

# ADAPTABLE BUNDESTAG



RESEARCH PLAN  
COMPLEX PROJECTS  
ING. J.C.L. LEROY GÖRES

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**COMPLEX PROJECTS**  
**Bodies & Buildings Berlin**  
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# ABSTRACT

## Abstract

The Bundestag is the German federal parliament and with its 736 representatives it is the biggest freely elected parliament in the world (Mayer, 2021). The size of the Bundestag fluctuates every election term because the German voting system works with overhang and levelling representatives (Federal Ministry of the Interior and Community, N.D.).

The range of possible mandates varies from 598 to over 1,000 members, highlighting the considerable variability and uncertainty in the system (Vehrkamp, 2021). With more than 7 employees per representative (Bundestag, 2022), the Bundestag can fluctuate with over 3.000 employees per election term.

This gives the obvious problem that it is very difficult for the Bundestag administration, to know how many facilities are needed. In the Bundestag, there is a forced use of home office, wooden container offices, and temporarily built offices, to try to facilitate the Bundestag (Ismar, 2021). This is also a problem on the sustainable side because temporary facilities are not sustainable and energy inefficient.

These problems are also true for any proposed designs for a new parliament building for the Bundestag. So, to counter these problems, a new Bundestag parliament building should be able to adapt to the change of users per election term.

Some questions that arise when looking at the possible solution of adaptability are: how are architectural elements related to this and how can the program best be used? How can digitalisation play a role and is it may be possible to have programmable and adaptable floorplans or room uses? How will the cyber security be accommodated for possible digital meetings? And how can all this adaptability help in sustainability?

The research and design question that follows out of these questions: *How to design the adaptable Bundestag parliament of the future to sustainable facilitate the fluctuating number of members?*

To answer the research question and come to a conclusion/final design, the research into the client will be done by gathering information through internet, interviews, and written questions. For the site the main research methods will be mapping information and site visits. And for the program the research will be done by case studies on other federal parliamentary lower house buildings. Because the Bundestag is idiosyncratic in its fluctuating size, the comparisons will be in square meter per employee.

The final goal is to design a new sustainable Bundestag parliament building that is adaptable in use and program, and not negatively affected by the fluctuating number of members of the Bundestag.

## Keywords

- Adaptable building use
- Hybrid building use
- Sustainable program use
- Parliament building
- Bundestag

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# INTRODUCTION

01





## Thesis Topic/Introduction

The Bundestag is the German federal parliament and in its current 20th term it is with 736 representatives the biggest parliament in the German history (Bundestagsverwaltung, 2023) and the biggest freely elected parliament in the world (Mayer, 2021).

The Bundestag is also the only federal body that is directly chosen by the German people. It is the successor of the earlier Reichstag parliament body and met for the first time in 1949. Since then, the size of the Bundestag changed every election term, but the minimum size is 598 representatives (Bundestagsverwaltung, 2023). The variety of the Bundestag size every election term has to do with the German voting system and the system of overhang and leveling representatives (Überhangmandate und Ausgleichsmandate) (Federal Ministry of the Interior and Community, N.D.).

The Bundestag has multiple functions, including, being the chief legislative body on the federal level, electing the German Chancellor (Kanzler), and composing the yearly budget that the government can work with (Bundeshaushalt) (Bundestag, N.D.).

The plenary hall of the Bundestag is in the old Reichstag building and the Bundestag has been meeting there since 1999. Besides the Reichstag building the Bundestag mainly works and functions out of 8 other buildings with a total floor area of over 450.000 m<sup>2</sup> and with more than 6.000 offices, to accommodate its almost 10.000 employees (Bundestag, 2023). The Old Reichstag building is partly because of its famous history also the most visited parliament building in the world with over 2 million yearly visitors (Bundestag, N.D.).



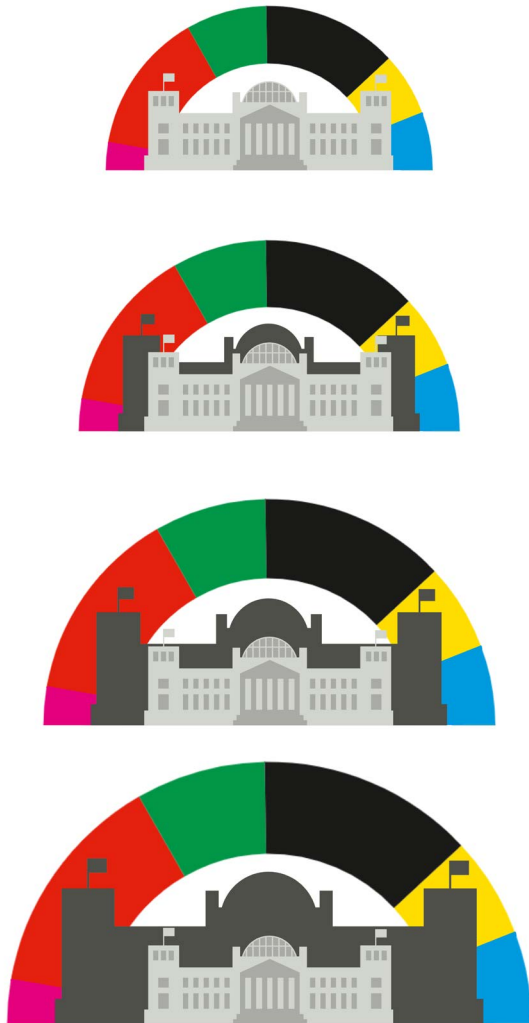
**Figure 01:** The plenary room (Plenarsaal) of the Bundestag, located in the old Reichstag building. On the top left the German eagle. This symbol is also the architectural element of this research.

## Problem statement

As mentioned in the introduction the size of the Bundestag is not solely determined by the results of the second vote but is also significantly influenced by how voters split their first votes (Bundestag, 2021). As a result, the Bundestag's size can vary widely depending on these behaviours, making it somewhat unpredictable. The range of possible mandates varies from 598 to over 1,000 members, highlighting the considerable variability and uncertainty in the system (Vehrkamp, 2021).

The representative in the Bundestag cannot handle their mandated tasks alone. That is why each of them currently has 23.205 euros available per month for employees who support them in carrying out their parliamentary work and on average every representative of the Bundestag has 7,2 of these employees (Bundestag, 2022).

Knowing the fact that the number of representatives of the Bundestag can change in over 400 members and that every member has more than 7 employees, results in the fact that the size of the Bundestag can fluctuate with over 3.000 employees per election term. This number is an extreme case, and normally the number is lower, for example in 2017, when the Bundestag grew with 624 employees, because of the election results (Bundestagsverwaltung, 2023). But it shows and highlights the fact that the size of the Bundestag uncertain is and that the change of employees quite considerable is.



