

**Special Session
Human Rights Paper Session**

**15-Minute City Concept in Relation to
Human Rights and Inclusive City**

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Abstract

The 15-minute city concept and the "DraußenDaheim" project in Sonnengarten Limberg, Austria, underscore the crucial link between human rights and climate-justice cities. These initiatives prioritize creating equitable and inclusive urban spaces, emphasizing the right to a comfortable, sustainable environment for all residents, regardless of their background. Access to essential urban resources is seen as a fundamental human right, and vulnerable groups, such as caregivers and the elderly, should not be excluded. By embracing gender-sensitive planning, community engagement, and digital participation tools, the "Draußen Daheim" project aligns with democratic principles and human rights, ultimately aiming to build sustainable, accessible, and equitable cities for everyone.

The focused research on the "DraußenDaheim" project in Sonnengarten Limberg assessed its alignment with the 15-minute city concept and human rights integration. Using diverse methods, including accessibility analyses, digital participation, and GIS tools with diverse plugins, the study uncovered insights into the unique needs of demographic groups like caregivers and the elderly.

Introduction

The 15-minute city concept refers to an urban living model where residents can fulfill most of their daily needs within a 15-minute walk or bike ride from their homes. It aspires to create inclusive and sustainable urban spaces by making services and amenities easily accessible to all residents, thus reducing the reliance on private vehicles and promoting a healthier and environmentally friendly lifestyle. In Austria, the "DraußenDaheim" project in Sonnengarten Limberg exemplifies this concept through its innovative design and implementation. The "DraußenDaheim" project utilizes digital and analog participation tools that foster inclusivity by giving voice to all social groups, including those who often get disregarded, in urban development decisions. This inclusive approach also integrates gender-sensitive planning, acknowledging the different needs and behaviors of various genders in urban life.

The "DraußenDaheim" project

It is essential to recognize the fundamental entitlement to a high-quality living environment. This encompasses more than just having a place to reside; it also entails access to high and accessibility of important infrastructure that enhance people's well-being. Ensuring that everyone, regardless of their background, feels comfortable and at home in outdoor environments is crucial, reflecting the spirit of the German saying "draußen daheim."

Research question

Is "Sonnengarten Limberg" well-suited for a 15-minute city¹?

This research question refers only to a specific section of the entire project, which falls within the framework of my internship at the AIT (Austrian Institute of Technology).

Methodology

Focusing on the "DraußenDaheim" project implemented in Sonnengarten Limberg, Austria, this project reflects a support of a broader concept— the 15-minute city concept— grounded in urban planning, environmental sustainability, and human rights considerations. In this study, we conducted an accessibility analysis of Points of Interest (POIs) using QGIS, aiming to assess accessibility for various demographic groups. This methodological approach will provide valuable insights into our research framework. Conducting a first review within the project," an assessment was made to determine whether "Sonnengarten Limberg" aligns effectively with the 15-minute city concept. A particular highlighting on the project's focus is placed on various demographic groups, paying special attention to those bearing caregiving responsibilities. Acknowledging the fact that urban spaces are often utilized differently by diverse population subsets, it is crucial to scrutinize how varying groups experience, navigate, and are affected by their urban environments. As caregivers are typically tasked with numerous responsibilities, they require convenient access to necessary services and

¹ In this context, "15-minute city" serves as a general term denoting easy accessibility to various destinations within a short travel time, typically around 15 minutes, and is used to describe the concept of urban planning focused on enhancing local accessibility.

amenities within their localities (Morrow & Parker, 2020). As such, they serve as a critical demographic group for assessing how the 15-minute city concept assimilates within practical urban landscapes in addressing contemporary societal and environmental challenges.

Moreover, to ensure a comprehensive outlook, digital and analog participatory tools were utilized to collect the voices of various individuals during the project. Often, when approaching urban planning, residents' voices serve as a necessary yet overlooked resource (Terraza et al., 2020). These inhabitants possess firsthand experience living within these spaces, hence providing unique insights into their strengths and weaknesses. Therefore, employing digital and analog tools permitted these voices to inform the study. Whether via online platforms or physical workshops, diverse perspectives were collected. This method not only ensured democratic values were upheld, but also generated direct feedback on what matters to residents. Therefore, urban changes or adaptations proposed are reflective of and responsive to the needs and expectations of residents.

