complex projects 2020

a co-creation space

ZWISCHENSPIEL

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Armance Coppoolse

TU Delft

2023

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Bodies and Building
Digitalisation

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Research question: How could the use of data to personalize the opera experience impact the architectural design of new opera buildings in Berlin?

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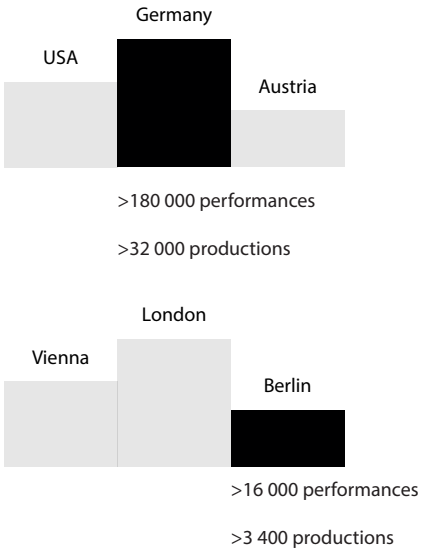
INTRODUCTION

01

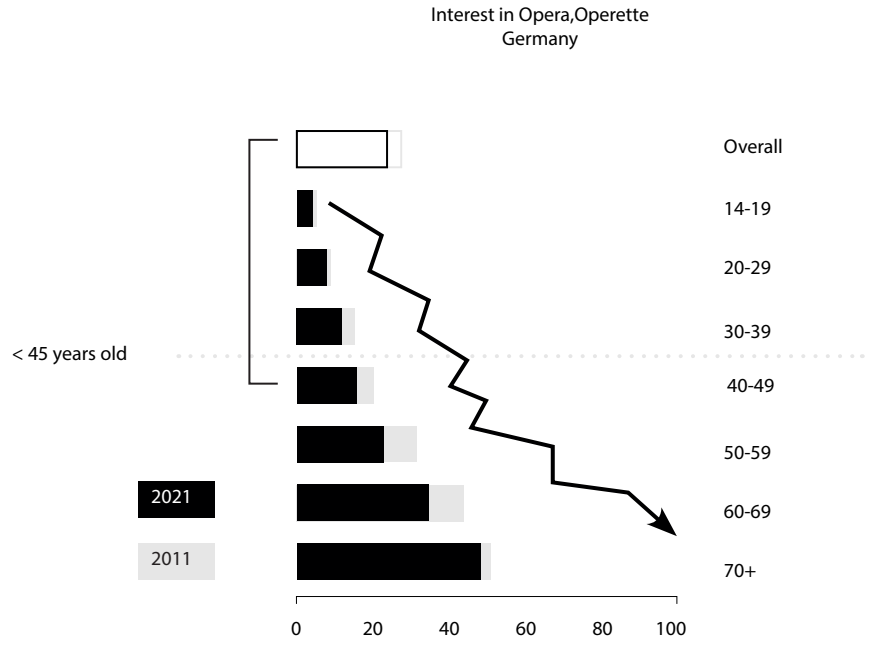
INTRODUCTION

1.1 Thesis topic

Germany is the country hosting the most opera performances and productions, with Berlin being the third global capital of opera counting over 16 000 performances yearly *(figure 1)*. Berlin is also a young city with 56% of citizens being under 45 years old. This age range appear however to be the ones least interested in opera, accompanied by an overall decrease of interest in the art genre (figure 2). This can firstly be explained by the obsolescence of opera since the vast majority of them were written in the late 19th century *(figure 3)*. Secondly, the persisting stigma that opera is for the elite restrains people from going (Reporter, 2017). This goes hand in hand with the idea of exclusivity of opera, making it seem accessible (Avila, 2018). On the other hand, once you took the initiative to go to the opera, the experience makes you feel 'special'.



(OperaBase, n.d.).



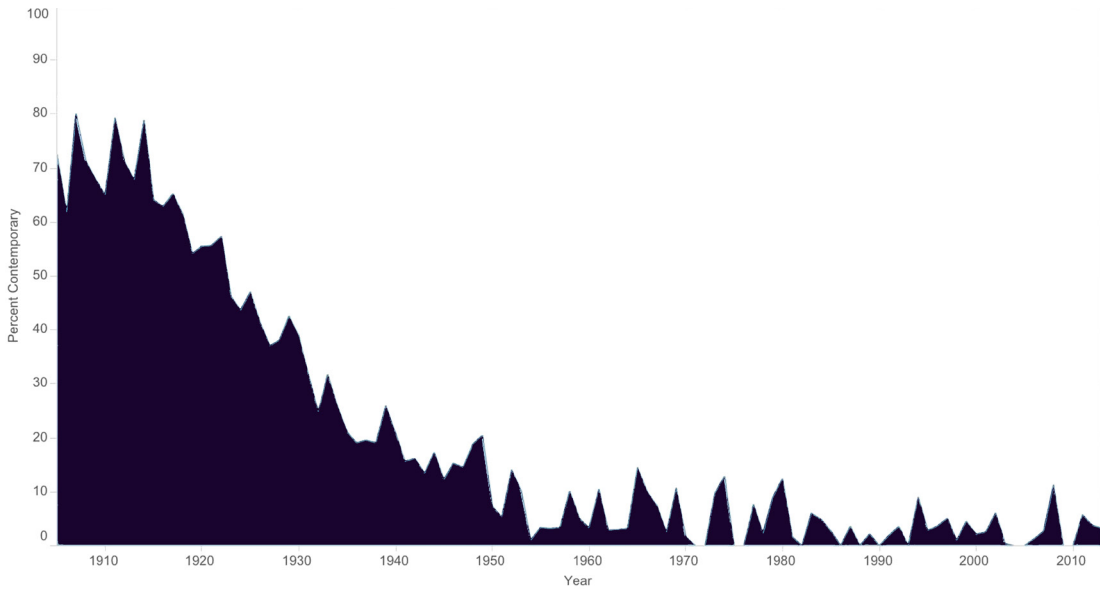
(Miz | Central Contact Point for All Questions Revolving Around Musical Life in Germany, 2023)

1.2 Problem statement

Opera is nowadays an obsolete, exclusive and stigmatized performance art. To stimulate a renewal of the art genre, an update is needed in order to attract a broader and younger audience. To remove the stigma, future opera buildings should be made more accessible. The feeling of exclusivity could however be retained by making the whole audience feel like a VIP. This could best be created by personalizing the opera experience. Data analytics is the most updated way to approach personalization.

1.3 Research question

How can Berlin offer an innovative opera production and performance space which stimulates data-driven co-creation ?



(Ingraham, 2021)

RESEARCH FRAMEWORK

02

RESEARCH FRAMEWORK

2.1 Theoretical framework

2.1a Data to personalize

Theater and other performing arts like opera, can use data analysis to their advantage as a way to tailor future programming (Stage, 2022). It can lead to better funding and budgeting, but also personalized marketing: By assessing the popularity of the content, the demographics of the target audience, and the level of interaction, it becomes feasible to tailor marketing materials to a wider audience.* Data analysis also makes it possible to identify precisely the elements of the performance the audience did and did not appreciate. This predictive analytics can help to plan the upcoming season successfully.

2.1b Privacy concerns

However, a disjunction has been stated by the State of Personalization Report from Twilio when it comes to brands using data to power customer interactions (Skeldon, 2023). Only half (51%) of European consumers intend to repeat their purchase after a positive personalized experience, with 49% probable to suggest it and 33% considering becoming a loyalty member to obtain special offers. On the other hand, there is an ongoing sense of data distrust. Twilio's 2023 report reveals that more than a fifth (22%) of European consumers express a decline in confidence regarding their personal data being utilized for personalization compared to 2022. In addition, only 49% of them believe that brands safeguard their personal data and handle it responsibly. This shows the importance of transparency regarding data collection (when, how and why) and its benefits for the consumer through personalization. Besides, inplementing a strong and comprehensive strategy for data privacy and protection is paramount to build consumer trust.

