The cultural stock exchange
a cultural forum which merges the social and economic part of society

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Eindhoven University of Technology

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Eindhoven University of Technology
The Cultural Stock Exchange
A cultural forum which merges the social and economic part of society
Graduation Studio
A Contemporary Cultural Forum

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University of Technology
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The Cultural Stock Exchange
A cultural forum which merges the social and economic part of society
Preface

I started at the Technical University of Eindhoven in 2009. One of my biggest ambitions since I was little, was to become an engineer, an architect. The road to success was sometimes bumpy, but most of the time fun and instructive. I met a lot of inspirational people and I also gained lifelong friendships. It is six years later now, and the end of the road is in nearby. Some of my friends have already graduated and I can’t wait to say the same, although I will miss it sometimes I’m sure.

The graduation studio in which I enrolled at the beginning of last year had the following theme: ‘a contemporary cultural forum’. This theme attracted me because of its socially concerned character. As an architect I think it’s important to contribute to the society we live in. This studio gave me the opportunity to do this. During the process of research and design a lot of people helped me out and I would like to take the opportunity to thank them.

First of all I would like to thank the tutors of this project: prof. ir. Juliette Bekkering, ir. Sjef van Hoof and ir. Mark Hemel, for their feedback and input. The tutoring gave me a lot of new insights and knowledge which helped me to improve my project. Also I would like to thank my co-students in this studio for their support, comments, collaboration and good times. Especially Marike with whom I did part of the research together since we choose the same location for our project. Likewise I would like to thank Michiel and the Ranonkelaars, (my roommates) for their support and cooking during stressful periods. Last but certainly not least I would like to thank my parents, brother and girlfriend for being always supportive, enthusiastic and raising my spirit in hard times.
Summary

As part of the design studio of a contemporary forum, this thesis can be seen as a result of a year of research and designing. During the last centuries, the economic power has gained more influence as a political power. Interesting is that many of the functions of the economic spaces, such as banking, exchanging and shopping are now on the internet. In combination with the social media this creates new initiatives and possibilities such as crowdfunding. Instead of using a bank to finance a project, society can do so as well through individual support. This combination of the economic part with the social part is a current topic. For a lot of cultural activities it is hard to get enough financial support and crowdfunding might be a solution. However cultural activities are also visible and present on the internet, they are attractive to people for the most part because of the experience they provide. This experience takes place in the physical world. This need of a live experience might be an interesting opportunity to create an offline platform that supports culture in this new social economic way that can function as
a forum. This platform can be described as a Cultural Stock Exchange. The cultural stock exchange fills the gap between the physical world where cultural activities take place and the online world. From this suggestion it is possible to formulate a research question:

“How to spatially design a cultural stock exchange as a contemporary forum which merges the social and economic part of society?”

The site for the project is King’s Cross in London. At this site a lot of different functions can be found. Especially the combination of businesses and cultural functions makes it interesting. Google has planned its HQ’s on this site. The Cultural Stock Exchange could benefit from Google to connect to the digital world, (youtube, google cultural institute., etc.). And Google could benefit from the Cultural Stock Exchange to provide a new kind of office to their employees.

The Cultural Stock Exchange evolves around events, therefor I got interested in Tschumi, who has very elaborated ideas on events and architecture. One of his techniques to design for events is disprogramming, by combining programs with different spatial configuration new events are possible. By combining the cultural stock exchange with google both can profit from each other.

Since this building does not yet exist I researched the typology of stock exchanges and how they work. Google is only now starting to build their own offices and therefore I researched the redesign of their California headquarters. From this and the theory on programming I came to the following thesis:

“Using the technique of programming and organization by beams and transformation over gridlines, a synergy is created between the Cultural Stock Exchange and Google, resulting in a forum.”
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preface</td>
<td>5</td>
</tr>
<tr>
<td>Summary</td>
<td>6</td>
</tr>
<tr>
<td>Introduction</td>
<td>10</td>
</tr>
<tr>
<td>1. Theory</td>
<td></td>
</tr>
<tr>
<td>1.1 Essay</td>
<td>15</td>
</tr>
<tr>
<td>1.2 Methods</td>
<td>23</td>
</tr>
<tr>
<td>1.3 Location</td>
<td>25</td>
</tr>
<tr>
<td>1.4 Program</td>
<td>37</td>
</tr>
<tr>
<td>1.4.1 The program of the</td>
<td>38</td>
</tr>
<tr>
<td>Cultural Stock Exchange</td>
<td></td>
</tr>
<tr>
<td>1.4.1 Google</td>
<td>43</td>
</tr>
<tr>
<td>1.5 Programming</td>
<td>45</td>
</tr>
<tr>
<td>1.6 Typology</td>
<td>51</td>
</tr>
<tr>
<td>1.6.1 The Stock Exchange</td>
<td>51</td>
</tr>
<tr>
<td>1.6.2 Google</td>
<td>55</td>
</tr>
<tr>
<td>2. Design</td>
<td></td>
</tr>
<tr>
<td>2.1 Concept</td>
<td>63</td>
</tr>
<tr>
<td>2.2 Routing</td>
<td>77</td>
</tr>
<tr>
<td>2.3 Organization of program</td>
<td>81</td>
</tr>
<tr>
<td>2.4 Façade</td>
<td>91</td>
</tr>
<tr>
<td>2.5 Detail</td>
<td>101</td>
</tr>
</tbody>
</table>

| Conclusion                       | 104  |
| Bibliography                     |      |
| Books                            | 106  |
| Internet                         | 107  |
| Figures                          | 109  |

| Appendix                         | 111  |
Introduction

In today’s society, culture has a very versatile role. On the one hand, globalization ensures that cultures are increasingly blending together and therefore become richer but also more superficial, on the other hand the same globalization ensures that people strongly cling to their own culture to be sure of having their own identity. This interesting subject is precisely the reason why the theme of the graduation studio ‘a contemporary cultural forum’ is so topical.

The focus in this research will be on culture in the smaller sense of the word, thus not on all things that can be drawn in when speaking of culture but only the cultural part that can be defined as art.

Culture has always been an important part of the society. Because it often was funded by the state, it could be seen as a matter of identity. Showing of the own identity was, partly, showing of the own culture. Over the centuries these funds from the state decreased. This was due to changes in political power, the economic part of society become stronger and stronger till it separated from the governmental part and thus got its own voice and will and requirements. For culture, these changes had a drastic effect. Economy is about profit after all, and culture is often said to be non or too less profitable.

For me as an architect, a way to fill the gap between those new big companies, seeking for a new way of working while pretending they do care about culture, and the so called non profitable culture is to make sure that a building is designed where a symbiotic relation between the two is created. After some search, which will be shown in the research, the idea to design a cultural stock exchange came up. And this is the question which will have to be answered in this thesis: How to spatially design a Cultural Stock Exchange as a contemporary forum which merges the social and economic part of society?

The thesis will begin with an essay, where the themes ‘forum’, ‘political aspect’ and the role of the architect in this will be explored. This essay has contributed to my motivation to do more research and thus to come to the final design. After the essay the first part, containing the
research, will start. To begin with, the research on the location. This research has been done on the one hand through an analysis of the dispersion of the different functions (cultural/governmental/economic) through the center of London, and on the other hand through an interview of some Londoners about their needs when it comes to a cultural forum. After the research on the location, the switch is made to the program. The final program of the Cultural Stock Exchange is partly based on the needs of the Londoners and partly on the needs overall in modern society created by the retrenchments on culture. As I mentioned, this program cannot stand on its own and should therefore be combined with the program of a bigger company (Google). For the best way on how to combine these programs the research goes further on ‘architectural programming’ and ‘architectural typology’. Those results are needed to be able to design a (typological) new building in which different programs have to come together in a beneficial way.

