



LUND
UNIVERSITY

ASBM01: Degree Project in Sustainable Urban Design

LTH Lund University, 2023 /2024

Author: Antonia Zoe Freudenberger

Examiner: Lars-Henrik Stahl

Supervisor: Laura Liuke

ACTIVE AND INCLUSIVE TOGETHER -

an age-friendly approach to integrate older people
into neighbourhood life



Image source 1: Perspektive (own visualisation)

Summary

ACTIVE AND INCLUSIVE TOGETHER: An age-friendly approach to integrating older people into neighbourhood life

The needs and wishes of older people have often been forgotten in urban planning in recent decades. Yet already today, more than one billion of the world's population is over 60 years old, and according to the World Health Organisation (WHO), one in six people will be over 60 by 2030 - an increase to 1.4 billion by 2030 and up to 2.1 billion by 2050 (WHO, 2024) . Like many European countries, Switzerland faces the challenge of an increasingly ageing population. In the capital Bern, neighbourhoods such as Schlosshalde-Murifeld have already 20-25 % of residents aged 65 years or older, and this share is expected to grow (Statistics City of Bern, 2023). The design of age-appropriate urban renewal is therefore particularly important here. Currently on the site, the city highway is a major barrier between neighbourhoods, green spaces and people. The car-oriented structure has a negative impact on the activity level and independence of older people and thus on their physical and mental health. In addition, the current housing market in Bern

does not address the needs of older people - there is a lack of affordable, barrier-free housing, advice on age-appropriate housing and a more diverse range of housing. In my design proposal, I would like to activate older people and integrate them into the life of the district. In concrete terms, this means: Active: The neighbourhood will promote physical and social activities by providing safe and short walking and cycling routes, as well as active green spaces and public facilities in close proximity that can be used by all, regardless of age. Inclusive: The design integrates all people, but especially older people, by addressing their needs and weaknesses, e.g. through barrier-free access and housing as well as benches and public toilets. Together: The design encourages interaction between old and young. The neighbourhood will offer housing forms that promote social interaction, such as intergenerational housing and public spaces that bring people together regardless of their age or social status.

Acknowledgements

I would like to express my heartfelt gratitude to my supervisor, Laura, for her tireless support and encouragement during difficult times. Additionally, I am thankful for the many hours of interesting discussions we had and her advice for life will always remain with me.

A special thanks to my family for their constant support and invaluable advice, especially regarding their personal experiences with ageing.

I am also deeply grateful to my "Swiss experts," Albrecht and Johanna, for giving me an insight into Swiss culture and the city of Bern.

To my colleagues in the Sudes program, thank you for the wonderful time we spent together and the enriching exchanges we had. A special thanks goes to my colleague Alma for the constant mental support during challenging moments.

CONTENT

1. Introduction	6
1.1. Why is this Topic important?!	7
2. Research	8
2.1. What is old and who are they?	9
2.2. It is well known that the Body begins to change with Age	10
2.3. Age-friendly City-Framework	11
2.5. Best Practice Examples	12
3. Analyse	16
3.1. Switzerland	17
3.1.1. Population and Demographie Switzerland	18
3.1.2. Housing history and Market in Switzerland	19
3.2. The City of Bern	20
3.2.1. Demographie	21
3.2.2. Bern as a Age-Friendly City	23
3.2.3. Population and Housing Market	24
3.2.4. Mobility	26
3.2.5. Health	28
3.2.6. Bern attractions and Social Spaces	29
3.2.7. Green And Blue Infrastructure	30
3.2.8. Conclusion	32
3.2.9. The Older People of Switzerland and Bern	33
3.3. The site	36
3.3.1. The History	38
3.3.2. The ByPass Ost	40
3.3.3. Mobility	42
3.3.4. Freudenberger Square Public Space	46
3.3.5. Wittigkopfen Public Space	48
3.3.6. Buildings	50
3.3.7. Green and Blue infrastructure	52
3.3.8. Social and Cultural Infrastructure	54
3.3.9. Health infrastructure	55
3.3.10. Commercial Infrastructure	56
3.3.11. Attractive destinations	57
3.3.12. Conclusions	58

4. Design	60
4.1. Vision	61
4.2. Its Inhabitant	62
4.3. Strategy	64
4.3.1. Creating Places of Social Interaction and Support	66
4.3.2. Creating Different Forms of Housing	68
4.3.3. Creating active Mobility Structures	70
4.3.4. Connecting and Activating Green Spaces	72
4.4. The Process	74
4.5. Masterplan	77
4.6. Detail 1	79
4.7. Detail 2	81
4.8. Sections	82
5. Reflection	84
5.1. Reflection	85
6. Reference Sources	88

1. Introduction

1.1. Why is this Topic important?!

Worldwide the population is getting older according to the WHO by 2030, one in six people will be over 60 years old - an increase from 1 billion in 2020 to 1.4 billion in 2030 and as many as 2.1 billion by 2050 (WHO, 2024). Especially in many western countries, the so called babyboomer will soon reach the age of over 65.

In our society, however, being old is a challenge in many ways. Ageing is often associated only with the loss of beauty, physical and mental condition. Therefore, many older people feel that they are ignored by society, while they just want to „belong to society“ and „be like everyone else“ (Menezes, 2021). Particularly in the field of urban planning, older people have often been forgotten in the past, so that today's structures often disadvantage older people. As a heterogeneous group, their needs are broadly diversified, yet there is evidence that older people are, for example, more often involved in traffic accidents, that there is a lack of affordable hou-

sing for older people and that they suffer more from the increasing heat in cities, to name just a few of the challenges for older people in urban areas. On the other hand, growing older also means serenity, freedom, contentment and wisdom (somoto, 2019). This can be seen as a great opportunity for the city and the neighbourhood, and already many seniors are getting involved in their city or neighbourhood.

Switzerland, as a country with an increasing proportion of older people, has been dealing with this issue for a few years, especially in cantons that are and will be strongly affected by demographic change. In terms of population, the canton of Bern is one of the cantons with an above-average proportion of people over 65 years (BFS, 2020). In my thesis I will look at the needs and problems of older people in Bern and then present ideas for improving the situation of older people in the city and implement them in a design.

WORLDWIDE

2020: 1 billion (12,5%)
2030: 1.4 billion (16,5%)
2050: 2.1 billion (29,5%)

SWITZERLAND

1900: 5,6%
2020: 18.8 %
2050: 25.5 %

BERN

2020 : 16%
In 2050: 19,5%

SCHLOSSHALDE

2020: 20%

MURIFELD

2020: 25%

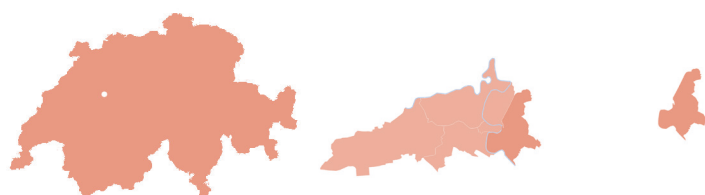


Image source 2: Graphics on the older population (own visualisation)

2. Research

WHAT IS OLD AND WHO ARE THEY?



Image source 3: 94 year old gymnast Johanna Quaas ([guinnessworldrecords](#), 2012)

In our society, we classify people regarding the years they have lived. According to the WHO everyone above 60 belongs to the category “older people”. But historically, age was not something people paid attention to, you were old when you started getting sick. It was not until the introduction of a retirement age during the Industrial Revolution that people were divided into working and non-working and thus into young and old (Gills, 1991). On the other hand, from a biological point of view, the accumulated number of age can be different from the biological age. This means that a person who is 36 years old can have the biological age of a 30-year-old or vice versa. As a result, their abilities can be very different (Lestrade & Gilman, 2022). Furthermore, due to globalisation and the LGBTQ+ movement, there are even more crucial differences within the group, making it difficult to categorise them into specific age groups (Hauderiwicz, & Ly Serena, 2020). Nevertheless, thanks to the healthcare system, older people have a higher life expectancy than in the past.



Image source 4: Elderly people at a repair cafe (Ilvy Njiokiktjien for [The New York Times](#), 2012)



Image source 5: Elderly people with rollators (IGP - your health professionalsMAGAZIN, 2023)

2.2. It is well known that the Body begins to change with Age

For example, life expectancy in Switzerland in 1950 was 66.4 (men) and 70.9 (women) years; today it is 82.5 (men) and 86.4 (women) years and is expected to continue to rise. In a study on old age in Switzerland, researchers found that statistically, those aged 65 today in Switzerland can still live 14 healthy years (Health Promotion Switzerland, 2016). However, most older people have 5-8 years of illness ahead of them before they die, and only a very small percentage of people are lucky enough to die in old age without serious illness (Barzilai, 2020). It is probably possible to shorten the duration of illness in the future, but for the moment society has to come to terms with this fact (Lestrade & Gilman, 2022).

As people age, various physical changes can impact their daily lives and overall well-being. Here's a summary of the key points:

Hearing:

A reduction in hearing ability can significantly affect communication. Background noises may lead to disorientation and social exclusion (AIA, 1985).

Vision:

Visual impairments are widespread. Most people over the age of 65 need glasses, but many learn to deal with them in everyday life (Burtan & Mitchell, 2006).

Perception:

Focusing between close and distant objects becomes more challenging. Furthermore, seeing in the dark gets more difficult and patterns can also cause dizziness (AIA, 1985).

Strength and Stamina:

By the mid-seventies, individuals typically have around half the strength they had in their youth, leading to reduced activity levels (AIA, 1985).

Mobility:

Mobility issues can result in an unsteady gait, making it difficult to navigate steep gradients or walk long distances (AIA, 1985).

Voice:

The voice can change due to physical alterations in the body (Hauderiwicz; Ly Serena, 2020)

Bowel and Bladder Weakness:

Weakened bowel and bladder control means older adults may need to use the toilet more frequently (Hauderiwicz; Ly Serena, 2020).

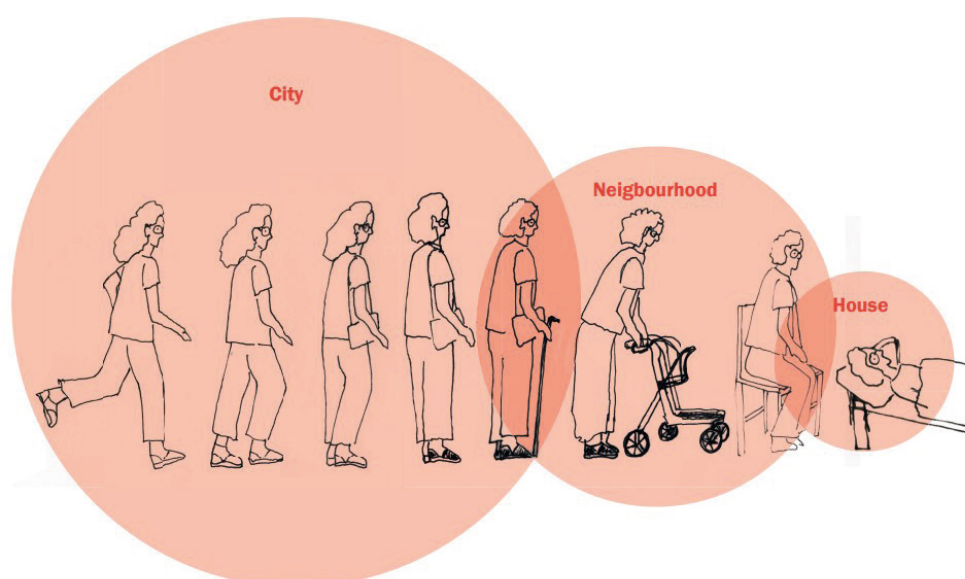


Image source 6: Graphic of the radius of older people(own visualiation)

2.3. Age-friendly City-Framework

In 1991 the WHO created the age-friendly city association in 1991 to create awareness of older people and their need in cities. The WHO calls for the creation of age-friendly cities where active ageing is promoted, which means that all people, regardless of their age, should be able to participate in all aspects of society. Today, many cities call themselves age-friendly cities according to the WHO. Therefore, I asked myself what is an age-friendly city? According to the WHO an age friendly city contains the eight domains - (Global Network for Age-friendly Cities and Communities).

Community and Health Services: This domain focuses on ensuring that older adults have access to a range of health and social services that are affordable, accessible, and tailored to their needs. This includes primary healthcare and community support programs that help to promote the independence of older adults and ensure their well-being.

Transportation: Accessible and affordable transportation is crucial for older adults to stay connected with their community. This includes public transport options that are easy to use, have clear signage, and provide seating and shelter. It also involves ensuring that transportation services are available for those with mobility issues or disabilities.

Housing: Age-friendly housing means providing a variety of housing options that are affordable, safe, and designed to meet the needs of older adults. In addition, it also involves ensuring that housing is located in areas where services and amenities are easily accessible.

Social Participation: Encouraging older adults to engage in social, cultural, and recreational activities is key to preventing isolation and promoting mental health. This aspect focuses on creating opportunities for older people to participate in community events, clubs, and volunteer activities, ensuring these activities are accessible and welcoming.

Outdoor Spaces and Buildings: Public spaces and buildings should be designed to be safe and accessible for older adults.

This includes having well-maintained sidewalks, adequate lighting, benches for resting, and buildings with ramps and elevators. These features help older people to move around their community safely and comfortably.

Respect and Social Inclusion: Promoting respect and inclusion involves challenging ageism and ensuring that older people are valued and included in all aspects of community life. This can be achieved through public awareness campaigns, intergenerational programs, and policies that support the rights and contributions of older people.

Civic Participation and Employment: Older adults should have opportunities to contribute to their communities through volunteering, civic engagement, and employment. This domain focuses on removing barriers to participation, such as age discrimination, and providing support for older adults to stay active in the workforce or volunteer roles.

Communication and Information: Ensuring that older adults have access to information is essential for their independence and participation. This includes providing information in formats that are accessible, such as large print or audio, and ensuring that communication channels are available for those who may not be tech-savvy.

2.4. Best Practice Examples

Based on the WHO framework, I have created a small collection of projects that are designed to be age-friendly and inclusive.

VAUBEN

Location: Vauben, Germany

Main domains: Outdoor Spaces and Buildings, Respect and Social Inclusion

Benefits for older people: Promotes the mobility of older people, independence and social interaction and physical fitness

Short description: Quartier Vauban is a model of sustainable transportation, with low car ownership and a 64% modal share for non-motorized transport. The neighborhood prioritizes pedestrians and cyclists, restricts car use, and features dedicated streets and common areas for walking and playing, enhancing safety and reducing pollution. These features collectively contribute to Vauban's reputation as a sustainable and walkable neighborhood, where the emphasis is on creating a livable and environmentally friendly urban space (GIZ, 2011).

MONTI

Location: village of Monte, Switzerland

Main domains: Outdoor Spaces and Buildings, Respect and Social Inclusion, Civic Participation and Employment

Benefits for older people: Promotes the mobility of older people, independence and social interaction, enables participation

Short description: To enhance the quality of life for the elderly, community-wide involvement is essential, considering their complex living environments. The village of Monte in the Muggio Valley was used as a case study to explore innovative ways to improve the relationship between elderly well-being and their surroundings. The project includes targeted architectural changes in public spaces, creating an intergenerational path with seven key points that connect the needs of the elderly and the broader community with various aspects of public space (studioser, 2022).

ZUHÖRBÄNKLI

Location: Thun and Bern, Switzerland

Main domains: Community and Health Services, Social Participation, Respect and Social Inclusion, Civic Participation and Employment

Benefits for older people: Has a positive effect on mental health, can help combat loneliness, offers support, promotes intergenerational exchange and social interaction

Short description: The „Zuhörbänkli“ (Listening Bench) is a community initiative started by Franz Klopfenstein in 2018. Its main goal is to provide a welcoming space where people can engage in open and respectful conversations. The bench offers a low-threshold opportunity for anyone to share their stories and connect with others, without any therapeutic intent. Volunteers are available at scheduled times to listen and engage with those who sit down, fostering a sense of community and understanding (UND Generationandem, 2024).



Image source 7: Neighbourhood street in Vauben(GIZ, 2011)



Image source 12: Images of Vauben (GIZ, 2011)



Image source 8: Images of Monti after the transformation (studioser, 2022)



Image source 11: Images of Monti after the transformation (studioser, 2022)



Image source 9: "Zuhörbänkli"(UND Generationentandem, 2024)



Image source 10: Team of the initiative "Zuhörbänkli"(UND Generationentandem, 2024)

ALTE WEBEREI CARRÉ

Location: Tübingen, Germany

Main domains: Housing, Community and Health Services, Outdoor Spaces and Buildings

Benefits for older people: Promotes social inclusion, offers health service, can help combat loneliness, offers support, promotes intergenerational exchange and social interaction

Short description: The “Alte Weberei Carré” is characterised by a diverse mix of uses and an integrative residential concept. The ground floor, which extends across the entire site, includes a ground-level garage, shops and offices and is surrounded by a one to three-storey ring of predominantly residential units. The doctor’s surgery and the residential care group on the first floor have direct access to the inner courtyard. This semi-private, sheltered space encourages daily interaction within the community, which is particularly beneficial for residents suffering from dementia (Baden-Württemberg Chamber of Architects, 2023 and Wüstenrot Stiftung, 2020)

BRAMSHOF - GENERATIONAL HOUSING

Location: Zurich; Switzerland

Main domains: Housing, Respect and Social Inclusion, Community and Health Services, Outdoor Spaces and Buildings

Benefits for older people: Diverse living options, promotes social interaction and intergenerational exchange and independency, offers health services

Short description: The Bramshof in Zurich offers a variety of housing options such as maisonettes, apartments, student dormitories, guest rooms, family apartments, accessible housing, senior housing, artist studios, and communal living spaces for people with mental health issues. Therefore, it creates a diverse mix of residents. It was developed using a mix of bottom-up and top-down approaches, creating a model for humane, contemporary, and future-oriented living that remains unique in Zurich. The complex features five stories with two connected inner courtyards that are divided by three two-story buildings. It particularly focuses attention inward, providing a sense of security and protection, while also clearly separating private and semi-public spaces to foster both community and privacy. Towards the street, there are small commercial units such as a restaurant, a daycare center, offices, and a community room, creating a lively atmosphere (ETH Wohnforum - ETH Case, 2021).

OAK GROVE PARK

Location: Klaipeda City Municipality; Lithuania

Main domains: Outdoor Spaces and Buildings, Respect and Social Inclusion

Benefits for older people: Promotes the mobility, well-being, social interaction and physical fitness, has a positive effect on mental health

Short description: Oak Grove Park is a good example of inclusivity as it has been designed to meet the diverse needs of its community. It features both active areas with sports fields and playgrounds, and serene spaces with ponds and flower beds, ensuring that everyone feels welcome. In addition, a continuous loop path encourages social interaction and physical activity, making it a popular venue for community engagement. By fostering an environment that promotes socialization and healthy living, the park enhances the quality of life for people of all ages and backgrounds (Landezine, 2024).

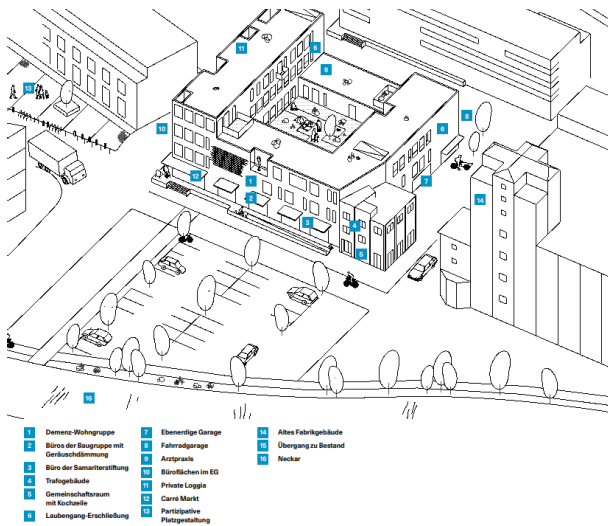


Image source 14: Visualisation of the Alte Weberei Carré (Wüstenrot Stiftung, 2020)



Image source 15: Image of the Alte Weberei Carré (Baden-Württemberg Chamber of Architects, 2023)



Image source 16: Courtyard of the Bramshof (Thomas Haug)



Image source 17: Private gardens and balconies towards the street (Thomas Haug)



Image source 18: Playground with soft boarders in the Oak Grove Park (Landezine, 2024)



Image source 19: Calm and nature-oriented spaces in Oak Grove Park (Landezine, 2024)

3. Analyse

3.1. Switzerland

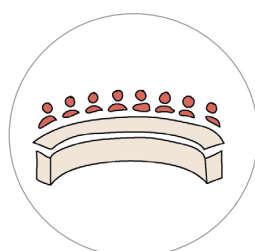
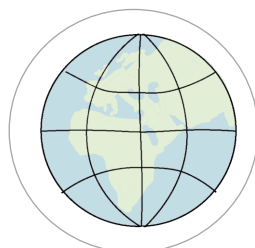


Image source 20: Pictograms (own visualisation)

POPULATION

2023: 8.7 million inhabitants

Forecast for 2050: 10,4 millionen inhabitants

DEMOGRAPHY

People 65 and above

2023: 1,7 millionen (1 in 5 is 65 or older)

Forecast for 2050: 2,7 millionen

At 84 years (85.9 years women, 81.9 years men) Switzerland has the second highest life expectancy after Japan

INTERNATIONAL

25% of the inhabitants are foreigners. Switzerland is one of the European countries with one of the highest proportions of foreigners.

URBANISATION

85% of the Swiss population lives in cities
15% of the Swiss population lives in rural areas

PARTICIPATION

Switzerland is a direct democracy, which means that voting takes place at communal, cantonal and federal level. This makes it the country with the highest active participation of citizens in the world.

SWISS SENIOR CITIZENS' COUNCIL

Since 2001, the Seniors' Council has been politically lobbying for the interests of seniors at the federal level.

Fact about Switzerland (EDA; PRS / Federal Statistical Office (BFS) and OECD, 2023)

3.1.1. Population and Demographie in Switzerland

In 2020, the number of permanent residents in Switzerland was 8.7 million. According to the Federal Statistical Office, this figure is expected to rise to 9.4 million by 2030 and up to 10 million for the first time in 2040. In 2050, the population of Switzerland will be 10.4 million.

This population increase is caused by the immigration of young migrants (between 20 and 39 years) and the resulting rise in the birth rate. Between 2020 and 2050, the birth rates are expected to increase from 89,000 to over 100,000, due to the higher number of women of child-

bearing age resulting from migration. On the other hand, the mortality rate will increase significantly due to the growing older population. The population group of people 65 + years will increase from 1.6 million in 2020 to 2.1 million in 2030 and 2.7 million in 2050. This will lead to an increase in their share of the total population from 18.9 % in 2020 to 25.6 % in 2050. Today, in 2023, one in five people in Switzerland is already 65 years old or older. In the future, especially the number of people over 80 years old will rise sharply. From 2020 until 2050, the number of people over 80 will more than double (BFS, 2020).