2.1c Collecting data

This needed trust and transparency could best be achieved by through first-party data retrieval, which consists in collecting data directly from its audience (Opendatasoft, 2023). It is also more reliable and relevant to the target group for predictive analytics than second- and third-party data, which are provided consequently provided by a trusted partner and a data merchant. First-party data can be divided into profile data, behavioral data and customer feedback. These are often obtained on websites and social networks through a tracking pixel. Customer feedback can also be collected with online surveys, which is considered zero-party. Zero-

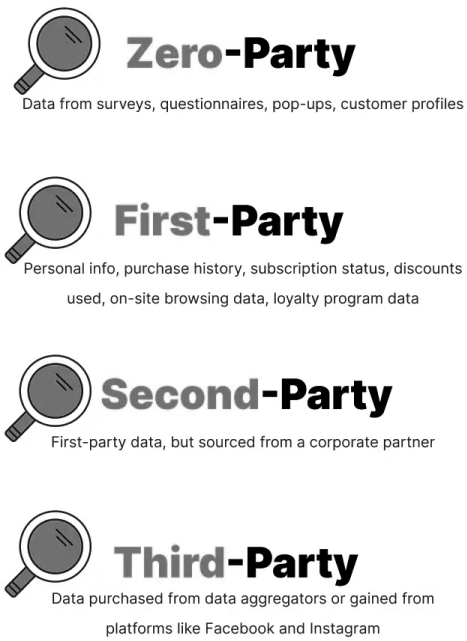


figure 4: Different data collection methods (Zero-Party Data [2023] | Definition, Tactics, Examples, Collection | Daasity, n.d.).

party data is information customers share voluntarily (Zero-Party Data [2023] | Definition, Tactics, Examples, Collection | Daasity, n.d.). It can be seen as conversational data' as it teaches your personal background, opinions and preferences of the customer. This has the advantage of making the customer feel special and valued as an individual, for ezample through questionaires *(figure 4)*. It also solves the potential privacy issues as it essentially requires consent: This way, the customer knows they're in the driver's seat. Being given the choice, still 70% of consumers are willing to provide their behavioral and psychographic data in exchange for an enhanced service (Selligent Marketing Cloud, 2023). To summarize, to build consumer's trust in data-exchange it is advised to be transparent, prioritize data privacy, communicating the personalization benefit and giving customers control over their data. In addition, strictly necessary data should be retrieved (Skeldon, 2023).

2.2 Relevance

Digital art spaces like Netflix and Spotify has a data-driven strategy to tailor the content to the consumers: '' In a way, users are not only shaping art, they are also shaping it." (Liu, 2022). Performing arts centers could benefit greatly from relying on data for decision making. The Mondavi Center already applied this by implementing dynamic pricing, a seat allocation model and tailored products offerings. But the application of data to personalize is overall still very limited in the art industry, and should be developed.

RESEARCH METHODS

03

RESEARCH METHODS

3.1 Client

To determine the best fitting clients , I will do some elaborate Internet search. To verify the suitability, it would be advisable to contact the companies by email or through Linkedin.

3.2 Site

Opera being obsolete, exclusive and stigmatized could be solved by making opera educational, secluded and accessible. The site could greatly contribute to it by locating the opera building within 30 min from the partnered music (composition) school to stimulate new written opera's, secluded to give it an exclusive feeling and easily accessible by public transportation.

3.3 Program

To define the program brief of this personalized data-driven opera, I will first look at a the Lee movie theater plan, the Spere in LA and Opéra Garnier. These case studies will help me understand the difference between the three typologies, comparing the more recent forms of entertainment buildings with a classical opera. Following, I will analyze the program of these four modern opera buildings: Guangzhou Opera House by Zaha Hadid, Oslo Opera House by Snøhetta, Harbin Grand Theatre by Ma Yansong and Casa da Música by Rem Koolhaas. Using benchmarking on these four case studies, I will determine the building area and footprint, the number of seats. Then, I will look at the distribution of public, performance and service area. Finally, I will zoom into the stage area, backstage and auditorium distribution of the main opera halls of each case study.
The overall program will hopefully help me determine program elements that could be useful in personalizing the opera experience. To deepen the research, it could be interesting to look at the approach of personalized business events as a reference since this is the domain where personalization is the most elaborated. Other references of applied data-driven personalization in cultural centers would be a useful addition.

The initial program scheme is based on the program analysis of the four modern opera buildings discussed before, with Opera Garnier as a classical reference and the Lee movie theater and the Sphere as comparative elements.
The performance and rehearsal halls spread over several floors *(figure 8)*. The specific ceiling height are still to be determined.

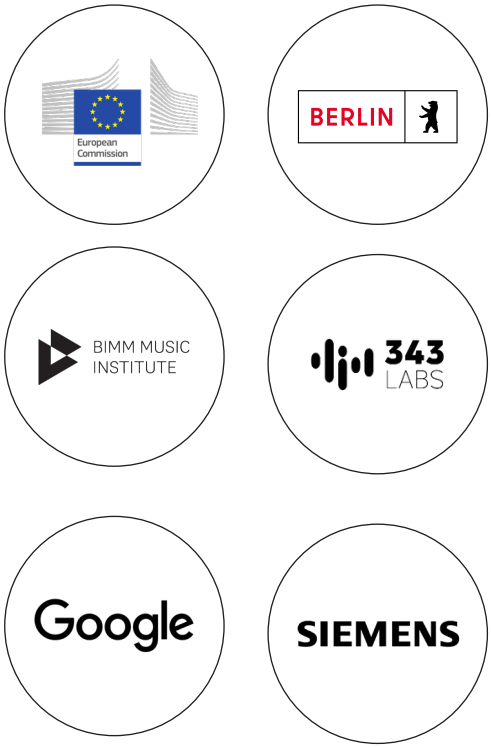
Based on further research, specific elements for data-driven personalization should be added. We could imagine to instore 'community boxes' where the audience is segmented based on specific data like dress code and surtitle language preference. References for these boxes should be looked into (Discover Ōma, n.d.). A personalized journey offering a wide range of through the building could be applied with tailored recommendations. It would therefore be interesting to look into business event personalization as it is the domain where this approach to obtain attendee engagement is currently the most developed (Jaccard, 2023). Other references of data-driven museums or other cultural locations could be analyzed (Playable Simulations | Futurium, n.d.). Implementing various (digital) experiences in the building as part of the opera experience could be interesting to investigate (Perović, 2023).

DESIGN BRIEF

04

4.1 Client

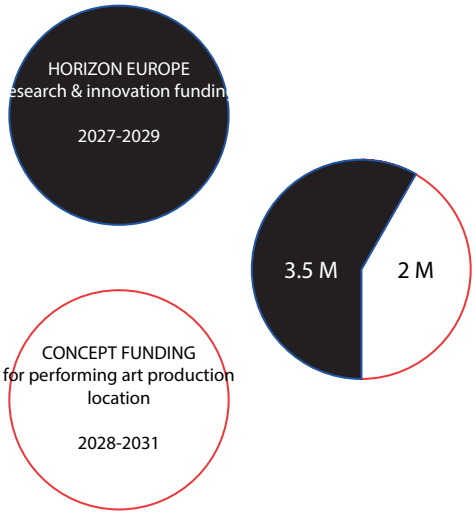
For future data-driven opera buildings in Berlin, a data mining company is needed to collect and process data. As an international company, Google could be a great main financial investor *(figure 9).* The new Berlin opera could this way be a driver for creating other data-driven opera buildings worldwide using the available data input . For privacy concerns, governmental regulators should supervise the data processing on European and national scale. This could be done through the European commission and Oper in Berlin, both cultural entities. Tech support for the application of data-mining and other digital implementations is needed. The German company Siemens would be a suited candidate for this. The selected building location enables a partnership with the Bimm music Institute and 343 Labs, which could both benefit from the rehearsal and performance halls as well as getting known by the audience.



Potential clients and partner
(Own work, 2023)

"Opera has always had a revolutionary spirit.
Co-creation can help that thrive today,
while new technologies can foster innovation and inclusion."

François Matarasso,
manager of opera co-creation project
TRACTION



innovation & inclusion

new technologies

European Commission | CORDIS EU research results

English EN

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HORIZON 2020

Opera co-creation for a social transformation

Fact Sheet | Results in Brief | Reporting | Results | News & Multimedia

DE EN ES FR IT PL

Community opera rekindles its radical reputation

Opera, arguably the first popular multidisciplinary art form, is now often viewed as archaic. Creating digital tools to support community co-creation, TRACTION offers us a force for empowerment, social transformation and self-expression.