In the second part, where the design is described, the focus will first lay on the concept. This part will reflect on how the building was formed gradually and on the basis of which criteria that happened. Thereafter, both the routing and the organization of the program will have a closer look because of the importance of both in designing the whole building. Finally, the report will focus on the façades and the details to give a complete picture of the entire design.
1.1 Essay  The role of architecture in the game of political power

Introduction
It is remarkable that the Latin word ‘forum’ is still used, even in a modern context, to describe a specific space in a city. In Roman times these fora were important because of two reasons. Firstly the forum was an important characteristic of Roman identity. Secondly in this space, the political, economic, social and cultural part of the city came together. Even though the word forum originates from the Roman period, the word forum is also used to describe such places in other cultures and times. For example in ancient Greece the ‘agora’, in medieval Europe the ‘market’ and in the Renaissance the ‘plaza’. These spaces have in common that they are all public spaces and that they are about the relation between the social/cultural, economic and governmental part which the city consist of. Two elements played a role in the relation between the different parts. On the one hand, the placing of buildings that contained these functions. On the other hand the social/cultural, economic and governmental part where also present on another level. An example is the moment of instability in governmental power, which the people use to gather on the forum to show their opinion. The link between those different uses, and thus, the real function of a forum was to enable social interaction. People needed to gather to be able to stay aware of the happenings in all respects. These three parts, and changes in social interaction, have influenced architecture in different ways during history. In times of a strong governmental part, government determines architecture. This has been the case till WWII in West-Europe. Later, the moment when the social/cultural or economic part becomes more powerful, these parts start defining the style of architecture. The thesis I would like to defend in this essay is: Architecture is a political act and architects should use this as an opportunity. I will defend and test this thesis by looking at the influence exerted on architecture by different powers. The focus in this research will lay on (the classification of) public spaces in relation to the social/cultural, economic and governmental part.
Political use of architecture by governmental power

Architecture in Rome during the imperial period
In this paragraph we focus on the Roman forum and the ‘Forum of Augustus’ to be precise. Looking at the context in which the forum of Augustus was build, it becomes clear that within this former social setting the governmental part was prevailing. The political leaders were deciding on the appearance of the city.  
From historical research on the Forum of Augustus there is consensus that Augustus used architecture to accomplish certain goals such as: transmitting a story (the story of his family), showing power and wealth (his own and the power/wealth of the Roman Empire), legitimizing his power. This was done by using architectural tools to highlight different contrasts. Kim Dovey identifies them in ‘Framing Places, Mediating power in built form’. To clarify the working of those contrasts we can look at the way Augustus handles the contrast between identity and difference by overemphasising his divine identity (by placing statues of Venus and Aeneas) in contrast to others who competed for his position. Thomas Markus tells us that, until about the middle of the eighteenth century, architects used another architectural tool focusing on the recognition of the function of a building by its form: ‘... a church, or a market had forms and spatial structures which were understood and accepted as appropriate for each of these uses. ‘Type’ meant ‘origin’, archetype. A few examples from those kinds of archetypes can be named such as a Roman theatre, a Protestant or Catholic church and spaces like the forum, the market and the plaza. For the forum, it was also designed with a view to its use: social interaction of all kinds (for example: governmental interaction in the Curia, social interaction in the Comitium, governmental/social on the Rostra, economic interaction in the Basilica).
Architecture in Nazi-Germany

The imperial period in Rome can be seen as a totalitarian regime. This lack of opportunities for the population to participate and the obvious supremacy from the governmental elite, we can also find in Nazi-Germany. In the plan which Albert Speer made for Berlin (Germania), one can see the different functions (the buildings by which these functions are embodied) can be found close to each other in one central area. This way of centralizing the three different parts seems to fit a totalitarian regime. Lebbeus Woods reinforces this thought by stating that a city of many centres is an (already) anti-hierarchical city⁠¹⁵.

Also there are similarities in the objectives of Albert Speer⁠¹⁶ and Augustus. When we look for a specific spot in Germania which we could call a ‘forum-like’ place, we end up with the Großer Platz and the Volkshalle on the north side of the plaza. Both (not realized but) designed for governmental and social/cultural purposes in which interaction⁠¹⁷ played a major role⁠¹⁸. Although the radio and cinema became more influential, face to face interaction was still really important for propaganda or for keeping up with the happenings. The architect had to take this into account.

Architecture during the transition to a democracy

We also know that governmental power has changed during the history of West-Europe. Not only totalitarian regimes ruled but also (more) democratic ones. Staying in Germany, the Reichstag may be one of the most interesting examples of how architecture changes when the governmental power changes. When the Reichstag was built (from 1884 till 1894), Germany was still an empire. The building was closed and massive. But when in 1918 the Weimarer Republik, the first democratic governmental power in Germany, came up, the first changes in the Reichstag began to appear⁠¹⁹. But the power of Hitler became evident and the Reichstag went up in flames in 1933, ‘the burning dome became a symbol of the downfall of democracy and constitutional government’⁠²⁰. So when in 1992 a competition was organized to let this symbol revive, Norman Foster took this chance to design it as ‘one of the world’s great democratic forums’⁠²¹²².

¹⁵ Woods, 1992, p. 10
¹⁶ Larsson, 1983.
¹⁷ Offline interaction is meant when using the word interaction.
¹⁸ For example, the Volkshalle could house gatherings of people, commemorations or speeches.
¹⁹ Schulz, 2000, p. 23
²⁰ Schulz, 2000, p. 26
²¹ Schulz, 2000 p. 9; Norman Forster mentions the goal of ‘making the Reichstag as one of the world’s great democratic forums’.
²² Jencks, 1999: “The new, renovated Reichstag is something of magnificent fishbowl, and a light, elegant contrast to its heavy container ... It is a convincing expression of the new German democracy.”
This way of using opportunities is, I think, part of the duty of an architect. I therefore agree with the following words of Lebbeus Woods: 'A new architecture for an era of radical changes in private and public life must actively participate in the establishment of new economic and political systems for the design and construction of buildings, and for the continued transformation of human communities around the world. This does not necessarily mean that the architect must propose a new society, though it might. At the least, it means that the architect must propose programmatic elements within a client’s building program, to account for qualities for which the architect, not the client, is responsible.'

When we look at the way Norman Foster develops this principle in his design, we can conclude the following: first of all there is a lot of attention for public space. Norman Foster changed the building from a closed governmental building to a much more democratic one by letting the parliamentarians and the public enter the building through the same door. That enforces the equality between those two groups. This can be linked with two of the four issues in which the transformation of the Reichstag is rooted: the Bundestag’s significance as a democratic forum and a commitment to accessibility. Also, the building is very environmentally friendly. This is linked to the third issue: a vigorous environmental agenda. Furthermore Norman Foster does this while respecting history ‘as a force that shapes buildings as well as the life of nations’. He especially shows the value of democracy by making the building a living museum that shows the past. This is linked to the fourth issue: an understanding of history. Foster also makes The Reichstag into a living museum. Colin Rowe talks about the idea of the city to be a living museum. He says that the city consist of random but carefully selected information of culture for educational purpose. Even the argument of Rowe that ‘the city as museum is different from neoclassicism by its multi-formity can be applied on The Reichstag. The appreciation of the design can then as well be explained by the balance between ‘scaffold and exhibition’ which can be seen as a balance between new and old; exhibiting the historical episodes.
Political use of architecture by economic power
The biggest change regarding the ruling power nowadays is the fact that in earlier times the governmental power was firmly bond with the economic part, but nowadays those two parts are more distant and the economic part has become a power of its own. The economic part has therefore also become more important regarding political decisions. This means that architects and their architecture are now bound to different rules set by different interests.
As mentioned in the introduction, we established that a forum is characterized by the different public buildings centralized in one big public space, a space which all together enables (social) interaction. Therefore the focus, while looking at modern cities, will stay on the organization of public spaces and functions. But as Kiril Stanilov states: ‘Throughout urban history, the extent to which public space permeates the urban fabric has fluctuated, and so has its content. Depending on where the social energies of a particular historical moment are concentrated, the emphasis has shifted among [the] three main functions – the political [governmental], the economic and the social[/cultural].’
To be able to analyze this public spaces I had to define the content of each one:
- governmental space: ministries, parliament, royal palace, court
- economic space: business district, stock exchange, main shopping area, ministry of finance
- social/cultural space: schools, museum, theatre, cultural center, city defining cultural buildings (London eye/Eiffel tour)

Furthermore we have to keep in mind that the interaction between people within this public spaces became less important because of the growing use of new media. People don’t have to interact face to face to keep in touch or to stay up to date about events, face to face contact can be kept the very strictly necessary. These changes also influence the architecture.