The successful execution of this project relied significantly on the utilization of key tools and platforms, namely Lime Survey, Smarticipate, and Simulate as well as developed interfaces for data exchange between these tools. These key resources were essential for data gathering, community participation, and simulation procedures, collectively contributing to the project's overall efficacy and success.

Use of the 15-Minute City Concept in Sonnengarten Limberg

Integrating human rights principles into the 15-minute City concept enriches its sustainability framework, ensuring a more inclusive and equitable urban development paradigm that addresses issues such as mobility poverty and upholds fundamental rights, ultimately contributing to a more just and sustainable future.

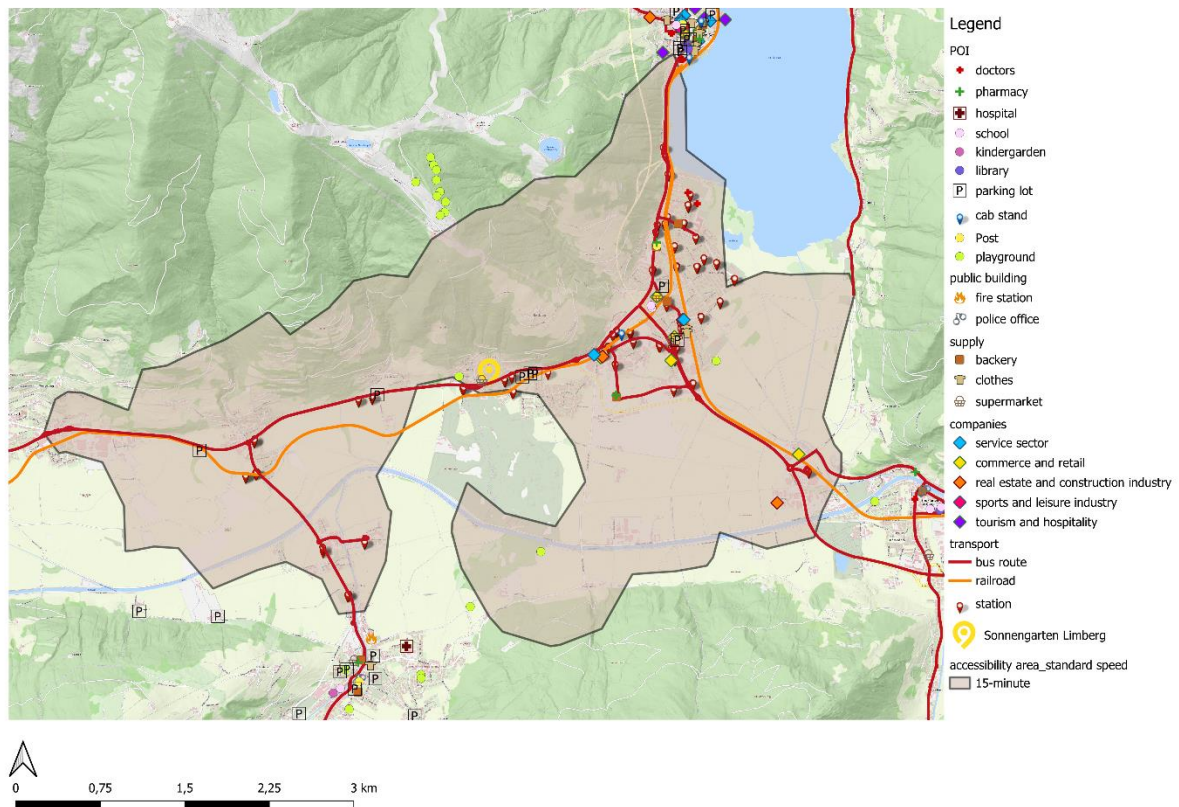


Figure 1: Analyses of Points of interest regarding accessibility within 15-minute by bicycle from the Sonnengarten Limberg, Own illustration (Map basis: OpenStreetMap (OSM) CC-BY-SA 2.0)

This figure 1 depicts the geographical extent of the 15-minute accessibility area by bicycle from involving the environments of Sonnengarten Limberg. In this calculation, the standard bicycle speed is considered to be 18.4 km/h. It is worth noting that this cartographic illustration has been meticulously crafted using the Geographic Information System (GIS) software QGIS, and in conjunction with the plugin utilized for this analysis, known as QuickOSM² for identifying points of interests and ORS Tools³ for creating the accessibility area.