SOCIETY

© Joaquin Damaso, www.co-art.eu

While opera remains a cornerstone of European culture, it can be divisive; some love it, others find it old-fashioned, expensive and exclusive.

"In fact, opera was always at the leading edge of creativity – embracing new instruments, stories, aesthetics and techniques. Maybe now it has settled down into comfortable middle age," says Mikel Zorrilla, Director of Digital Media at Vicomtech and coordinator of the EU-funded TRACTION project.

TRACTION reignited some of opera's radical credentials through three new community co-created performances for 11 locations, including an opera house, prison, concert halls, schools, public squares and a virtual first.

Project Information

TRACTION
Grant agreement ID: 870610

DOI
10.3030/870610

Closed project

EC signature date
8 November 2019

Start date	End date
1 January 2020	31 December 2022

Funded under
SOCIETAL CHALLENGES - Europe In A Changing World - Inclusive, Innovative And Reflective Societies
Study European heritage, memory, identity, integration and cultural interaction and translation, including its representations in cultural and scientific collections, archives and museums, to better inform and understand the present by richer interpretations of the past
Research into European countries' and regions' history, literature, art, philosophy and religions and how these have informed contemporary European diversity

Total cost
€ 3 751 877,76

EU contribution
€ 3 751 877,50

Coordinated by
FUNDACION CENTRO DE TECNOLOGIAS DE INTERACCION VISUAL Y COMUNICACIONES VICOMTECH
Spain

La Gata Perduda, 2018
El Gran Teatre del Liceu
Barcelona, Catalonia

O Tempo (Somos Nós), 2020
Sociedade Artística Musical
dos Pousos, (Samp)
Leiria, Portugal

Out of the Ordinary, 2022
As an nGnách
Irish National Opera
Ireland

4.2 Site

After visiting Berlin, the one site responding to all these criteria while simutanously fitting into the group strategy, turned out to be Treptower Park *(figure 10).* The park offers 3 main options with a preference for number 2 as it is at walking distance of the train station and offers a view on the Spree river *figure 11).* Another advantage of the site is its proximity with two music schools. The first one is the Bimm Music Institute, a music-industry university located at 10 min by bike or 18 min by bus from the park. The second one is called 343 Labs, a music production school located at 25 min with the S-Bahn. A collaboration with these schools will ensure an updated opera program.
Further research oin the site could be done with GIS mapping to find out whichh exact location would be be suited for the opera building.

Prominent
along main axis or square

Decentralisation
1,5 km apart from existing &
future data staorages

Educational
5km from two existing music schools

Display
1km from train station for
high visibility & exposure

Attractive
adjacent public space
for leisure activities

Decarbonisation
Passively reduce energy
consumption & utilise wasted

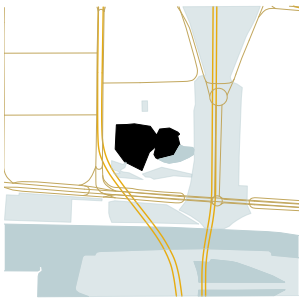
Porto

Paris

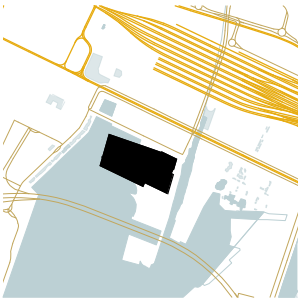
CASE STUDIES

Prominent
along main axis or square

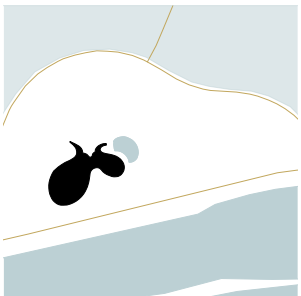
Attractive
adjacent public space
for leisure activities



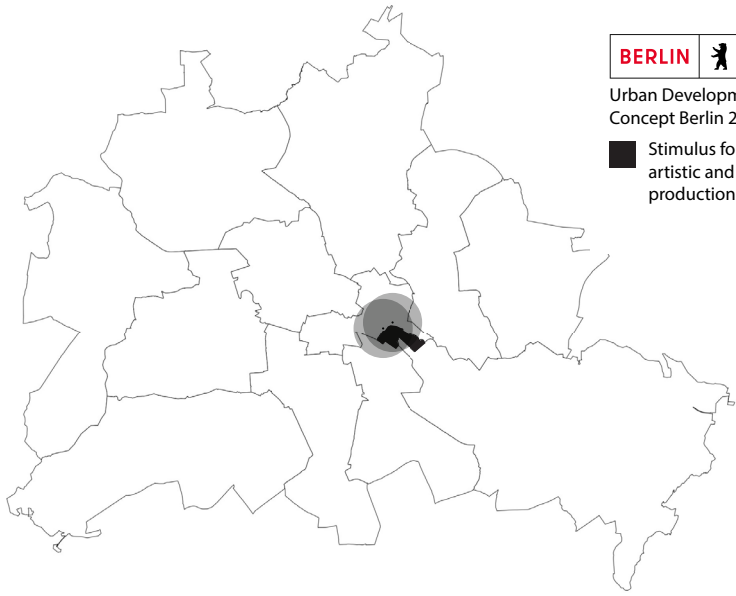
Guangzhou



Oslo



Harbin



BERLIN

Urban Development
Concept Berlin 2030

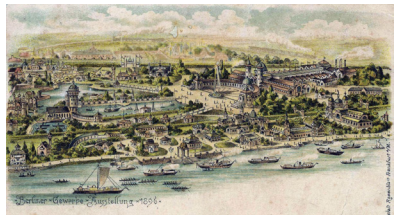
Stimulus for
artistic and cultural
productions

BIMM MUSIC INSTITUTE

343 LABS

TREPTOWERPARK

1876 -88 recreational park



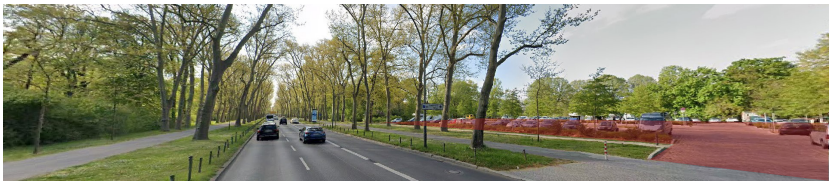
1896 Great Industrial Exposition of Berlin