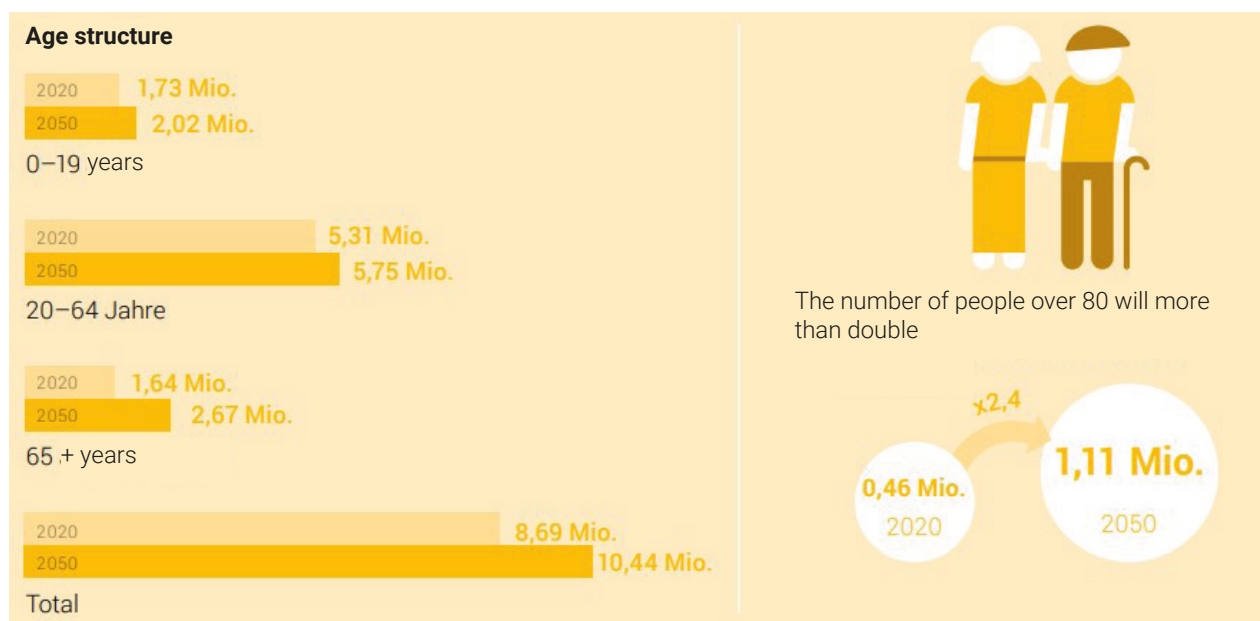


Image source 21: Age-structure in Switzerland (BFS – Szenarien, 2023)

3.1.2. Housing history and Market in Switzerland

In the past, older people lived together with their family. In Switzerland, for example, generational cohabitation was widespread, especially in rural areas. An extended family or even several families usually shared a farm for economic reasons, but also looked after each other. The traditional Bernese farm consisted of two houses, the main house where the family (mother, father with children) lived and a smaller house, the Stöckli, where the grandparents lived (Hermann personal interview, Zurich, 11.03. 2023). This form of housing integrated older people well into social life and provided for them. Nevertheless, today most older people live alone and if they need help, a care taker is hired or a move to a separate nursing home is made. In Switzerland according to Zimmerli the willingness to move decreases with rising age. Only 25% of the people over 80 are willing to move although their home isn't

barrier-free and too large. The consequences are a loss of participation and social contacts as well as a large consumption of living space in the case of mobility restrictions (Zimmerli, 2019). This contrasts with the fact that Switzerland is considered a rental country in Europe. In 2020, 2.3 million households (61 %) in Switzerland lived in rented or cooperative housing (BFS, 2020). But the unwillingness to move isn't the only reason why older people are not moving to a more suitable home. But even if they are willing to move into a smaller, barrier-free flat, many fail because of the higher costs of such a flat. In the study Zimmerli found out, that older people tend to need more time for the application process, incentives to leave family housing and prefer small, low-cost flats. On the other hand, housing providers receive long-term, loyal tenants (Zimmerli, 2019).

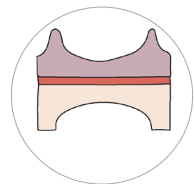


Image source 22: Traditional Bernese farm (own visualisation)

3.1.3. The City Bern



Image source 23: Collage about the city of Bern (own visualisation)



CAPITAL OF SWITZERLAND

POPULATION

2023: 144,447 inhabitants

Forecast for 2050: 173,400 inhabitants

DEMOGRAPHY

In 2023: 20% of the population was 65 years and older

Forecast for 2050: 32 % of the population will be 65 years and older

WORLD HERITAGE OLD TOWN

Bern`s Old Town, is characterized by its pedestrian friendly structure – small alleys and long arcades.

FOUNTAIN CITY

The city is also known as the fountain city because of its 217 fountains.

Image source 24: Pictograms (own visualisation)

Source: (Bern Welcome, 2024; Statistics City of Bern, 2019)

3.1.4. Demographie

In 2021, the demography of the city is roughly balanced between young and old. In the last twenty years, rising birth rates and the immigration of younger adults (18-25 years) have decreased the average age by 2 years, down to around 41 years. However, a strong increase in the number of older people is expected in the coming years due to the baby boomers. At the end of 2018 according to statistics, 16.3 percent of the resident population of the city of Bern was 65 or older. According to the latest population forecasts, this proportion will be 17 percent in 2030 and 19.5 percent

in 2050. According to the forecast, the proportion of people aged 80 and older will increase from 5.3 percent in 2018 to 5.6 percent in 2030 and 7.7 percent in 2050.

Looking at different groups within the elderly, it is clear that the number of elderly women is slightly higher compared to elderly men, which is due to the higher average life expectancy of women. Additional statics also show that in the upcoming years the number of older foreigners will also strongly increase (Statistics City of Bern, 2024).

Demography of Bern in 2021

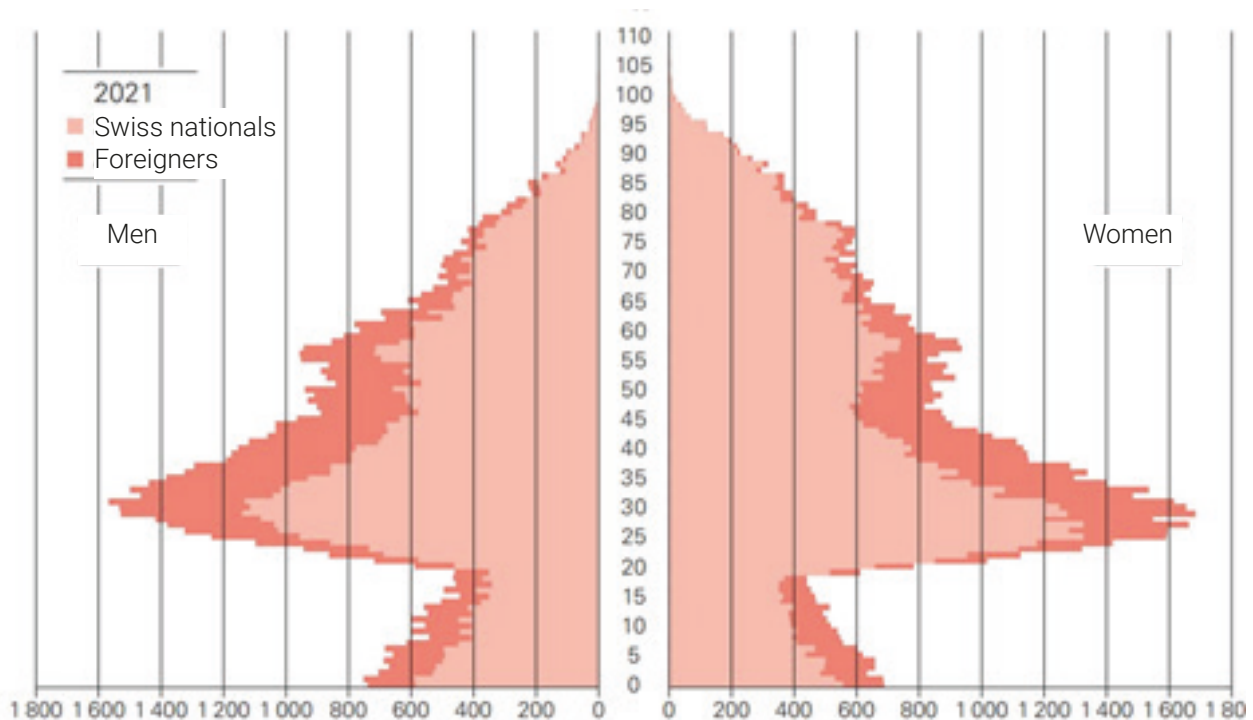


Image source 25: Age pyramid of the city of Bern (Statistics City of Bern, 2024)

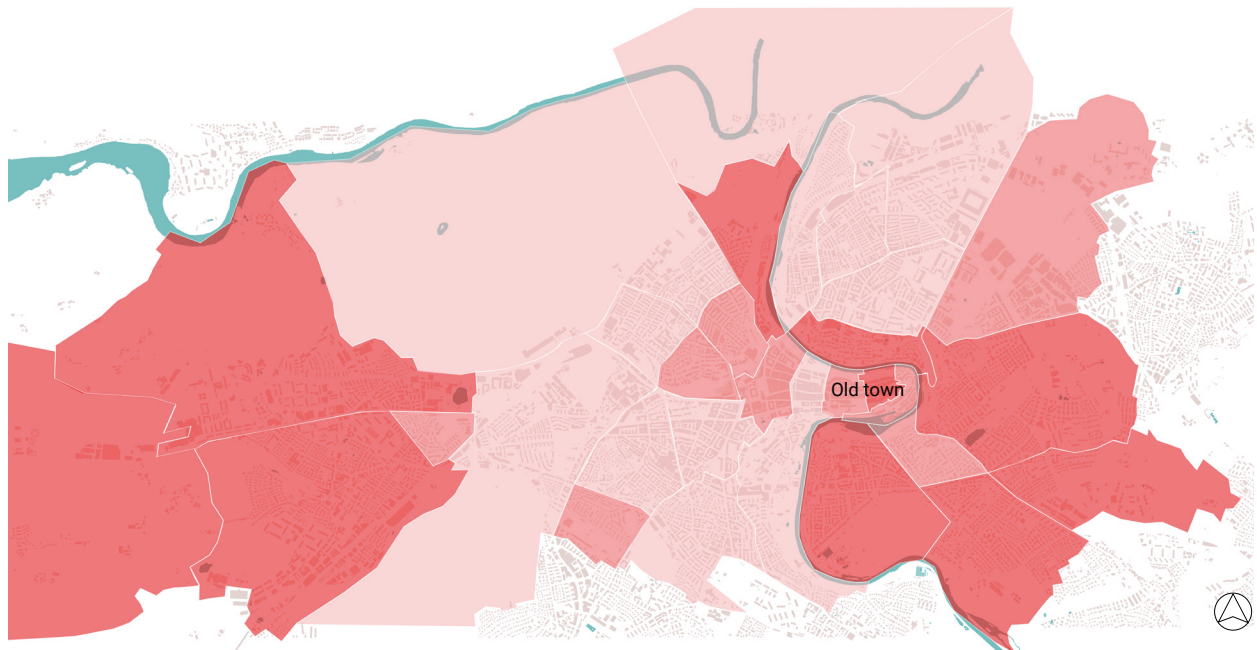


Image source 26: Map of the proportion of older people in the various Bernese districts(own visualisation based on Statistics City of Bern, 2019; on the geoportal of the Canton of Bern, 2024)

The age structures in the various districts are very different. The east and west of Bern have particularly older populations. In the north and south, popular family districts are known for having fewer older people. The Old Town has a nearly average proportion of older people. Only the district of Weißes Quartier has a number of older people particularly higher than average due to the concentration of retirement homes and nursing facilities.

- > 20% of older population
(higher than average)
- >15% of older population
(more or less average)
- < 15% of older population
(below average)

3.1.5. Bern as a Age-Friendly City

The city of Bern has been dealing with the question of how to better integrate its growing elderly population into the city for several years. Therefore, the city has compiled a comprehensive social policy to achieve the goals of an age-friendly city. Since 2014 the city is also part of the WHO age friendly cities. In the newest “ageing report” the main strategy to improve the inclusion of older citizens, is to create so called “Caring communities” on a neighbourhood level. The city Bern sees caring for people as

social task. The environment must be designed in such a way that it enables people to live well even in a state of fragility and vulnerability. This includes social contacts, participation in social life and (infra-)structures that enable mobility despite limitations. The term caring communities means taking responsibility for each other and developing trust in each other. Because no society functions without a certain degree of social reliability and community (Municipal Council of the City of Bern, 2020).

In the A city for all - Focus on age Ageing Strategy 2030 with Measures 2020-202 (Municipal Council of the City of Bern, 2020) following main points were raised :

Gender problematic

A age-friendly city is also a feminin city because today nearly 60% of the citizens in Bern over 65 are women. In the upcoming years according to estimation the difference in life expectancy between men and women will decrease with the increase of older people. Nevertheless, mainly women are working in low-paid position in the health care and nursing sector.

Old-age poverty

Old-age poverty is a problem in Switzerland but especially in Bern. In 2018 18.9% of pensioners in Bern received AHV (supplementary benefits) due to their low pension. The average of 12,5% in Switzerland as a whole is significantly smaller. According to estimations will this group rise up to 20% in 2030 due to an increase of pensioners and an increase of older immigrants.

Living situation

94% of the citizen over 65 are living in alone or in a multifamily household only 6% are residents of a nursing or old people's home. Of the 94% 36% are living alone and 58% living with others mostly in a couple household.

Move and housing market

The willingness to move decreases with rising age. According to Zimmerli only 25% of the people over 80 in Switzerland are willing to move although their home isn't barrier-free and too large. The consequences are a loss of participation and social contacts as well as a large consumption of living space in the case of mobility restrictions. But even if they are willing to move into a smaller, barrier-free flat, many fail because of the higher costs of such a flat (Zimmerli, 2019).

3.1.6. Population and Housing Market

POPULATION

Bern, as fifth largest city in Switzerland had inhabitants in 2020 (Statistics City of Bern, 2024). From 2016 to 2030 the cities population is estimated to increase by almost 12% from 140,000 (2016) to around 157,000 inhabitants (2030) due to increasing of birth rates and immigration. In the long term, from 2030 to 2050 a population growth up to 20% is even conceivable.

The increase in the number of inhabitants is related to employment growth - by 2030, the labour market must create up to 8.5% more jobs (City Bern, 2016).

This presents the city of Bern with the challenge of growing without reducing the current quality of life.

HOUSING MARKET

As for now the housing market is tight in Bern as well as in most urban areas in Switzerland - the request for apartments is higher than the housing offer, therefore prices have risen sharply in the last years. Especially inhabitants with lower income and people that are new on the renting market get to feel that.

Additionally, living space per person is very disproportionately distributed. According to the City Planning Office of Bern, only 1/4 of the apartments of Bern have more than four rooms (large apartments), but over half of the large apartments are occupied by one and two-person households therefore, more than thousand inhabitants live in apartments with more people than rooms.

The ownership rate has risen slightly in the last years, nevertheless it's still low with 17%, in comparison to the rate of 37% in Switzerland as a country.

However, 75% of the apartments are owned by individual people, the rest is owned by private investors (5%), public cooperatives (14%) and the city (7%). The low rate of apartments ownership by the city

makes it more difficult to react on to the tight market.

Thus, not only do the 17% of Bernese at risk of poverty have difficulties finding affordable and suitable housing, also families, older and disabled people of the middle class are also affected (City Planning Office of Bern, 2018). At Bern's housing market there is a lack of affordable barrierfree houses. Additionally, the majority of barrier free apartments are in new buildings and therefore, often only affordable for financially well off older people. The situation is similar for housing with supplementary benefits for older people or in new forms of housing, the lack of affordability and the lack of offers makes it difficult for low-income or middle-income pensioners to change their housing situation.

For families the city does not currently offer any specific housing, therefore it is difficult for families to find suitable and affordable housing in the city due to the lack of larger flats and the high rents. Therefore, the number of families moving out of Bern is higher than the number of families moving into the city (City Bern, 2016).

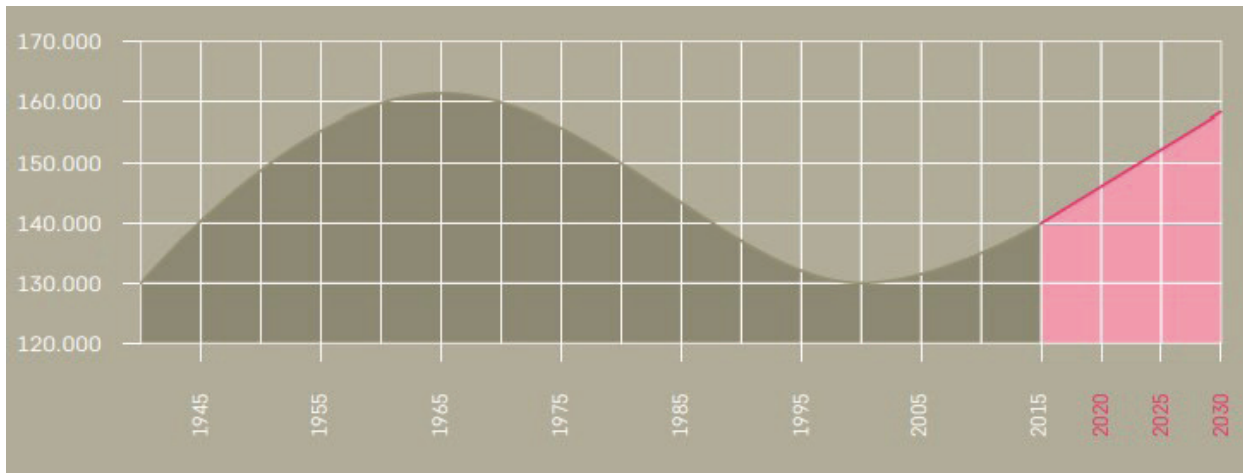


Image source 27: Estimated population growth of the STEK 2016 (City Bern, 2016)

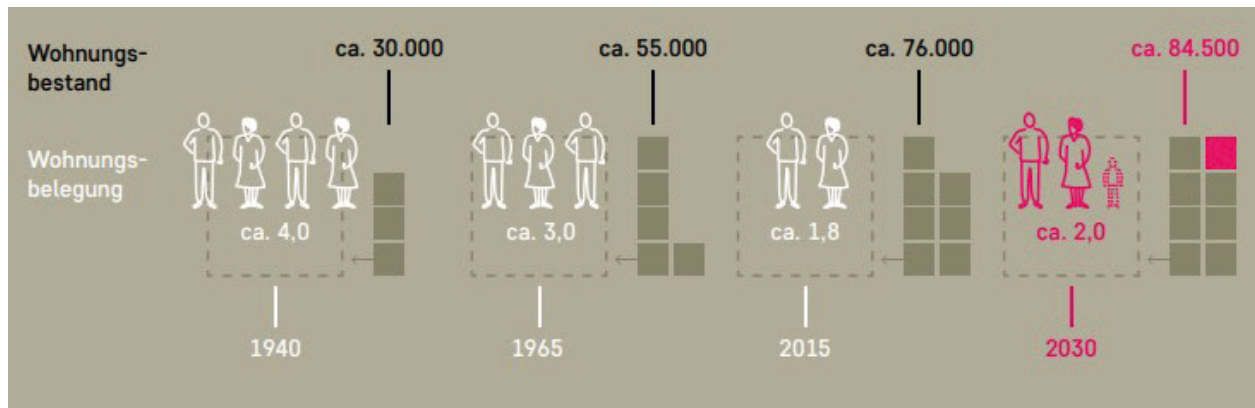
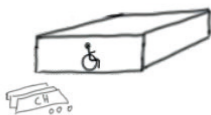


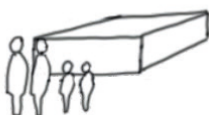
Image source 28: Residential portfolio development of the STEK 2016 (City Bern, 2016)



a high amount of older people are living in large flat / singel/family houses



barrier-free housing is not affordable



it is difficult for families to find a sufficiently large flat

Image source 29: Graphics of the housing market (own visualisation)

3.1.7. Mobility

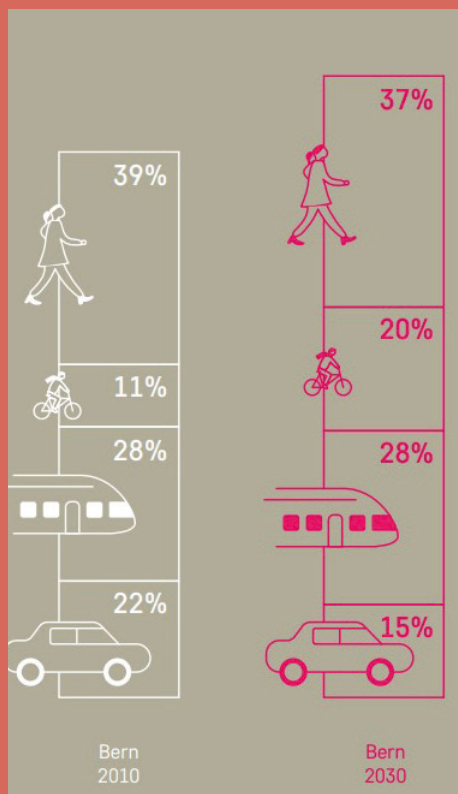
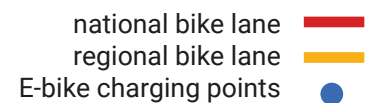


Image source 30: Mobility share of the city of Bern in 2010 and 2030 (STEK 2016)

According to the STEK 2016 from 2016 to 2030, the share of bicycles should increase from 11 % to at least 20 %. In addition, the city plans to promote public transport and pedestrian friendliness and to reduce individual transportation (City Bern, 2016).

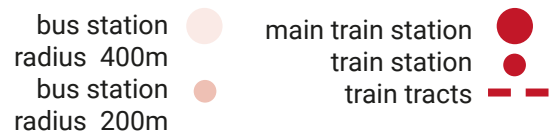
BICYCLE

Bern is planning to become a cycling city. In recent years, the city has invested a lot in creating cycle paths and bike garages with repair workshops have been built all over the city. In addition, Bern has responded to the new trend of e-bikes and has installed and is planning numerous e-charging stations.



PUBLIC TRANSPORTATION

Switzerland is known for its high investments in public transport and thus also for a good public transport system. This is also true for the city of Bern. To increase the number of users, Bern is even planning to expand the system, especially in connection with new developments on the outskirts of the city



INDIVIDUAL TRANSPORTATION

According to a survey on quality of life from 2021, traffic is one of the main problems for Bernese citizens. The city highway runs partly directly through the city and separates the neighbourhoods from their surroundings. In the STEK Mobility 2016 Bern, there are therefore three strategies for improving the current situation: avoid, relocate and make compatible. Additionally, by promoting car sharing and strict parking space management, Bern wants to reduce the number of parking spaces.