**Figure 02:** Illustration showing the standard, L, XL, and XXL Bundestag, all different in size.

Jobs/Departments	Employees	XXL
Abgeordnete	736	963
Scientific staff	1.958	2.562
Secretaries	841	1.100
Clerks	917	1.200
Auxiliary staff	1.436	1.879
<b>Total for Abgeordnete</b>	<b>5.887</b>	<b>7.703</b>
Director Department	49	
Parliament and MP Department (P)	1.170	
Foreign Relations, Europe and Analysis Department (A)	480	
Information and Documentation Department (I)	340	
Digitization Department (D)	180	
Construction and Infrastructure Department (B)	190	
The central Department (Z)	840	
<b>Total for Bundestag administration</b>	<b>3.249</b>	
Extra staff	718	
<b>Total for Extra staff</b>	<b>718</b>	
<b>Current bundestag employees</b>	<b>9.854</b>	<b>11.670</b>

**Figure 03:** Table showing the current size of the Bundestag and how this would grow with almost 2.000 employees in a Bundestag XXL.

This gives the obvious problem that it is very difficult for the Bundestag administration, or a designer for a future Bundestag parliament building, to know how many offices, meeting rooms, conference rooms, facilities, etc. are needed.

## Problem statement

Even though this looks like an obvious problem, the solution is not. The problem could be solved by changing the voting system, but this means changing the German constitution, and this will probably not happen, because a lot of the political parties' profit from this voting system.

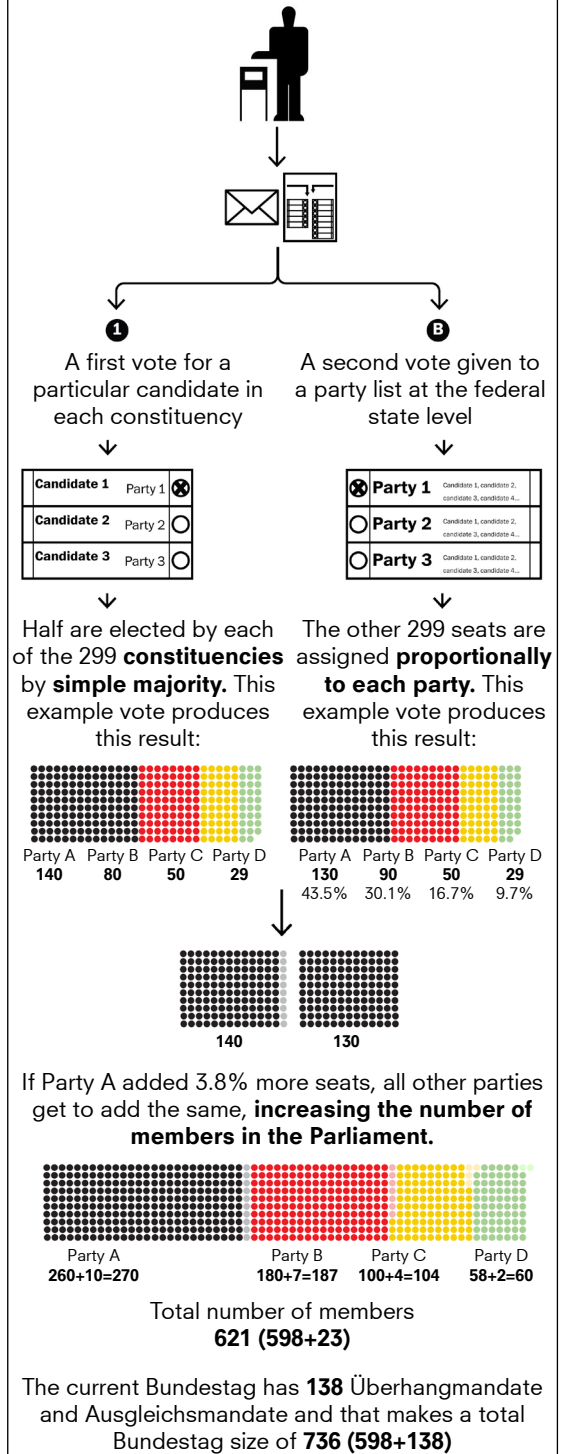
So, a legislative solution is unlikely and therefore the problem must be solved by making sure that there are always enough and not too many facilities after each election. But in reality, this is not the case because of the earlier mentioned uncertainty and unpredictability of the voting results. For example, in the current term of the Bundestag, there is a forced use of home office, wooden container offices, and temporarily built office buildings, to try to facilitate the employees of the Bundestag (Ismar, 2021).

This is also a problem on the sustainable side, because quickly building new, and sometimes even temporary, offices and other facilities to accommodate the problem is not sustainable and energy inefficient. The same can be said for planning ahead for a worst-case scenario and building a large number of offices and facilities in advance, and then only using a small part of them when the voting results do not reflect this worst-case scenario.

These problems are also true for any proposed designs for a new parliament building for the Bundestag. So, to counter these problems, a new Bundestag parliament building should be able to adapt to the change of users per election term.

## German election system

The German electoral system combines a **personal vote** in single-member constituency with the principle of **federal proportional representation**.



**Figure 04:** Flowchart explaining the German election system and how the Bundestag can fluctuate in size.

## Research question

Through the research into the problem, it became clear that an adaptable parliament building could maybe be a possible solution for the problem. It could be an interesting topic to do research on and this research would then mainly be focused on the use and program of the parliament, as these are important parts of adaptable building use. The proposed idea for this project is to design a new adaptable parliament for the Bundestag, so that the politics is not impeded by faciliatory problems.

Some questions that arise when looking at the problem and possible solutions of adaptability are: how are architectural elements related to this and how can the program best be used in this case? And on a technical level there will also be some questions and challenges such as how can digitalisation play a role and is it maybe possible to have programmable and adaptable floorplans or room use like on a stage in a theatre? There will also be challenges on safety and security for adaptable building use in a parliament. And questions like how the cyber security will be accommodated for possible digital meetings. Also, very important in this time and age, how can all this adaptability help in sustainability? And finally, how do an adaptable parliament and transparency of democracy go together?

All the questions result in the following main research and design question: *How to design the adaptable Bundestag parliament of the future to sustainable facilitate the fluctuating number of members?*

To make this complex research topic of a new adaptable Bundestag parliament feasible, the research is divided in the following topics: architectural considerations, technological solutions, sustainability measures, public engagement & democratic transparency, and legal, security & safety aspects. The sub-questions that are needed to give a good answer to the main research and design question are:

## Sub-questions

### Architectural considerations:

- What architectural elements can be implemented to accommodate a variable number of parliament members?
- How can the physical layout/ program of the Bundestag be designed to ensure flexibility and adaptability in use?