Organization of (public space in) a modern West-European city
The biggest consequence brought by the empowering economic part is the immense growth of the city and city center. Due to

32 Stanilov, 2007, p. 269
the industrial revolution in the eighteenth/nineteenth century, cities became attractive for people and continued to grow. To continue making this growth possible, big changes in urban planning were needed which could deal with the problems inherited from the urban planning from as far away as the pre-industrial period. Urban planning had to be looked at from a total different angle and companies (the economic part) became important in this process. The biggest changes in the city center were due to the zoning regulations in the beginning of the 20th century. Those regulations were instituted to ‘put limits on building size’ and ‘protect established areas from despoilment’ but most of all, ‘sort out incompatible activities’. When analyzing the public spaces, as defined earlier, in the city of London the consequences of this growth and ‘renewed’ urban planning become clear. The public spaces are scattered but sometimes form clusters. This is because ‘housing, manufacturing and retail activities, which formerly intermixed, now took place in different parts of the city.’ So from then on there is no clear center anymore like the forum in Roman cities. Besides the organization of the public spaces with a certain function, also the morphology plays a role in the organization of a city. Colin Rowe talks about ‘the crisis of the object and the predicament of texture’. In this way the public buildings are embedded in the fabric of the city, some become objects other spaces are voids. That makes it possible to see London as a collage city, a city consisting of different fragments forming a composition as a whole. The forum on itself can also been seen as a collage, a place build up from different elements that form a composition. Within this composition the public spaces are organized.

### Modern challenges for the architect and his architecture

Above I have been defending the thesis ‘Architecture is a political act and architects should use this as an opportunity’. Knowing that an architect is empowered to contribute to change, it is important to find out the biggest challenges that have to be taken, in a modern society, to eventually participate. The first challenge given by the ruling economic part is explained by Kim Dovey: ‘The shift from modernism to postmodernism has

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33 Hall, 1997, P. 47; During the nineteenth century populations continued to grow; quite often the number of inhabitants in a town would double in the course of 30 or 40 years.
34 Hall, 1997, p. 55/85 (In this period we cannot yet talk about urban planning, thus this would be an anachronistic word use).
35 Hall, 1997, p. 8
36 Fainstein, 2015
37 Fainstein, 2015
38 Fainstein, 2015
39 Rowe & Koetter, 1978, p. 51
been broadly characterized by Lyotard (1984) as a loss in the credibility of universal theory (metanarratives) coupled with increased attention to difference (local narratives) (...) At the same time the economic value of aesthetics, of architecture as ‘symbolic capital’, has increased 40. This way of letting go universal theory and the increasing economic value connects with the idea of Thomas Markus. He states that from the 18th century on form, function and space where no more converged in a regular and predictable way but ‘a whole range of formal solutions became possible (...) the traditional spatial structures were no longer reproduced without question.’41 This means that the modern architect has got no more archetypes to hold on to, but therefore got far more freedom of choice when it comes to the form and aesthetics of a building. But how is the function of building determined if it is not by its form? Thomas Markus shows that it is determined by the social relations in a building and the use of a building. These relations can be of three different kinds: the relation between people and people, between people and knowledge and between people and things.42 This can be illustrated by the following example: the Chasse Theater in Breda by Herman Hertzberger, which could be seen as some sort of cultural forum since it enables interaction around a cultural theme. It is an aesthetically beautiful building, but not its form but its use and the social interactions in the building give you an idea of the function of the building. When you know it’s a theater, you are able to see it as a theater. Would there have been another use of it or would there have been other interactions, probably we would not have seen it as a theater but as a building with some other function.

The second challenge for a modern architect is globalization and the ongoing use of modern/digital techniques.43 The reason why it is a challenge for the architect is because first of all it is a challenge for the society. Not only the buildings of which the forum consisted, are scattered, but also the associated social relations. Most of the time contact between companies or individuals takes place online and not in real life anymore. But people are more and more expressing their need of ‘offline’ contact. This became clear by the gatherings after the terrorist attacks in Paris in January 2015. But also in everyday life, when

40 Dovey, 1999, p. 34
41 Markus, 1993, p. 31
42 Markus, 1993, p. 39
43 Eldermery, 2009
people in London or Paris are asked about it, they all answer that there is a growing need of face to face contact and meeting other people. Because this is a need of modern society, caused by the changes due to the ruling power, architects should take this into account in the design of new buildings.

To conclude, architecture is a political act since there is always influence from different ruling powers. However the architect is part of the political game and should use the given opportunities to make the design his own.
1.2 Methods

For the research part of this thesis three different methods have been used. First and most of all I used the method of literature review. This enabled me to get an overview of the information existing about the subject of my research. Different concepts are investigated through literature review, first of all the concept of programming and the different theories from Koolhaas and Tschumi about this concept. The second concept to be investigated was the concept of typology, which can be split in to the typology of the stock exchange and the typology of modern offices.

Another method used in the research is the method of interview. Through this method I was able to talk with Londoners and thus to get a real impression of their needs and thoughts. The interview works a lot better to get this kind of information than for example a literature review because you can exactly ask the question in which you are specifically interested. Furthermore it is a very accurate method because you hear the answers right away from the people who are directly involved in the subject.

The third method I used, is the method of case studies. I used this method to compare different buildings from the same typology (the stock exchange buildings). Through this comparison I was able to draw different criteria which a stock exchange building should meet.


1.3 Location

The location of the forum is an essential aspect to be able to realize the goals of this project as well as possible. That is, to preserve cultural initiatives by bringing together the cultural and economic part of society.

To point out a possible location for the forum, different analyses have been used. On the one hand an analysis of London, in which the focus was placed on the location of the different functions (economic, culture/education, governmental) in the city center. On the other hand I have also looked at the opinion of the people living in the city of London. Finally I looked at upcoming areas to see if there are places where my idea of a forum could be implemented.

Analysis of the different functions:

Because London is a modern city, in which a contemporary forum could be located, it is important to look at the city as a whole and to indicate precisely how the different functions are spread all over the town. This analysis can be seen on the left page.

By looking at this map it is possible to see that the governmental buildings are located relatively close to each other but that the other functions are widespread over the city center. By the connection made between the different buildings belonging to a specific function, an image is created in which the reach of the different functions can be seen. In this way, it seems that the center of London is more or less saturated, with respect to the different function. This could mean that a location for the forum must be found outside the center. Naturally this is not a conclusion that can directly be presented as a fact by only looking at the analysis of the area. To know whether the various functions in the center of London are adequately represented, it is necessary to know how the Londoners experience these themselves.
King’s Cross location in London
Interview Londoners
During my stay in London I interviewed a lot of different people; from businessmen to schoolchildren and from real Londoners, born in London, to only temporary visitors to this metropolis. I made the interview quite broad to get the most information as possible. One of the questions was about a (possible) location for the future forum. According to many of the interviewees, there was already such a place in the center of London; Southbank. However, the biggest drawback of Southbank is, according to the interviewees, that there are too many tourists around and young people also feel that the place is dated and should be renewed. Most people at least agreed that London could use a new ‘Southbank’, whether at the same spot or not. Also several alternatives for a possible location were raised by the interviewees (as you can read in the diagram), often places located outside the center of London.

Research location
To be able to identify a possible location, the various insights from the analysis of the functions and the interviews should be put together. In addition, these findings need to be complemented with several requirements imposed by the final goal. First, the location should be easily accessible to everyone, which means that the location must be near or, in a way, connected to the public transport network of London. In addition, the site should provide the ability to connect the economic part and the social part and therefore has to be somewhere in the city where buildings of both functions already exist or are planned to be build. Finally, it is important (in this kind of projects) to observe that the architect cannot and should not want to just claim a location and therefore the architect should follow the trends that have already been put in motion in the city (by the economy). The architect must seize this opportunity to give a place and a form to his project. Finally, it is important to observe what trends and developments are in motion in the city (by the economy). When comparing the requirements and outcomes, the location ‘King’s Cross’ (also mentioned by interviewees) seems to fit those requirements and outcomes the best.