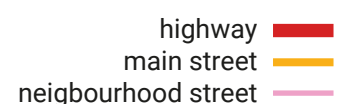




Image source 31: Cycling infrastructure (own visualisation based on the geoportal of the Canton of Bern, 2023)

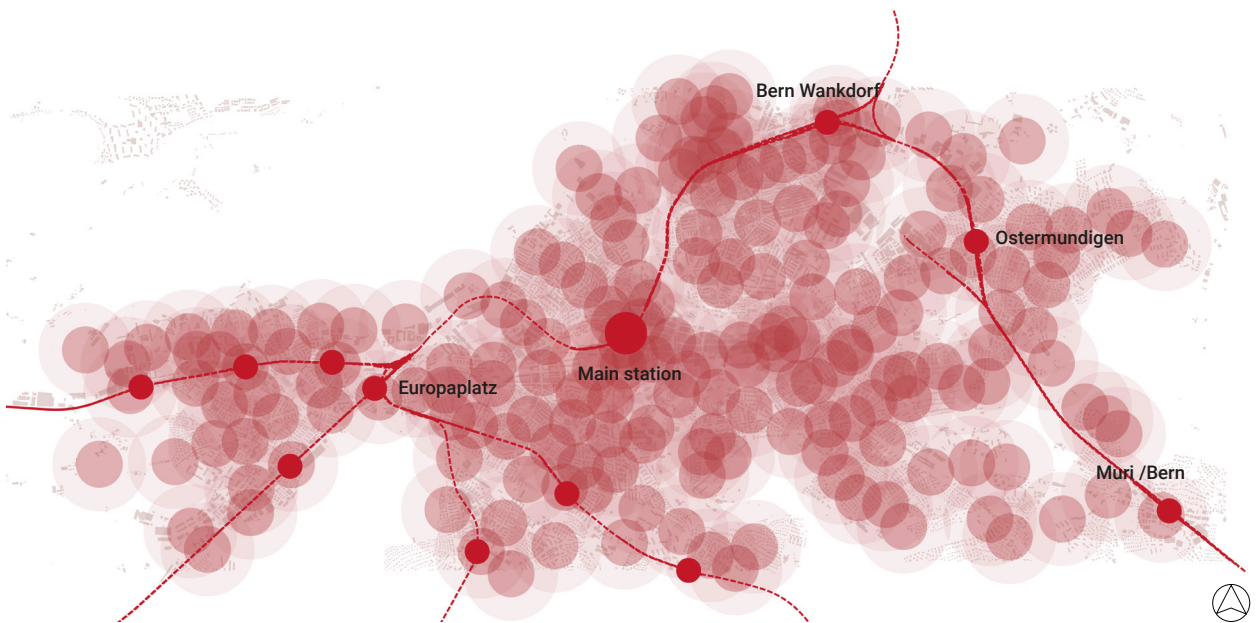


Image source 32: Public transport network (own visualisation based on the geoportal of the Canton of Bern, 2023)

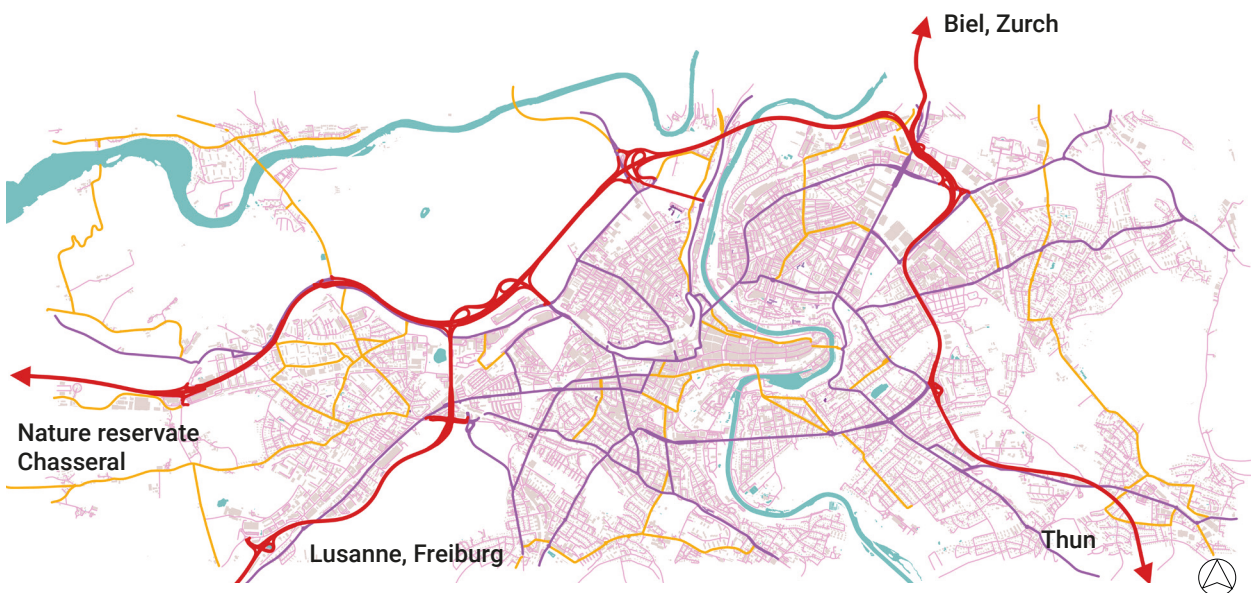


Image source 33: Car infrastructure (own visualisation based on the geoportal of the Canton of Bern, 2023)

3.1.8. Green And Blue Infrastructure



Image source 34: Green and blue infrastructure (own visualisation based on the geoportal of the Canton of Bern, 2023)

Within the city, there are several smaller parks and a few larger ones; however, some neighborhoods lack sufficient public green spaces.

The outskirts of the city are characterised by large wooded areas, agricultural land and natural meadows, which are considered cultural landscapes. In residential areas, old town lack of parks, concentration along the area.

The river Aare and its habitat are identity-forming for Bern. The green space around the Aare, as the largest green connection within the city, offers numerous parks and - recreational facilities like for example the Marzili outdoor swimming pool that attract numerous visitors. In addition, the numerous fountains in the city and the partially open flowing water system in the old town show the richness of water and its identity-forming significance for the city (City Bern, 2016).

- agricultural land
- parks
- forest
- allotment garden
- cemetery
- water



Image source 35: Mountain range in the region of Bern (Krämer, 2029)

FAVOURITS PARKS OF OLDER PEOPLE IN BERN



Image source 36: Efenau park in Bern (own visualisation)



Image source 37: Rosengarden in Bern (own visualisation)



Image source 38: Bern Minster Platform (own visualisation)



Image source 39: The Area (own visualisation)

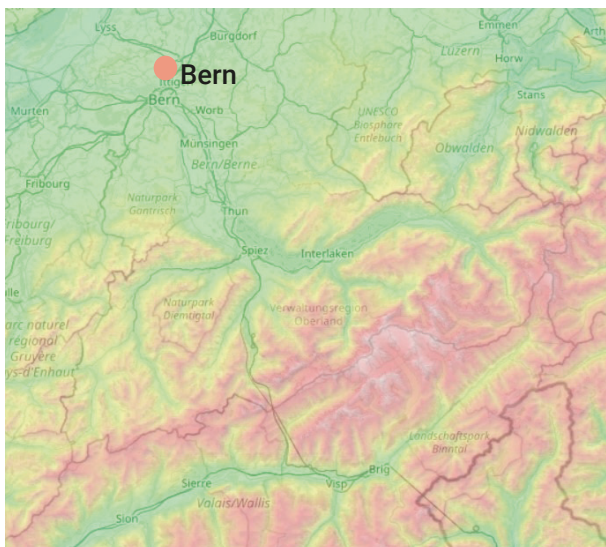


Image source 40: Green and blue infrastructure (topographic-map)

BERNS SURROUNDINGS
 Bern is surrounded by the panorama of the Bernese Alps, which is a source of identity for many people and offers numerous leisure opportunities like hiking, cycling, and skiing (Interviews).

3.1.9. Health

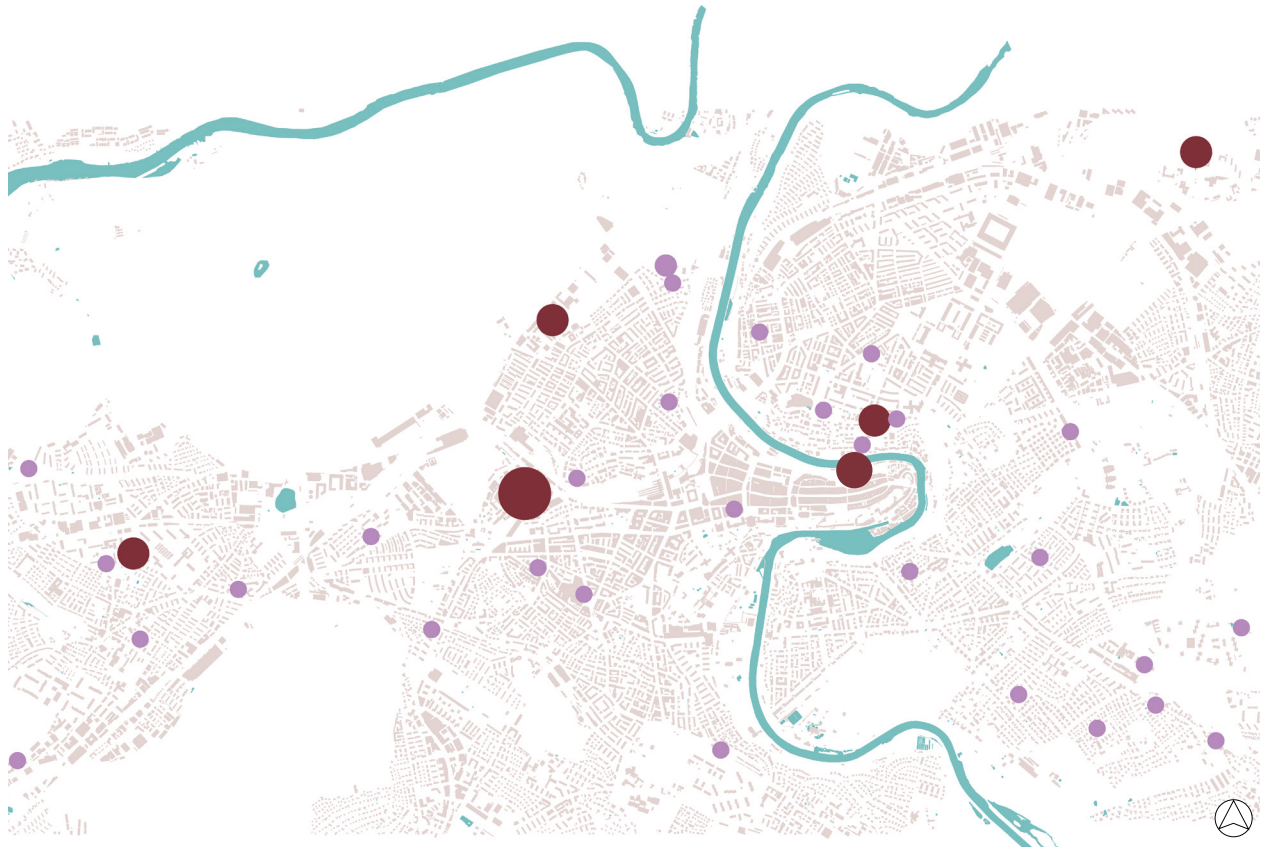


Image source 41: Health infrastructure (own visualisation based on the geoportal of the Canton of Bern, 2023)

The health system in Bern is rated as good. The city has two university hospitals, which are also of great regional importance. However, the health opportunities in the population vary according to social situation and status. For older people today, there is a lack of viable acute and transitional (OTC) services that would improve integrated care.

But as for now only only 6% of older people are residents of a nursing or old people's home. The increasing ageing of society poses new challenges for the existing health care system to maintain the current standard on the one hand and to expand it on the other. Recruitment and training of staff will play a crucial role (Department of Health, Social Affairs and Integration of the Canton of Bern , 2020)

- hospital
- care facilities / nursing homes

3.1.10. Bern attractions and Social Spaces

There are many attractions and social spaces specifically for older people, such as the Bern Generation House or the uni-

versity, which offers courses for older people. However, most of the facilities are located in the old town.



Image source 42: The seniors' uni in berne is well attended (Raphael Moser, 2018)

SENIOR UNIVERSITY

Bern is also known as a university city. Various departments are spread throughout the city. In the main building of the university, older people can also take part in the senior uni, a study programme especially for people over 65 who want to acquire new knowledge (University Bern, 2024)



Image source 43: Inner courtyard of the generation house in Bern (Berner Generationenhaus, 2024)

BERNER GENERATIONENHOUSE

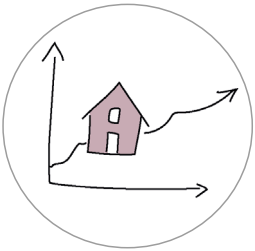
The Berner Generationenhaus, founded in 2014, is a public place of encounter and social dialogue. It unites twelve social institutions and the Burgerspittel retirement home under one roof. The services offered include information, counselling, education and life support for all generations. There are also temporary exhibitions on the theme of generations in the Generationenhaus and in the café you are also allowed to bring your own food and drinks, which should help to include all people regardless of their income (Berner Generationenhaus).

3.1.11. Conclusion



DEMOGRAPHY (MEDIUM)

Bern's population is growing as well as its older population. However, as a student city, Bern still has a medium-high average age. Despite this, certain districts have a significantly higher proportion of older residents.



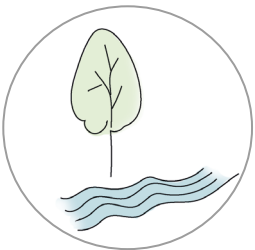
POPULATION AND HOUSING MARKET (BAD)

Rising housing prices and a high proportion of people living in spacious single-family houses makes it difficult for vulnerable groups such as older people or families to find suitable, affordable, barrier-free homes.



MOBILITY (GOOD TO MEDIUM)

The mobility infrastructure in Bern is overall good, thanks to its strategy to become a more cyclist-friendly and its good public transportation. However, the city highway, which crosses several neighbourhoods, contributes significantly to increased pollution, problematic traffic management and other negative effects in these areas.



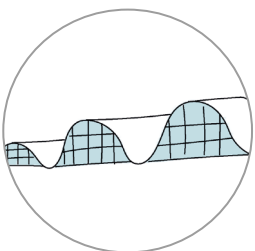
GREEN AND BLUE INFRASTRUCTURE (MEDIUM)

The city's green and blue infrastructure is defined by the river Aare and includes several parks. The outskirts are characterized by cultural landscapes, such as wooded areas, agricultural land, and natural meadows. However, some neighborhoods lack green spaces in close proximity.



HEALTH (GOOD)

The health system in Bern is rated as good, featuring the University Hospital and numerous doctors within the neighborhoods. However, in the upcoming year, with the rising number of older people, the system will be challenged.



BERN ATTRACTIONS AND SOCIAL SPACES (GOOD)

Bern offers several attractions and social spaces, including special institutions for older adults and generational exchange programs like the elderly university and generational house, though most of these institutions are concentrated in the city center.

Image source 44: (own visualisation)

3.1.12. The Older People of Switzerland and Bern

To gain a deeper understanding of the elderly population in general and but in Bern / in Schlosshalde, I conducted interviews with several older individuals on the streets. Additionally, I captured photographs of elderly people in urban environments to observe their activities, preferences, and needs.

Some further facts about the hobbies of older people in Switzerland:

The most popular sports among the over-60s, regardless of gender, are hiking, cycling, and swimming, according to the Swiss Sports Report. Among women, yoga and gymnastics were in fourth and fifth place, while skiing was a popular sport among men. Aquafitness and nordic walking are more popular in the 60+ age group, but despite all the preconceptions that they are popular sports for older people, they still lag far behind many other sports.

(Bürgi, Lamprecht, & Stamm, 2020).

As people age, their involvement in volunteering and political participation tends to increase. In 2019, 52-53% of individuals aged 65 to 74 in Switzerland were engaged in volunteer work, while 30% of those over 75 years old participated in such activities (Höpflinger, 2019).

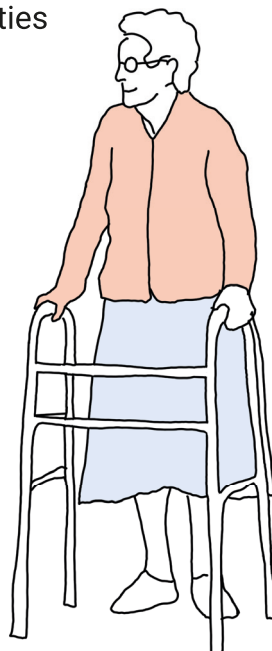
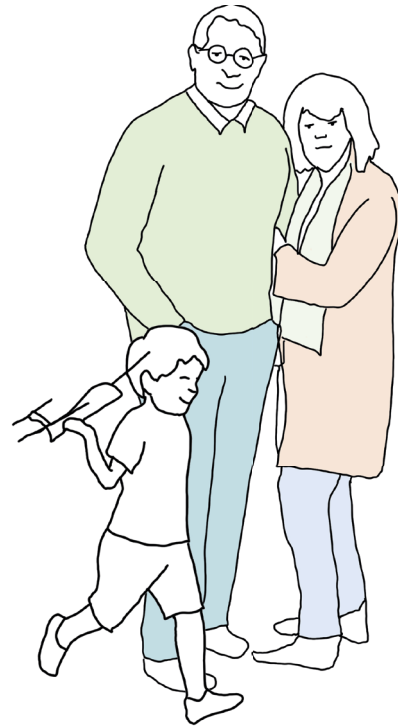


Image source 45: Drawings of older people (own visualisation)

OLDER PEOPLE IN BERN



The donkeys are a attraction for young and old.



The Zuhörbankli (Listening bench) situated in the generational house is especially used by older people



Playing with their (great-) grandkids is popular



Playing with their (great-) grandkids is popular



The supermarket and its restaurant in Bern Europaplatz is a popular place for many older people.

Image source 46: Pictures of older people in Bern (own visualisation)

INTERVIEWS WITH OLDER PEOPLE OF THE NEIGHBOURHOOD

Mother (60) and son (23) fit

„The Wittenkopfer neighbourhood is like a village in a forest. Although the buildings don't seem that nice from the outside, the view is fantastic, the green space between the buildings are a dream and there is a great community spirit- I wouldn't like to live somewhere else. At the nearby allotment garden my daughter and I are planting all kind of plant, we even get a biodiversity medal. I just wish the noise and the air quality would be better.“

Two women (78) bit unmobil

„We live here for a very long time already and we love the green spaces around. The traffic is annoying especially at the Freudenberg square. A nice square with some cafe and public functions would be nice. “

Men (70) fit

"I love the nearby green spaces. The neighborhood is calm and pleasant. I grew up here, and it feels like home. I can't imagine living anywhere else. However, the traffic and the crossings making it dangerous for biking."

Men (80) unmobil

"The waiting times at the crossings are too long, and the duration to walk across is quite short. Additionally, there are many crosswalks, which makes the crossing time even shorter."

Couple (65)

„I resently moved here with my husband. Unforualty he passed away a year ago and now I'm feeling a bit lonely. It's very difficult to find new friends. I like cultur so I somethimes to go the Paul Klee museum but unfortatly with my small pension I can not go as frequwntly as i would love to. I would appreciate a vibrant cafe or reaturant where I can observe a bit public life,because at the moment it's very quiet.

Men (60)

„A meeting place, a center is missing to bring people together, there is a quartier office but it's not very visable and therefore. The barrier to step in is higher furthermore a sponatnous meet up isn't possible

3.2. The Site

The district has with over 20% the highest procentage of older people in Bern (Statistics City of Bern, 2023).



Schlosshalde:

17% people under 18
67% people between 18- 65
20% people above 65


Murifeld

18% people under 18
57% people between 18-65
25% people above 65





Image source 48: Aerial view of the site (own visualisation based on the geoportal of the Canton of Bern, 2023)

 Image source 47: City structure of Bern (own visualisation based on the geoportal of the Canton of Bern, 2023)

3.2.1. The History

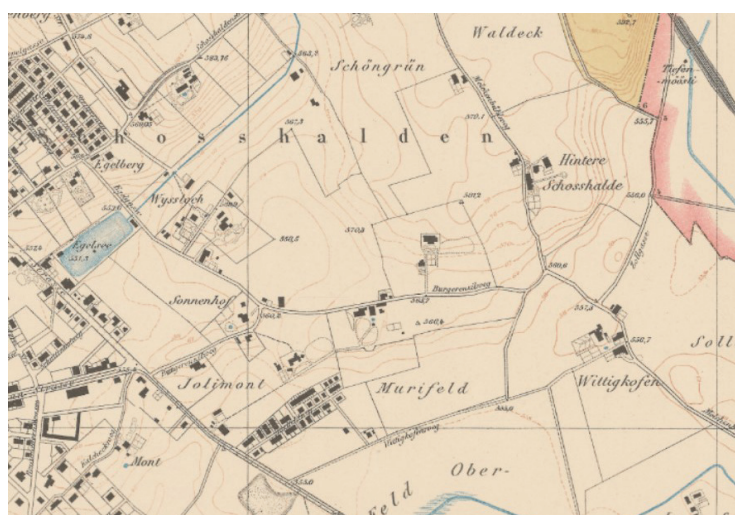
BEFORE 1900

Before 1900 Berns City boarders were limited by the river Aare. The area was charcterized by argiculture field and farms.



BEFORE 1914

First atemed to extend the city toward the east were made and the Murifeld was build on.



BEFORE 1941

In 1940, the Ostring was built, leading to further development of the surrounding area.



BEFORE 1962

Until 1962 parts of the Schosshalde were built and the city expands further east.



BEFORE 1978

During the 60 / 70 the city highway was built and with its near by surroundings larger scale building complexes. During the 70/80 the high-rise neighbourhood Wittenkopf and the large scale neighbourhood in Muri next to the highway were developed.



NOW

In the 2000 the Sonnenhof was further developed as well as the north part of Schöngruen / Vermont. Building of the Zentrum Paul-Klee.

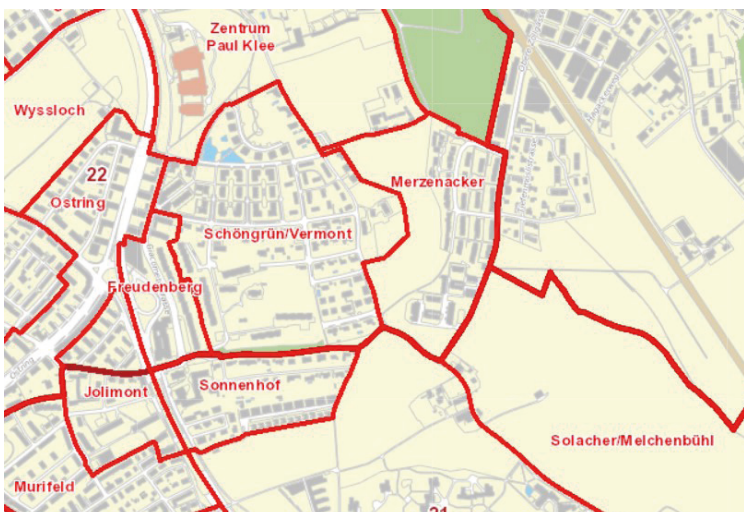


Image source 49: History of the city of Bern (own visualisation based on the geoportal of the Canton of Bern, 2023)

3.2.2. The Bypass East

The city highway runs directly through the neighbourhoods, separating them and causing numerous traffic-related burdens for the citizens. The burden of the traffic infrastructure in the east is high in the opinion of Bernese citizens (Statistics city of Bern, 2016). To counteract this, Bern is planning to build the eastern bypass - two tunnel tubes leading from the Muri junction to Bern Expo.

The far-reaching planning process began in 2015 with preliminary studies and several participation processes to develop a vision for the development of the tunnel tubes as well as for the new spaces that will be freed up by the construction of the tunnel highway. Due to the housing shortage and the rising population, Bern is even planning to release new building land (Astra, 2022). According to the plans, the tunnel will be opened in 2045, thus giving the starting signal for the re-development of the old highway.