As evident from the figure, the 15-minute accessibility area boasts a wide range of daily services conveniently located within its boundaries.

² (QuickOSM. (2023). QuickOSM: A QGIS Plugin for Efficient OpenStreetMap Data Retrieval (Version 2.2.3). Retrieved from <https://docs.3liz.org/QuickOSM/>

³ ORS Tools. (2023). ORS Tools: A QGIS Plugin for Advanced Geospatial Analysis (Version 1.5.3). Retrieved from <https://github.com/GIScience/orstools-qgis-plugin/wiki/>

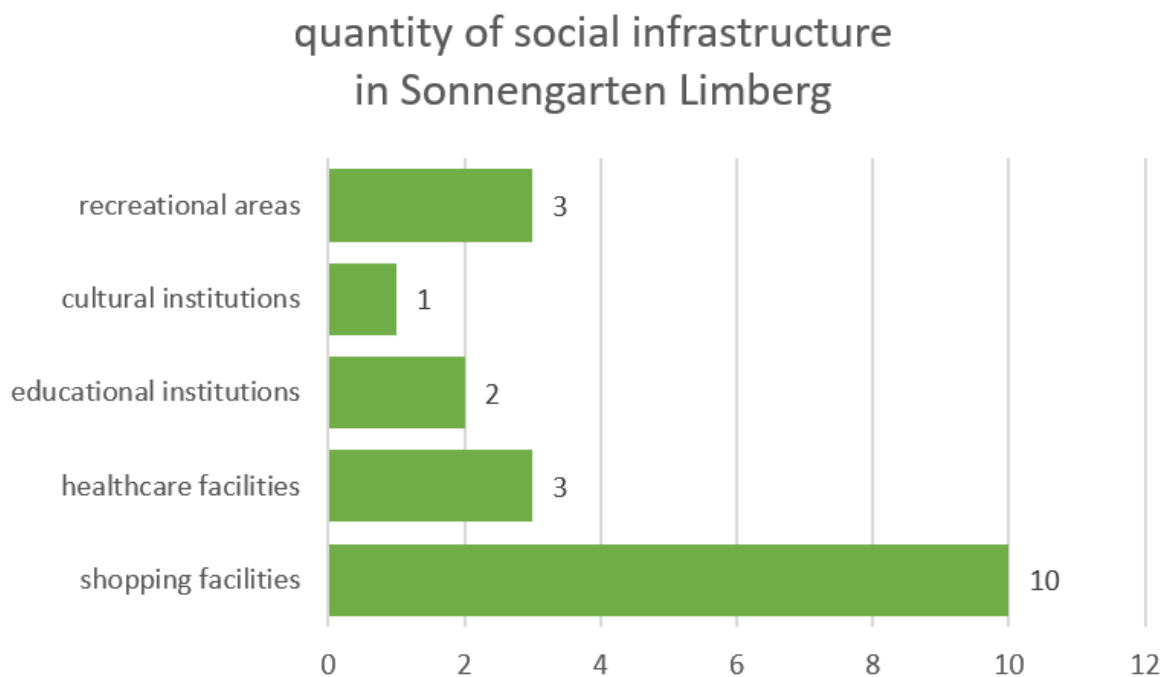


Figure 2: Quantity of social infrastructures within the 15min area surrounding the Sonnengarten Limberg, Own illustration.

It's important to note that this study exclusively assessed bicycle accessibility, given the impracticality of reaching many social services on foot in the study area.

While this example highlights the ease of access to critical services in the specified geographical region, it's crucial to acknowledge the limited quantity, refer to figure 2, and diversity of the social infrastructure available within this framework, especially when compared to more extensive urban environments.

Certainly, this image unequivocally delineates the 15-minute accessibility area surrounding Sonnengarten Limberg. However, it is imperative to recognize that the actual time required to traverse this zone can be subject to variability contingent upon individual factors, such as one's physical condition or the type of bicycle they possess.