44 A summary of it can be read entirely in the appendix.
Fig. 1 Map of King’s Cross 1895, National Library of Scotland.

Fig. 2 Development plan for King’s Cross, partly realized. (source: King’s Cross)
History King’s Cross

History and future: King’s Cross is a neighborhood in the district of Camden in the north of London. Before 1800 this neighborhood could be seen as a semi-rural area where Londoners lingered when they wanted to spend some time out of the busy center of the city. This all changed when in the 19e century the Regent’s Canal, the train tracks and two stations (St. Pancras and King’s Cross railway station) were built. Also the Imperial Gas Light and Coke company settled in this area. As a result the area was becoming more accessible, it got an economic boost and thus gradually changed to an urban area. King’s Cross became the gateway of London. The situation worsened again after the Second World War, when poverty, prostitution and drugs gave a bad reputation to the district. The transport by railway had received a blow during the war and it took a while before it was restored. Yet the town of London decided, in the 90s of the last century, to put more money into this area to create a more livable neighborhood again. The so-called King’s Cross partnership was concluded to support (financially) different projects and initiatives concerning the livability of the area.

The real turning point was again brought by the train in 2000. This time it was the construction of the channel tunnel, to the mainland of Europe. From that moment, more and more businesses and cultural initiatives settled in King’s Cross. This ensured that the leftovers of the bad reputation of King’s Cross in the early 2000s completely disappeared and made room for innovative projects. The future of King’s Cross looks rosy. With its rich history and unique setting this place offers many opportunities for new companies.

The plans for King’s Cross can be expressed by the following numbers:

67 acres of land
50 new buildings
1,900 new homes
20 new streets
10 new public parks and squares
26 acres of open space
30,000 people by 2016

45 King’s Cross history
46 King’s Cross development
47 King’s Cross development
An important point to make this place a success is the mixing of a few things. Firstly, the aim at King’s Cross is to create a mix of people and cultures, in addition to a mix of old and new, a mix of open spaces and build areas and especially a mix of different functions. There are houses next to offices, cultural venues next to hotels and it is also possible to find restaurants and shops in the same neighborhood. The mix of the different functions is shown in the image on the left. By naming this mix explicitly as a means to achieve success and thereby making it a goal to pursue, this area offers exactly the opportunities needed by a cultural forum which merges the cultural and economic part of society.

**Site analysis**

King’s Cross is well known for the railway station. Although the area changed a lot, its character, partially formed by the railways, is still manifest. The railway stations and their train track form for example some kind of demarcation of the area. This gives a unique space, a kind of island where history and new activities can meet. The east side of the plot
is not bounded by the rails since the train tracks go below ground. However this side of the area is bounded by a more busy street. Except for the street along the canal the area is car free. This provides the possibility for the squares, and the way they are connected, to become the main (way of) circulation within the area. Another way of circulation through the area is the canal which is still in use by the traditional boats. The tow path along the canal is used by cyclist and pedestrians which gives the area a connection to Camden Town without the typical car traffic. Around the canal the green looks mostly natural due to the fact that the parks have an ‘organic’ design and further away from the water the green is organized in park structures which are characterized by more straight ordered green.

On the next page the pictures of the site visit are shown to give an impression of the location.
Site visit

King’s Cross Station

St. Pancras International Station

fig3. (left) King’s Cross (Source: Google Maps)
Stairs at Granary Square

Granary Square, fountains in front the Granary

Grand Union Tow Path used for walking and cycling

View towards the train tracks of King’s Cross
fig.4 (right) King’s Cross Aerial view (Source: King’s Cross)
Functions of the Cultural Stock Exchange

1. Presentation of cultural initiatives

2. Exchange/ investment

3. Development of cultural projects
1.4 Program

The theme of culture was initially already the subject as described in the assignment of this studio: to design a contemporary cultural forum. In addition, the theme of culture is also a subject that is often neglected in today’s society and often gets trampled by the domination of the economic part due to its (read: culture’s) ‘lack of profitability’.

‘Art is not life, in our worldview, by which I mean that... creativity [is] not integrated in our materialistic, logical existence, no matter how much we may pay for a Van Gogh.’\(^{48}\)

Yet, more and more initiatives and voices can be discerned which attempt to reverse this trend. As a human, I am absolutely in favor of the inversion of this trend and as an architect, I would like to contribute to this change. However, since it is difficult nowadays to reach a goal without any use of the economic part of society, this part will be incorporated in two different ways in the program of the contemporary cultural forum. This will be done in a way in which I can use as much as possible the benefits of this economic part and minimize its burdens.

**Problem: Lack of finance for cultural initiatives**

---

\(^{48}\) Montuori, 1989, p. 182
1.4.1 Program of the contemporary cultural forum

The cultural aspect of the forum will be met by offering various forms of art. The different forms of art can be classified as follows: music, theater/dance, film/digital arts and fine arts. This division has been chosen since most art works can be included. The forum will serve as a platform for unknown artists who want to achieve something with their art but don’t have the means to do that on their own. The (first) economic dimension is brought by the linking of the term stock exchange to the cultural forum. Because culture on its own has often not enough support, especially when it comes to unknown artists, it is important to make the cultural aspect more attractive to the public. More attractive means that the financial threshold should be lowered so that people do not have to give up the visit to the cultural forum because they don’t have the money for it. The function of a stock exchange ensures that purchasers of shares will for example receive a certain share in the company and thus have a certain share in the profit. The stock exchange aspect in the case of the cultural forum is based on the same principle but will have a slightly different effect. For the cultural forum, the concept of the stock exchange will be mixed with the concept of crowdfunding. Crowdfunding is a relatively new concept by which basically everyone can promote his/her project via a dedicated website and recommend it to the visitors of the website, with the aim to attract investors who see potential in the project and who would like to invest in it. This works very well for example for the development of applications or other computer related things. Also for the musicians this systems offers more and more possibilities. However, the biggest problem with online crowdfunding is probably the ‘online’ part. When it comes to a project in which the experience of the audience is as important as the technical execution, for now, the online-world is still inadequate. How different is it, after all, to watch a show behind a screen or life in a hall completely dedicated to this kind of performances?
Crowdfunding for culture works in physical world

Solution for gap between physical and digital world
# Program Cultural Stock Exchange

<table>
<thead>
<tr>
<th>Exchange Floor</th>
<th>600 m²</th>
<th>Theatre</th>
<th>500 m²</th>
<th>Cinema</th>
<th>400 m²</th>
<th>Studio/atelier</th>
<th>600 m²</th>
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<tr>
<td>- hall</td>
<td></td>
<td>- hall</td>
<td></td>
<td>- hall</td>
<td></td>
<td>- hall</td>
<td></td>
</tr>
<tr>
<td>- restaurant</td>
<td></td>
<td>- tech. space</td>
<td></td>
<td>- tech. space</td>
<td></td>
<td>- music studio</td>
<td></td>
</tr>
<tr>
<td>- cafe</td>
<td></td>
<td>- stage</td>
<td></td>
<td>- stage</td>
<td></td>
<td>- rehearsal room</td>
<td></td>
</tr>
<tr>
<td>- wardrobe</td>
<td></td>
<td>- logistic space</td>
<td></td>
<td>- logistic space</td>
<td></td>
<td>- atelier</td>
<td></td>
</tr>
<tr>
<td>- toilets</td>
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<td>- change room</td>
<td></td>
<td>- change room</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>- office</td>
<td></td>
<td>- mirror room</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- logistic space</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
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<td></td>
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<td></td>
</tr>
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<td>Galleries</td>
<td>2000 m²</td>
<td>Music hall</td>
<td>500 m²</td>
<td>Studio/atelier</td>
<td>600 m²</td>
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<td>- hall</td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>- hallway and routing</td>
<td></td>
<td>- tech. space</td>
<td></td>
<td>- music studio</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The operation of the cultural stock exchange
The operation of the stock exchange in the cultural forum is based on events. Events will be filled in with promotion of performances and exhibitions of new artists. People can go to these events without paying money for it in advance (lowering the financial threshold). The intention of this approach is that people will spend money on shares afterwards according to what they thought the presentation or exhibition was worth. The money will then be invested by the artist in the final product and the shareholders will receive something in return like for example the opportunity to go to the final show for free or to have a copy of the final product (a cd/dvd etc.).
The organization of such events is as follows when it appears in a schedule. The so called events are shown with a circle. Initiatives can present themselves on such events and start a project to invest in. Every week the theme of the event changes and till the new event of the theme the initiatives are promoted. When a project reaches its needed goal of funding the project can start. During a new event the finished show/product will be presented.