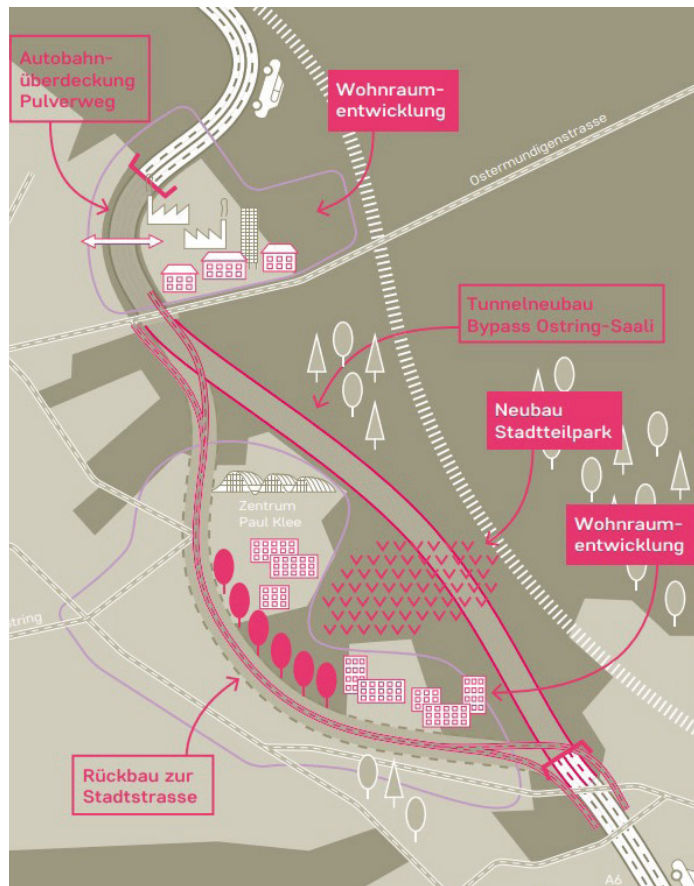


Image source 50: Overview of the Bypass East (ASTRA, 2022)

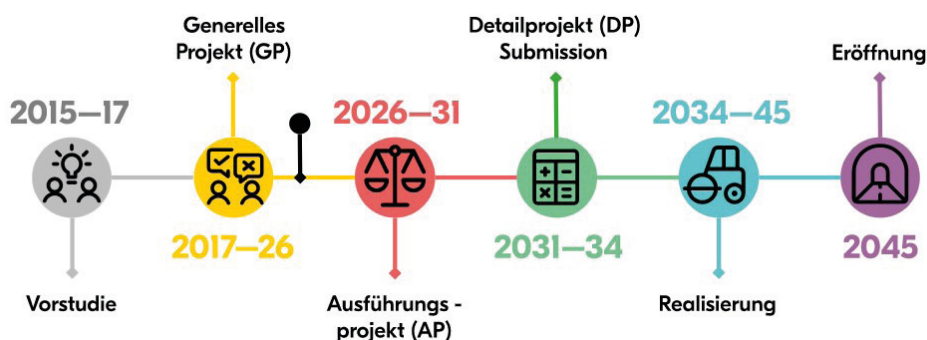


Image source 51: Process diagram of the Bypass East (ASTRA, 2022)



Image source 52: Development plan of the STEK 2016 (City of Bern, 2016)

According to STEK 2016, various areas are to be redesigned and renewed by 2030 or 2050. The areas are each assigned a category of the four priority themes: urban, green, work and transport (City of Bern, 2016).






Image source 53: Aerial photograph Bypass East (ASTRA, 2022)

3.2.3. Mobility

BYCYCLE

The area is generally conducive to cycling, attributed to its wide streets and low traffic volumes in residential zones. Nevertheless, the motorway junction and its intricate crossings present significant challenges, particularly for older people.

- national bike lane 
- regional bike lane 
- E-bike charging points 

PUBLIC TRANSPORTATION

The area is mostly well covered by the bus network; however, some residential areas are inadequately served. This issue is exacerbated by the few connections between the eastern and western parts of the area. Additionally, the area is insufficiently connected to the northern part of the city due to the tram network.

- bus station radius 400m 
- bus station radius 200m 
- tram planned 
- tram 
- train tracts 

INDIVIDUAL TRANSPORT

The car-oriented structures in the neighbourhood can be recognised by various features - the street proportions are often very car-oriented, there are numerous unclear street crossings as well as long distances due to a lack of footpath connections. Especially the city highway that runs through the neighbourhood and the main road.





- highway 
- main street (high traffic) 
- main street 
- neighbourhood street 



Image source 54: Cycle infrastructure (own visualisation based on the geoportal of the Canton of Bern, 2023)



Image source 55: Public transportation network (own visualisation based on the geoportal of the Canton of Bern, 2023)

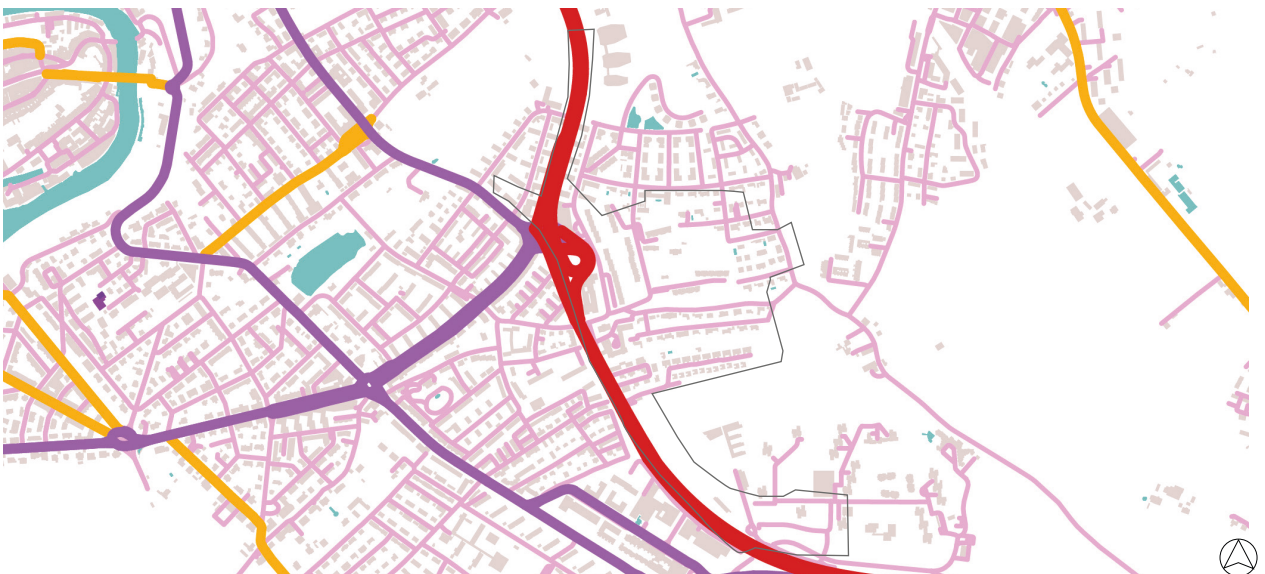


Image source 56: Car infrastructure (own visualisation based on the geoportal of the Canton of Bern, 2023)

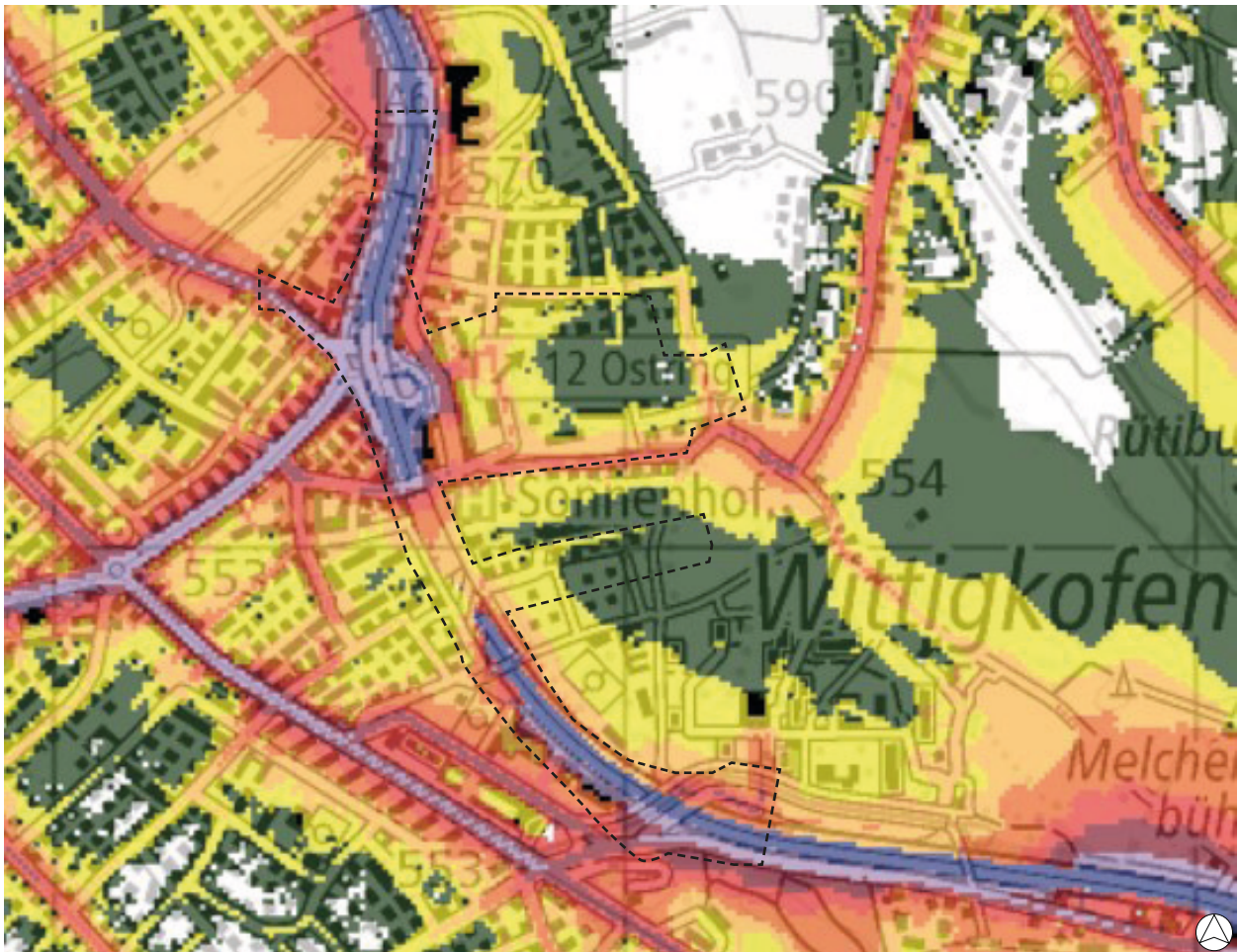


Image source 57: Noise map (Geoportal of the Canton of Bern, 2023)

The noise burden of the city high way and the car oriented structure is in most parts of the site quiet high, only the north east part isn't affected from it. Nevertheless the effects of the noise protections

are seen it's effects- even the really closed building are high but not super highly affected by the noise in comparison to the area around Egghölzli and Menchenbuehl were there isn't any protection.



Image source 58: The highway functions as barrier between neighbourhoods (own visualisation)

Although many of my friends are becoming increasingly hard of hearing, traffic noise is a frequent source of annoyance for me.

- high noise level
-
-
-
-
- low noise level

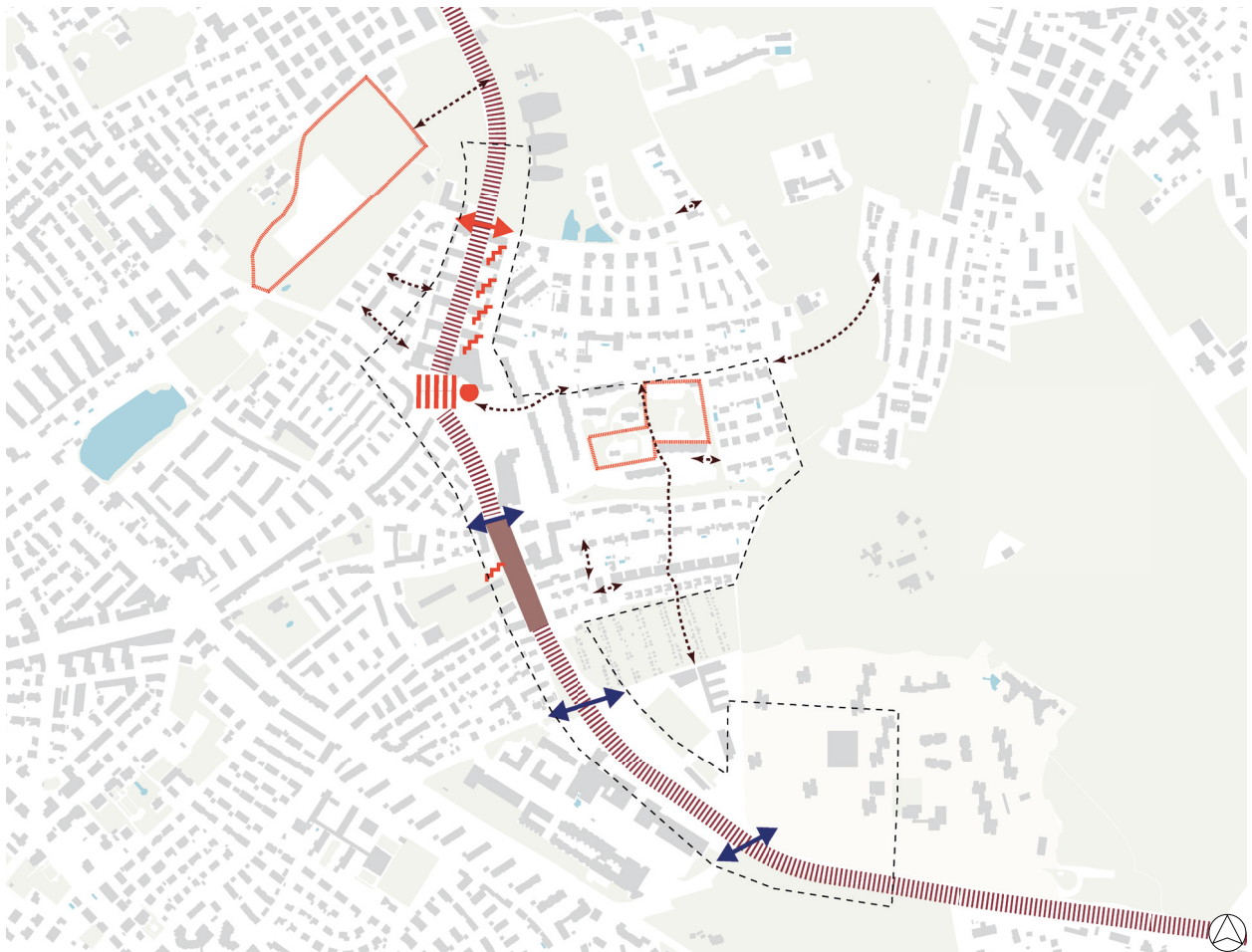


Image source 59: Map of barriers (own visualisation based on the geoportal of the Canton of Bern, 2023)

The city highway is a major obstacle both within the district and with its surroundings. In addition, the artificially created topography, built during construction to protect against noise, makes this even more difficult. There are some crossings, but these

are often longer and more complicated to reach, e.g. road junctions with several traffic lights, elevator or bridges, which is particularly disadvantageous for elderly people and people with reduced mobility. In addition, the visual separation remains.



Image source 60: The highway functions as barrier between neighbourhoods (own visualisation)

3.2.4. Public Space: Freudenberger Square



Image source 61: Aerial photograph (Geoportal of the Canton of Bern, 2023)

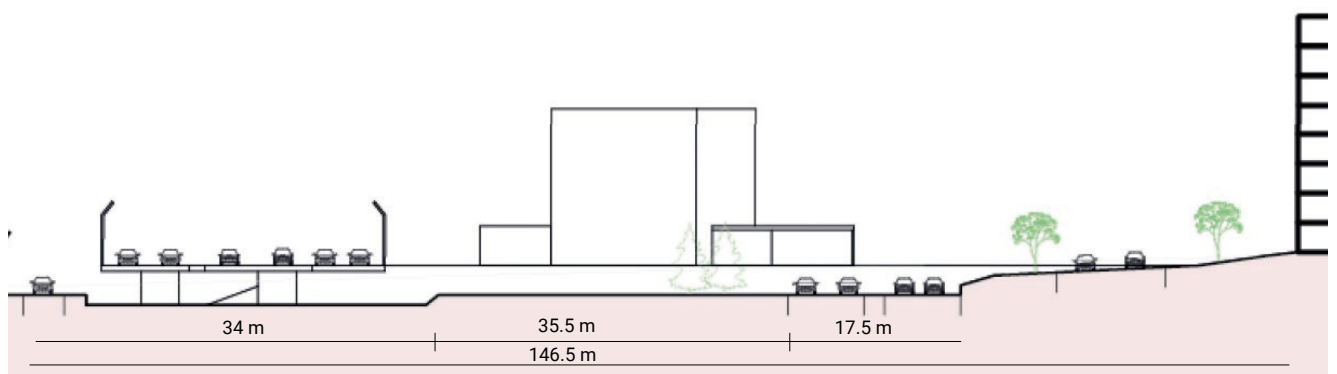


Image source 62: Section - Now (own visualisation)



Image source 63: Highway exit at Freudenberger square (own visualisation)

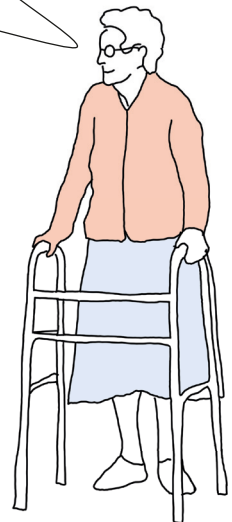


Image source 64: Traffic situation at Freudenberger square (own visualisation)

When I look out of my window, I see only a concrete wall, and I have to take a long detour to get to the nearby supermarket. On top of that, I have mobility issues, so I leave the house less and less often.



Image source 65: Square in front of the business complex (own visualisation)



3.2.5. Public Space: Wittigkopfen Public Space



Image source 67: Aerial photograph (Geoportal of the Canton of Bern, 2023)

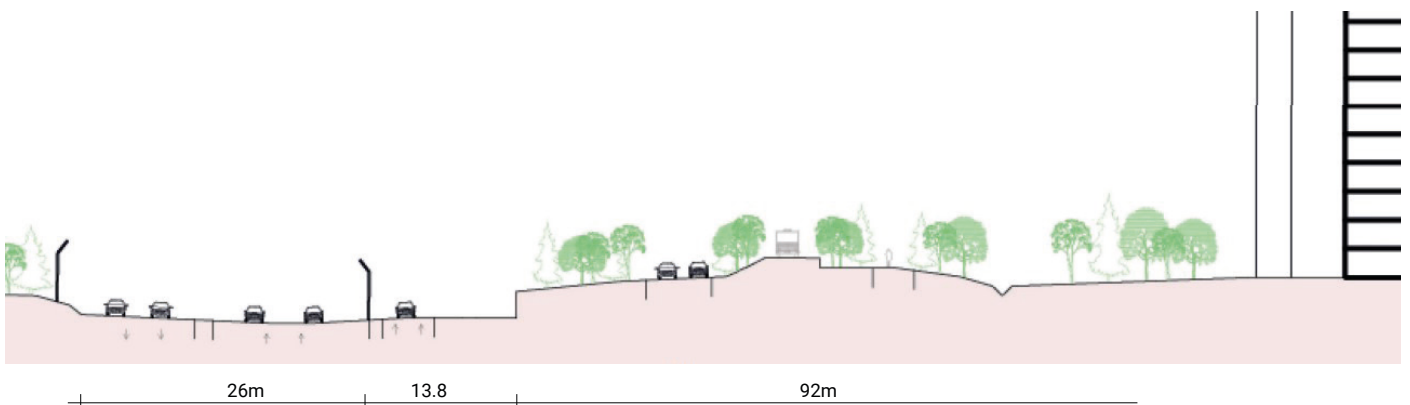


Image source 68: Section Wittighofen - Now (own visualisation)



Image source 69: Large green spaces between the high-rise complexes (own visualisation)



Image source 70: Supermarket "square" is used as a parking lot (own visualisation)



Image source 71: Car-oriented structures (own visualisation)

I enjoy the peace and quiet in Wittihoffen, but I wish there was a proper square in the neighbourhood where I could meet and watch people.



3.2.6. Housing

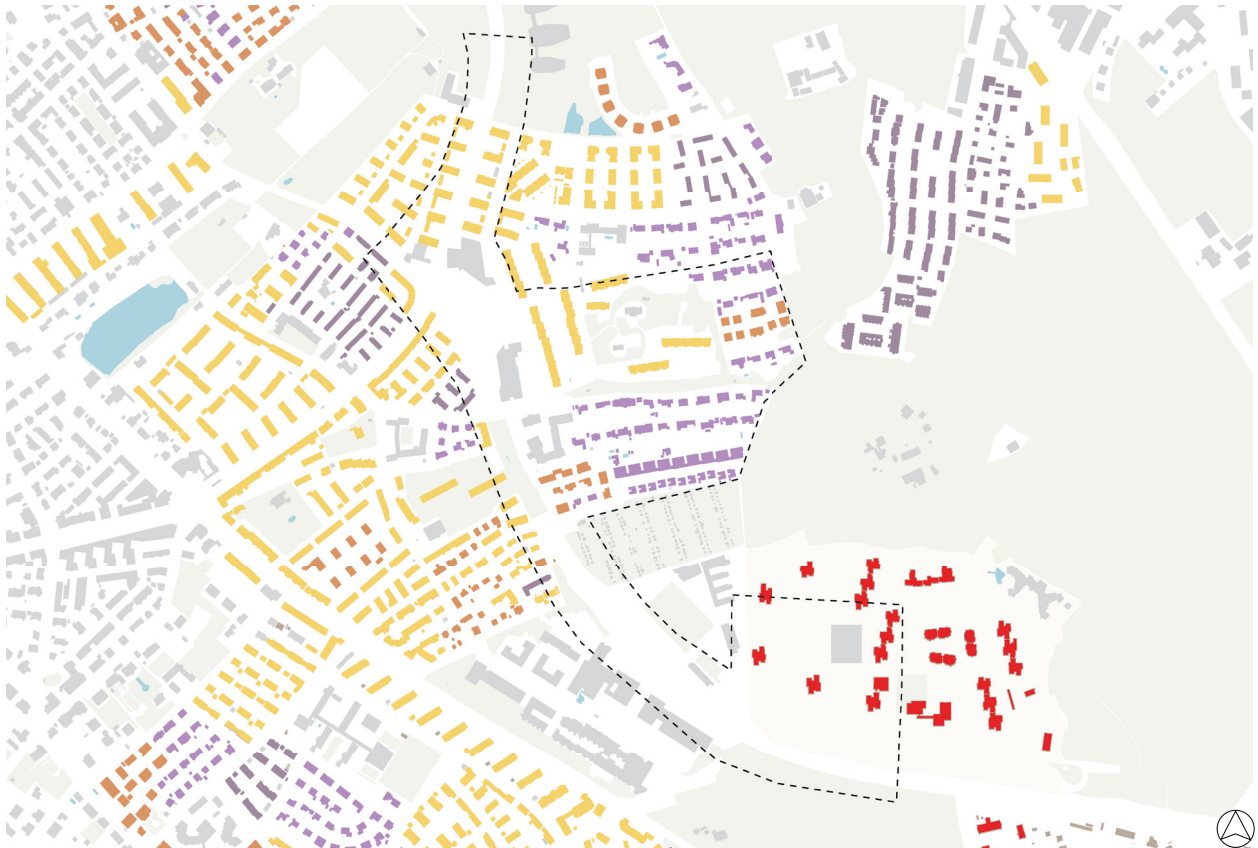
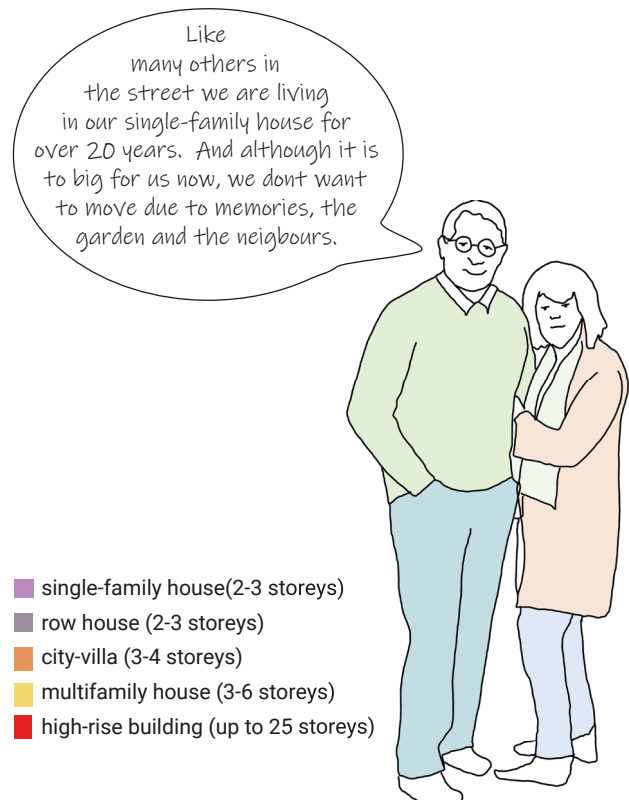


Image source 72: Housing types (own visualisation based on the geoportal of the Canton of Bern, 2023)

The building typology is heterogeneous - there is a high proportion of multifamily houses lined in rows with 3-6 storeys, which means that the entrance area is partly turned away from the street. Nevertheless, public, semi-public and private spaces are mostly clearly defined by raised walls, fences or vegetation. Another important building typology is the so-called city villa, a detached building containing several flats with 3 to max. 4 storeys and a private garden. Additionally, there are also single-family houses and row houses, which are mainly located in the middle of a neighbourhood or on the edge of a neighbourhood.