1946-49 Soviet war memorial

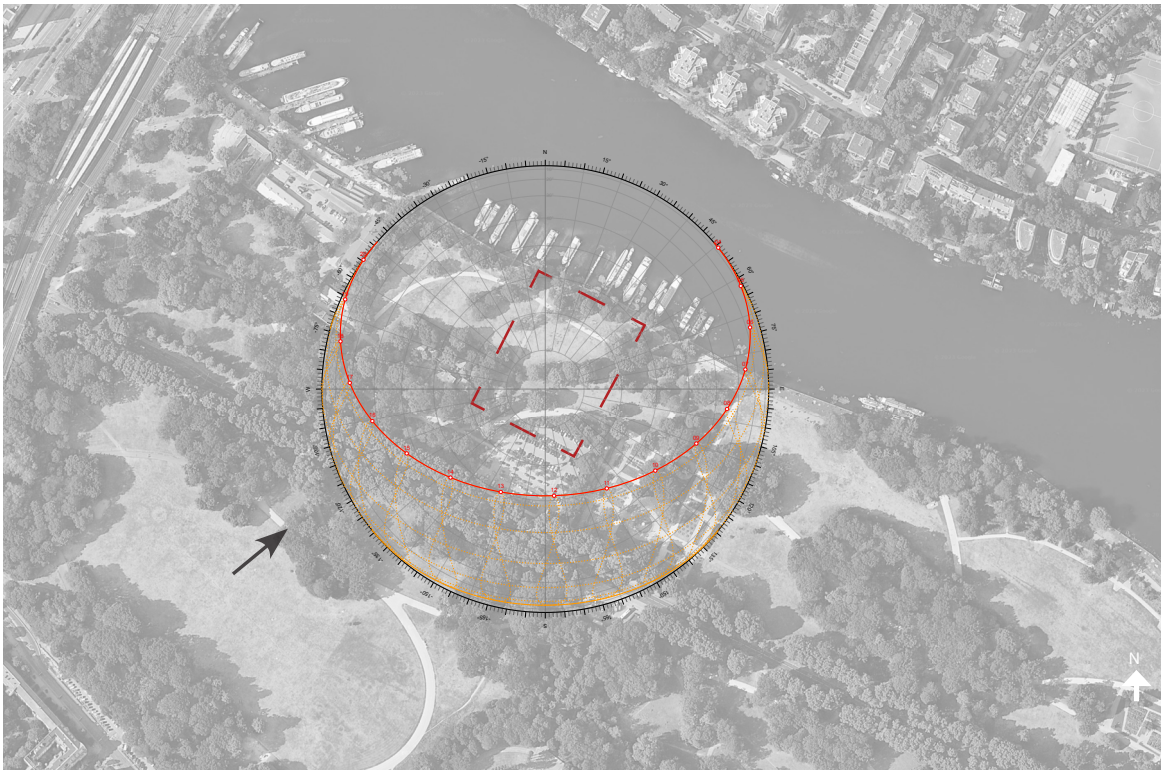
1957-58, rosegarden

1990 - 2023 sport and culture events

POTENTIAL

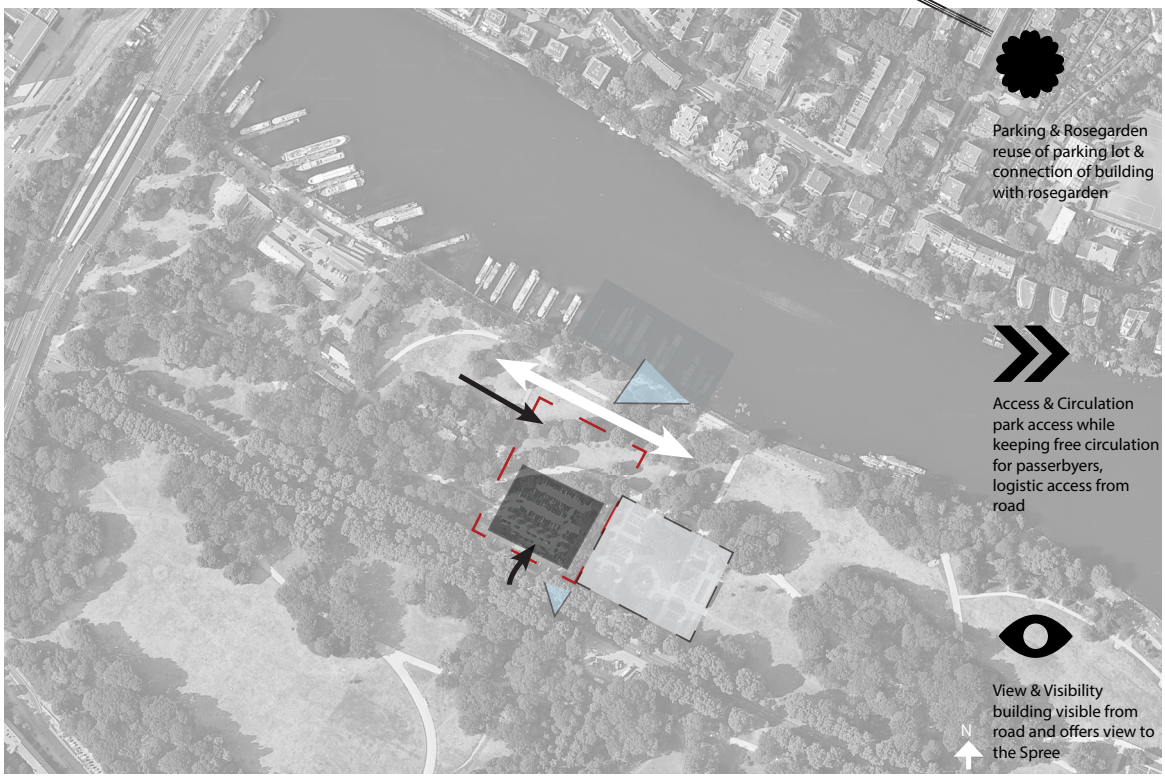


CLIMATE



ACCESSIBILITY

SITE STRATEGY

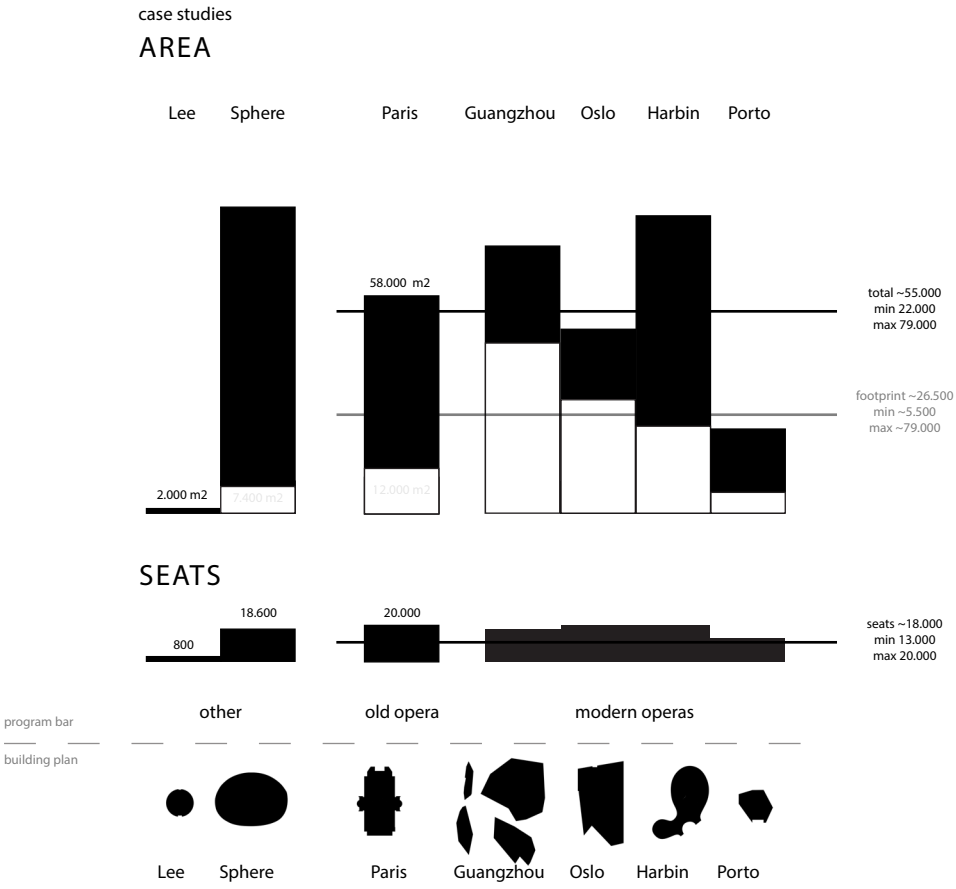


DESIGN BRIEF

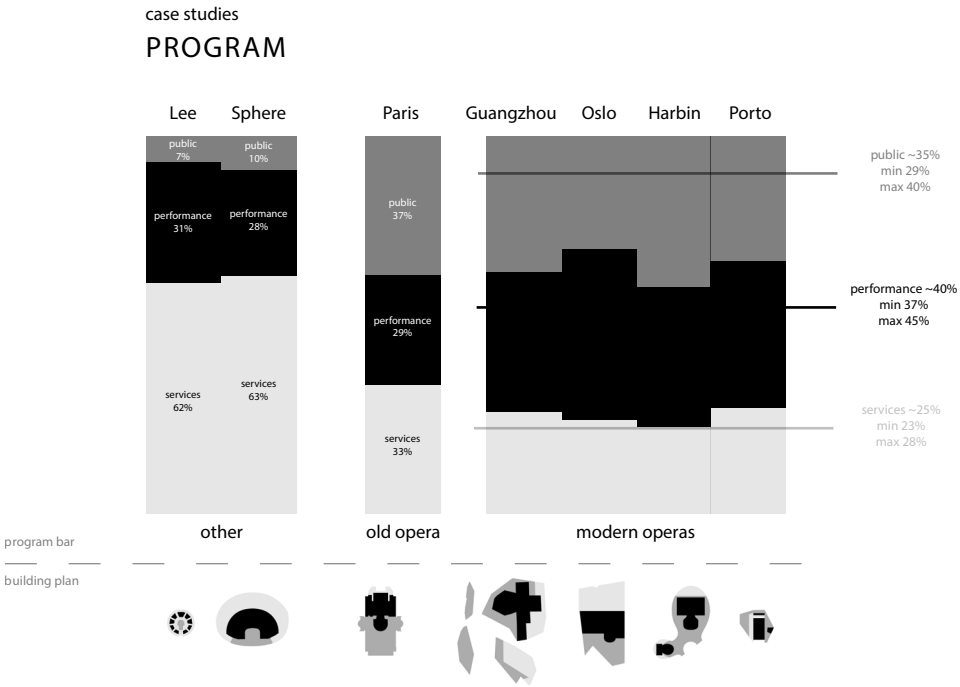
4.1 Program

The Lee movie theater, you can see the whole performance hall consist of an auditorium. The Sphere, being the most innovative form of entertainment, appears to still have some stage area. In addition to stage area, Opéra Garnier also presents a large backstage area and reserved exclusive area. Modern operas like in Guangzhou also has VIP areas, but as a minor part of the program. Oslo Opera House is characterized by the several secondary halls. This is also the case for the Harbin Grand theater, where the decentralization of the building is clearly visible (figure 5). Conversely, the program of Casa da Música Casa appears to be centered around the main opera hall.