In this way there is always activity in the building, organized presentations and events but especially the continuous developing; promoting and exhibition of projects make it a lively forum.
Project site for Google HQ at King’s Cross, about 65000m² office space and 5000 retail planned
1.4.2 Google

To make this project about culture successful, it is important to continue to use the driving force behind our contemporary society, the economic part. This already happens through the use of the market in the stock exchange but can be addressed even stronger when it comes to promotion, brand awareness and profitability. The location of King’s Cross and its attractiveness to larger modern companies offers a solution. During the investigation of the area and the plans linked to it, it has been found that Google had decided to build their headquarters at King’s Cross, between the two train stations. The initial design of these headquarters, however, was rejected because it was too boring. The exterior reflected not enough the unusualness of the interior and the design should be such that the building could remain for at least 100 years at the same place/in the same area. Joe Borrett (Google head of real estate and construction) says the following about the rejection of the initial design: ‘We have a great plan for the new building at King’s Cross but we want to challenge ourselves to do something even better for Google, King’s Cross and for the local community.’

By exploring the vision and organization of Google, it can be shown that combining the cultural stock exchange and Google would offer many advantages. But what is the ultimate goal for a company like Google and how do they want to achieve that goal? After this has been determined, it will be needed to explore the already existing relations between Google and cultural initiatives. Google’s mission is described as follows: “to organize the world’s information and make it universally accessible and useful.” In addition, Google aims to reflect the internationality of its employees in its image and to maintain an open culture in which everyone feels safe to come up with ideas. To achieve this, 10 values have been set up, some are particularly interesting when combining the cultural stock exchange with Google.

1) Focus on the user and all else will follow.
2) Democracy on the web works.
3) You can make money without doing evil.
4) You can be serious without a suit.

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49 Google HQ King’s Cross, 2015
50 Borett, 2013
51 Google HQ King’s Cross, 2015
52 Google about
53 Google philosophy
Especially the last value is representative for how Google uses office space. Their offices feature remarkable functions such as a swimming pool, bakery, bar, theatre, climbing wall, etc. In this way Google can be seen as some sort of a new working culture. The Cultural Stock Exchange would contribute perfectly to this new idea on office design. Google doesn’t apply these underlying values only when it comes to the ‘search engine’, but also when it comes to all Google ‘products’.

**Google cultural institute**

The focus on culture is shown by the Google company through for example the Google cultural institute. In 2011 Google launched a non-profit initiative to begin various partnerships with cultural institutions to make the cultural heritage from all over the world available online. The idea is to digitize art, make it possible to arrange collections and making tools available to experience the art in a more realistic and intense way. Part of this initiative is the Google art project, through which Google has partnered with more than 150 museums from 40 different countries. The purpose of these partnerships is to make all the art pieces, which can be seen in the different museums, available online in high resolution. This makes it possible to virtually walk through a gallery of some museum, to look closely at art pieces and to create your own collection with your favorite pieces. Sometimes it is even possible to get a virtual guided tour or just some more information about a certain piece of art.

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54 Google cultural institute
55 Google art project
1.5 Programming

*This relationship*[i.e. between architecture and program] *is equivalent to that between lyrics and music*\(^{56}\)

Because the program of the cultural stock exchange is innovative and because both the programs of the stock exchange and Google should be linked, the so-called architectural programming becomes really important in designing the building. Today architectural programming is defined as the research and decision-making process that identifies the scope of work to be designed\(^{57}\). Although ‘programming’ seemed to become less important from the 90s on, there are still great architects who have kept the focus on this part of the process, such as Rem Koolhaas and Bernard Tschumi. Both have done so in their own way.

**Rem Koolhaas**

Rem Koolhaas sees ‘program’ as the mix and accumulation of ‘human activities’ with which an architect can generate different ways of life and forms of architecture\(^{58}\). This type of ‘program’ is closely related to the term ‘agenda’, which is what an architect wants to achieve with his building. Koolhaas states that when an architect has an agenda of his own it means that he is not purely an extension of the market economy or developers’ desires or individual’s desires.\(^{59}\)

A project can be a literal reproduction of the program. This can be seen in figure 5 and in figures 6 and 7, where the process of design of the library of Seattle is shown.

\(^{56}\) Reiser & Umemoto, 2006, p. 166

\(^{57}\) Architectural programming, 2009

\(^{58}\) Programming, Koolhaas, 2014

\(^{59}\) Miljacki, Reeser Lawrence & Schaffer, 2016

fig. 5, 6 & 7 Koolhaas, 2009
The figure with the columns clearly shows that the program initially was just being piled up to create the concept. The other figures show an almost literally translation of this concept into a building.

The aesthetic decisions that need to be taken, are taken based on the program, but there is no given relationship between the form and the program according to Koolhaas.\textsuperscript{60} The way of programming used by Rem Koolhaas can be called ‘crossprogramming’; the structure or space used for a particular program not typologically intended for it.\textsuperscript{61} This means that unexpected situations can arise because certain activities take place in a building that was not meant to contain those activities in the first place. This crossprogramming is used by Koolhaas in for example the design of an athletic club in his book ‘Delirious New York’. Figure 8 shows boxers eating oysters at an oyster bar. This surrealistic scene is made possible because of the fact that Koolhaas has placed an oyster bar in a place in the building where one would not expect it. This creates surprising effects and makes the building thereby exciting and lively.

\footnotesize\textsuperscript{60} Miljacki, Reeser Lawrence & Schaffer, 2016
\textsuperscript{61} Tschumi, 1995, p. 155

fig. 8 Programming. Koolhaas, 2014
Bernard Tschumi

Bernard Tschumi describes the term architectural program as follows: ‘An architectural program is a list of required utilities; it indicates their relations, but suggests neither their combination nor their proportion’.\textsuperscript{62} According to Tschumi, there is no architecture without any event, that is to say; without actions and/or human activities. Buildings and spaces interact with the activities that take place inside. If space is properly designed, the activity intensifies through the space and the space widens (in the literal and figurative sense) through the activity. This is, according to Tschumi: ‘... what we architects must help (...) to achieve by intensifying the rich collision of events and spaces.’\textsuperscript{63} To achieve this interaction between activity and space, Tschumi makes great use of programming. He distinguishes three different ways to deal with program: crossprogramming, disprogramming and transprogramming. Crossprogramming means using a given spatial configuration for a program not intended for it \textsuperscript{64}. An example is the project of the ‘bridge-city’ in Lausanne in 1988. The bridges (some already existing, others designed for the new city) connecting two different parts of the city, are transformed into bridges which also contain a program, instead of being just support structures. The programs which are linked to the different bridges are all different (from housing programs to commercial ones), to give each bridge a different character. This results in a new connection, vertically and horizontally, so that the valley where the industry is localized becomes better connected to the historic center.

Disprogramming means combining two or more programs, whereby a required spatial configuration of program A contaminates program B and B’s possible configuration.\textsuperscript{65} An example is Tschumi’s design of the Kyoto center and railway station from 1991. The design of the modern railway station contains many functions, in programmatic terms, besides the main program of a conventional station. In this case the train station consists of several towers with a large mixture of program which will all together create an “unprecedented architectural event”.\textsuperscript{66}

\textsuperscript{62} Tschumi, 1996, p. 113
\textsuperscript{63} Tschumi, 1996, p. 259
\textsuperscript{64} Tschumi, 1995, p. 155
\textsuperscript{65} Tschumi, 1995, p. 221
\textsuperscript{66} Tschumi, 1995, p. 225
These towers, and all the different programs in there, are connected by a horizontal beam. In this way the choice and placement of different functions with different events (such as a wedding chapel, sports and a historic museum) create a new event. It is the, in the first instance illogical, composition of these functions that creates a surprising effect leading to a new experience of the space.

Transprogramming means combining two programs, regardless of their incompatibilities, together with their respective spatial configurations. This kind of programming is used for example in the design for the Library of France in Paris. In this case Tschumi inserted a running track in the library. By doing this, not only the program of the running track (sports) is inserted, but also the circulation and organization of the library floors are influenced.

Naturally, focusing on programming doesn’t mean that form or the relation between program and form shouldn’t be taken into consideration at all. According to Tschumi the relation between program and form can go different ways. First of all the relation can be one of reciprocity, which means that program is shaped to match the form or the other way around. Another possibility is a relation of indifference, which occurs when the chosen form can contain any program. The third and last relation is one of conflict, which means that form and program are deliberately conflicting.