The large-scale quarter Murrifeld, built in the 1980s, with its high-rise buildings of up to 25 storeys, is conspicuous for its building height, its building arrangement and its isolated location. The building typology,



as well as their condition, is very different, which also shows the very different social status of the residents. The relatively high proportion of flats or single-family houses, combined with the high number of older people who typically

live alone or with a partner, and the disproportionate amount of living space per person, indicate that many older people reside in single-family houses or family flats in the neighbourhood.



Image source 73: Multifamily house(own visualisation)



Image source 74: Row house (own visualisation)



Image source 76: Multifamily housing (own visualisation)



Image source 77: High-rise building (own visualisation)

Amount of flats in the neighbourhood Schlosshalde -Murifeld

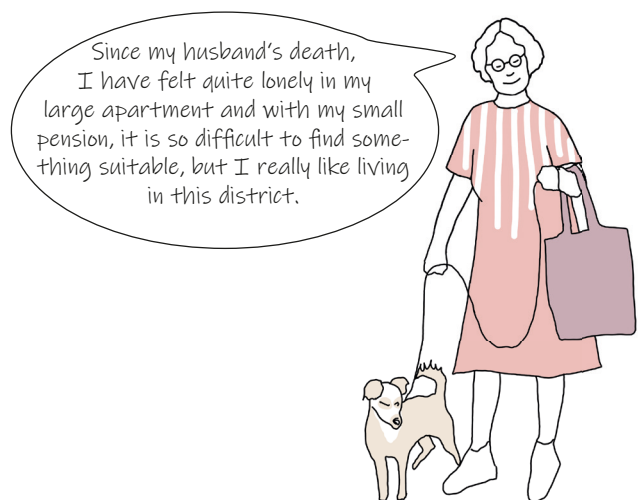
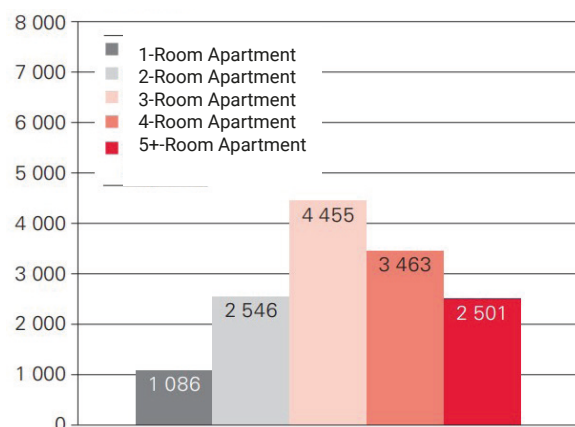


Image source 75: Housing stock (Zimmerli, 2021)

3.2.7. Green and Blue infrastructure



Image source 78: Blue- and Green spaces (own visualisation based on the geoportal of the Canton of Bern, 2023)

The site is surrounded by various green spaces - a large proportion of which are agricultural areas, natural green spaces such as forests and park-like green spaces. However, their accessibility and connection

is severely restricted by the urban motorway. In addition, some of the green spaces are semi-private or private and fenced off, meaning that public use is restricted.



- agricultural land
- parks
- forest
- allotment garden
- cemetery
- water

Image source 79: Green space strategy of the STEK (own visualisation based on the geoportal of the Canton of Bern, 2023 and the city of Bern, 2016)



Image source 80: Fenced meadow(own visualisation)



Image source 81: Allotment gardens(own visualisation)



Image source 82: Sculptures park Paul Klee (own visualisation)

Image source 83: Park landscape Wittighofen (own visualisation)



Me and my dog we love to go for a walk into the nearby forest but due to the city highway, we always have to make a huge detour to get there."



3.2.8. Health infrastructure

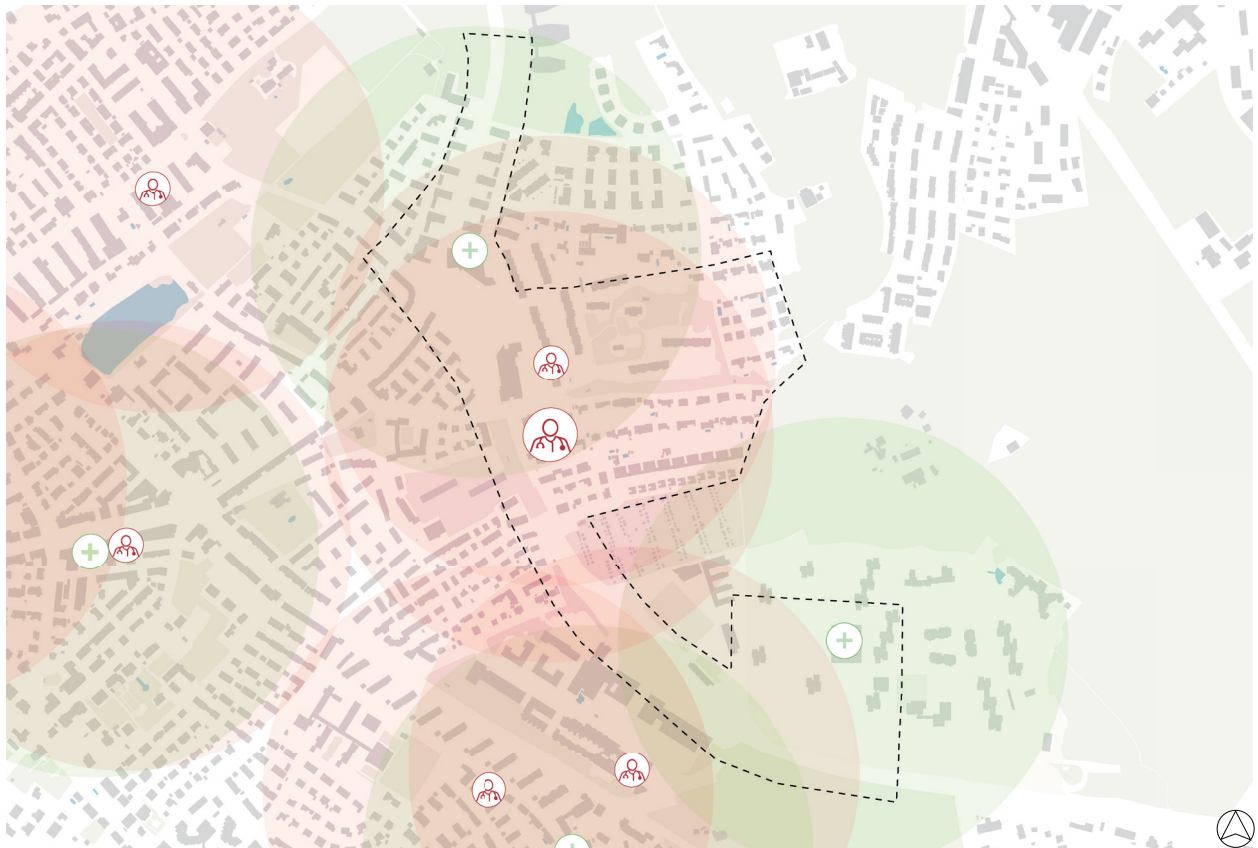


Image source 84: Health infrastructure (own visualisation based on the geoportal of the Canton of Bern, 2023)






The Sonnenhof Hospital is an important health care center for the surrounding neighbourhood, as well as for the whole city. There are some doctors on the site, but there is still a lack of practices, especi-

ally in Wittenkopf and Muri. In addition, the supply of pharmacies should be increased to ensure older people can reach a pharmacy with a radius of 400 m (Bohn, 2014).



Image source 85: Sonnenhof Hospital (own visualisation)

The Sonnenhof hospital and my doctor are very close by, which is very convenient, but unfortunately the road is partly inadequate for people with limited mobility.

-  hospital
-  doctor
-  pharmacy
-  radius 400m
-  radius 400m

3.2.9. Commercial Infrastructure

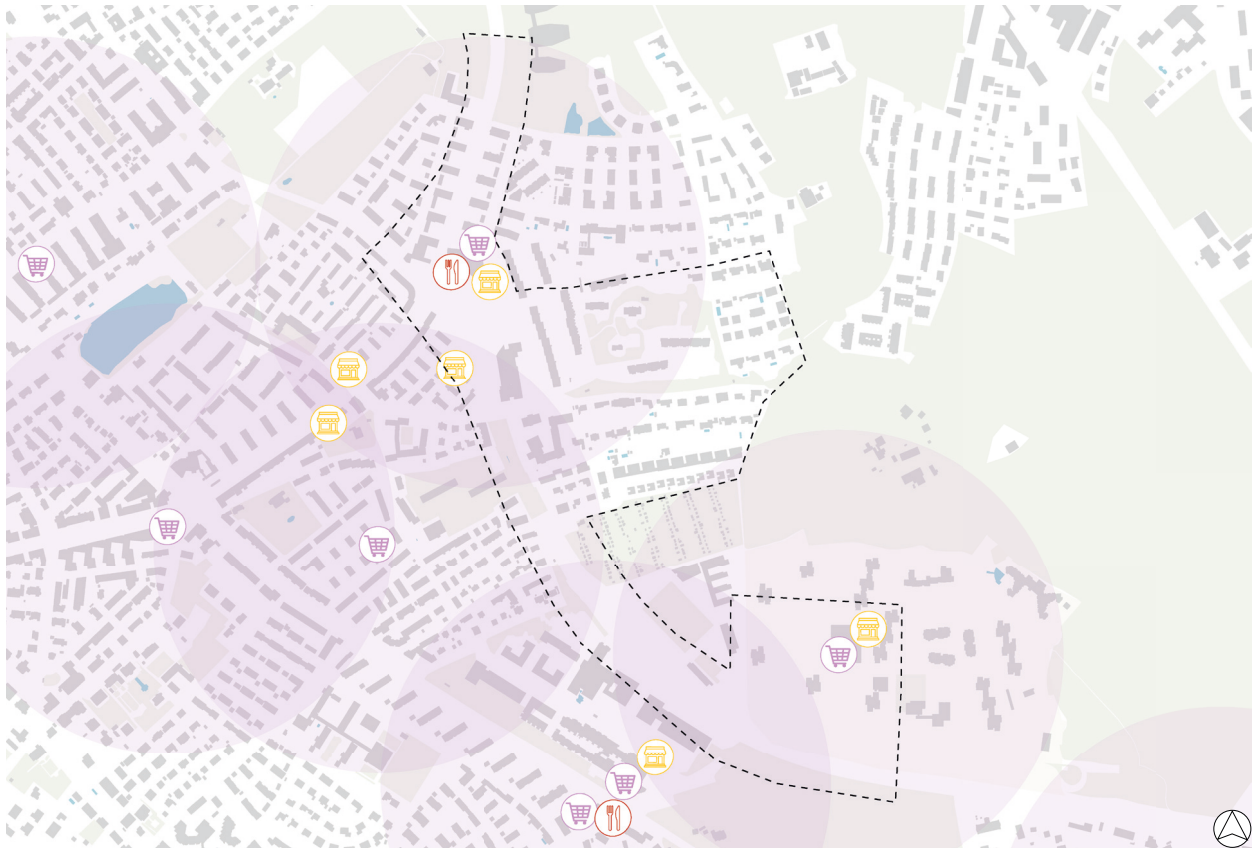






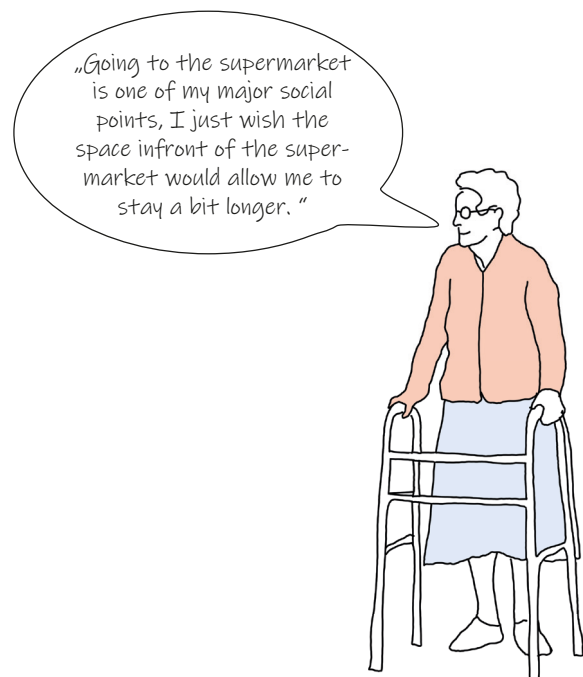
Image source 86: Commercial infrastructure (own visualisation based on the geoportal of the Canton of Bern, 2023)

-  supermarket
-  restaurant
-  other commercial stores
-  radius 400m

The availability of everyday goods is important for older people to maintain their independence. The recommended 400 m to a supermarket is achieved in large parts of the neighbourhood (Bohn, 2014). However, the area around the supermarkets is very car-oriented and does not offer opportunities for social contacts.



Image source 87: Commercial Hub at the Freudenberg square (own visualisation)



3.2.10. Social and Cultural Infrastructure

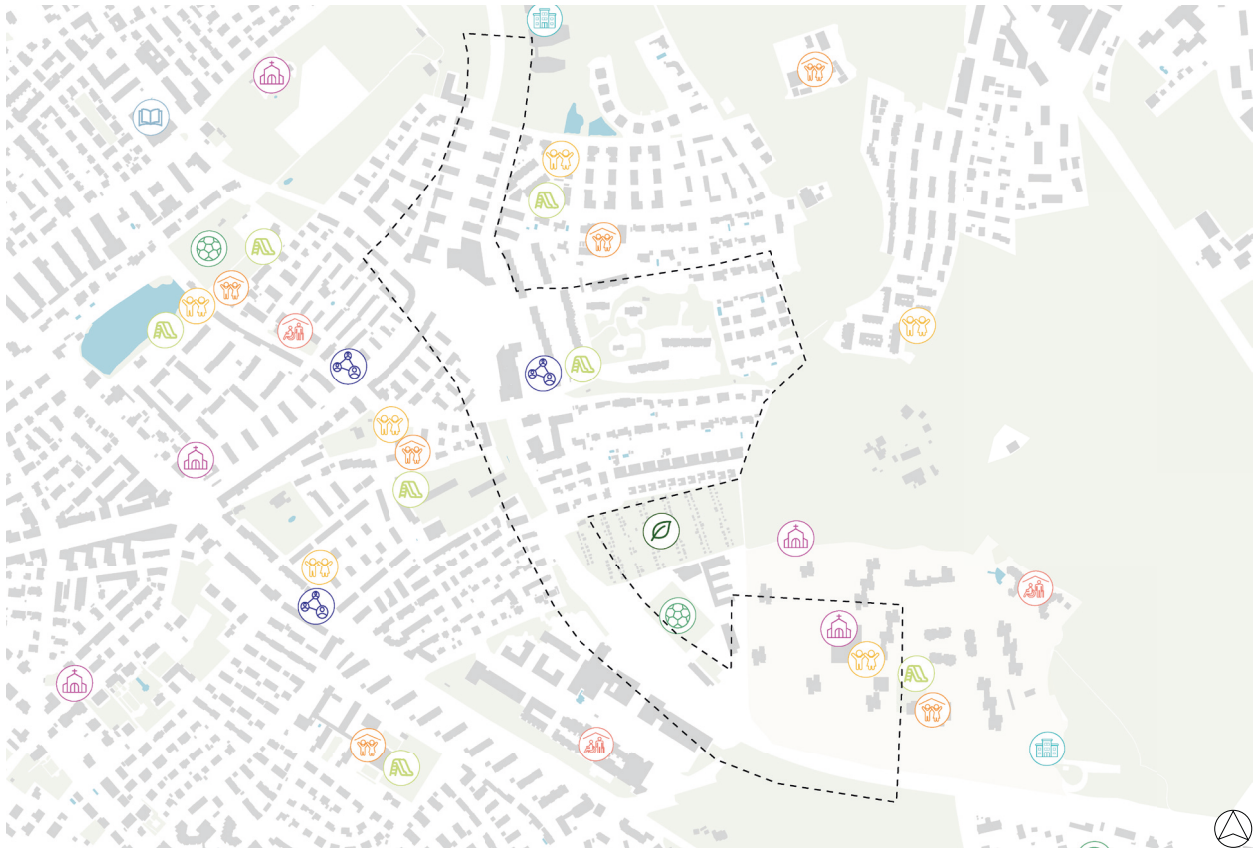












Image source 88: Social and Culture infrastructure (own visualisation based on the geoportal of the Canton of Bern, 2023)

The western part of the area has several churches and two elderly care complexes, though these are not well integrated into the neighborhood. The library is quite distant, especially for those with mobility issues.

While children's infrastructure is adequate, the playgrounds are partly poor designed. There are also allotment gardens, but they are only for private use. Overall, there is a lack of free social infrastructure.



Image source 89: Paul-Klee Museum(own visualisation)

-  museum
-  library
-  neighbourhood office
-  church
-  nursing home
-  school
-  kindergarden
-  playground
-  allotment garden
-  sport field

3.2.11. Attractive destinations



Image source 90: Favorite places of older people (own visualisation based on the geoportal of the Canton of Bern, 2023)

According to my research and through talking to older people in Bern, I mapped out the most important destinations within and close to the site.

- Natural spaces such as **forests** are the most popular publicly accessible spaces for older people in Bern.
- **Cemeterys** are spaces that is disproportionately visited by older people.
- **Public parks** in the immediate vicinity are essential for older people.
- **Swimming** is the third most popular sport among older people in Bern.
- **Public institutions** such as libraries and useums are popular places for older people to spend their free time.
- **Supermarket and other shops for daily needs** are indispensable for the older residents of the neighbourhood, as they serve as social meeting places and allow them a high degree of independence.
- **Hospitals and medical care facilities** are essential for older people and should be easily accessible due to their increasing physical and mental health problems.
- **Retirement home:** Visiting friends (or living in a retirement home) is common among older people.

3.2.12. Conclusions

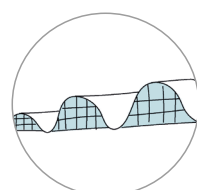
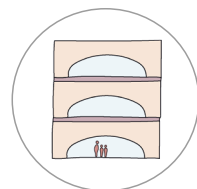
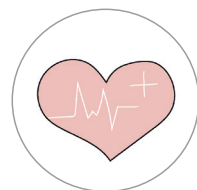
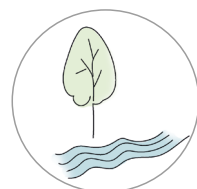
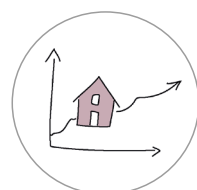
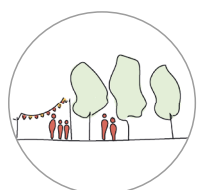


Image source 91: (own visualisations)

DEMOGRAPHY (MEDIUM TO POOR)

The area has a rising number of older residents and a higher proportion of older people compared to the rest of Bern. However, there is a relatively high number of young people compared to other districts as well.

MOBILITY (POOR)

The mobility infrastructure is very poor due to a car-oriented structure. The highway separates the neighborhood, causing noise and creating a confusing and complicated traffic situation for pedestrians and cyclists. Additionally there is a lack of short connections.

PUBLIC SPACES (POOR)

The main public spaces are dominated by stationary traffic and a car-oriented traffic structure. Therefore, they provide a low quality for staying and lack functional amenities.

HOUSING (MEDIUM TO POOR)

The Housing is medium, there are different housing options (single-family, high-rise, etc.). However, there is a shortage of affordable housing for older people and innovative housing options such as generational living.

GREEN AND BLUE INFRASTRUCTURE (MEDIUM)

The neighborhood has many green spaces, but accessing them can be difficult due to the car-friendly structure. In addition, some green areas are not open to the public.

HEALTH INFRASTRUCTURE (GOOD)

The health infrastructure is good. Thanks to the Sonnenhof Hospital and various medical practices, the area is well-served. However, there is a lack of a nearby pharmacy.

COMMERCIAL INFRASTRUCTURE (MEDIUM)

The commercial infrastructure is good to medium, most parts of the neighborhood being within the recommended walking distance for older people to reach a supermarket. However, the car-oriented structure makes it difficult for older residents to access these areas.

SOCIAL AND CULTURAL INFRASTRUCTURE

The social and cultural infrastructure is medium. There are some notable facilities, such as the Paul Klee Center, which holds city-wide and regional importance. However, there is a lack of free social infrastructure that offers more than just playgrounds.

FROM THE PERSPECTIVE OF OLDER PEOPLE

CORE PROBLEMS OF OLDER PEOPLE

Older people often feel socially excluded and a high number is suffering from loneliness and depression

Older people have an above-average consumption of space, and at the same time they have difficulties finding a suitable offer for a smaller housing unit. Due to their limited mobility and independence, moving is also associated with a high degree of stress for them.