The average total area of the modern opera's comes very close to the classical opera house Garnier, but with a larger footprint. The average number of seats is also very comparable, being around 20000. The modern operas appear however to have more performance area and lesser service area, with the main opera hall having noticeably less backstage area.

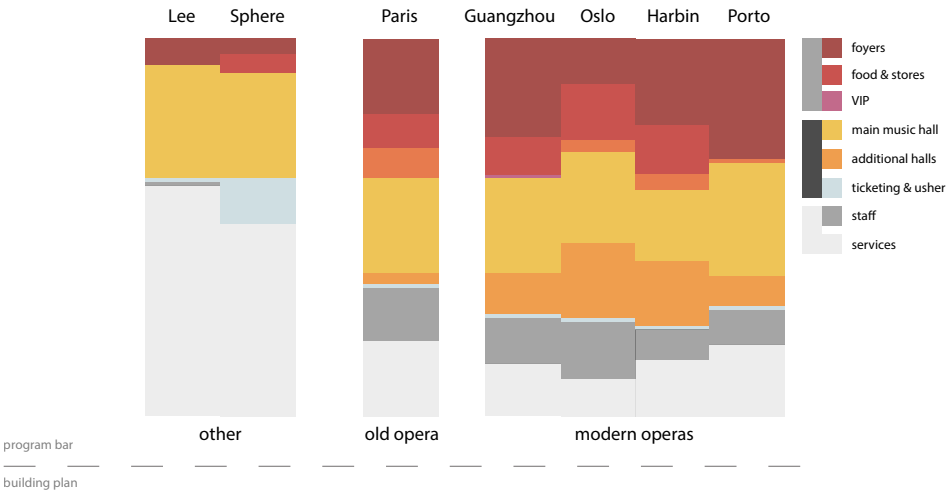


The program ambition for new opera buildings is to keep that low percentage of backstage area, decrease the service and thereby total area, and increase the multifunctional hall area *(figure 6)*. The so called VIP areas will be removed as the purpose is to make everyone feel like a VIP through data-driven personalization. Therefore, data storage is needed, estimated at 5000 m2. This needs further research by looking at references of data centers and data-driven buildings. To collect the zero-party data, we could imagine the data storage area serving as a threshold for the building *(figure 7).*



