successfully do this. To give Victoria Street a more defined boundary, the lower part of building A could be raised slightly in order to help the columns containing the street. (Fig. xxxiv)
This model also attempts to extend its program and physical form outside its original site, to the two car parks in 151 Victoria Street and 162 Victoria Street. However, the problem with connecting car parks is that their programmatic contribution to the project is poor. These two sites actually become more desirable with the absence of their program, so in the end, the building does not really connect anything at all.
Model 12

Date: 06.06.2009
Site: 167 Victoria Street, 150 Victoria Street and 191 Victoria Street.

As earlier discussed, bigness also incorporates smallness. Externally, the building is as big as it can be, while internally it is the exact opposite. In order to gain maximum profit, ceiling heights are low so that more stories and more floor space can be made. This model explores how it is possible to do the opposite. With a greater emphasize on quality, this model breaks down the largest fragments into smaller parts that relates more to our human scale. (Fig. xxxvi) Internally, these smaller parts can be more generous with space, by having double or triple height spaces, depending on their function. However, there is a limit to how much a building can be fragmented. Because the external form determines the internal space, the fragments can only be so small before the internal space is compromised.

Figure xxxv

The problem with the Victoria Street façade, identified in model 11, whether or not the ‘forest’ of columns and the raised building is enough to contain the street, seems to be solved. The solution may be to make the ceiling of the building below horizontal from the highest point, rather than to follow the slope of the street. In this way, the building blurs the threshold between the building and the street in a less dramatic way, and the street is still presented with a façade. (Fig. xxxvii)
The idea of floating one building over the other comes from the concept of breaking up the larger mass and making the street become a part of the building, blurring the boundaries. Here, the two parts share a structural system of crisscrossing columns, equally lifting and bracing, suggesting growth and interconnection. In regards to the problem of schism, I further suggest that these columns leave a larger hole in the penetrated slabs, establishing a visual connection between the floors. (Fig. xxxix) A similar connection has been done in Krematorium Baumshulenweg, Berlin by Axel Schultes.

Figure xxxvii: Krematorium Baumshulenweg, Berlin.
In terms of program, this model starts to develop an internal plan, where the library is the central connection point. The library extends further into both related and unrelated functions. However, the problem with this program development is that it does not include any external functions, making it all somewhat arbitrary. (Fig. xl)
The two external sites used here have little to offer apart from its space. In this way, the model conflicts with the programmatic structure as already suggested. Instead of connecting the external program, this model totally digests it, turning it into something else. In this respect, using 150 Victoria Street is not the best option at the moment due to its existing program of a car park. A further investigation of external program must be undertaken.

Figure xl: Model 12.
Date: 03.07.2009
Site: 167 Victoria Street, 1 Halsey Street, 36-142 Fanshawe Street, 151 Victoria Street and 190 Victoria Street.

Learning from model 11 and 12, this model sets out to investigate the potential for connecting external program to the complex. Les Mills in 151 Victoria Street stands out as a good opportunity with its public popularity. The fact that this popular gym does not have a swimming pool and the lack of swimming pools in the area creates an opportunity for this project. Obviously, Les Mills is likely to be interested in giving their customers a wider program, but the lack of space makes it unachievable. However, the long and narrow spatial configuration of a lap pool opens up the possibility of making it a suspended link across Victoria Street. In this model, I suggest that the pool can run from the gym straight through the gallery to the hotel. The guests at the hotel can then also use the pool and at the same time also bring more customers to the gym. (Fig. xlii)

This experimental connection of program shows the result of the previously immersed ‘plutonium rods’ coming together, and as a byproduct, the more or less revealing visual link between the pool and the gallery, turns the swimmers into works of art.

This model also connects KPMG across Fanshawe Street. KPMG is a large international business accounting company with offices in 140 countries, frequently arranging conferences and seminars. This makes the connection relevant not only to the proposed business centre, but also to the hotel and library. The last connection this model establishes is between the hotel and the existing seafood restaurant Ocean City. In this case, the hotel guests get another dining option while the restaurant increases the number of potential guests.
There now exists a logical program development from Les Mills to KPMG through the swimming pool, gallery, hotel, restaurant, library and business centre, merging the project with the context physically and programmatically. (Fig. xliii) In the end, the program becomes a partnership between the public and the private.