With increasing age, people no longer feel comfortable in road traffic and the restriction of mobility increases. This leads to reduced activity among older people and consequently to a deterioration of their health.

Mobility difficulties, reduction in activity, older people are more affected by the increasing heat of global warming

Older people are most often affected by poverty. Due to a lack of financial resources, they suffer from poor living conditions and social exclusion more often than any other age group.

STRUCTURAL, SYSTEMIC CAUSES

Older people have a limited mobility framework and leave their homes less often. There is a lack of public places and places to exchange in the close vicinity.

Lack of housing options for older people and lack of public funding for housing suitable for older people. Housing is not designed to adapt to changing living conditions.

Residential quarters and road construction are focused on cars. Age-appropriate cycle paths and footpaths as well as barrier-free paths are missing.

Lack of connection of green spaces and activities

Older people are mostly excluded from cultural activities. There is a lack of free and age-appropriate offers in the neighbourhoods.

4. Design

ACTIVE AND INCLUSIVE TOGETHER

-an age-friendly approach to integrate older people into neighbourhood life

ACTIVE

The neighbourhood will promote physical and social activities by providing safe and short walking and cycling routes, as well as active green spaces and public facilities in close proximity that can be used by all, regardless of age.

INCLUSIVE

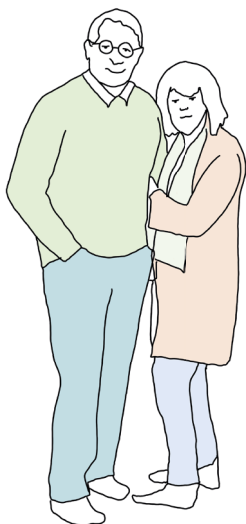
Design for the integration of all people, but especially older people, by addressing their needs and weaknesses, e.g. through barrier-free access and housing, as well as resting benches and public toilets.

TOGETHER

The design should encourage interaction between old and young. The neighbourhood offers housing forms that promote social interaction, such as intergenerational housing and public spaces that bring people together regardless of their age or social status.

4.2. Its Inhabitant

In order to better understand the needs of older people in the neighbourhood, I used my research, observations and conversations with older people in Bern to create these fictional characters that represent the older residents of the neighbourhood.



MARIA (70) AND DANIEL (68)

Housing: Living in single-family house for over 20 years in the Surbekstreet.

Leisure: Cycling, handicrafts, spending time with the grandchildren, Maria likes to go to cafes with her friends, Daniel feels somewhat underchallenged and sometimes doesn't know what to do with the free time he has gained, after his recent retirement,

Health and Independence: Fit and completely independent

Social life: One of their sons with his family lives close by, Maria has a lot of friends with in the city and the neighbourhood.



AZRA (78)

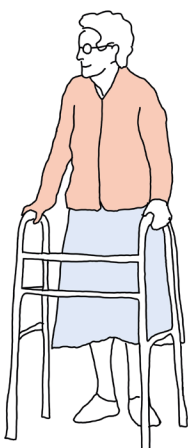
Housing: Lives in a flat at Wittigkopfen, but since the flat is a bit too large and expensive for herself after her husband died she is thinking about moving.

Leisure: Going for walks with her dog, working in allotment garden, reading, meeting people.

Health and Independence: Medium fit, first problems, still completely independent, a bit lonely.

Financial situation: is affected by old-age poverty

Social life: Knows a lot of people in the neighbourhood, although after her husband died she feels a bit lonely.



MONIKA (90)

Housing: Lives in a not barrier-free flat, as a result, she has increasing difficulty moving around and leaving the house.

Leisure: Going to the grocery store, going for walk, watching people.

Health and Independence: Limited mobility and independency.

Social life: Shrinking social network due to the death of friends.

Image source 92: Drawings of older people and maps (own visualisation)

SITUATION AFTER THE DESIGN

Housing: Remodeling + top up for new family

Leisure: Daniel is volunteering in repair cafe, using his technical skill from his former work, going on bike tours, going to the new playgrounds with their grandchildren and the children of the new family living in their house.

Social life: Hanging out with their new tenants.



Housing: Moved into a affordable flat at a generational living

Leisure: Shares her allotment garden now with a young women from the neighbourhood, going for walks in the now so close by forest

Social life: New friends and acquaintances in the house who help each other and inquire about each other's well-being



Housing: Moved temporary into a short care facility, after she broke her arm.

Leisure: Loves going to the new neighbourhood park and watch the children play, meets friends and acquaintances at the supermarket cafe.

Health and independence: Improved due to the fact, that she leave the house more often.



4.3. Strategy



Image source 93: Connecting neighbourhoods (own visualisation)

Removing the highway presents an opportunity to reconnect two previously separated neighborhoods, allowing them to grow together once more.

This reconnection offers the possibility to establish new pathways and therefore significantly enhancing the walkability of the district. Furthermore, the space at the heart of the neighbourhood can be designed to address the needs of older adults and

fostering community cohesion.

Additionally, this area can be utilized to provide new housing, public functions, and green spaces, bringing people together and improving the overall quality of life. My design aims to demonstrate a potential transformation of the space, exploring various options to enhance the quality of life for older adults and everyone else.

To create an active and inclusive environment where people are encouraged to be active, I have developed four strategies:



CONNECTING AND ACTIVATING GREEN SPACES



CREATING ACTIVE MOBILITY STRUCTURES



CREATING DIVERSE FORMS OF HOUSING



CREATING PLACES OF SOCIAL INTERACTION AND SUPPORT

4.3.1. CREATING PLACES OF SOCIAL INTERACTION AND SUPPORT



Image source 94: Places of social interaction (own visualisation)

- square
- social
- commercial
- short term care
- allotment garden center

Creating new social infrastructure and public spaces is essential for including older adults in society.

Inclusive Play Areas: Develop play areas that cater to both young and old. This includes facilities like boule courts and outdoor fitness equipment designed for older adults and people with mobility constraints. These should be located next to traditional playgrounds to encourage intergenerational interaction.

Short-Term Care Facilities: Since older people are less likely to move because they want to remain in their family environment where they have a social network, establish short-term care facilities within neighborhoods is crucial. These facilities can provide necessary support for older adults recovering from accidents or illnesses but

allowing them to stay in the communities they are familiar with.

Neighborhood Offices: Create neighborhood offices that offer activities for all age groups and promoting intergenerational exchange. These offices should provide free activities, which are crucial for including those suffering from old-age poverty. Additionally, they can serve as consulting centers, offering help and advice to those in need.

Shared Allotment gardens: Promote shared activities such as urban gardening. Being in touch with nature has a positive effect on older adults, and participating in communal gardening can promote exchange between generations. This allows older adults to remain active without having to bear the burden of tending a garden on their own.



play and active spaces
for young and old



shared allotment gardens with
educational center



neighbourhood office
including consulting and free
activities



short-term care

Image source 95: Tools: Social interaction (own visualisation)

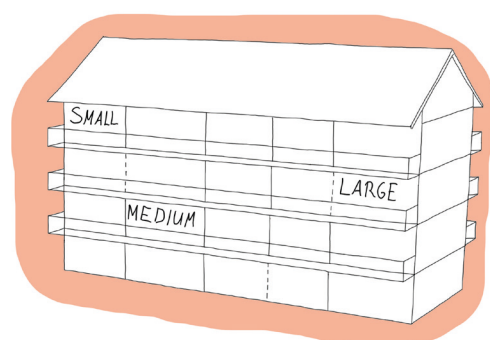
4.3.2. Creating Different Forms of Housing



Image source 96: Housing (own visualisation)

To include older people in the community, it's essential to recognize their diverse housing needs. As older adults are less likely to move because they prefer to stay

in a familiar environment and maintain their existing social networks, it's important to provide several housing options within the neighborhood.



FLEXIBLE HOUSING

Different flat sizes, which can be changed according to the needs of the residents, are intended to enable lifelong living in the house. Two small flats can become one big one, one small and one medium one super big and vice versa. This allows older people to stay in their own home and reduce the size of the apartment when it is no longer needed.

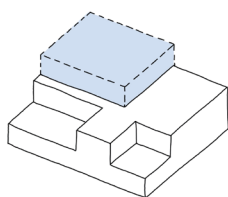
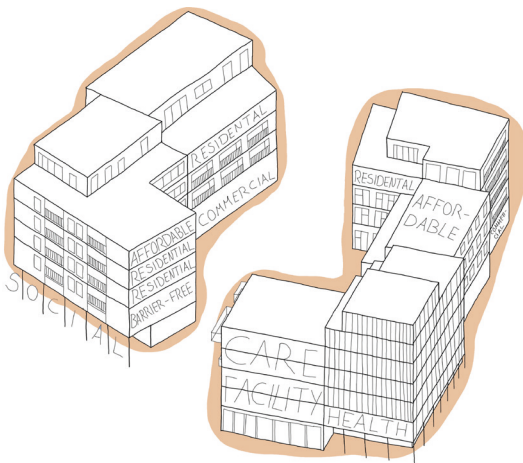
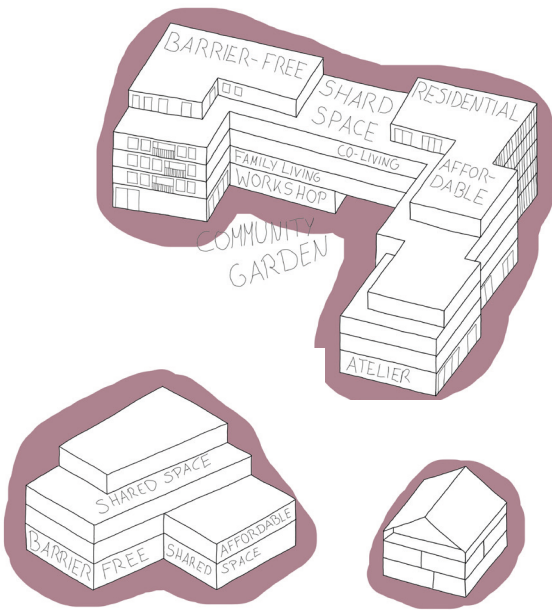


Image source 97: Tools: Housing (own visualisation)

GENERATIONAL LIVING DIVERS SIZES

Generational living provides flats for a diverse group of people, including singles, families, students, and older adults. These living arrangements also offer community spaces to encourage interactions among residents, which is particularly important for older people who may experience loneliness.

Residential: divers apartment sizes and forms of living including affordable, barrier free and family friendly

Shared spaces: workshop, community kitchen, sport room, roof top, community garden etc.

MIXED

Mixed houses are crucial because, as people age, their mobility radius tends to decrease. Thus, providing daily necessities within the house or nearby neighborhood is important.

Social functions: neighbourhood office, kindergarden, library, etc.

Residential: divers in size and form including affordable and barrier-free

Commercial: daily needs such as supermarket, farmarcy, cafe, restaurant, hair-dresser, etc.

Health and Care: short term care, ambulant care Sservice, doctor

TOP-UP

There is a large number of older people living in oversized homes, so there is a huge potential here. A conversion and a top-up of single-familie houses are intended to enable older people to remain in their homes and at the same time address the problem of loneliness among older people and the lack of housing for families.

4.3.3. Creating active Mobility Structures



Image source 98: Pedestrian infrastructure (own visualisation based on the geoportal of the Canton of Bern, 2023)

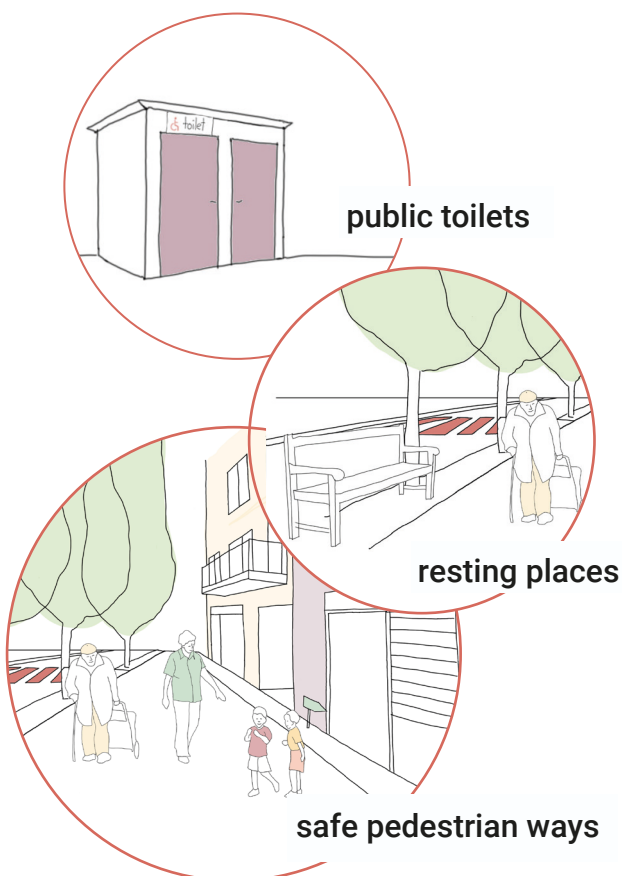


Image source 99: Tools: Pedestrian infrastructure (own visualisation)

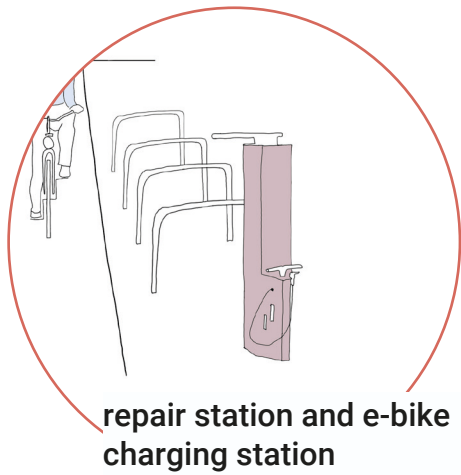
To enhance walkability among older adults, several key measures should be implemented:

Public Toilets: Older adults tend to use the toilet more frequently due to lower bladder capacity. Strategically placing public toilets along walking routes can significantly improve their comfort and confidence in walking longer distances.

Resting Places: Providing resting places along the way is essential. These spots allow older adults to take breaks and rest, making walking more manageable and enjoyable.

Safe Pedestrian ways: Implementing low traffic roads can significantly enhance pedestrian safety and overall walking experiences by reducing the risk of accidents. For older adults with limited mobility, increasing the number of connections and ensuring shorter, barrier-free routes can make walking more feasible and less strenuous. Wider sidewalks accommodate mobility aids such as rollators and allow for a slower walking pace, facilitating safe overtaking by others.

Image source 100: Bicycle infrastructure (own visualisation based on the geoportal of the Canton of Bern, 2023)



Promoting Cycling Among Older Adults

To encourage cycling among older adults, several key measures should be implemented:

Wide Cycle Lanes: Design cycle lanes that are wide enough to accommodate both fast and slow cyclists. This ensures safety and comfort for all users, allowing older adults to cycle at their own pace without feeling pressured.

Repair and E-Bike Charging Stations: Establish repair and e-bike charging stations along cycling routes. There is a rising trend among older adults to use e-bikes due to the reduced physical effort required. Providing these facilities will support this trend and make cycling more accessible and convenient for older adults.

Image source 101: Tools: Bicycle infrastructure (own visualisation)

4.3.4. Connecting and Activating Green Spaces



Image source 102: Green- and blue infrastructure (own visualisation)

To create a more inclusive and supportive green environment for older adults, several key elements should be considered:

Vibrant Public Spaces: Public spaces and Green spaces need to be close by and easily accessible. Diverse public spaces that encourage activity and interaction between generations are essential. Soft borders between these spaces can facilitate natural interactions.

Calm and Biodiverse: There should also be public spaces that offer quiet, safe and clean spaces with high biodiversity, where older people can rest and relax.

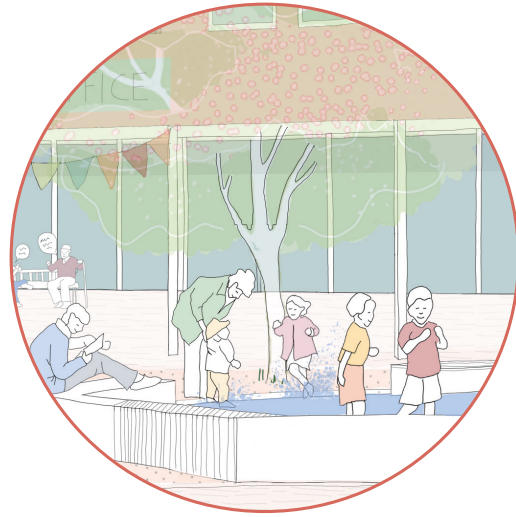
Resting under a tree: Along streets, there should be resting places with natural shading. Since the mobility radius of many older adults decreases, resting places are of crucial importance. Trees along pathways

can help reduce temperatures and mitigate the heat island effect.

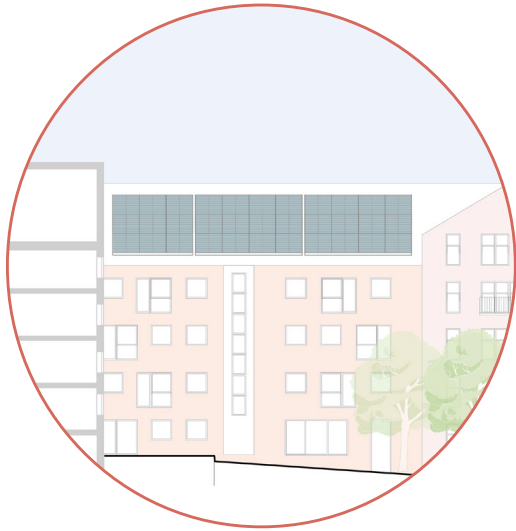
Blue Infrastructure: Given the vulnerability of older adults to heat and climate change, water stations providing free access to water are necessary along walking routes.

Solar energy: For older adults suffering from old-age poverty, solar energy can be a cost-effective alternative to reduce living expenses.

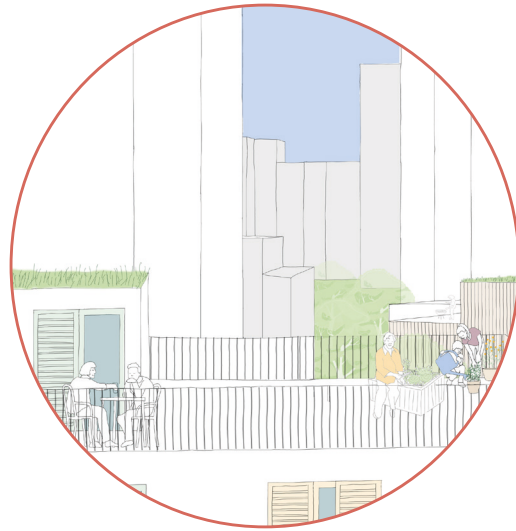
Green roofs: Green roofs can help cool buildings, reducing heat in the summer. This is particularly beneficial for older adults who are more vulnerable to heat. Secondly, natural environments have a calming effect. For older adults who may be unable to leave their homes due to mobility constraints, balconies and windows facing green areas provide access to nature and public life.



integrating blue infrastructure



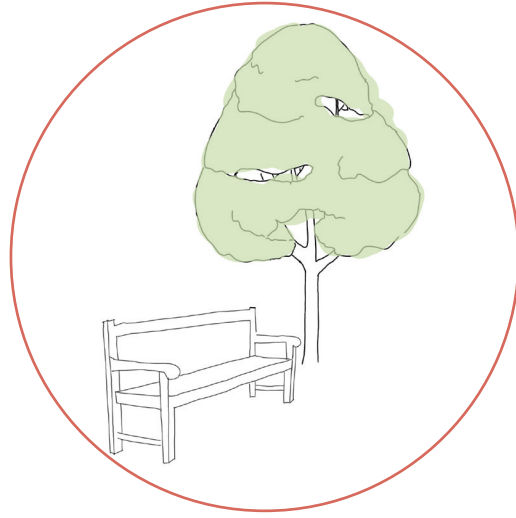
solar energy



green roofs and viewpoints from balconies, windows onto the green space



calm and biodivers



resting under trees

Image source 103: Tools: Green- and blue infrastructure (own visualisation)

4.4. The Process

1. Activating existing green and increase connectivity

Activating existing green spaces and increasing connectivity toward the new neighbourhood attraction.

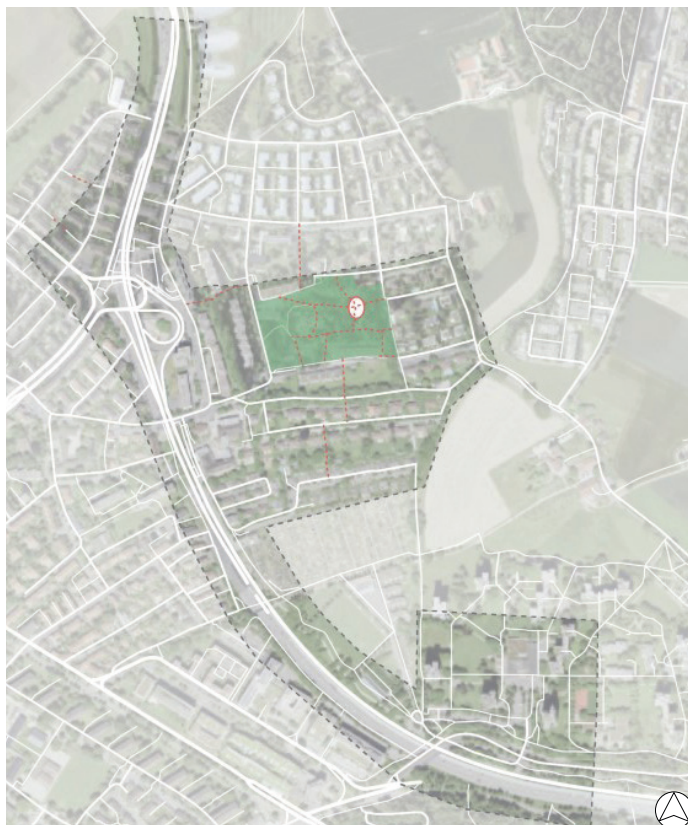


Image source 104: Phase 1 (own visualisation based on the geoportal of the Canton of Bern, 2023)

2. First building phase and advertising housing options

Motivating older people to move or rebuild requires a lot of time and persuasion. Therefore, my concept is to start a small building project with the different types of housing to inform older or future older people about their housing options.



Image source 105: Phase 2 (own visualisation based on the geoportal of the Canton of Bern, 2023)

3. Second building phase

After completion of the new tunnel, the second construction phase will begin. Starting with the improvement of transport accessibility through the construction of cycle paths, footpaths, public transport and roads.



Image source 106: Phase 3 (own visualisation based on the geoportal of the Canton of Bern, 2023)

4. Second building phase

Starting from the centres, the houses and green areas will be developed.