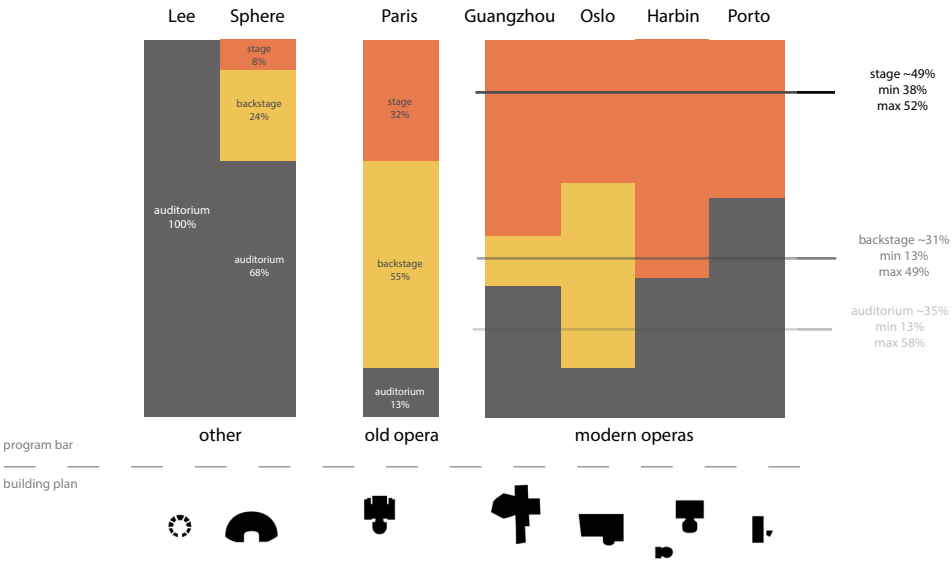
case studies

PROGRAM



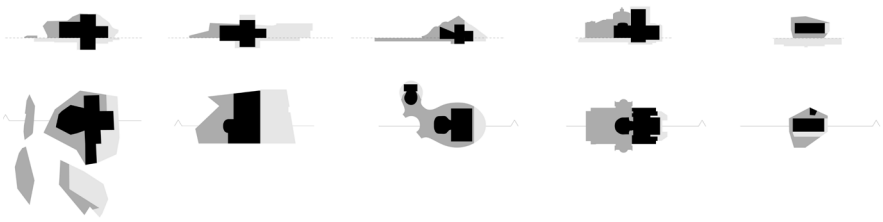
case studies

MAIN MUSIC HALL



case studies

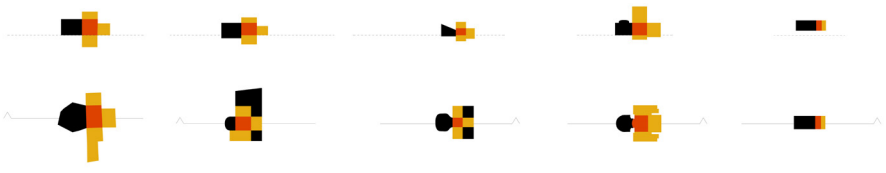
RIGIDITY



Guangzhou Oslo Harbin Paris Porto

case studies

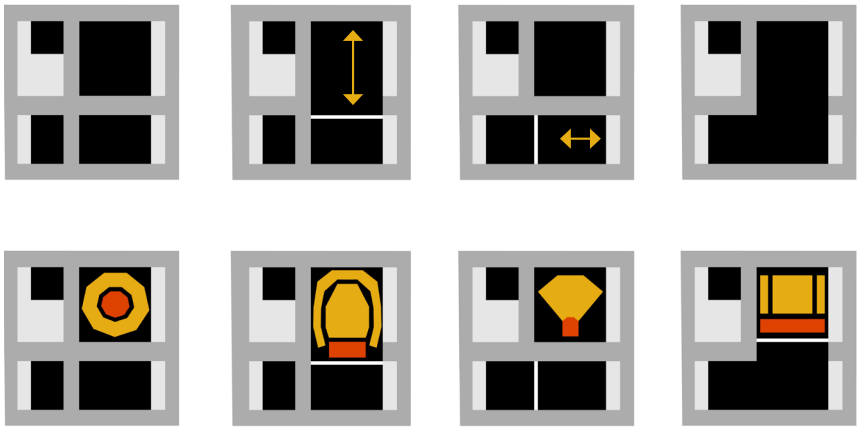
RIGIDITY



Guangzhou Oslo Harbin Paris Porto

Rusakov workers'club
Melnikov - 1928

FLEXIBILITY



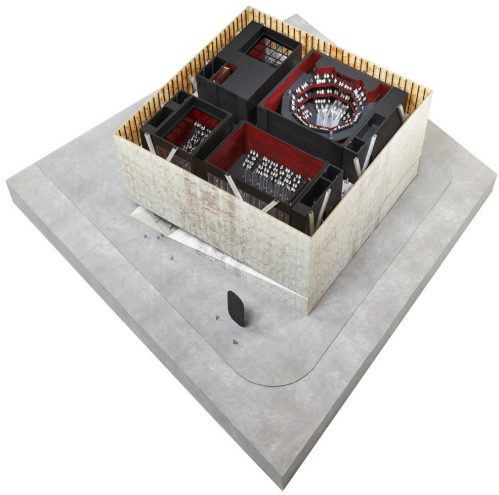
concerts
vineyard

opera & ballet
horseshoe with proscenium

theater & musical
continental

lectures
aisle

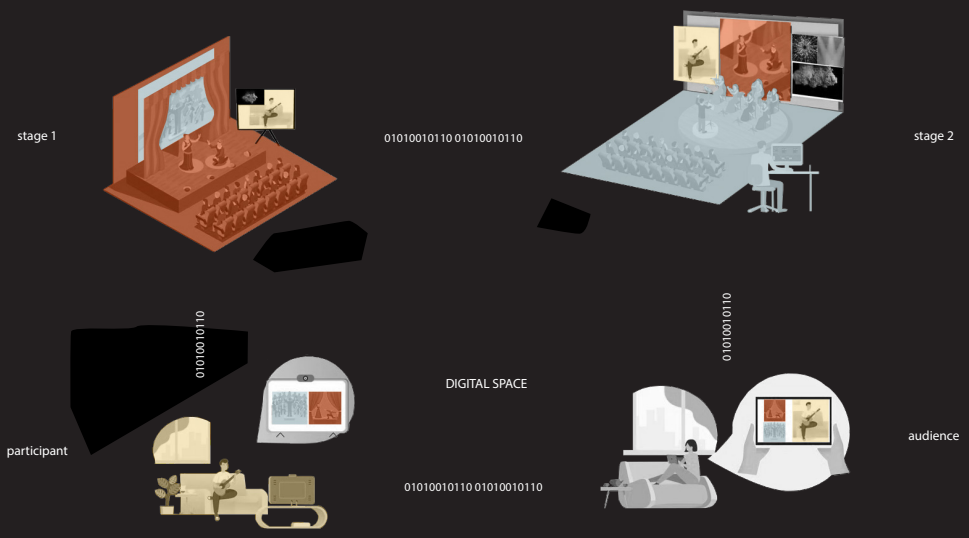
SPEECH ⟷ MUSIC



Performing Art Center
Perelman - 2020

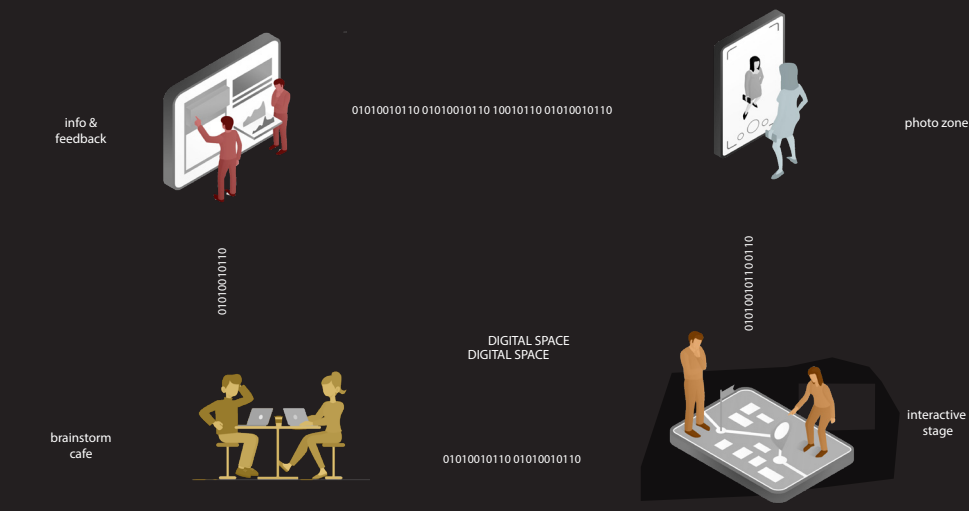
innovative spaces

CO-CREATION STAGE



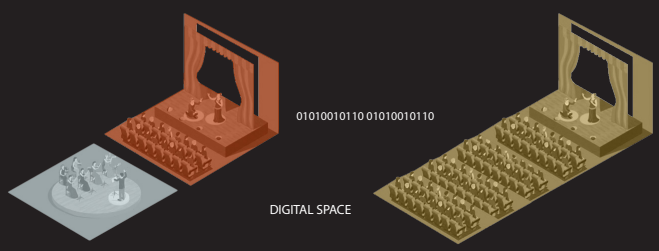
innovative spaces

DATA LOBBY



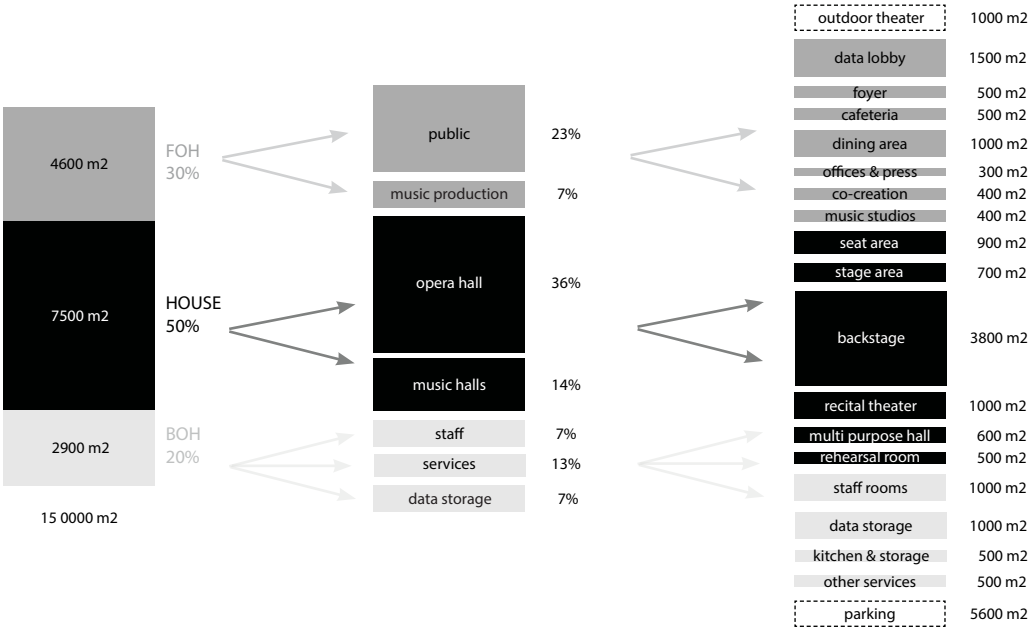
innovative spaces

FLEXIBLE THEATERS

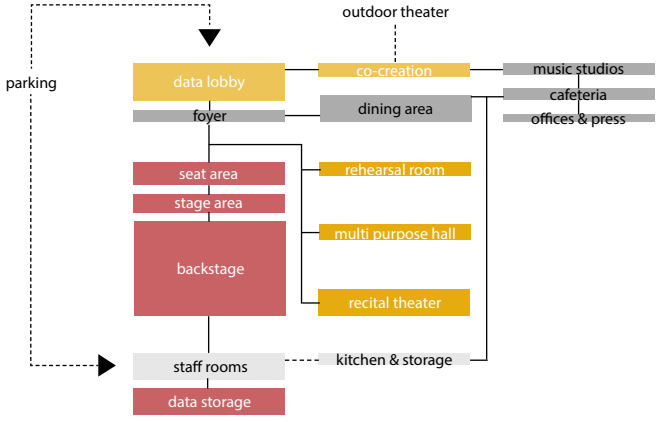


building program

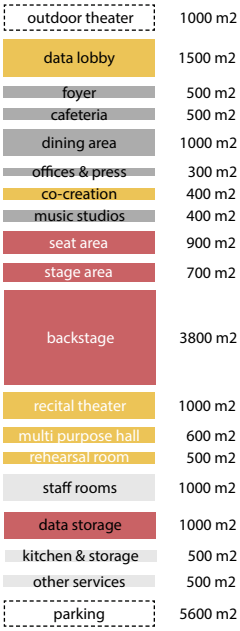
PROGRAM



RELATIONS

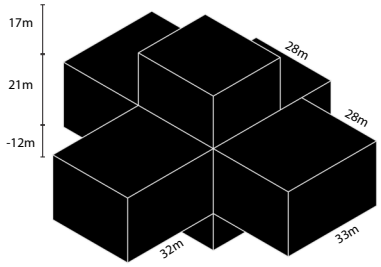


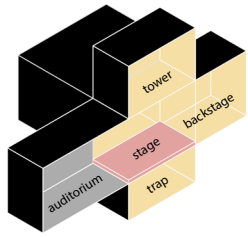
INNOVATIVE SPACES



key spaces

OPERA HALL



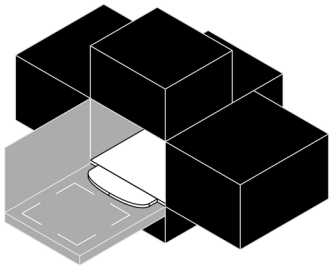


auditorium
1.8m2/person