Programmatically, this model seems to work as it establishes a logical, but also surprising chain of events throughout the project. However, the idea that the building is comprehensible through one specific type of material may need to change. In this model, the whole building is clad with Cor-ten steel plates, making the building distinguishable from the rest of the city. Although this material works in terms of the conceptual idea, it might make the building too overpowering, or monumental, which is not the intention.
Another problem to be mentioned is that if another project decides to use the same material, things might get confusing. I therefore suggest that instead of emphasizing one material, it might be possible to have a combination of materials that together makes the building unique.

**Structural System:**

The structural system in this model is based on reciprocal support, where each fragment depends on the others. The elongated fragments are all braced in one direction with columns, while the in other direction they are supported by intercepting fragments, resulting in a system where everything is interconnected. (Fig. xlv)

![Structural diagram, plan.](image)

The placement of columns is seemingly random, but there is an underlying system throughout the building. Every 25 meters, two columns are connected at the top point, creating an A-frame. These A-frames are essential for the system to work, as they prevent the building from collapsing due to horizontal loads such as wind and earthquake. In between these A-frames, freestanding columns are placed to take the vertical loads. (Fig. xlv) As already suggested in model 12, these columns leaves a larger hole in the floor slabs they penetrate to let through light. However, the A-frames cannot penetrate the top floor slabs, as they need a more stable connection.
Figure xliv: Structural diagram, section.

Figure xlvi: Model 13.
In terms of an alternative approach to material, this model investigates the combination of timber and concrete. In this particular situation, they are two opposing materials with great potential for making intriguing combinations. Timber, on one side is a light, organic and non-urban. It also holds a non-monumental quality, which is useful as it makes the appearance of the building less intimidating. On the other side, concrete is heavy and a very urban type of material with a clear monumental behavior. The idea here is to create pure elements of either timber or concrete, to emphasize their interconnection. The junctions between these elements become important not just because it is where the two opposing materials meet, but also because they are programmatic transitions. It also follows that instead of having a building reaching out into the city, there is now a notion of the city also reaching into the building, interlocking the two.

This model also illustrates the general texture of the city, and how timber and concrete may react to it. Clearly, the concrete elements blend in with the context, while the timber stands out. To stretch the idea further, I suggest that the timber elements could actually be glass boxes with a timber screen with varying permeability. By making the spacing between the timber slats bigger or smaller, it becomes possible to control whether a part of the building reveals or perplexes. This method can also be used as a way of controlling light. In the upper part of the gallery, the north, east and western façades could have a dense range of slats, while the southern façade could have wider spacing, letting through flat light. Due to the sun’s low angle in east and west, I suggest that these two facades could have vertical slats instead of horizontal for better sun control.

(Fig. xlviii)
In addition to the external programmatic connections established in model 3, this model also investigates the internal connections. These functions become important to the overall program in terms of binding it together in a way that makes the project able to function as a civic centre. (Fig. xlix) The most public functions have a central location, feeding the external space with activities, making it both lively and functional. (Fig. I)

![Diagram of Internal Program](image1)

**Figure xlviii: Internal Program.**

![Diagram of Courtyard connections](image2)

**Figure xlix: Courtyard connections.**
Structurally, this model is based on the same reciprocal system as the previous models, but also extends the columns through the roof of the building. Thus, the columns not only bring light through to the top floor, but also suggest that the building is not yet finished, as it ultimately will never be.

In terms of human scale, some of the parts in this model still seem too big and overpowering, and I suggest further fragmentation of these parts is necessary.
Model 15 – Final result.

Date: 01.10.2009

Site: 167 Victoria Street, 1 Halsey Street, 36-142 Fanshawe Street, 151 Victoria Street and 190 Victoria Street.

This last model shows how further fragmentation can give the building more human scale without compromising its actual size. Cutting in and displacing fragments also gives an opportunity to create smaller spaces of different qualities. To a certain degree, the internal functions have decided where these cuts have occurred, while at the same time the cuts also gives ideas about the function within, and how it operates.