### Technological solutions:

- What role can movable or programable floorplans play in designing an adaptable parliament?
- How can digital systems and communication technologies such as holograms be integrated to enhance the functionality of the adaptable Bundestag?

### Sustainability measures:

- How can the adaptable Bundestag contribute to energy efficiency and other sustainable goals?

### Public engagement and democratic transparency:

- What measures can be taken to ensure that an adaptable Bundestag remains accessible and democratically transparent to the German people?

### Legal, security and safety aspects:

- What legal, (cyber)security and safety challenges may arise in an adaptable parliament?

This project aims to answer the research question by doing academic research into the topics of the sub questions and answering these sub questions by written and designed research methods. The final goal is to design a new sustainable Bundestag parliament building that is adaptable in use and program, and not negatively affected by the fluctuating number of members of the Bundestag.



**Figure 05:** The „Flagge der Einheit“ (Flag of Unity) in front of the Reichstag building. It is a symbol and stands for the unification of Germany as a monument on the Platz der Republik.

# RESEARCH FRAMEWORK

02



## Theoretical framework

The concepts that are clearly central and critical to this research topic are “adaptable building use”, “flexible building use” and “sustainable building use”. These three concepts are defined and discussed on the hand of existing theories and literature reviews in the following part of this research plan.

“From an architectural design perspective, a broad distinction can be made between two strategies for making architecture flexible. A building can be flexible by being designed so that physical changes can be made after completion, or through using a building for different purposes. The former has been termed simply ‘flexibility’, the latter ‘adaptability’” (Groák, 1992).

“When buildings are designed to be adaptable, on the other hand, the flexibility lies at the level of the layout of the building. The building is capable of different social uses but remains unchanged” (Groák, 1992).

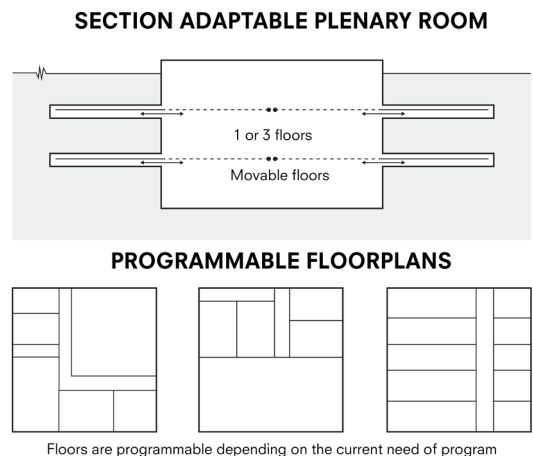
Using these definitions, the concept of adaptability means using a building for different purposes. For this research the definition will be more specific of not using a whole building for a different purpose but using certain rooms like a plenary hall for a different purpose.

“A paper by (Larsson, 1999) examines adaptable office buildings, and assumes that the environmental benefits are largely related to two factors: the annualized reduction in embodied and replacement energy, and the annualized reduction in solid waste generation from renovation and demolition.

Using data from research studies that document the quantities of embodied energy and demolition energy used by office buildings, Larsson estimates an equivalent reduction in two categories of environmental loadings: 15% reduction in air emissions, and 15% reduction in demolition solid waste.” (iea-ebc, 2001)

This research by Larsson shows that adaptable buildings can help in the sustainable building use. For this research into an adaptable Bundestag the information that adaptability can help with sustainability is important because the research question asks to design a sustainable adaptable Bundestag.

The three key concepts that are now described are important for the research because the current research done in these topics mainly focuses on buildings in general and not on specific rooms in buildings. This will be done in the research into an adaptable new Bundestag building.



**Figure 06:** Diagram showing a possible way to have an adaptable plenary hall with multiple programmable floorplans.

## Relevance

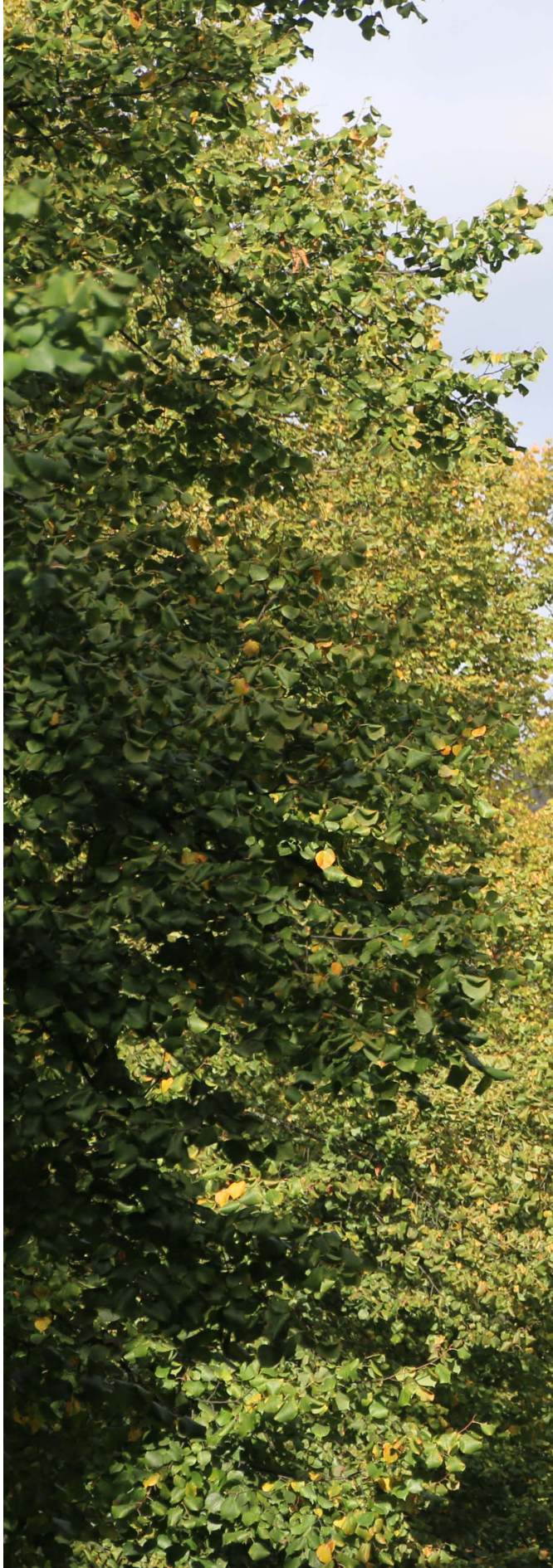
The relevance of this research and design can be sub divided in sustainable, democratic, and architectural relevance. The main topic is relevant, because the problem is a real problem in the Bundestag and a problem that has real consequences. Next to that the current Bundestag administration is not able to sustainable solve the problem (Ismar, 2021), thus research into how dis could be done is important.