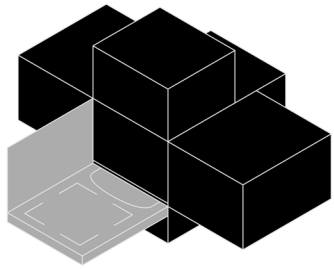
max capacity
1125 people

sound
65 - 115 dB

adjacency
-foyer
-backstage adjacent to road



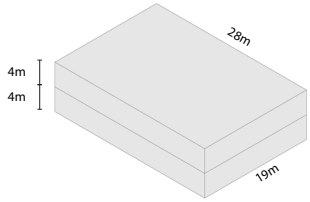
orchestra pit filler
&
stage extension

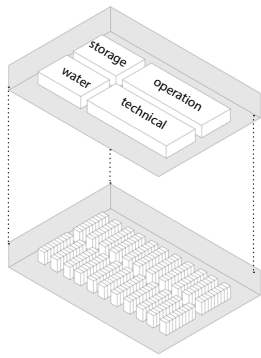


stage partition
&
flexible seating

key spaces

DATA STORAGE





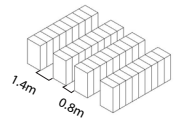
overall area
700 m2

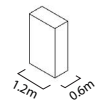
loading
5-12 kN/m2 (TIA-942)

noise
90 dB

adjacency
-power Supply
-cooling Plant

noise reducing strategies
-liquid cooling/waterborne
with recirculated Spree water
-optimized airflow
between racks



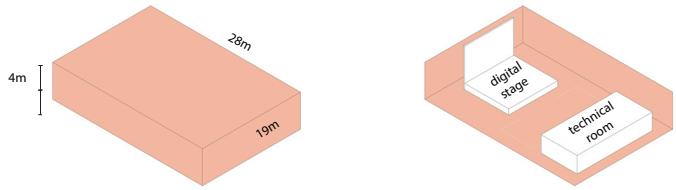


key spaces

CO-CREATION STAGE

sound
26 - 30 dB

adjacency
-lobby
-music studios



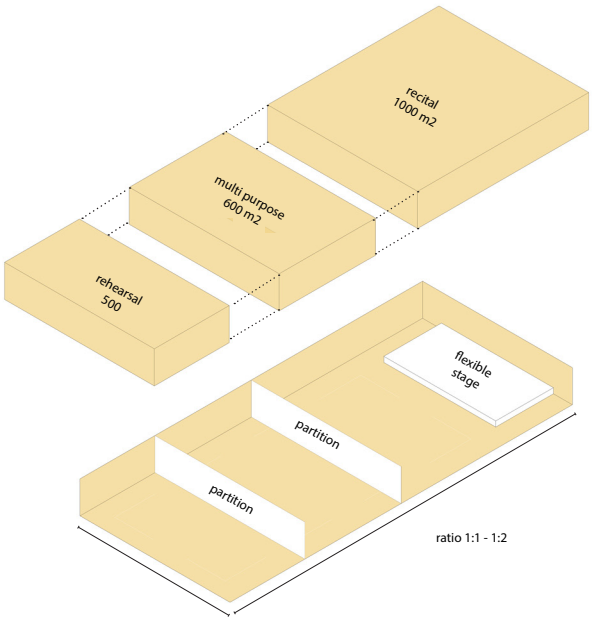
key spaces

FLEXIBLE THEATERS

sound
30 - 100 dB

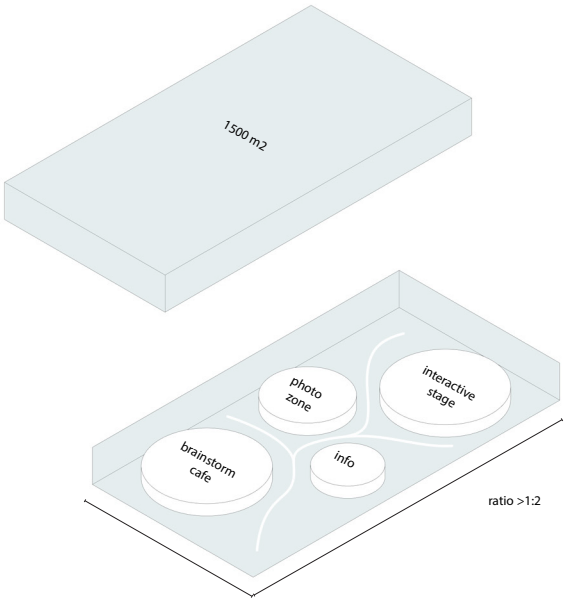
adjacency
- min 2 theaters connected
-foyer
-music studios

area variation
+/- 20%



key spaces

DATA LOBBY

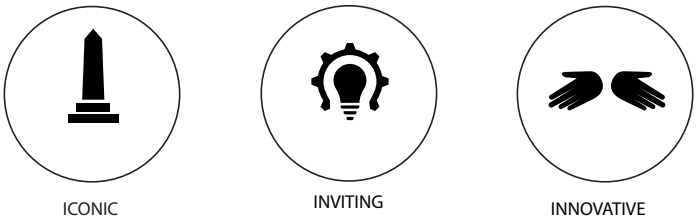


adjacency
-foyer
-restaurant
-music studios
-main entrances

circulation
- public promenade
- ratio >1:2 to encourage paced flow
- openess to outside