The process of choosing where to cut into the building has therefore not been a random exercise, but a planned process that has considered the spatial configurations, functions, light, vistas and commodity. In the library, it is important to give the books a central location, but at the same time avoid direct sunlight. The circulation space therefore runs mostly on the edges of the space while the books are located further in where the direct sunlight can’t reach. The vertical connections between floors are emphasized through double and triple height atriums exchanging space, light and air. These atriums work well in regards to *schism* by revealing more of the building’s program, and also break down the notion of internal smallness.
Perception of external space:

In order to demonstrate how *fragmentation* works as a method of breaking down bigness, it becomes important to understand how the building is perceived from the street level. The building can be seen from a number of different angles, which all present the viewer with a different impression.

Nevertheless, it always distinguishes itself slightly from the existing buildings in a way that makes the viewer realize its unity. There is a notion that the building tries to blend in and hide itself amongst the existing buildings, but is not totally able to do so. This gives the building a peculiar quality that, in my view, will encourage further exploration.
Figure lv: View from Victoria Street.

Figure lv: View from corner Victoria Street and Hardinge Street.
Figure Ivii: View from Bouzaid Way

Figure Ivii: View from Doc Street.
Figure lviii: View from Doc Street, internal.

Figure lix: View from Victoria Park Market.
As already identified, there is a strong emphasis on quality rather than quantity throughout the whole project, so to be fair, a justification seems appropriate. A building like this is likely to cost more than any *dumb box* of the same size as designing quality spaces usually comes at a higher price. As opposed to the office tower, this is a building people can choose to visit or not. Its success therefore depends on its quality. In the end, a place of high quality also makes a higher value, which in the bottom end is what everyone wants, even Charles Jencks’ ‘corporate drones’.

*How does the model correspond to Koolhaas’ theory of bigness?*

This final model demonstrates alternative methods of approaching bigness in regards to the five theorems by Rem Koolhaas. It shows how the alternatives discussed earlier, can come together in one building in context.

1. Instead of dividing the building into autonomous parts, such as structure, exterior cladding, interior fit-out and so on, the whole is divided into 8 smaller buildings, each controllable by a set of architectural gestures. Since all of the smaller buildings have the same set-up of parts, it becomes more like one small building in 8 different variations, fused together in one big building.

2. The building displays a variety of internal and external architectural connections such as ramps, stairs and bridges. Every connection is equipped with special qualities such as light, space and vistas to make the transition between spaces more than just going from A to B.

3. Given that none of the fragments of this building surpasses Koolhaas’ *critical mass*, the building has the option of perplexing or revealing its inner activity. The permeable timber screens provide a system that can do this either instantly or gradually, depending on the spacing between the slats.

4. It is impossible to comprehend the building’s total form from any point of view, except from the Sky Tower. Therefore, the building will never appear particularly big as its total size is hidden within its context. The outcome of this is that our impression of the building is dominated by its qualities rather than its size.

5. Through form and program, the building merges into the urban fabric in such a degree that it actually becomes a physical part of it. The timber fragments are stretching out while the concrete fragments are reaching in, interlocking building and context. The interconnection is so strong that it seems impossible for the building to ever divorce itself from its surroundings.
Figure lx: Final model.

Figure lxi: View from Sky Tower
Conclusion

The main goals for this project, as stated in the introduction, were to find an alternative way of designing large-scale buildings in large cities, based upon an alternative theory of bigness. This alternative approach was aimed at creating a building that did not reject its context, but became a part of it in a way that could improve the overall form of the city and enhance its social activity.

Throughout the research, there have been many important findings that all have contributed to the final solution.

The most important finding in this research is that bigness is not really about size as such; it is about efficiency and profit. The reason we build such large buildings that we do, has more to do with the economic advantages than anything else. The modern city is almost without exception driven by capital, which is why it often ends as a ‘non-space’, a space without qualities, where shopping seems to be the last remaining form of public activity. Bigness is about efficiency, about getting from A to B rather than how to get from A to B, experience is absent in bigness. “What used to be the “thrill” of the urban voyage is quickly giving away to banality and exhaustion: One has nothing more to discover, nothing other than immense, general and nondescript spaces.” 34 In the end it seems more reasonable to ask: How can we create big buildings without bigness?