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67 Tschumi, 1996, p. 327
68 Miljacki, Reeser Lawrence & Schaffer, 2016

fig. 9, 10 & 11 Tschumi
<table>
<thead>
<tr>
<th>Project</th>
<th>Program</th>
<th>Image</th>
<th>Analysis of program and organisation</th>
</tr>
</thead>
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<tr>
<td>Crossprogramming</td>
<td>housing, public functions, commercial, traffic</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
<td>low density modern, high density</td>
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<td>Lausanne, Bridge-city</td>
<td>Historic city</td>
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<td>traffic, housing/public commercial</td>
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<td>station, public functions, commercial, hotel</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
<td>hotel, cultural, commercial, sport</td>
</tr>
<tr>
<td>Kyoto, Center and Railway station, 1991</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
<td>car park, conference theatre</td>
</tr>
<tr>
<td>Transprogramming</td>
<td>library running track (circuit)</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
<td>circuit, library, all plans</td>
</tr>
<tr>
<td>Paris, Library of France</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
<td>fig. 9, 10 &amp; 11</td>
</tr>
</tbody>
</table>
1.6 Typology

‘Typology is the comparative study of physical or other characteristics of the built environment into distinct types.’

1.6.1 The Stock Exchange

The first stock exchange building was built in Belgium at the end of the fifteenth/beginning of the sixteenth century. From that moment on, the trade on the stock market was no more focused on commerce in general but only on trade in money and securities. At the end of the sixteenth century, when Europe gets richer, more and more stock exchange buildings emerge, particularly in the Netherlands and England where prosperity increases due to the trading with India and Indonesia for example. The VOC (United Company of East India) was the first company in 1602 which was fully funded through equity trading.

From that time, the concept of the stock exchange changes only very little, however, the volume of trade became more widespread, and the distances between the traders increased. The London Stock Exchange was built in 1773 and a few years later also the New York Stock Exchange, also known as Wall Street. The New York Stock Exchange can now be considered the most important stock exchange in the world. As the stock market changed during the centuries, it also took an increasingly important place in society. Today, the stock market has become an integral part of our economy and society. “The stock market is one of the most vital components of a free-market economy, as it provides companies with access to capital in exchange for giving investors a slice of ownership in the company.”

The stock exchange building

Because the main function of my building fits with the function of a stock exchange, it is important to look at the typology of buildings in which stock exchanges have been/are located. The buildings will not be analyzed in terms of appearance but in terms of the spatial placement of the program, thus, the way in which the routing and the program are organized.

The following chart shows how the routing and the program have been applied in different stock exchange buildings.

---

69 Guney, 2007, p. 3
70 Stock Exchange history
71 VOC history
72 Stock Exchange
<table>
<thead>
<tr>
<th>Typology Stock Exchange</th>
<th>Stock Exchange of Hendrick de Keyser</th>
<th>Amsterdam Stock Exchange</th>
<th>Stock Exchange of Antwerp</th>
<th>Stock Exchange of Frankfurt</th>
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</thead>
<tbody>
<tr>
<td>Architect</td>
<td>Hendrick de Keyser</td>
<td>Jos Cuypers</td>
<td>Joseph Schadde</td>
<td>Heinrich Burnitz &amp; Oskar Sommer</td>
</tr>
<tr>
<td>Date</td>
<td>1611</td>
<td>1913</td>
<td>1872(1513)</td>
<td>1879</td>
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<td>Amsterdam Stock Exchange</td>
<td>Antwerpen</td>
<td>Frankfurt</td>
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<td>Open air Exchange</td>
<td>Stock Exchange</td>
<td>Contemporary Function</td>
<td>Eventspace/Hotel</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Glass Covered Exchange Floor</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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</table>

**Program/routing**

**Floor 1**

**Floor 2**

**Program/view**

**Section**

52
<table>
<thead>
<tr>
<th>Beurs van Berlage</th>
<th>New York Stock Exchange</th>
<th>Royal Exchange</th>
<th>Shenzen Stock Exchange</th>
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<td>William Tite</td>
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<td>1903</td>
<td>1844</td>
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<td>Stock Exchange</td>
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<tr>
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<td>Stock Exchange</td>
<td>Stock Exchange</td>
</tr>
<tr>
<td>Sort Floor</td>
<td>Covered exchange floor</td>
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<tr>
<td>Special</td>
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<td>Glass covered exchange floor</td>
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<tr>
<td>View on floor</td>
<td>Yes Open galley</td>
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<td>Yes</td>
<td>No</td>
<td>Public layers</td>
<td>Yes</td>
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<td>—</td>
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</tbody>
</table>
Conclusion
The conclusion which can be drawn from the diagram illustrates the similarities between the various stock exchange buildings. It can be concluded that in general stock exchanges have:

1 a large open void.
2 rectangular floors surrounded by offices
3 a gallery with view on the exchange floor.

These three characteristics can be used in the design of the stock exchange part in the cultural stock exchange, but another important characteristic will have to be changed; the closed character of the stock exchange should be opened up a lot more for the design of the cultural stock exchange. This should be done in order to mirror the open nature of the program and thus to achieve the purpose of this cultural stock exchange.
1.6.2 Google

Office design
In 1906 Frank Lloyd Wright designed the Larkin Administration Building in New York city. This can be seen as the first time in history where an architect has consciously thought about the design of an office. A revolutionary design was realized; Frank Lloyd Wright and his fellow pioneers decided to use less walls and thus a very open space was created. Since then a lot has changed when it comes to office design. “Over the last four decades of the twentieth century, the design of office buildings in Europe evolved alongside changing trends in business management.” This means that the second revolution in office design came along with the invention of the computer in the 1980s. Large distances could be covered far more easily due to the increasing ease of the internet access in the 1990s. Since the beginning of the 21st century, we are attending a new revolution in office design, because, due to modern technology, it is not even needed to be in a typical office at a typical desk to work. Work can be done everywhere and modern companies have to fit in this new era. Therefore they have to be attractive and innovative, even if it is not yet completely defined what this attractiveness and innovation consist of.

Google Office
To know more about Google and the way they use the office space a research was done on their already existing office in Silicon Valley, California (this is just a redesign of an already existing building). Google is a company which wants all the best for its employees, Googlers as they are often called. Their offices include a variety of different kinds of work spaces and besides that, a lot of ‘special’ rooms with other programs such as: a bar, a gym, a bakery, a gaming hall, etc. The idea behind this is the belief of Google (and of more modern companies) that you don’t have to be at a desk to do your work, you can as well be at place that doesn’t look/feel like a work place at all. Secondary Google has found, for an important part due to this office design, a way to keep the employees happy and thus motivated.

73 Office design history, 2015
74 Commission for architecture & the built environment, 2005
75 Office design evolution
1 FLOOR
Total surface: 31580 m²

- Closed office: 17%
- Open office: 11%
- Meeting room: 9%
- Food: 7%
- Toilets: 3%
- Vertical circulation: 4%
- Special: 10%
- Undefined: 3%
- Streets, open area: 36%

2 FLOOR
Total surface: 31580 m²

- Closed office: 16%
- Open office: 15%
- Meeting room: 12%
- Food: 2%
- Toilets: 2%
- Vertical circulation: 4%
- Special: 14%
- Undefined: 1%
- Streets, open area: 34%
1 FLOOR
Total surface: 31580 m²
Closed office: 17%
Open office: 11%
Meeting room: 9%
Special: 17%
Other: 10%
Streets, open area: 36%

Google Office space

Open

Closed

Club house  coffee shop  Supper club  Conference  Library  I-Bar  Terrace  open meeting  Open huddle  Closed meeting  huddle room  work station

Terrace/ garden  Swimming pool  Parking  Running track  Cycling path

Entrance
A Google office building can be seen as a place where you can also practice your hobbies and spent free time. From the analysis of Google HQ in Silicon Valley this has become visible in the floor plans by a relatively large amount of special spaces with respect to the ‘typical’ office space. But so far Google has not actually build its own buildings. Only now the design for the new Campus at Silicon Valley has been finished and the design for the HQ at King’s Cross has been rejected as mentioned before. So there is no (not yet?) typology for Google, but what is more important to gain from this is the fact that the typical office typology doesn’t fit Google at all. In this way Google strives for a completely new way of working and therefore also a completely new way of designing its buildings and offices. This makes the design for Google particularly interesting since it has to be something completely new, a state of the art in office design.