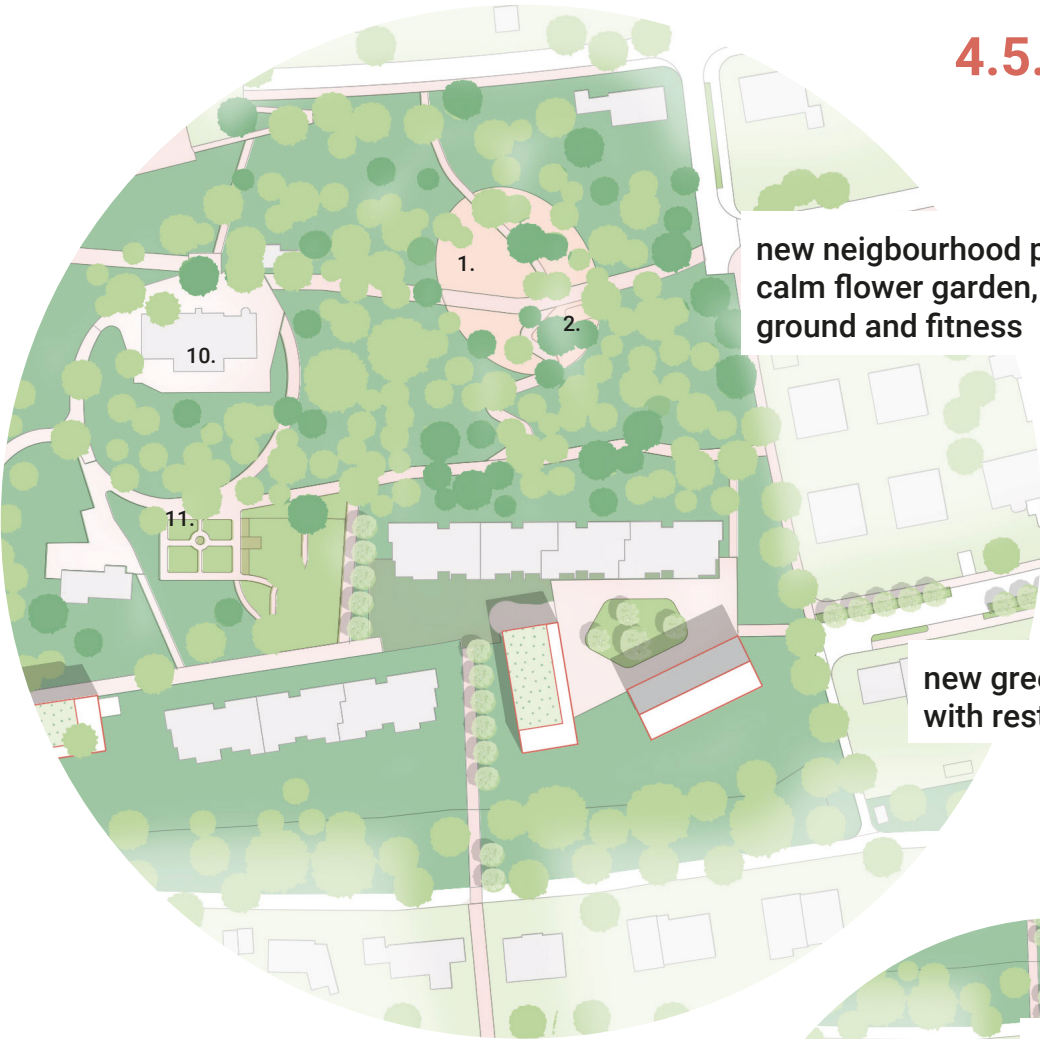
Image source 107: Phase 4 (own visualisation based on the geoportal of the Canton of Bern, 2023)



Image source 108: Masterplan (own visualisation)



4.5. Masterplan



new neighbourhood park with calm flower garden, cafe, play ground and fitness

new green connections with resting benches



new connection



safe crossings

LEGEND

- 1. neighbourhood park with fitness and play area for young and old
- 2. public toilet
- 3. farmarcy
- 4. generational housing small

- 5. gardening educational center
- 6. shared allotment plots
- 7. top-up
- 8. climbing hall
- 9. parking house
- 10. park cafe
- 11. flower garden

Image source 109: Zoom-ins masterplan (own visualisation)



Image source 110: Detail 1 (own visualisation)

4.6. Detail 1

The new urban development features a series of interconnected public spaces, each with a unique character and function.

The Main Square, a vibrant public square, offers weekly markets and outdoor dining spaces for restaurants and cafés, creating a lively atmosphere.

On the opposite side of the street, the Mobility Square is conveniently located next to a tram station and offers a bike repair station. The new tram station is fully barrier-free, ensuring accessibility for everyone.

Connected to the Main Square, the Neighbourhood Square is a more intimate area designed for relaxation and socializing, featuring water play areas, several trees, and places to sit and relax. In addition, the neighbourhood office is located directly on the square, making it a place for all generations.

The Supermarket Square offers a seating area and an outdoor restaurant area, making it an ideal place to meet and relax, especially for older people. In the mixed-use building, there are retail stores to cover daily needs, such as a hairdresser and a supermarket.

The housing options are diverse, with mixed housing types, flexible living spaces, and generational living.

The generational living houses facilitate community spaces such as a workshop and a community garden. Additionally, there is a special house for the elderly, a kindergarten, and a public playground.

A new green path connects this area to the new neighbourhood park, promoting outdoor activities and relaxation. Furthermore, green and bicycle connections extend towards the north and the city of Bern, encouraging sustainable transportation.

Finally, a barrier-free ramp ensures seamless connectivity between the west and east parts of the development.

LEGEND

1. mixed house with supermarket, cafe, pharmacy and doctor, residential
2. cafe /restaurant
3. bike shop
4. mixed houses
5. flexible housing
6. short-care facility
7. guest house
8. generational living
9. repair cafe
10. neighbourhood office with public toilet and „zuhörbänkli“
11. community garden with urban gardening
12. bike repair station
13. kindergarten and assisted living
14. playground
15. tram stop
16. bus stop
17. neighbourhood square
18. main square with market
19. supermarket square
20. mobility square



Image source 111: Detail 2 (own visualisation)

4.7. Detail 2

The play and open space in the centre of the neighbourhood is intended to bring new and old residents together. A playground for children, a boule court for young and old and seating for resting, observing and exchanging.

A new car-free square in front of the shopping centre provides safe access for older people and the opportunity to linger after and before shopping.

The communal courtyards as well as the rooftop terraces and outdoor halls increase encounters between people and are thus intended to strengthen the feeling of home and community.



LEGEND

- 1. generational living
- 2. guest house
- 3. short-care facility
- 4. community kitchen
- 5. flexible housing
- 6. library with public toilet
- 8. mixed houses
- 9. supermarket + commercial functions (existing)
- 10. tram stop
- 11. play street
- 12. barrier-free parking lots
- 13. boule
- 14. seating area
- 15. playground
- 16. square
- 17. community courtyards
- 18. green roofs
- 19. solar energy
- 20. bioswale

4.8. Sections

The new wide cycle paths are intended to enable safe cycling for both fast and slow cyclists and thus make cycling safe, especially for older people.

Numerous trees provide shade and cool the neighbourhood expansion. In addition, the numerous benches offer rest and relaxation as well as observation opportunities for older people.

Weekly markets and outdoor areas of restaurants and cafés enliven the square.

The housing complexes offer semi-private courtyards with a high proportion of green spaces and opportunities for interaction.

Housing with balconies facing the courtyards and public spaces are intended to foster social integration of older people with mobility constraints.

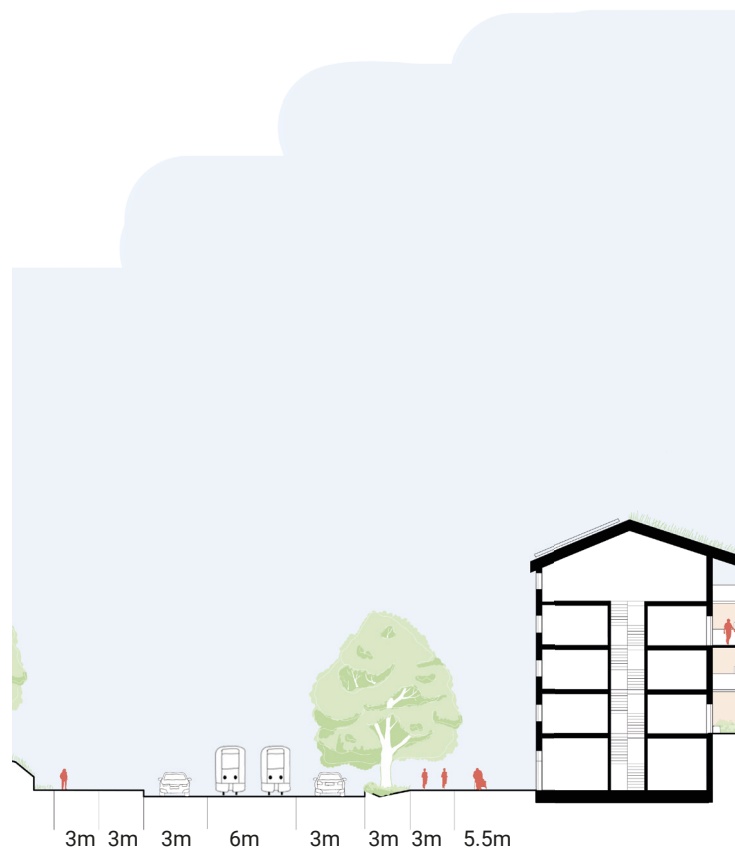


Image source 112: Section Wittighofen: West - East (own visualisation)

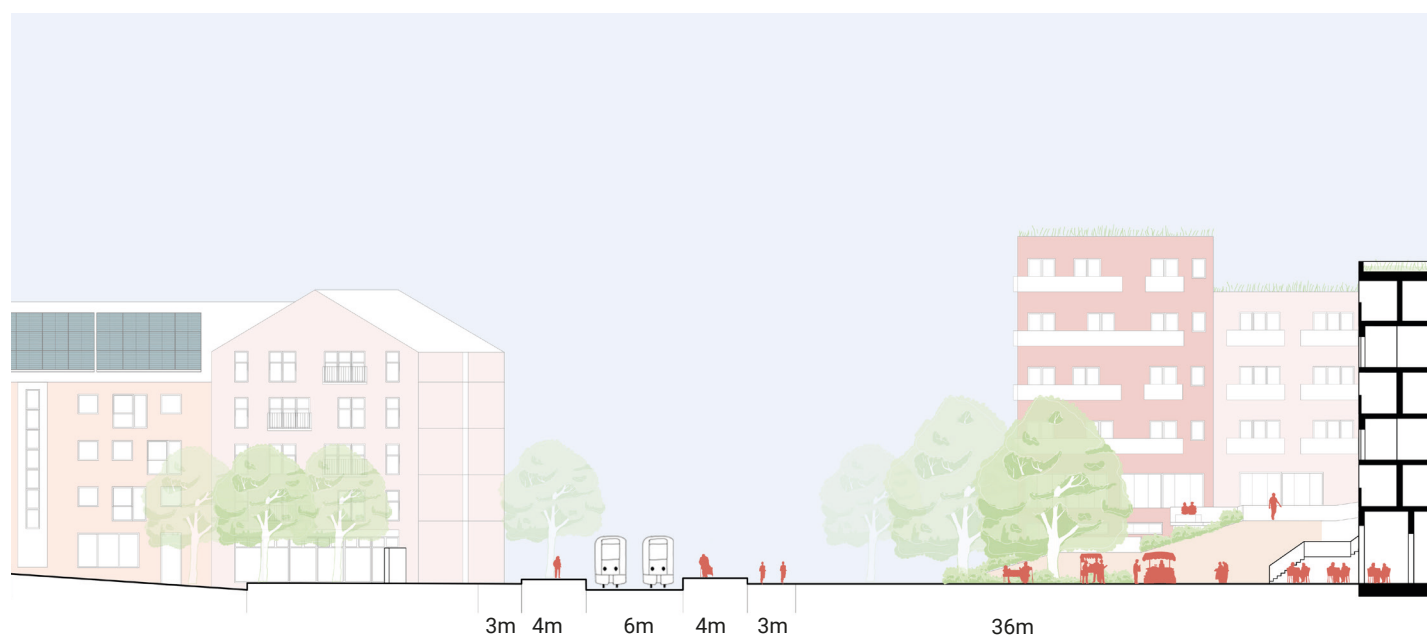
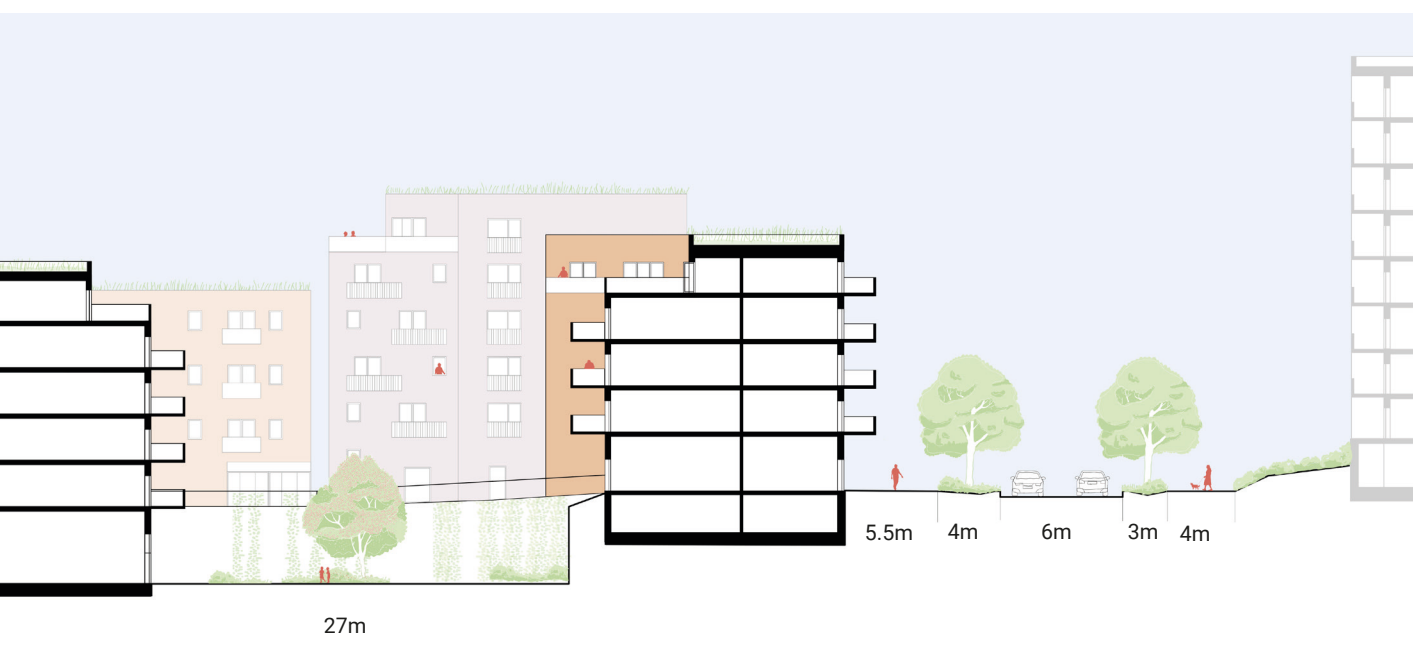


Image source 113: Section Freudenberger square West - East (own visualisation)



5. Reflection

5.1. Reflection

MARIA (70) AND DANIEL (68):

Our residence on Surbekstreet, which we have inhabited for over two decades, recently underwent significant modifications to enhance accessibility. This upscaling, which included barrier-free expansions, was financially feasible only through a government founding credit. Without this support, the renovation would have been prohibitively expensive. We are fortunate to have a harmonious relationship with the family that has moved in with us, though we acknowledge that adapting to new cohabitants can become increasingly challenging with age. The experience of shared living, while often idealized, presents its own set of complexities.

In our free time, we occasionally take part in activities organised by the neighbourhood office, but some of the events are geared too much towards older people and we miss the interaction with other generations or feel that the events are somewhat forced.

AZRA(78):

Residing in Wittigkofen has been a deeply fulfilling experience, though the decision to relocate was not made lightly. I currently live in a generational house, which facilitates meaningful intergenerational interactions. While this arrangement is presently satisfactory, I am aware of the potential need to move in the future to avoid becoming a burden to others. The presence of children in the courtyards can occasionally be overwhelming, yet overall, I am content with my living situation.

My decision to move was significantly influenced by a friend who had already joined the pilot project; without this personal connection, I might not have ventured into this new housing concept. The extensive advertising and consulting efforts were crucial in providing the assurance needed for older adults like myself to consider such a transition. The security of knowing that this housing model is viable mitigates the inherent stress associated with moving.

MONIKA (90):

The redevelopment of Freudenberger square has significantly enhanced the local environment, and I particularly enjoy visiting the weekly market. However, the increased density has introduced a level of urbanity and unfamiliarity that I find overwhelming at times. Adjusting to these environmental changes has been a gradual process.

Following an arm fracture, I temporarily relocated to a nearby care facility. While the proximity was convenient, I long to return to my own home, where I can regain a sense of independence. The communal living arrangement in the care facility has been challenging, as I am accustomed to living alone. I would prefer to transition to a smart home environment that supports independent living. On a positive note, the nearby park has encouraged me to be more physically active.

ZOE:

As shown, the group of older people is very diverse, and their needs are correspondingly varied. This requires a range of solutions, which I have tried to demonstrate in my master's thesis.

A central point for me was the inclusion of all people, especially older people. In this case, it is about participation equity, which is concretely reflected in structural measures. It involves accessibility in all cases for people who use wheelchairs, people with visual impairments, people with hearing impairments, and people who need social support from others to find their way.

To implement this, however, it requires not only good planning but also political will and societal acceptance, which then concretely flow into structural measures that significantly improve the lives of people with disabilities. Only sensible and participatory planning makes this possible, as urban development sets the political and social direction for decades.

A second important point is the consideration of demographic change, which is becoming increasingly evident in Switzerland. This societal transformation must also be concretely incorporated into the planning of new neighborhoods, as today's older people are mobile for much longer and are interested in and participate in many cultural, political, and social issues. The aging society is not only reflected in the number of older people but also in the pleasing increase in life expectancy. Older people remain active longer but need a city or village structure that meets these needs, comparable to the goal of inclusion. At the same time, there are more and more people who become very old and need care in old age. It is necessary to build the necessary facilities or housing forms that facilitate the transition for these people and treat them with dignity.

It is a difficult and complex task, but it is important for a pluralistic and open society. And since everyone will be old one day, it is only to the advantage of all people to address this now and build a future in which older people are better integrated. Therefore, I hope that my master's thesis can inspire others to design age-appropriate neighborhoods so that my generation and future generation feels integrated in old age.

6. Reference Sources

6.1. Reference Sources

Literature:

AIA (American Institute of Architects) (1985). Design for aging: An architect's guide. Washington, DC: AIA Press.

Astra (Federal Roads Office) (2022). Bypass Ost [Bypass East] Retrieved from <https://www.bypass-bern-ost.ch/entwicklungsraum-bern-ost-muri>, (Access date 10.08.2023).

Baden-Württemberg Chamber of Architects (2023). Beispielhaftes Bauen: Auszeichnungsverfahren „Tübingen 2011 - 2017“ [Exemplary building: Award procedure 'Tübingen 2011 - 2017']. Retrieved from <https://www.akbw.de/baukultur/beispielhaftes-bauen/datenbank-beispielhaftes-bauen/beispielhaftes-bauen/objekt/baugemeinschaft-alte-weberei-carre-hof-4-6064>, (Access date 10.11.2023).

Barzilai, N. (2020). Age Later: Health Span, Life Span, and the New Science of Longevity. 1st ed. St. Martin's Publishing Group.

Berner Generation House (n.d.). Über uns [About us]. Retrieved from <https://www.begh.ch/ueber-uns>, (Access date 10.08.2024).

Bern Welcome (2024). Brunnenstadt Bern [Fountain City Bern]. Retrieved from: <https://bern.com/de/aktuelles/stories-und-tipps/brunnenstadt-bern?srsId=AfmBOor3YYr02TfpX-LwDa0znZb5ip3jvHwtAZo8FoTt9cx0X8vJxna>, (Access date 10.08.2024).

BFS (Federal Statistical Office) (2020). Szenarien zur Bevölkerungsentwicklung der Schweiz und der Kantone 2020–2050 [Scenarios for population development in Switzerland and the cantons 2020-2050]. Neuchâtel. BFS-Nummer 201-2000 .

Bohn, F. (2014). Altersgerechte Wohnbauten - Planungsrichtlinien: Der Schweizer Planungsstandard [Age-appropriate residential buildings- Planning guidelines: The Swiss planning standard]. Zurich: Swiss centre of expertise for disabled-friendly construction.

Burton, E. & Michell, L. (2006). Inclusive urban design for street life. Oxford, UK: Architectural Press.

Bürgi, Lamprecht, & Stamm (2020). Sport Schweiz 2020 - Sportaktivität und Sportinteresse der Schweizer Bevölkerung [Sport Schweiz 2020 - Sports activities and interest in sports of the Swiss population]. Federal Office for Sport FOSPO. Retrieved from https://www.lssfb.ch/inhalte/publikationen-2/Bro_Sport_Schweiz_2020_d_WEB.pdf, (Access date 10.03.2023).

City Bern (2016). STEK 2016 – 2017: Stadtentwicklungskonzept Bern Gesamtbericht. [STEK 2016 – 2017 : urban development concept Bern overall report.] . 1 edition. Retrived from <https://www.bern.ch/themen/planen-und-bauen/stadtentwicklung/stadtentwicklungsprojekte/stek-2016>, (Access date 12.03.2024).

City Planning Office of the City of Bern (2018). Grundlagenbericht zur Wohnstrategie [Basic report on the housing strategy]. Retrieved from <https://www.bern.ch/politik-und-verwaltung/stadtverwaltung/prd/stadtplanungsamt/fachstelle-wohnbauforderung/wohnstrategie>, (Access

date 10.11.2023).

Department of Health, Social Affairs and Integration of the Canton of Berne (2020). Gesundheitsstrategie des Kantons Bern 2020–2030 [Health strategy of the Canton of Bern 2020-2030] Retrieved from <https://www.gsi.be.ch/de/tools/suchresultate.html?q=Bericht+zur+Alters-+und+Pflegerpolitik+im+Kanton+Bern+2020>, (Access date 12.03.2024).

ETH Wohnforum - ETH CASE (2021). Generationenwohnen - Eine Dokumentation von 19 Generationen-wohnenProjekten im Rahmen des Forschungsprojekt [Intergenerational living - A documentation of 19 intergenerational living projects as part of the research project]. Retrieved from <https://wohnforum.arch.ethz.ch/publikationen/forschungsberichte/2021/generationenwohnen.html>. Zürich, (Access date 10.08.2023).

Federal Statistical Office (BFS) (2023). Die Bevölkerung – Fakten und Zahlen [The population - facts and figures]. Retrieved from <https://www.eda.admin.ch/aboutswitzerland/de/home/gesellschaft/bevoelkerung/die-bevoelkerung---fakten-und-zahlen.html> ,(Access date 10.08.2023).

Gillis, J. (1991). Child, adolsent, adult, young-old and old. HUG, p. 60

GIZ (2011). “Quartier Vauban” Sustainable District in Freiburg, Germany. Retrieved from <https://sutp.org/publications/quartier-vauban-sustainable-district-in-freiburg-case-study/> ,(Access date 10.08.2023).

Hauderiwicz, D. & Ly Serena, K. (2020). Age-Inclusive Public Space. Berlin: Hatje Cantz Verlag, Copenhagen: dominique + serena.

Health Promotion Switzerland (2016). Gesundheitsförderung im Alter - Fakten und Zahlen [Health promotion in old age – facts and figures] . Factsheet 15. Bern. June 2016.

Höpflinger F. (2019). Freiwilligenarbeit im Alter – immer wichtiger [Volunteering in old age – an increasingly important trend]. Articles Retrieved from <https://www.gerontologieblog.ch/freiwilligenarbeit-im-alter-immer-wichtiger-2/>, (Access date 20.02. 2023).