Looking at the 3 subdivisions it can be stated that this research can help in achieving sustainable goals by making sure that the most efficient adaptable Bundestag will be designed. With this it is possible to construct less and use less of the building area than in traditional ways. Both reducing construction and building size could result in high savings in energy and materials. Also, the fact that the hybrid use of a building is related to commuting to and from a building could help in energy use reductions.

On the area of democratic processes this research is also relevant, because if there is nothing done, a worst-case scenario of “the Bundestag of a thousand” can play out that would really harm the functioning of the Bundestag an thereby harm the democratic system of Germany (Vehrkamp, 2021).

Lastly on the architectural topic this research is relevant to possible future designs because it can help in realizing environmental goals that architects must work with, and it could be used for similar building types like offices. This environmental aspect fits in the Energy aspect of group 9 in the BBB Complex Projects graduation studio.

**Figure 07:** *The Reichstag with the German flag photographed through trees. representing architecture, democracy, and sustainability.*







# RESEARCH METHODS

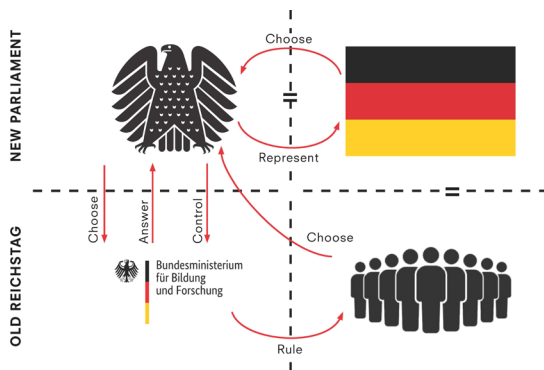
03



# Research methods

## Client

The client of this research and design project will be the Bundestag, the parliamentary federal body of Germany (Bundestag, N.D.). Because it is a democratically chosen and by the constitution transparent political body it releases as much relevant information about itself and how it does function to the public. So, there is a lot of information accessible about the structure of the client, their many different roles, etc. This information will mainly be gathered through internet research, but for (not yet) digitalised information also interviews with employees, written questions and visits to archives are methods that will be used to come to conclusions for the design and research.



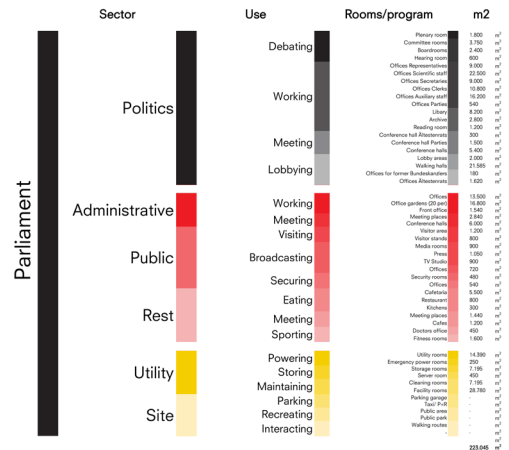
**Figure 08:** The client is the Bundestag, which is chosen by the German people. So, in a way the German people are the clients and the Bundestag will be the user of the building.

## Site

For the site the main research methods will be mapping information from multiple publicly available sources such as internet sites from the municipality of Berlin (Bundesland Berlin, N.D.). Also, fieldwork and site visits will be used to further investigate and understand different sites to come to conclusions for the research and design.

# Program

The program will be mainly researched by different kinds of case studies of the different buildings and programs of the current Bundestag, but also of other federal parliamentary lower house buildings in the world. Because the Bundestag is idiosyncratic in its fluctuating size compared to other parliaments, there will be calculated and researched with square meter per employee/user instead of using averages. In this way other case studies can be used to get to conclusions for the Bundestag program. There will also be research done into the political workings of the Bundestag and the German election system. Lastly, also internet research methods will be used to gain information about future technologies that are related to adaptable and hybrid building use to make conclusions for the Bundestag program.



**Figure 09:** Program breakdown of the Bundestag. This breakdown shows the sectors of: Politics, Administration, Public, Facility and Utility.



**Figure 10:** Collage made for this research plan of BBB Complex Projects. The collage shows the old Reichstag, an AI image of a future Bundestag parliament, Hologram debating, etc.



# DESIGN BRIEF

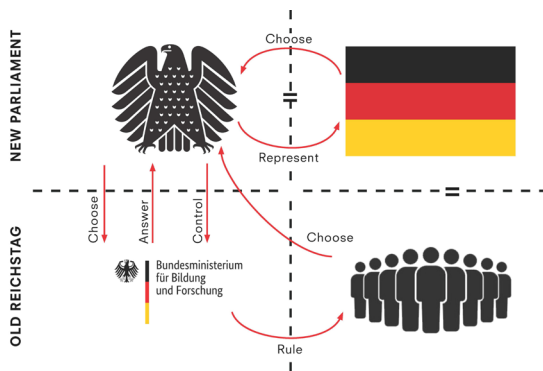
04



## Client

The client of the new adaptable Bundestag will be the German people, because they choose the Bundestag, pay for the Bundestag and are represented by the Bundestag. The German people will also in a way partially use the building when some of them decide to visit the debates. The real users of the new adaptable Bundestag will be the employees of the Bundestag.

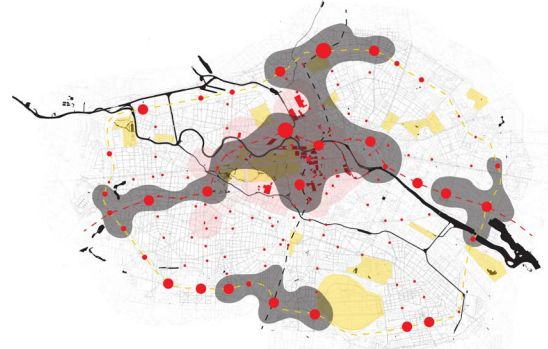
The employees of the current Bundestag consist out of 736 chosen representatives and their 5.151 assistances. These assistances are for example: Scientific staff, Secretaries, Clerks, PR-managers, speech writers, and auxiliary staff. The number of representatives and their assistances can fluctuate around 3.000 per election term, so an adaptable program is needed. Next to this fluctuating political part of employees the Bundestag also has around 3.900 administrative and faciliatory staff. These employees are for example: Directors, managers, and workers in the 7 administrative departments, Lawyers, Cooks, Cleaners, etc. They also have their own police force for the security of the Bundestag and its buildings. In total the number of employees of the Bundestag is almost 10.000.