**Conclusion**
To get some insights in the way Google uses it’s office space some conclusions can be drawn from the analysis. First of all there is a hierarchy in the open/closed space relation. The spaces close to the entrance or routing are more open and active while the spaces that are more distant to entrance and routing are closed working spaces. Secondly there is a large amount of programmatic functions which are not typically associated with the office concept.
Design
“Using the technique of programming and organisation by beams and transformation over gridlines, a synergy created between the Cultural Stock Exchange and Google, resulting in a forum.”
2.1 Concept

During the research I focused on the technique of programming and typology. When starting the design I took the program and the way the cultural stock exchanges works as starting point. As explained before the program of the cultural stock exchange contains different functions; a gallery, a theatre, a cinema, a music hall and studio’s. All these functions come together on the exchange floor which will serve as the heart of the building or in other words ‘the forum’. As concluded in the research google planned a lot of office space but part of this space can be used for the cultural stock exchange since Google considers for example a theatre as part of an ideal office as well. In this way the majority of the space used by the program of the cultural stock exchange, will be part of Google as well. Due to its lack of typological examples, program can also be taken as starting point when designing the Google offices. The focus should then be on the organization of and connection between the different programs. The program of the cultural stock exchange is transformed into a 3D representation.

The program then becomes a series of programmatic beams. The dimension is based on the size needed for the largest space, the theatre. The theatre, mend for about 140 persons requires roughly 12 meters width and 7-8 meters height, including the installations. Google does not require a specific space so it would ‘fit’ the beam either way. The Exchange floor consists of a large vertical block. This is due to the fact that, as concluded in the research on typology, the exchange floor is not only about the floor but for a great part also about the central void/atrium in which the floor is placed. The exchange floor doesn’t have to fit in a beam because the design of the floor is determined by the organization of program around it.
Cultural Stock Exchange

The height of the building is determined by the height of the office buildings to the west. This way enough floor space is created but the building doesn’t stand out because of its height.

The Cultural Stock Exchange should, in this block, be located on the north side of the plot. This way it becomes the ‘head’ of the plot. This location is important because the Cultural Stock Exchange will then be facing the other side of the canal where more cultural activities are located. To give this ‘head’ of the plot more mass, some beams are extended into wider ones.

The next step in the concept is to find a good spot for the main entrance. Therefore it is important to look at the main route of circulation, which is King’s Boulevard since most people will come from King’s Cross. The boulevard is bordered by trees, thus giving the impression of a long lane leading to a certain point. By placing the main entrance at the end this certain point where the lane is leading it becomes the most important part of the building, the Cultural Stock Exchange. This is shown in the image on the right page. Now the location of the main entrance is
fixed, the different steps to build up the grid can be taken. The stairs of the main entrance are perpendicular to the Boulevard, therefore the grid is also placed in that direction. The programmatic beams can be directed along the grid to emphasize a certain view. The height of the different floors changes the possibilities for the views. So the first layer relates to the direct surrounding, the boulevard and railways. From King’s Cross to the entrance the passing trains are visible between the beams. With height increasing the relation becomes of another scale. The second layer of beams has a view over the rails to King’s Cross, and Granary Square on the other side.

The third layer enables a view towards St. Pancras International, the fourth layer in the north shows a view over the canal and on the east it shows a view over the buildings.

The final layer is high enough to get a view on the skyline of the business district of London. This part (read: the top floor of the building) is also representing the merging of the social and economic part of society. One site has a view on the economic center, the opposite site has a view on the historic part which can be seen as the social center. All are shown on the next page.
First layer view on entrance show on the left side (and rails)

Second layer has a view over the train tracks and King's Cross. Shown above a view from the Library.
Third layer, a view from the office to St. Pancras International

Fourth layer, view from the office beam over the canal/historic part
Final layer, a view from the gallery to the skyline of the business district in London
Programatic organisation

- Cultural Stock Exchange
- Google
- Retail

Atria and movement
The next step involves the program of Google. To merge the Cultural Stock Exchange and Google, the programs are woven through each other (although the biggest part, the focus, of the Cultural Stock Exchange is still found on the north side). The shops, which are located in the first layer, represent the ordinary market on a traditional forum in Rome, where the important economic center was located in the Basilica. In this case, the Basilica will be the exchange floor which is located on top of this first layer. This can be seen in the image on the top of the left page. The Exchange floor is part of a large void to the top of the building, this provides a clear view from all levels onto the floor. On the other hand it shows visitors an amazing impression of all different programmatic functions next to each other. It shows activities and attracts visitors the curiosity to go and look further. It also provides light into the core of the building. This breaking of the beams brings the program together in a way. Three other atria can be found in the building providing this connection as well as light. They also function as a guide for the vertical movement by elevator. Shown in the second image on the left page.

Google:
65000 m² office space
5000 m² retail

Cultural stock exchange:
+/−5000 m²
Because each beam features certain part of the program, it is possible to connect them in a horizontal way to let different programs meet. This can be done by moving over the roof from the layer below. This movement and use of the space, creates a new more open space. This space will be largely influenced by the program of the beams next to it for example the space between a cinema beam and an office beam can be used to have a lunch break and on the meantime as a extended foyer for the cinema. To make this space fully usable a second glass façade is placed in between the beams. Shown in the image below.

This large inner space is naturally ventilated since the windows in the top can be opened.

The rainwater is collected on the glass roofs to provide the inner green roofs with water in the drainage layer. Finally to make the effect of this way of programming clear two conceptual sections are shown in the image on the right page and the next page, to give an impression.

From this I can state my thesis “Using the technique of programming and organization by beams and transformation over gridlines, a synergy is created between the Cultural Stock Exchange and Google, resulting in a forum.”
Conceptual section
2.2 Routing

The people visiting the Cultural Stock Exchange and Googlers have the same main entrance. The three other cores with a lift shaft are accessible for Google. To express the beam and its identity the floor within the beam is only accessible from the inside of the beam. The stairs are always oriented towards the end of the beam to show the view. This is emphasized by making the stairs open so it is possible to look trough. The lift connects all floors on certain places, for the visitors it is only possible to go out at floors of the Cultural Stock Exchange. In this way Google has only access to its floors by making use of a modern access key (pass, eye etc). It is also possible to move up and down by stairs. The stairs are on the outside of the beam and connect the lower part of the beam to the roof of the beam. In this way the space between the beams has also a character of circulation and discovering. From a roof you can look over the lower beams. In this way it is for example possible as a visitor to see a part of Google on another beam but it is not possible to get there. With continuous beams there is only a problem to have enough light in the inner parts and it is also breaking the concept to just place a door in the beam to move to beams on the same level. The concept for the horizontal movement and at the same time the light is shown in the image above. The main view is along the beam therefore the new openings should not break this view or create a more interesting one. So the beam has large openings on the sides to move from beam to beam however these openings are not in line with each other, it is not possible to look through the beam. Inside the beam this provides light and the light again is used as a guide for the routing.
Interior view of a Google part between the beams
Interior view of the exchange floor of the Cultural Stock Exchange
2.3 Organization of Program

Each beam contains two floors, the second floor is only accessible (except for the beams that are connected by an elevator) from the first floor. Therefore the floorplans are shown in pairs. The organization within the beam is different. The beams of the Cultural Stock Exchange are more divers and bring Google and the Cultural Stock Exchange together. The beams that are part of Google follow the principle of open program parts and more closed. To do this certain ‘blocks’ are made to create a divers office space together with ‘special’ beams providing different functions. The organization within for example an office block is linear organized along the direction of the beam to emphasize de view. The places which have less natural light are the more closed parts and the parts close to the circulation are more open. On the following pages the plans are showing the routing of the cultural stock exchange since this part is public (also accessible for Google) and the main spaces of the Cultural Stock Exchange as well as the special programmatic features of Google.
Level 7

10 Cinema
11 Beachvolleybal field
12 Administration

Level 6

N
2.4 Façade

The façade is very expressive for the biggest part because of the ends of the beams which point in different directions. But also the cutting of the beams on the lines of the plot gives different ends. From the outside these ‘viewing guides’ provided by the beams are used in different ways. By showing the variety of activities in the different beams, it acts as an image to the outside world for the cultural stock exchange. On the other hand, for Google, it creates an image of how they want to be seen.