Landezine (2024). The Transformation of Oak Grove Park in Klaipėda. Retrieved from <https://landezine.com/the-transformation-of-oak-grove-park-in-klaipe-da-by-pupa/>, (Access date 20.10. 2024).

Lestrade, T., & Gilman, S. (Directors). (2022). À la recherche de la jeunesse perdue [In search of lost youth]. Movie. Paris: Arte France.

Menezes, Deborah (2021). ‘You really do become invisible’: examining older adults’ right to the city in the United Kingdom. *Ageing & Society* (2021), 1–20. Cambridge University Press. doi:10.1017/S0144686X21001793

Municipal Council of Bern (2020). Eine Stadt für alle – Schwerpunkt Alter - Altersstrategie 2030 mit Massnahmen 2020–2024 [A city for all - Focus on old age - age strategy 2030 with measures 2020-2024]. Retrived from <https://www.bern.ch/politik-und-verwaltung/stadtverwaltung/bss/familieundquartier/alter/publikationen-bereich-alter#altersstrategie-2030>, (Access date 10.08.2023).

Studioser (2022). Monte. Retrieved from <https://www.studioser.ch/>. (Access date 12.03.2024).

Statistics city of Bern (2016). Lebensqualität in der Stadt Bern [Quality of life in the city of Bern]. Bern.

Statistics City of Bern (2024). T 01.01.530i Wohnbevölkerung nach Heimat und Altersgruppen Ende 2023 – Volkszählungsquartiere (XLSX) [Resident population by home country and age group at the end of 2023 - census neighbourhoods]. Retrieved from <https://www.bern.ch/themen/stadt-recht-und-politik/bern-in-zahlen/katost/01bev/01bev-xls>. Bern

Statistics City of Bern (2019). Bevölkerungsprognosen Stadt Bern 2050 [Population forecasts for the city of Bern 2050].

Statistics City of Bern (2024). Aktuelle Prognose: rund 160'000 Bernerinnen und Berner bereits ab 2035 [Current forecast shows: around 160,000 Bernese already from 2035]. Bern Press Release 30. January 2024

sotomo (2019). Altersbilder der Gegenwart - Haltung der Bevölkerung zum Alter und zur alternen Gesellschaft [Images of old age in the present - the population's attitude towards old age and an ageing society] Zurich. Berner Generationenhaus. Retrieved from <https://sotomo.ch/site/projekte/altersbilder-der-gegenwart/>, (Access date 10.08.2023).

UND Generationentandem (2024). Die Idee «Zuhörbänkli»[The idea of 'listening benches']. Retrieved from <https://www.generationentandem.ch/live/zuhoerbaenkli/events/>, (Access date 12.03.2023).

University Bern - Bern University for Seniors (2024). Über uns [About us]. Retrieved from https://www.seniorenuni.unibe.ch/ueber_uns/, (Access date 10.08.2024).

WHO (World Health Organisation) (2024). Creating age-friendly cities and communities. Retrieved from <https://www.who.int/activities/creating-age-friendly-cities-and-communities>, (Access date 12.01.2024).

WHO (World Health Organisation) (2024). Ageing and health. Retrieved from [https://www.who.int/news-room/fact-sheets/detail/ageing-and-health#:~:text=By%202030%2C%201%20in%206,will%20double%20\(2.1%20billion\)](https://www.who.int/news-room/fact-sheets/detail/ageing-and-health#:~:text=By%202030%2C%201%20in%206,will%20double%20(2.1%20billion).). (access date 12.11.2024).

WHO (World Health Organisation)(n.d.) About the Global Network for Age-friendly Cities and Communities. Retrieved from <https://extranet.who.int/agefriendlyworld/who-network/>, (Access date 15.03.2023).

WHO (World Health Organisation) - Global Network for Age-friendly Cities and Communities (nd.)The WHO Age-friendly Cities Framework. Retrieved from <https://extranet.who.int/agefriendlyworld/age-friendly-cities-framework/>, (Access date 15.03.2023).

Wüstenrot Stiftung (2020). Wohnen jenseits des Standards [Living beyond the standard]. Retrieved from <https://wuestenrot-stiftung.de/publikationen/wohnen-jenseits-des-standards-download/>. (Access date 15.03.2023).

Zimmerli, Joelle (2019): Demografie und Wohnungswirtschaft, Seniorenfreundliche Zugänge zum Mietwohnungsmarkt [Demography and housing industry, senior-friendly access to the rental housing market]. Zürich: Volume 3.

Images:

Image source 1: Own visualization(2024). Perspektive

Image source 2: Own visualization (2024). Graphics on the older population

Image source 3: guinnessworldrecords (2012). 94 year old gymnast Johanna Quaas . Retrieved from <https://www.guinnessworldrecords.com/news/2012/9/record-holder-qplusa-johanna-quaas-oldest-gymnast-44959>, (Access date 10.11.2023).

Image source 4: Njiokiktjien, Ilvy (2012). Elderly people at a repair cafe. New York Times. Retrieved from <https://www.nytimes.com/2012/05/09/world/europe/amsterdam-tries-to-change-culture-with-repair-cafes.html>, (Access date 13.12.2024).

Image source 5: IGP - your health professionals-MAGAZIN (2023). Elderly people with rollators. Retrieved from <https://www.igp-magazin.de/eng-abschuessig-glatt-typische-fallen-mit-dem-rollator/>, (Access date 13.12.2024).

Image source 6: Graphic of the radius of older people(own visualiation)

Image source 7: GIZ (2011). Neighbourhood street in Vauben. Retrieved from <https://sutp.org/publications/quartier-vauban-sustainable-district-in-freiburg-case-study/>, (Access date 10.08.2023).

Image source 8: Studioser (2022). Images of Monti after the transformation. Retrieved from <https://www.studioser.ch/>. (Access date 12.03.2024).

Image source 9: UND Generationentandem (2024). "Zuhörbänkli Retrieved from <https://www.generationentandem.ch/live/zuoerbaenkli/events/>, (Access date 12.03.2023).

Image source 12: GIZ (2011). Images of Vauben Retrieved from <https://sutp.org/publications/quartier-vauban-sustainable-district-in-freiburg-case-study/>, (Access date 10.08.2023).

Image source 11: Studioser (2022). Images of Monti after the transformation. Retrieved from <https://www.studioser.ch/>. (Access date 12.03.2024).

Image source 10: UND Generationentandem (2024). Team of the initiative "Zuhörbänkli Retrieved from <https://www.generationentandem.ch/live/zuoerbaenkli/events/>, (Access date 12.03.2023).

Image source 14: Wüstenrot Stiftung (2020). Visualisation of the Alte Weberei Carré. Retrieved from <https://wuestenrot-stiftung.de/publikationen/wohnen-jenseits-des-standards-download/>. (Access date 15.03.2023).

Image source 16: Haug, Thomas (n.d.)Courtyard of the Bramshof. Retrieved from <https://openhouse-zuerich.org/orte/bramshof-2024/>

Image source 18: Landezine (2024). Playground with soft borders in the Oak Grove Park . Retrieved

from <https://landezine.com/the-transformation-of-oak-grove-park-in-klaipeda-by-pupa/>, (Access date 20.10. 2024).

Image source 15: Baden-Württemberg Chamber of Architects (2023). Image of the Alte Weberei Carré . Retrieved from <https://www.akbw.de/baukultur/beispielhaftes-bauen/datenbank-beispielhaftes-bauen/beispielhaftes-bauen/objekt/baugemeinschaft-alte-weberei-carre-hof-4-6064>, (Access date 10.11.2023).

Image source 17: Haug, Thomas (n.d.)Private gardens and balconies towards the street. Retrieved from <https://openhouse-zuerich.org/orte/brams-hof-2024/>

Image source 19: Landezine (2024). Calm and nature-oriented spaces in Oak Grove Park . Retrieved from <https://landezine.com/the-transformation-of-oak-grove-park-in-klaipeda-by-pupa/>, (Access date 20.10. 2024).

Image source 20: Own visualization (2024). Pictograms (own visualisation)

Image source 21: BFS (Federal Statistical Office) (2020). Age-structure in Switzerland. Neuchâtel. BFS-Nummer 201-2000.

Image source 22: Own visualization (2024). Traditional Bernese farm

Image source 24: Own visualization (2024). Pictograms

Image source 23: Own visualization (2024)..Collage about the city of Bern

Image source 25: Statistics City of Bern (2024). Age pyramid of the city of Bern. Bern Press Release 30. January 2024

Image source 26: Map of the proportion of older people in the various Bernese districts(own visualisation based on Statistics City of Bern, 2019; on the geoportal of the Canton of Bern, 2024)

Image source 27: City Bern (2016). Estimated population growth of the STEK 2016. STEK 2016 1 edition. Retrived from <https://www.bern.ch/themen/planen-und-bauen/stadtentwicklung/stadtentwicklungsprojekte/stek-2016>, (Access date 12.03.2024).

Image source 28: City Bern (2016). Residential portfolio development of the STEK 2016 . STEK 2016 1 edition. Retrived from <https://www.bern.ch/themen/planen-und-bauen/stadtentwicklung/stadtentwicklungsprojekte/stek-2016>, (Access date 12.03.2024).

Image source 29: Own visualization (2024). Grafics of the housing market

Image source 30: City Bern (2016).Mobility share of the city of Bern in 2010 and 2030. STEK 2016 1 edition. Retrived from <https://www.bern.ch/themen/planen-und-bauen/stadtentwicklung/stadtentwicklungsprojekte/stek-2016>, (Access date

12.03.2024).

Image source 31: Own visualization based on Geoportal of the Canton of Bern (2023). Cycling infrastructure. Retrieved from https://map.bern.ch/stadtplan/?grundplan=Stadtplan_farbig_Geoportal|Stadtplan_farbig_Extern_Region&koor=2600650,1199750&zoom=2&hl=0&layer=, (Access date 12.03.2024).

Image source 32: Own visualization based on Geoportal of the Canton of Bern (2023). Public transport network . Retrieved from https://map.bern.ch/stadtplan/?grundplan=Stadtplan_farbig_Geoportal|Stadtplan_farbig_Extern_Region&koor=2600650,1199750&zoom=2&hl=0&layer=, (Access date 12.03.2024).

Image source 33: Own visualization based on Geoportal of the Canton of Bern (2023). Car infrastructure. Retrieved from https://map.bern.ch/stadtplan/?grundplan=Stadtplan_farbig_Geoportal|Stadtplan_farbig_Extern_Region&koor=2600650,1199750&zoom=2&hl=0&layer=, (Access date 12.03.2024).

Image source 34: Own visualization based on Geoportal of the Canton of Bern (2023). Green and blue infrastructure. Retrieved from https://map.bern.ch/stadtplan/?grundplan=Stadtplan_farbig_Geoportal|Stadtplan_farbig_Extern_Region&koor=2600650,1199750&zoom=2&hl=0&layer=, (Access date 12.03.2024).

Image source 35: Krämer, C. (2019) Mountain range in the region of Bern. Retrieved from <https://travelmagazin.ch/daheim/die-7-schoensten-erlebnisse-im-emmental-2/>, (Access date 13.12.2024).

Image source 36: Own visualization (2024). Elfenau park in Bern

Image source 38: Own visualization (2024). Bern Minster Platform

Image source 40: Green and blue infrastructure (topographic-map)

Image source 37: Own visualization (2024). Rosengarden in Bern

Image source 39: Own visualization (2024). The Area

Image source 41: Health infrastructure (own visualisation based on the geoportal of the Canton of Bern, 2023)

Image source 42: Moser, Raphael (2018). The seniors' uni in berne is well attended Retrieved from <https://www.bernerzeitung.ch/vorlesungen-der-berner-seniorenuni-sind-ein-renner-529534665591,,> (Access date 13.12.2024).

Image source 43: Berner Generationenhaus (2024) Inner courtyard of the generation house in Bern . Retrieved from <https://www.begh.ch/>, (Access date 13.12.2024).

Image source 44: Own visualization (2024).

Image source 45: Own visualization (2024)..Drawings of older people

Image source 46: Own visualization (2024).. Pictures of older people in Bern

Image source 47: Own visualization based on Geoportal of the Canton of Bern (2023). City structure of Bern. Retrieved from https://map.bern.ch/stadtplan/?grundplan=Stadtplan_farbig_Geoportal|Stadtplan_farbig_Extern_Region&koor=2600650,1199750&zoom=2&hl=0&layer=, (Access date 12.03.2024).

Image source 48: Geoportal of the Canton of Bern (2023). Aerial view of the site. Retrieved from https://map.bern.ch/stadtplan/?grundplan=Stadtplan_farbig_Geoportal|Stadtplan_farbig_Extern_Region&koor=2600650,1199750&zoom=2&hl=0&layer=, (Access date 12.03.2024).

Image source 49: Geoportal of the Canton of Bern (2023). History of the city of Bern. Retrieved from https://map.bern.ch/stadtplan/?grundplan=Stadtplan_farbig_Geoportal|Stadtplan_farbig_Extern_Region&koor=2600650,1199750&zoom=2&hl=0&layer=, (Access date 12.03.2024).

Image source 51: Astra (Federal Roads Office) (2022). Process diagram of the Bypass East. Retrieved from <https://www.bypass-bern-ost.ch/zeitachse> (Access date 10.08.2023).

Image source 50: Astra (Federal Roads Office) (2022). Overview of the Bypass East. Retrieved from <https://www.bypass-bern-ost.ch/entwicklungsraum-bern-ost-muri>, (Access date 10.08.2023).

Image source 52: City Bern (2016). Development plan of the STEK 2016. STEK 2026, 1 edition. Retrieved from <https://www.bern.ch/themen/planen-und-bauen/stadtentwicklung/stadtentwicklungsprojekte/stek-2016>, (Access date 12.03.2024). (City of Bern, 2016)

Image source 53: Astra (Federal Roads Office) (2022). Aerial photograph Bypass East . Retrieved from <https://www.bypass-bern-ost.ch/entwicklungsraum-bern-ost-muri>, (Access date 10.08.2023).

Image source 54: Own visualization based on Geoportal of the Canton of Bern (2023). Cycle infrastructure. Retrieved from https://map.bern.ch/stadtplan/?grundplan=Stadtplan_farbig_Geoportal|Stadtplan_farbig_Extern_Region&koor=2600650,1199750&zoom=2&hl=0&layer=, (Access date 12.03.2024).

Image source 55: Own visualization based on Geoportal of the Canton of Bern (2023). Public transportation network. Retrieved from https://map.bern.ch/stadtplan/?grundplan=Stadtplan_farbig_Geoportal|Stadtplan_farbig_Extern_Region&koor=2600650,1199750&zoom=2&hl=0&layer=, (Access

date 12.03.2024).

Image source 56: Own visualization based on Geoportal of the Canton of Bern (2023). Car infrastructure. Retrieved from https://map.bern.ch/stadtplan/?grundplan=Stadtplan_farbig_Geoportal|Stadtplan_farbig_Extern_Region&koor=2600650,1199750&zoom=2&hl=0&layer=, (Access date 12.03.2024).

Image source 57: Geoportal of the Canton of Bern (2023). Noise map. Retrieved from https://map.bern.ch/stadtplan/?grundplan=Stadtplan_farbig_Geoportal|Stadtplan_farbig_Extern_Region&koor=2600650,1199750&zoom=2&hl=0&layer=, (Access date 12.03.2024).

Image source 58: Own visualization (2024). The highway functions as barrier between neighbourhoods

Image source 59: Own visualization based on Geoportal of the Canton of Bern (2023). Map of barriers. Retrieved from https://map.bern.ch/stadtplan/?grundplan=Stadtplan_farbig_Geoportal|Stadtplan_farbig_Extern_Region&koor=2600650,1199750&zoom=2&hl=0&layer=, (Access date 12.03.2024).

Image source 60: Own visualization (2024). The highway functions as barrier between neighbourhoods

Image source 61: Geoportal of the Canton of Bern (2023). Aerial photograph. Retrieved from https://map.bern.ch/stadtplan/?grundplan=Stadtplan_farbig_Geoportal|Stadtplan_farbig_Extern_Region&koor=2600650,1199750&zoom=2&hl=0&layer=, (Access date 12.03.2024).

Image source 62: Own visualization (2024). Section - Now

Image source 63: Own visualization (2024). Highway exit at Freudenberger square

Image source 64: Own visualization (2024). Traffic situation at Freudenberger square

Image source 65: Own visualization (2024). Square in front of the business complex

Image source 67: Geoportal of the Canton of Bern (2023). Aerial photograph . Retrieved from https://map.bern.ch/stadtplan/?grundplan=Stadtplan_farbig_Geoportal|Stadtplan_farbig_Extern_Region&koor=2600650,1199750&zoom=2&hl=0&layer=, (Access date 12.03.2024).

Image source 68: Own visualization (2024). Section Wittighofen - Now (own visualisation)

Image source 69: Own visualization (2024). Large green spaces between the high-rise complexes

Image source 70: Own visualization (2024).

Supermarket "square" is used as a parking lot

Image source 71: Own visualization (2024). Car-oriented structures

Image source 72: Own visualization based on

Geoportal of the Canton of Bern (2023). Housing types . Retrieved from https://map.bern.ch/stadtplan/?grundplan=Stadtplan_farbig_Geoportal|Stadtplan_farbig_Extern_Region&koor=2600650,1199750&zoom=2&hl=0&layer=, (Access date 12.03.2024).

Image source 73: Own visualization (2024). Multi-family house

Image source 76: Own visualization (2024). Multi-family housing

Image source 74: Own visualization (2024). Row house

Image source 77: Own visualization (2024). High-rise building

Image source 75: Zimmerli, Joelle (2021). Housing stock.

Image source 78: Own visualization based on Geoportal of the Canton of Bern (2023). Blue- and Green spaces. Retrieved from https://map.bern.ch/stadtplan/?grundplan=Stadtplan_farbig_Geoportal|Stadtplan_farbig_Extern_Region&koor=2600650,1199750&zoom=2&hl=0&layer=, (Access date 12.03.2024).

Image source 79: Own visualization based on Geoportal of the Canton of Bern (2023). Green space strategy of the STEK. Retrieved from https://map.bern.ch/stadtplan/?grundplan=Stadtplan_farbig_Geoportal|Stadtplan_farbig_Extern_Region&koor=2600650,1199750&zoom=2&hl=0&layer=, (Access date 12.03.2024).

City Bern (2016). STEK 2016 1 edition. Retrieved from <https://www.bern.ch/themen/planen-und-bauen/stadtentwicklung/stadtentwicklungsprojekte/stek-2016>, (Access date 12.03.2024).

Image source 80: Own visualization (2024). Fenced meadow

Image source 82: Own visualization (2024). Sculptures park Paul Klee

Image source 83: Own visualization (2024). Park landscape Wittighofen

Image source 81: Own visualization (2024). Allotment gardens

Image source 84: Own visualization based on Geoportal of the Canton of Bern (2023). Health infrastructure. Retrieved from https://map.bern.ch/stadtplan/?grundplan=Stadtplan_farbig_Geoportal|Stadtplan_farbig_Extern_Region&koor=2600650,1199750&zoom=2&hl=0&layer=, (Access date 12.03.2024).

Image source 85: Own visualization (2024). Sonnenhof Hospital

Image source 86: Own visualization based on Geoportal of the Canton of Bern (2023). Commercial infrastructure . Retrieved from https://map.bern.ch/stadtplan/?grundplan=Stadtplan_farbig_Geoportal|Stadtplan_farbig_Extern_Region&koor=2600650,1199750&zoom=2&hl=0&layer=

650,1199750&zoom=2&hl=0&layer=, (Access date 12.03.2024).

Image source 87: Own visualization (2024). Commercial Hub at the Freudenberger square

Image source 88: Own visualization based on Geoportal of the Canton of Bern (2023). Social and Culture infrastructure. Retrieved from https://map.bern.ch/stadtplan/?grundplan=Stadtplan_farbig_Geoportal|Stadtplan_farbig_Extern_Region&koor=2600650,1199750&zoom=2&hl=0&layer=, (Access date 12.03.2024).

Image source 89: Own visualization (2024). Paul-Klee Museum

Image source 90: Own visualization based on Geoportal of the Canton of Bern (2023). Favorite places of older people. Retrieved from https://map.bern.ch/stadtplan/?grundplan=Stadtplan_farbig_Geoportal|Stadtplan_farbig_Extern_Region&koor=2600650,1199750&zoom=2&hl=0&layer=, (Access date 12.03.2024).

Image source 91: Own visualization (2024).

Image source 92: Own visualization (2024). Drawings of older people and maps

Image source 93: Own visualization (2024). Connecting neighbourhoods

Image source 94: Own visualization (2024). Places of social interaction

Image source 95: Own visualization (2024). Tools: Social interaction

Image source 96: Own visualization (2024). Housing

Image source 97: Own visualization (2024). Tools: Housing

Image source 99: Own visualization (2024). Tools: Pedestrian infrastructure

Image source 98: Own visualization based on Geoportal of the Canton of Bern (2023). Pedestrian infrastructure. Retrieved from https://map.bern.ch/stadtplan/?grundplan=Stadtplan_farbig_Geoportal|Stadtplan_farbig_Extern_Region&koor=2600650,1199750&zoom=2&hl=0&layer=, (Access date 12.03.2024).

Image source 100: Own visualization based on Geoportal of the Canton of Bern (2023). Bicycle infrastructure. Retrieved from https://map.bern.ch/stadtplan/?grundplan=Stadtplan_farbig_Geoportal|Stadtplan_farbig_Extern_Region&koor=2600650,1199750&zoom=2&hl=0&layer=, (Access date 12.03.2024).

Image source 101: Own visualization (2024). Tools: Bicycle infrastructure (own visualisation)

Image source 102: Own visualization (2024). Green- and blue infrastructure

Image source 103: Own visualization (2024). Tools: Green- and blue infrastructure

Image source 104: Own visualization based on

Geoportal of the Canton of Bern (2023). Phase 1 Retrieved from https://map.bern.ch/stadtplan/?grundplan=Stadtplan_farbig_Geoportal|Stadtplan_farbig_Extern_Region&koor=2600650,1199750&zoom=2&hl=0&layer=, (Access date 12.03.2024).

Image source 105: Own visualization based on Geoportal of the Canton of Bern (2023). Phase 2 Retrieved from https://map.bern.ch/stadtplan/?grundplan=Stadtplan_farbig_Geoportal|Stadtplan_farbig_Extern_Region&koor=2600650,1199750&zoom=2&hl=0&layer=, (Access date 12.03.2024).

Image source 106: Own visualization based on Geoportal of the Canton of Bern (2023). Phase 3. Retrieved from https://map.bern.ch/stadtplan/?grundplan=Stadtplan_farbig_Geoportal|Stadtplan_farbig_Extern_Region&koor=2600650,1199750&zoom=2&hl=0&layer=, (Access date 12.03.2024).

Image source 107: Own visualization based on Geoportal of the Canton of Bern (2023). Phase 4. Retrieved from https://map.bern.ch/stadtplan/?grundplan=Stadtplan_farbig_Geoportal|Stadtplan_farbig_Extern_Region&koor=2600650,1199750&zoom=2&hl=0&layer=, (Access date 12.03.2024).

Image source 108: Own visualization (2024). Masterplan

Image source 109: Own visualization (2024). Zoom-ins masterplan

Image source 110: Own visualization (2024). Detail 1

Image source 111: Own visualization (2024). Detail 2

Image source 113: Own visualization (2024). Section Freudenberger square West - East

Image source 112: Own visualization (2024). Sec-