The critique of Rem Koolhaas’ five theorems generated an alternative to bigness, thoroughly tested through physical model making, sketch analysis and computer aided design (CAD). With a strong emphasize on experience, quality and perception, this concept turned out to become more of an antidote for bigness, where fragmentation was the agent.

The method of fragmentation has been the underlying concept throughout the project. Initially, fragmentation was to be used as a method for breaking down the physical mass of the building, but it turned out to become a useful method for other tasks as well. Fragmentation proved especially useful in terms of program development. Fragmenting the program meant that functions could be rearranged in logical, but also surprising ways, to establish new connections within itself and with the external context. The method has also proven to be useful in terms of materiality and internal space division.

However, fragmentation in itself provides an endless number of possible outcomes, which is why it needs to work within a system that determines where, when and how it occurs. If not, the product will be totally arbitrary, resulting in a building without any form of logic. In this project, fragmentation was based on the model of a rhizome. Although a rhizome does not have any specific pattern of growth, it exploits the possibilities found within its environment; it can only grow where it is allowed to grow. Based on a thorough understanding of context, this model proved to be very useful in terms of making informed decisions about form and program. The result is a building generated by the city itself.

To answer the research question, fragmentation seems to be a good method for making an alternative form of bigness, a bigness that does not compete with the city, but compliments it through a quality driven form and program. Fragmentation makes it possible for the building to be physically disconnected but still be perceived as one through a common material pallet. It has a great potential for generating endless variations of forms that can easily adapt to any given urban context. Instead of making something that can be fully comprehended in an instant, fragmentation generates forms and spaces that have to be explored, making the city less obvious through mystification and the element of surprise.
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Literature Background

Understanding the history of larger buildings, and how they transform the city was important. The Industrial Revolution made it possible to happen in the first place, so Berry Bergdoll’s *European Architecture 1750-1890* was an important reading. *Modern Architecture Since 1900* by William J. R. Curtis is another book on the modern history of architecture, and has chapters on the skyscrapers, monuments and the ideal community.

During the 50’s and 60’s there were a great deal of paper-projects on superstructures by architects such as the Smithson’s, George Candilis, Alexis Josic and Shadrach Woods. Books like *Another Modern*, by Tom Avermaete and *Anxious Modern* by Sarah Williams Goldhagen and Réjean Legault was important readings.

The radical Japanese avant-garde movement, the Metabolists in the 1960’s and 70’s had a preoccupation for large scale, flexible architecture with organic growth. One of the founders of the group, Kisho Kurokawa, has written several books on the topic, where *Metabolism in Architecture* has been the most relevant for the research.

Later paper-projects such as Atlanpole, Nantes France by Hans Kollhoff from 1988 has also been of great value to the research.

The most important readings for this project was concerned with Rem Koolhaas. REM Koolhaas’ book *Delirious New York, A Retroactive Manifesto for Manhattan* describes the history of Manhattan and how it became a laboratory for the Western Civilization. It describes the relationship between the metropolitan culture and the new great architecture, the skyscrapers. In this book, Koolhaas implies a latent theory of bigness, which was further developed in *S, M, L, XL*, which was one of the most important readings. *S, M, L, XL* also includes examples of his own architecture ranging from small to extra large. In a chapter on the City of Atlanta, REM talks about architect and developer John Portman, and how he tried to establish a centre for the city. Portman created private mini centers in form of atriums in all his buildings; thus he fails to create a centre for the city itself, known as the Portman’s Paradox. The reason for failing was the missing connection with the outside, resulting in separate entities rejecting everything external.

*What is OMA: Considering Koolhaas and the Office for Metropolitan Architecture*, edited by Veronique Patteeuw, is a collection of essays describing Rem Koolhaas’ role in architecture. One essay by Ian Buruma, *The Sky is the Limit*, reviews Rem Koolhaas as an architect and two of his books, *Delirious New York* and *S, M, L, XL*. Ian Buruma also reviews Koolhaas’ theory on bigness, which became important to the research.

Bernard Tschumi’s *Architecture and Disjunction*, a collection of his writings from 1975 to 1991 has also been of great value for this project. Tschumi introduces other ways of thinking about space and events, such as for example *cross programming*, where two opposing functions meet disregarding their programmatic incompatibility.