The façade looks different on all the four sides since the surrounding needs a different approach. The south side fronts the square in front of King’s Cross therefore the building ‘finishes’ the square, providing a café and above the major conference space and head offices that look out over King’s Cross. The west façade is more extravert the beams stick out quite far from the glass façade showing the character of the building and its events. The north façade is the most extreme in this way with large cantilevers as if the building is making a connection to the other side of the canal. The east façade is facing the rails, to this side the beams are less expressive and provide more of a solid wall where the beams are only little visible. This gives a calmer view for people arriving by train. On another conceptual level it can present the repetition of trains moving with different speed. However, the east façade is interesting enough to remind people when they exit King’s Cross and see the building again with a surprisingly more impressive façade.
South façade
North façade
2.5 Detail

In the detailing the focus is to express the identity of the beam, the stacking and ‘cutting’ at the ends. The beams are finished with white stucco, to create uniformity. Another benefit of stucco is the fact that it can be used inside and outside. At the ends the ‘cutting’ of the beam is expressed by precast concrete elements which forms a frame for the large curtain wall. By making use of a ‘Slimline floor system’ all pipes for the installations can be placed in the floor. At the place where the beams meet, the detailing and insulation is continuous to express the concept of the stacking, since in this way it is possible to have cinema and below an office beam. (shown on the next page). The inside of the beam has a different look compared to the outside. Each beam with a different program requires a different look. Over all there is a cast in place top floor, concrete panel walls and a concrete ceiling from the Slimline floor. The floor in the middle has a thin steel frame covered with a wooden floor. In this way the floor is an element in the beam with a different character. The green roofs are supporting the inside climate for the people. On the inside lower roofs the grass is replaced by wooden terraces.

1 Green roof 40mm 
Drainage layer 50mm Insulation 200mm Underlayment 18 mm Slimline floorsystem (IPE 400)

2 Sto finish stucco 6mm Insulation 200mm Slimline floorsystem (IPE 400) Cast in place topfloor 70 mm

Technical Section 1:100
1  Green roof 40mm  
   Drainage layer 50mm  
   Insulation 200mm  
   Underlayer 18 mm  
   Slimline floorsystem (IPE 400)  

2  Sto finish stucco 6mm  
   Insulation 200mm  
   Truss system (IPE 180)  
   Metal stud system 30mm  
   FibreC concrete panel 13 mm  

3  Sto finish stucco 6mm  
   Insulation 200mm  
   Slimline floorsystem (IPE 400)  
   Cast in place topfloor 70 mm  

__________________________  
Technical section 1:150
Conclusion

In order to get an answer to the question ‘How to spatially design a Cultural Stock Exchange as a contemporary forum which merges the social and economic part of society?’ it is important to first remind what could be concluded from the research. First of all the study revealed that Londoners had the need for a new forum in which culture would have an important place. The location proved to be the most suitable was King’s Cross, a district in the north of London just outside of the center. This location appeared to also have been chosen by Google for the build of a new HQ. The plans for the Google HQ seemed to fit perfectly the plans for the Cultural Stock Exchange. On the one hand the Cultural Stock Exchange could get funds for its activities and initiatives and more possibilities to advertise via the internet. On the other hand Google could use the different spaces from the Cultural Stock Exchange to add even more special spaces to their office and the employees could get inspirations by watching the different cultural initiatives.

The challenge was to organize the different
programs next to each other and also sometimes mix them with each other. Therefore the theories about programming of Koolhaas and Tschumi have been analyzed. The use of crossprogramming, disprogramming and the way of directly translating a program into a building can be seen in the way the beams of the building have been designed, and are being stacked and woven together. Another important part of the research was the location; this part has also been taken into consideration in the final design. The grid used to place the beams in a certain direction and the direction the beams are placed are both focused on the site. The views created by the position of the beams relative to the site are important to indicate the relation between the building and its environment. Another way this relation is defined is the way the façade reacts to its environment and vice versa, every façade is different because every environment next to a specific façade is different.

Naturally I would have loved to spend more time on this project. The surface of the building is enormous and therefore, due to the fact that this project was only for a year, I had to focus on the part of the building which contains the Cultural Stock Exchange. To be able to design a whole new building for Google the analysis on such building types should go even deeper than I already did. Therefore I would like to give this as a recommendation for further research. So far we can conclude and thus answer the question from the beginning: ‘Using the technique of programming and organization by beams and transformation over gridlines, a synergy is created between the Cultural Stock Exchange and Google, resulting in a forum.'
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Figures

Fig. 1

Fig. 2

Fig. 3
(left) King’s Cross (Source: Google Maps). Online available at <https://www.google.nl/maps> [Accessed 14/01/2016]

Fig. 4
(right) King’s Cross Aerial view (Source: King’s Cross) Online available at <https://www.kingscross.co.uk/development> [Accessed 26/09/2015]
Fig. 5, 6 & 7

Fig. 8

Fig. 9, 10 & 11
## Appendix

<table>
<thead>
<tr>
<th>Location and Interviewee</th>
<th>Are you living in London?</th>
<th>Are you born in London?</th>
<th>A cultural forum in London should at least consist of...</th>
<th>Is there a cultural function or social activity that should get a better space in London?</th>
<th>A cultural forum should connect different classes/cultures in London(1-10)</th>
<th>A cultural forum should provide social interaction between different cultures from other countries(1-10)</th>
<th>Is here a location in London that you could suggest for a cultural forum?</th>
<th>Do you use the metro at least once a week?</th>
<th>Should a cultural forum be connected to a metro station?</th>
<th>You are an inhabitant of...</th>
</tr>
</thead>
<tbody>
<tr>
<td>London Interview</td>
<td>Yes</td>
<td>Yes</td>
<td>Shops, McDonalds, people to meet, nice space, place to sit nice</td>
<td>rundown space, Park London(music)</td>
<td>10</td>
<td>Trafalgar square, Blue Water(shopping centre)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes, close to</td>
<td></td>
</tr>
<tr>
<td>Group of 5 Highschool boys (14-15 years old)</td>
<td>Yes</td>
<td>Yes</td>
<td>Music-&gt; brings people together, always open, films in all language, all ethnic minorities, different language</td>
<td>Southbank theatre, more function, other place too touristic</td>
<td>10 (more europe)</td>
<td>Brixton, Peckham highstreet, Campton(divers population)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes, near, revolve around it</td>
<td></td>
</tr>
<tr>
<td>Business man</td>
<td>Yes</td>
<td>No</td>
<td>Park</td>
<td>Multicultural, relax atmosphere</td>
<td>8</td>
<td>East London</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family (Father/Mother) 2 kids</td>
<td>Yes (just)</td>
<td>No/Yes</td>
<td>all cultural activities, represent people</td>
<td>No sufficient I guess</td>
<td>10</td>
<td>Southbank, only little tourist</td>
<td>No</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Man working at film set</td>
<td>Yes</td>
<td>Yes</td>
<td>All week outside, relation interior exterior, London people like outside but weather forces us to inside often</td>
<td>Well supplied, a new combination maybe</td>
<td>8</td>
<td>Camden, multicultural location</td>
<td>No</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mexican immigrant, learning english</td>
<td>Yes</td>
<td>No</td>
<td>Food, music, open, theatre</td>
<td>Combination of park, market, stairs to sit</td>
<td>7</td>
<td>? Maybe like southbank but then more cultures</td>
<td>No, to expensive</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 starters(2 couples) +/- 25-30 years (working, one musician)</td>
<td>Yes/No</td>
<td>Yes</td>
<td>Food, board games, drinks of course, food makes relation to other cultures, visual interaction, music, Later added: Should be meeting of different cultures possible to go and travel (air/NB), lot of art, travelshop</td>
<td>sports games that are free in par ex. Bowling outdoor alley, ping pong, sports do socialize, it should be playful, also crafts, to show and learn, ex old craft but also graffiti</td>
<td>10</td>
<td>Highgate(hometown) Busi sites, Canary Wharf, southbank used to be good now to touristic, Kings cross project has potential</td>
<td>Yes</td>
<td>Yes, possible different locations, your travel journey is put underground</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Art Student (Kingscross)</td>
<td>Yes</td>
<td>No</td>
<td>Multifunctional and multicultural, should contain every aspect of culture(music, film, art, drama etc.)</td>
<td>more social, street theatre(open theatre)</td>
<td>6</td>
<td>New upcoming areas, Kingscross Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes, could be, also underground is possible</td>
<td></td>
</tr>
</tbody>
</table>