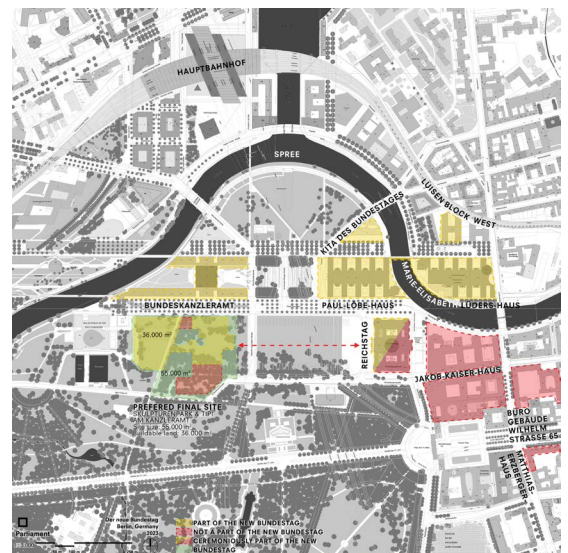
**Figure 11:** The client is the Bundestag, which is chosen by the German people. So, in a way the German people are the clients and the Bundestag will be the user of the building.

## Site

Because the Bundestag has 10.000 employees and they should work together with the other political buildings the personal site requirements are: being near the political district, near large public transport and on an open site. These requirements are mapped in figure 12. The chosen site is the park that is not directly in front of the old Reichstag but one park further. This park is the Skulpturenpark and has the temporary Tipi am Kanzleramt. The idea is to remove as less trees as possible, so form follows trees and that gives a buildable plot of around 36.000 m<sup>2</sup>.



**Figure 12:** Map showing the areas that follow the personal site requirements of: being near the political district, being near public transport and being located on an open site.



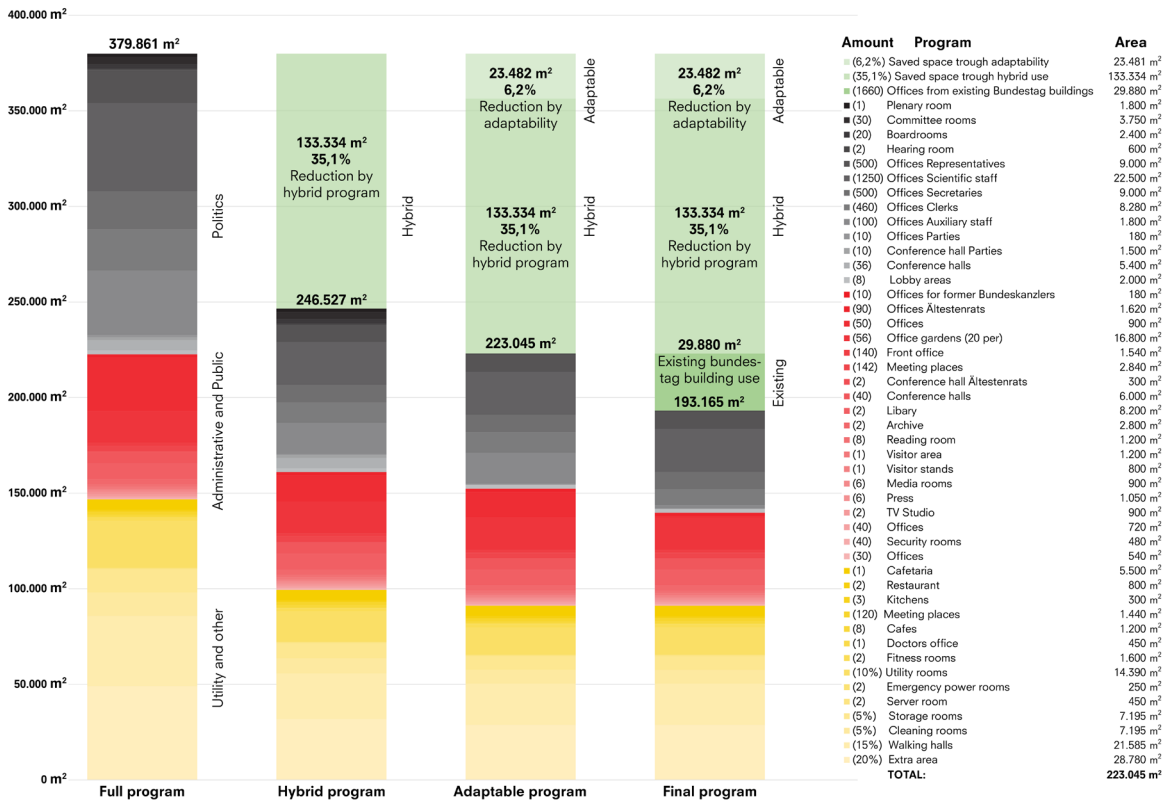
**Figure 13:** The chosen site: The Skulpturenpark and the Tipi am Kanzleramt. This location is near the old Reichstag and the buildable land should follow the existing trees.

# Program

For the program of the new adaptable Bundestag it is important to look at the existing program and employees. With almost 10.000 employees in 8 buildings with around a total of 450.000 m<sup>2</sup>, every employee has 45 m<sup>2</sup>. This is quite a lot, especially if you consider that the number of employees can fluctuate, so some election terms there will be the need of many more times this 45 m<sup>2</sup> and in some election terms a lot of these 45 m<sup>2</sup> will be vacant. This is not sustainable, so for the program of the new adaptable Bundestag the first program bar in figure 14 is made with all unnecessary program removed, like art galleries, exhibition spaces, etc. Only the core political, administrative and facilitatory program is kept and this comes down to 379.861 m<sup>2</sup>. On the next program bar hybrid office, meeting and debating use by holograms is calculated into the program, which can remove almost half of the offices and meeting rooms.