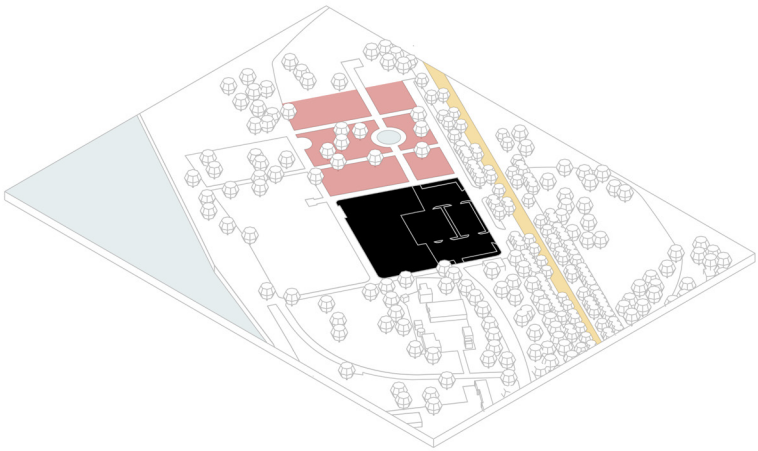
massing

BUILDING CRITERIA



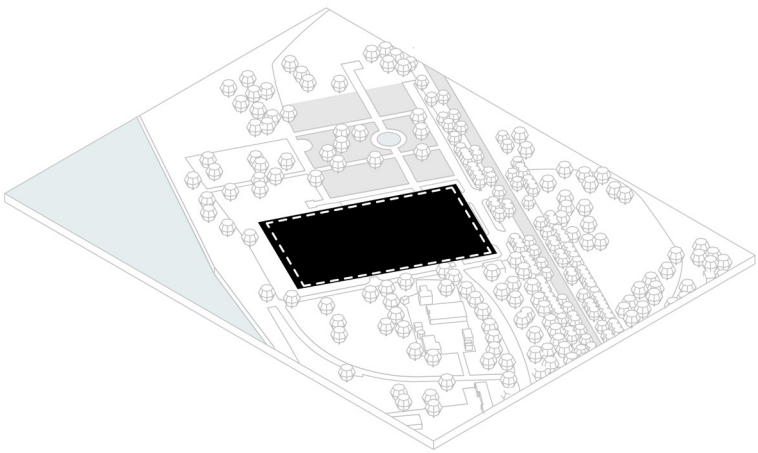
massing

SITE



massing

PLOT

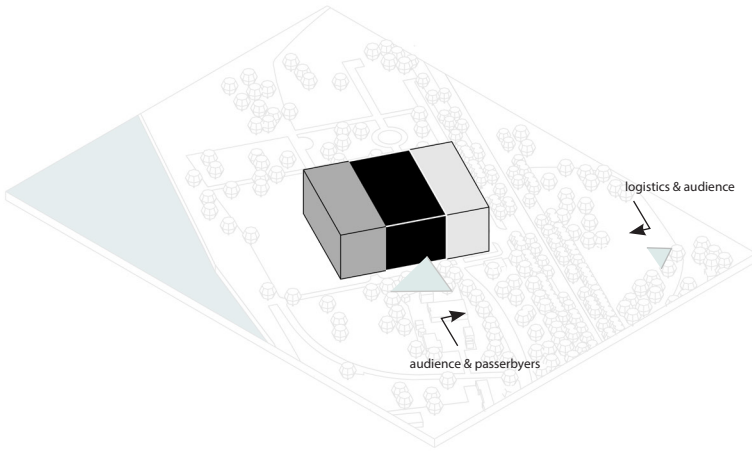


massing

FOOTPRINT

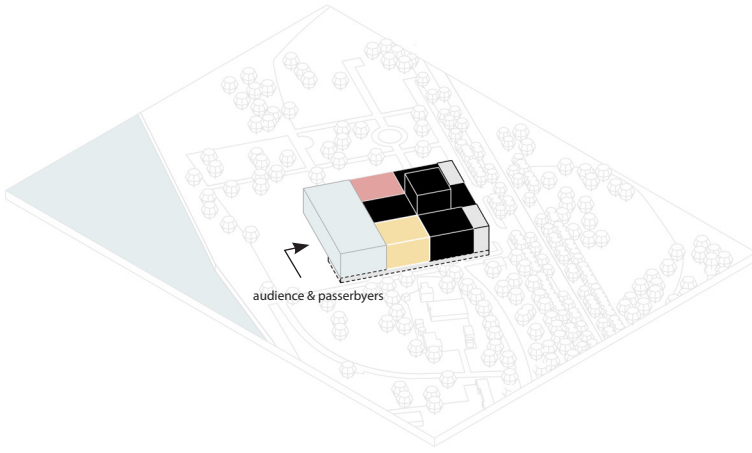
massing

ORIENTIATION



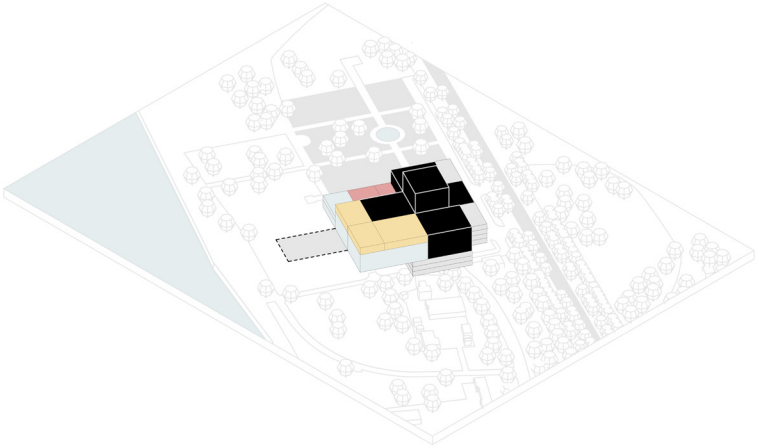
massing

PROGRAM



massing

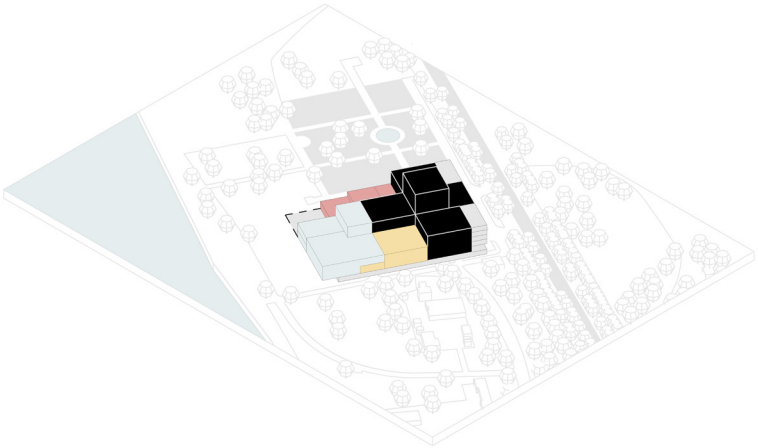
OPTION 1



public
music production
music halls
opera hall
data storage
staff
parking

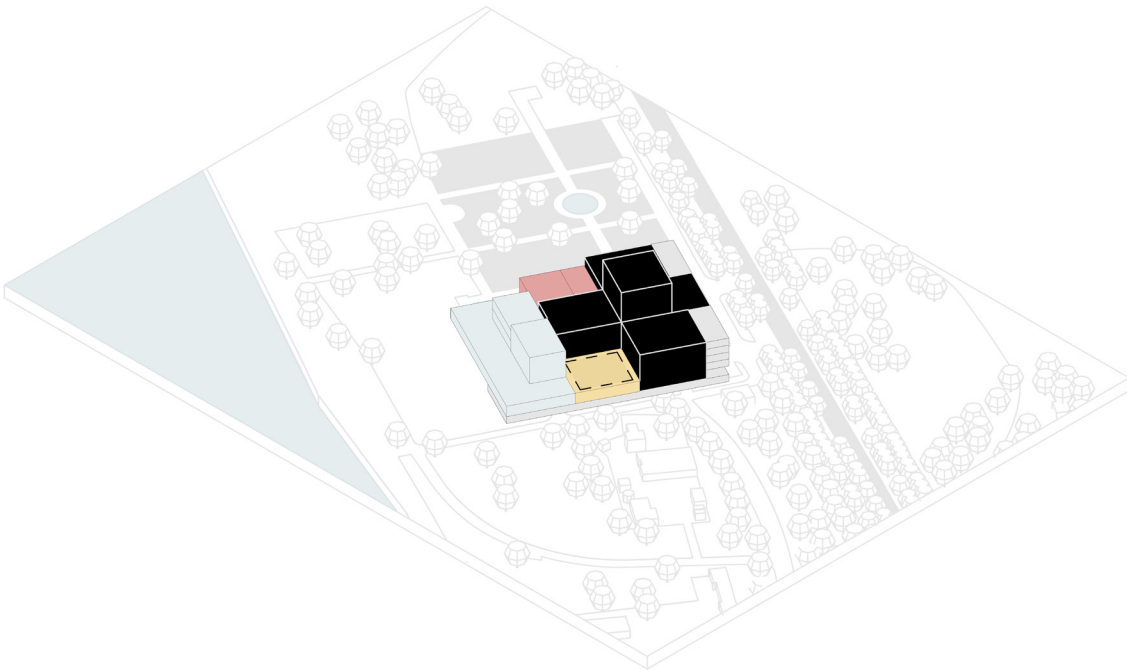
massing

OPTION 2



public
music production
music halls
opera hall
data storage
staff
parking

FINAL MASSING/ OPTION 3



public
music production
music halls
opera hall
data storage
staff
parking

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05

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5.2 Figure

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Own work (2023)

for opera production and performance

complex projects