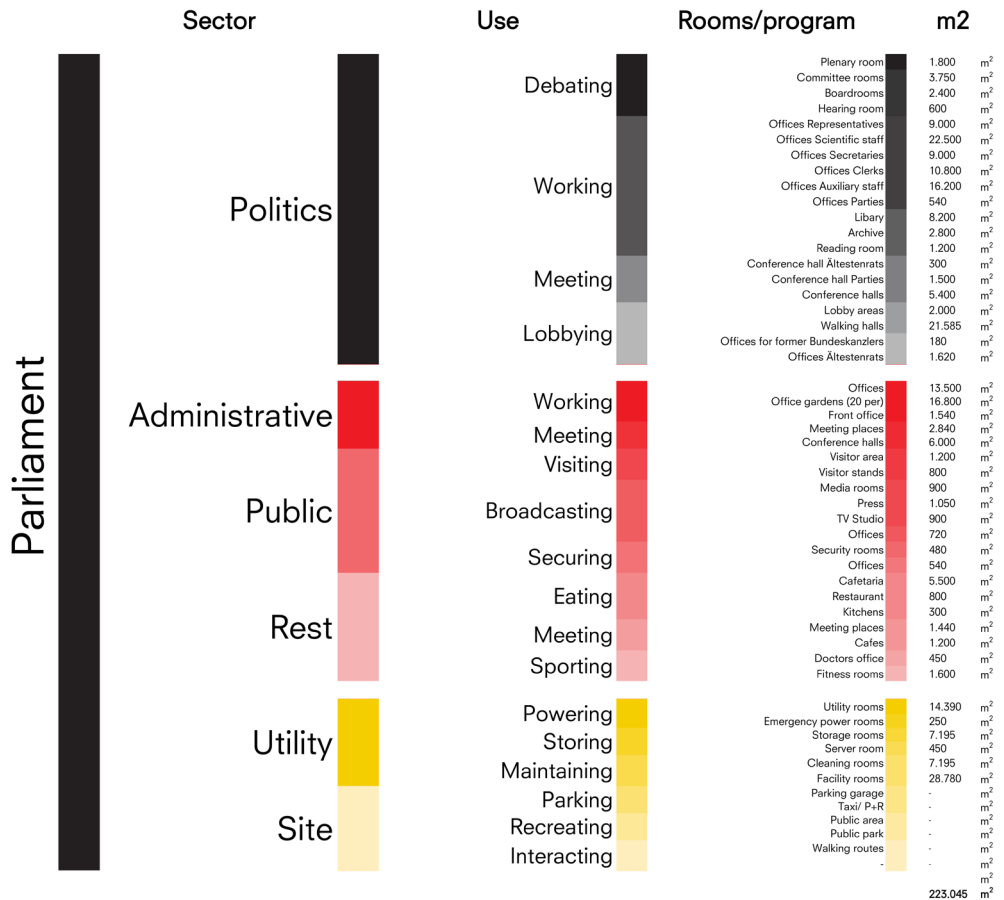
This results in a reduction of 35,1%, 113.334 m<sup>2</sup> of program with hybrid use. Next to this hybrid program bar is the adaptable program bar that reduces another 6,2%, 23.482 m<sup>2</sup>. This is done by making certain less used rooms like the plenary hall adaptable to facilitate another program as well. The last program bar in figure 14 also includes the fact that some of the offices can stay in some of the existing buildings. The total new program of the new adaptable Bundestag will be 223.045 m<sup>2</sup>.

In figure 15 the program breakdown of the new adaptable Bundestag is shown with clear emphasis on the distinction between politics, administration, and facilities. This is also visible in figure 17 in the grouping of the program in the program relation diagram on the next page.



**Figure 14:** The proposed program for the new adaptable Bundestag. The program shows the program bar and also how adaptability and hybrid building use can reduce a lot of building area.





**Figure 15:** Program breakdown of the new adaptable Bundestag. This breakdown shows the sectors of: Politics, Administration, Public, Facility, Utility and Site.

Amount	Program	Area
■ (6,2%)	Saved space trough adaptability	23.481 m <sup>2</sup>
■ (35,1%)	Saved space trough hybrid use	133.334 m <sup>2</sup>
■ (1660)	Offices from existing Bundestag buildings	29.880 m <sup>2</sup>
■ (1)	Plenary room	1.800 m <sup>2</sup>
■ (30)	Committee rooms	3.750 m <sup>2</sup>
■ (20)	Boardrooms	2.400 m <sup>2</sup>
■ (2)	Hearing room	600 m <sup>2</sup>
■ (500)	Offices Representatives	9.000 m <sup>2</sup>
■ (1250)	Offices Scientific staff	22.500 m <sup>2</sup>
■ (500)	Offices Secretaries	9.000 m <sup>2</sup>
■ (460)	Offices Clerks	8.280 m <sup>2</sup>
■ (100)	Offices Auxiliary staff	1.800 m <sup>2</sup>
■ (10)	Offices Parties	180 m <sup>2</sup>
■ (10)	Conference hall Parties	1.500 m <sup>2</sup>
■ (36)	Conference halls	5.400 m <sup>2</sup>
■ (8)	Lobby areas	2.000 m <sup>2</sup>
■ (10)	Offices for former Bundeskanzlers	180 m <sup>2</sup>
■ (90)	Offices Ältestenrats	1.620 m <sup>2</sup>
■ (50)	Offices	900 m <sup>2</sup>
■ (56)	Office gardens (20 per)	16.800 m <sup>2</sup>
■ (140)	Front office	1.540 m <sup>2</sup>
■ (142)	Meeting places	2.840 m <sup>2</sup>
■ (2)	Conference hall Ältestenrats	300 m <sup>2</sup>
■ (40)	Conference halls	6.000 m <sup>2</sup>
■ (2)	Library	8.200 m <sup>2</sup>
■ (2)	Archive	2.800 m <sup>2</sup>
■ (8)	Reading room	1.200 m <sup>2</sup>
■ (1)	Visitor area	1.200 m <sup>2</sup>
■ (1)	Visitor stands	800 m <sup>2</sup>
■ (6)	Media rooms	900 m <sup>2</sup>
■ (6)	Press	1.050 m <sup>2</sup>
■ (2)	TV Studio	900 m <sup>2</sup>
■ (40)	Offices	720 m <sup>2</sup>
■ (40)	Security rooms	480 m <sup>2</sup>
■ (30)	Offices	540 m <sup>2</sup>
■ (1)	Cafeteria	5.500 m <sup>2</sup>
■ (2)	Restaurant	800 m <sup>2</sup>
■ (3)	Kitchens	300 m <sup>2</sup>
■ (120)	Meeting places	1.440 m <sup>2</sup>
■ (8)	Cafes	1.200 m <sup>2</sup>
■ (1)	Doctors office	450 m <sup>2</sup>
■ (2)	Fitness rooms	1.600 m <sup>2</sup>
■ (10%)	Utility rooms	14.390 m <sup>2</sup>
■ (2)	Emergency power rooms	250 m <sup>2</sup>
■ (2)	Server room	450 m <sup>2</sup>
■ (5%)	Storage rooms	7.195 m <sup>2</sup>
■ (5%)	Cleaning rooms	7.195 m <sup>2</sup>
■ (15%)	Walking halls	21.585 m <sup>2</sup>
■ (20%)	Extra area	28.780 m <sup>2</sup>
<b>TOTAL:</b>		<b>223.045 m<sup>2</sup></b>

**Figure 16:** The total program list of the new adaptable Bundestag. The total program size is 223.045m<sup>2</sup>. Which would have been 379.861m<sup>2</sup> when there was no adaptable and hybrid program.

**Saved program adaptability**  
23.481 m<sup>2</sup>

**Offices from existing Bundestag buildings**  
1.660  
29.880 m<sup>2</sup>

**Offices**

**Saved program hybrid**  
133.334 m<sup>2</sup>

**Kitchens**  
3  
300 m<sup>2</sup>

**Cafes**  
6  
1.200 m<sup>2</sup>

**Corridors**  
15%  
21.585

**Storage**  
5  
7.19

**Cleaning**  
5  
7.19

**Figure 17:** Program relation diagram for the new adaptable Bundestag. This diagram shows the grouping of different program topics.

Scientific staff  
1.250  
22.500 m<sup>2</sup>

Offices Representatives  
500  
9.000 m<sup>2</sup>

Conference halls  
36  
5.400 m<sup>2</sup>

Conference halls  
100  
3.750 m<sup>2</sup>

Hearing room  
2  
1.800 m<sup>2</sup>

Offices Parties  
10  
1.800 m<sup>2</sup>

Offices Auxiliary staff  
100  
1.800 m<sup>2</sup>

Offices Secretaries  
500  
9.000 m<sup>2</sup>

Offices Clerks  
460  
8.280 m<sup>2</sup>

Boardrooms  
20  
2.400 m<sup>2</sup>

Conference hall Parties  
10  
1.500 m<sup>2</sup>

Lobby areas  
8  
2.000 m<sup>2</sup>

Office  
30  
540 m<sup>2</sup>

Security  
40  
480 m<sup>2</sup>

Canteen  
1  
5.500 m<sup>2</sup>

Plenary room  
1  
1.800 m<sup>2</sup>

Visitor stands  
1  
800 m<sup>2</sup>

Extra area/lobby/atriums  
20%  
28.780 m<sup>2</sup>

Corridors  
15%  
21.585 m<sup>2</sup>

Visitor area  
1  
1.200 m<sup>2</sup>

Emergency power rooms  
2  
250 m<sup>2</sup>

Server room  
2  
450 m<sup>2</sup>

Doctors office  
1  
450 m<sup>2</sup>

Meeting places  
120  
1.440 m<sup>2</sup>

Fitness rooms  
2  
1.600 m<sup>2</sup>

TV Studio  
2  
900 m<sup>2</sup>

Media rooms  
6  
900 m<sup>2</sup>

Press  
6  
1.050 m<sup>2</sup>

Offices  
40  
720 m<sup>2</sup>

Reading rooms  
8  
1.200 m<sup>2</sup>

Offices Ältestenrats  
90  
1.620 m<sup>2</sup>

Archive  
2  
2.800 m<sup>2</sup>

Front office  
140  
1.540 m<sup>2</sup>

Offices  
50  
900 m<sup>2</sup>

Ältestenrat  
2  
300 m<sup>2</sup>

Offices for former Bundeskanzlers  
10  
180 m<sup>2</sup>

Utility rooms  
10%  
14.390 m<sup>2</sup>

Corridors  
15%  
21.585 m<sup>2</sup>

Library  
2  
8.200 m<sup>2</sup>

Conference halls  
40  
6.000 m<sup>2</sup>

Office gardens (20 per)  
56  
16.800 m<sup>2</sup>

Meeting places  
142  
2.840 m<sup>2</sup>

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## Energy requirements

The new adaptable Bundestag should not only follow current German standards for sustainability but should go further than that. The idea is that the building will become a symbol and example for the German nation to inspire and promote sustainable buildings. So, the new Adaptable Bundestag will not only be energy neutral but produce and store energy for its surrounding. It should be built as much as possible from renewable materials and construction methods. And finally, its energy consumption by commuting from its users should be reduced.

## Group requirements

The Energy group of the Complex Projects Bodies & Buildings Berlin has made a vision for a self-sustainable Berlin by 2030. Because the adaptable Bundestag is part of the Energy group, it should follow this vision. The vision is still a work in progress, but for site related choices the group already made three site requirements.

## Group requirements

The first site requirement is building on existing potential, which means that the building should be located on a site that already exist and can be retrofitted. Examples include on parking lots, on bare lands, near water and railways, near industry and in existing buildings as re-use. This will make sure that urban sprawl is reduced, and that construction is made more efficient.

The second group site requirement is related to production of energy and states that the building can only be built on a site where geothermal power is possible. The third group site requirement is that the building should be close to public transportation. The definitive proximity is determined by the importance/use of the building.

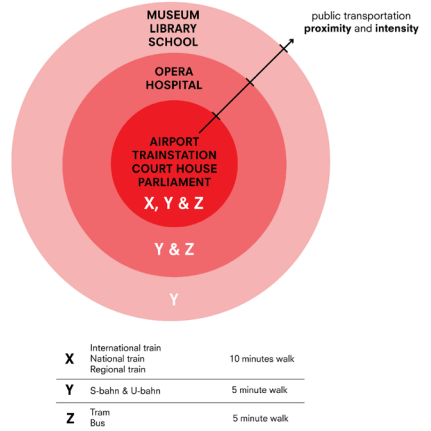
The adaptable Bundestag site will be close to the river Spree, near the Hauptbahnhof and on land where geothermal power is possible, so following all the group site rules.



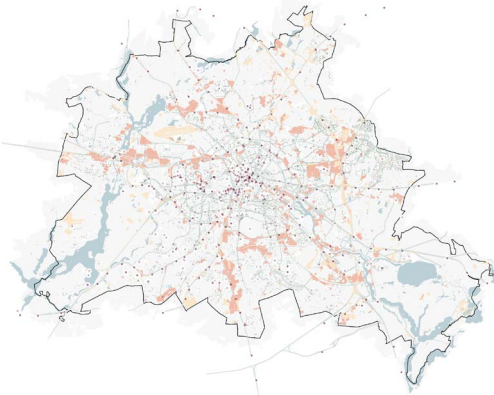
**Figure 18:** The old Reichstag building with the iconic text of “Dem Deutschen Volke”. This means “Of the German people”, which shows that the parliament is not a ruler but a servant.



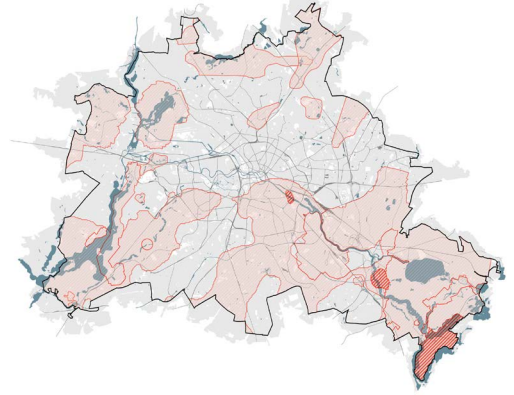
**Figure 19:** The groups ambition to make Berlin a self-sufficient city by 2030.



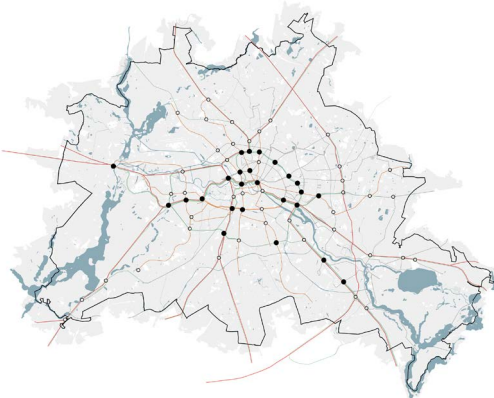
**Figure 20:** Group site rule 3: Location near public transport according to importance.



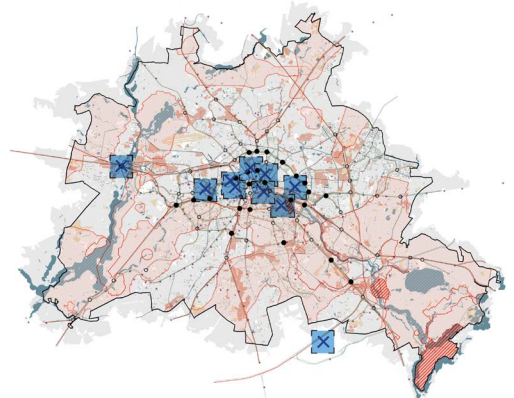
**Figure 21:** Group site rule 1: Build on existing potentials for Berlin.



**Figure 22:** Group site rule 2: Location in the areas with geothermal power availability.



**Figure 23:** Group site rule 3: Location near public transport according to importance.



**Figure 24:** The final total group site requirements map with the 10 locations.

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## Figures

**Figure 01:** The plenary room (Plenarsaal) of the Bundestag, located in the old Reichstag building. On the top left the German eagle. This symbol is also the architectural element of this research. *Bundestag. (N.D.). Plenum\_adler. Retrieved from Bundestag: [https://www.bundestag.de/resource/image/586442/16x9/1460/822/c4d0daa35d0907ae17dad8dc17b627fd/6E82B5F106F53086556D14714CB242BC/plenum\\_adler.jpg](https://www.bundestag.de/resource/image/586442/16x9/1460/822/c4d0daa35d0907ae17dad8dc17b627fd/6E82B5F106F53086556D14714CB242BC/plenum_adler.jpg)*

**Figure 02:** Illustration showing the standard, L, XL, and XXL Bundestag, all different in size. *Created by Autor ing. J.C.L. Leroy Göres.*

**Figure 03:** Table showing the current size of the Bundestag and how this would grow with almost 2.000 employees in a Bundestag XXL. *Created by Autor ing. J.C.L. Leroy Göres.*

**Figure 04:** Flowchart explaining the German election system and how the Bundestag can fluctuate in size. *Created by Autor ing. J.C.L. Leroy Göres.*

**Figure 05:** The „Flagge der Einheit“ (Flag of Unity) in front of the Reichstag building. It is a symbol and stands for the unification of Germany as a monument on the Platz der Republik. *Photographed by Autor ing. J.C.L. Leroy Göres.*

**Figure 06:** Diagram showing a possible way to have an adaptable plenary hall with multiple programable floorplans. *Created by Autor ing. J.C.L. Leroy Göres.*

**Figure 07:** The Reichstag with the German flag photographed through trees. representing architecture, democracy, and sustainability. *Photographed by Autor ing. J.C.L. Leroy Göres.*

**Figure 08:** The client is the Bundestag, which is chosen by the German people. So, in a way the German people are the clients and the Bundestag will be the user of the building. *Created by Autor ing. J.C.L. Leroy Göres.*

**Figure 09:** Program breakdown of the Bundestag. This breakdown shows the sectors of: Politics, Administration, Public, Facility and Utility. *Created by Autor ing. J.C.L. Leroy Göres.*

**Figure 10:** Collage made for this research plan of BBB Complex Projects. The collage shows the old Reichstag, an AI image of a future Bundestag parliament, Hologram debating, etc. *Created by Autor ing. J.C.L. Leroy Göres.*

**Figure 11:** The client is the Bundestag, which is chosen by the German people. So, in a way the German people are the clients and the Bundestag will be the user of the building. *Created by Autor ing. J.C.L. Leroy Göres.*

**Figure 12:** Map showing the areas that follow the personal site requirements of: being near the political district, being near public transport and being located on an open site. *Created by Autor ing. J.C.L. Leroy Göres.*



## Figures

**Figure 13:** The chosen site: The Skulpturen park and the Tipi am Kanzleramt. This location is near the old Reichstag and the buildable land should follow the existing trees.

*Created by Autor ing. J.C.L. Leroy Göres.*

**Figure 14:** The proposed program for the new adaptable Bundestag. The program shows the program bar and also how adaptability and hybrid building use can reduce a lot of building area.

*Created by Autor ing. J.C.L. Leroy Göres.*

**Figure 15:** Program breakdown of the new adaptable Bundestag. This breakdown shows the sectors of: Politics, Administration, Public, Facility, Utility and Site.

*Created by Autor ing. J.C.L. Leroy Göres.*

**Figure 16:** The total program list of the new adaptable Bundestag. The total program size is 223.045 m<sup>2</sup>. Which would have been 379.861 m<sup>2</sup> when there was no adaptable and hybrid program.

*Created by Autor ing. J.C.L. Leroy Göres.*

**Figure 17:** Program relation diagram for the new adaptable Bundestag. This diagram shows the grouping of different program topics.

*Created by Autor ing. J.C.L. Leroy Göres*

**Figure 18:** The old Reichstag building with the iconic text of "Dem Deutschen Volke". This means "Of the German people", which shows that the parliament is not a ruler but a servant.

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**Figure 19:** The groups ambition to make Berlin a self-sufficient city by 2030.

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