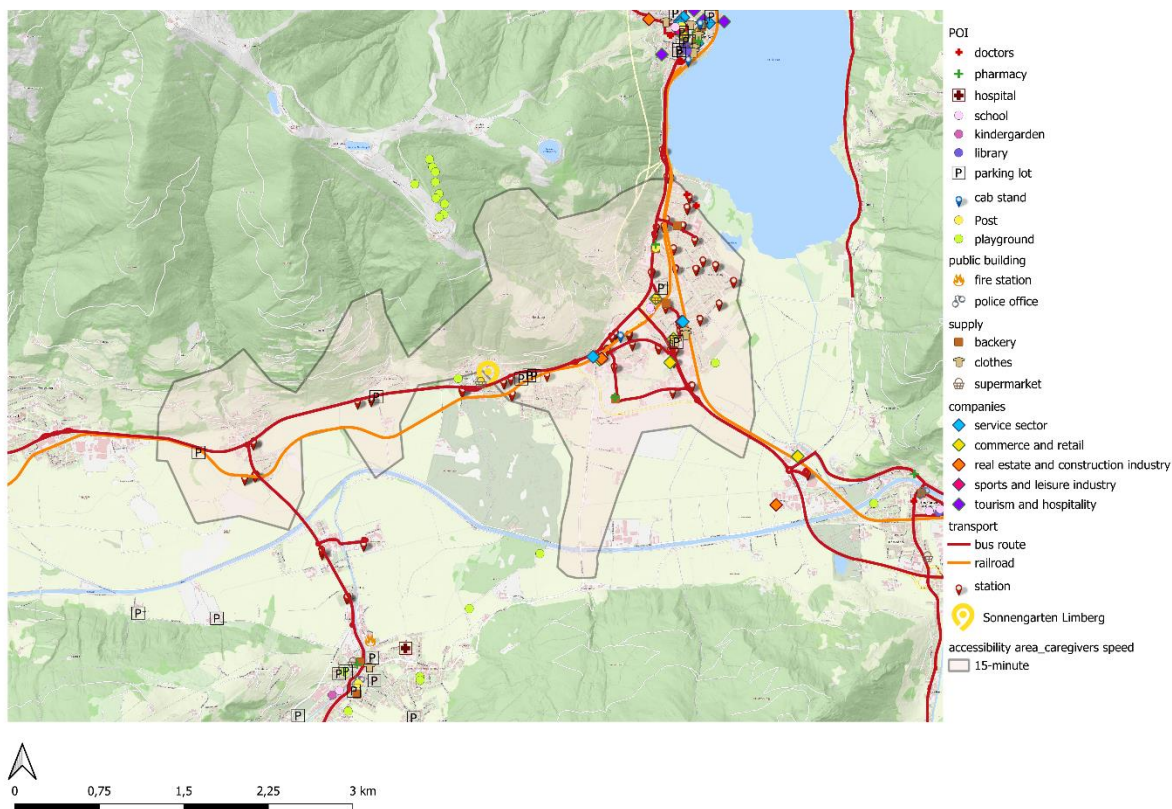


Figure 3: Analyses of the Points of Interest regarding accessibility within 15-minute by bicycle from the Sonnengarten Limberg, Own illustration (Map basis: OpenStreetMap (OSM) CC-BY-SA 2.0)

This figure illustrates the 15-minute cycling area but takes a reduced cycling speed into account. It is worth highlighting that the elderly and caregivers are the primary demographic group considered here. In this context, a bicycle speed of 13 km/h was considered as the standard in this context.

When comparing the 15-minute accessibility area with and without the reduced cycling speed, it becomes apparent that while there may be distance variations, identifying immediate differences can be problematic. This challenge stems primarily from the complex interdependency of social services within the accessibility area.

After conducting a region analysis, which the 15-minute accessibility area is designated, sixteen residents of the Sonnengarten Limberg area recorded their travel routes to open spaces in a diary for a maximum of two weeks by using the digital tool called "Smarticipate"⁴. This data was utilized to determine the modes of transportation they employed for their travels.

⁴ Smarticipate is an interoperable and expandable platform for interactive urban planning for a more transparent, democratic and inclusive implementation of urban transformation processes.

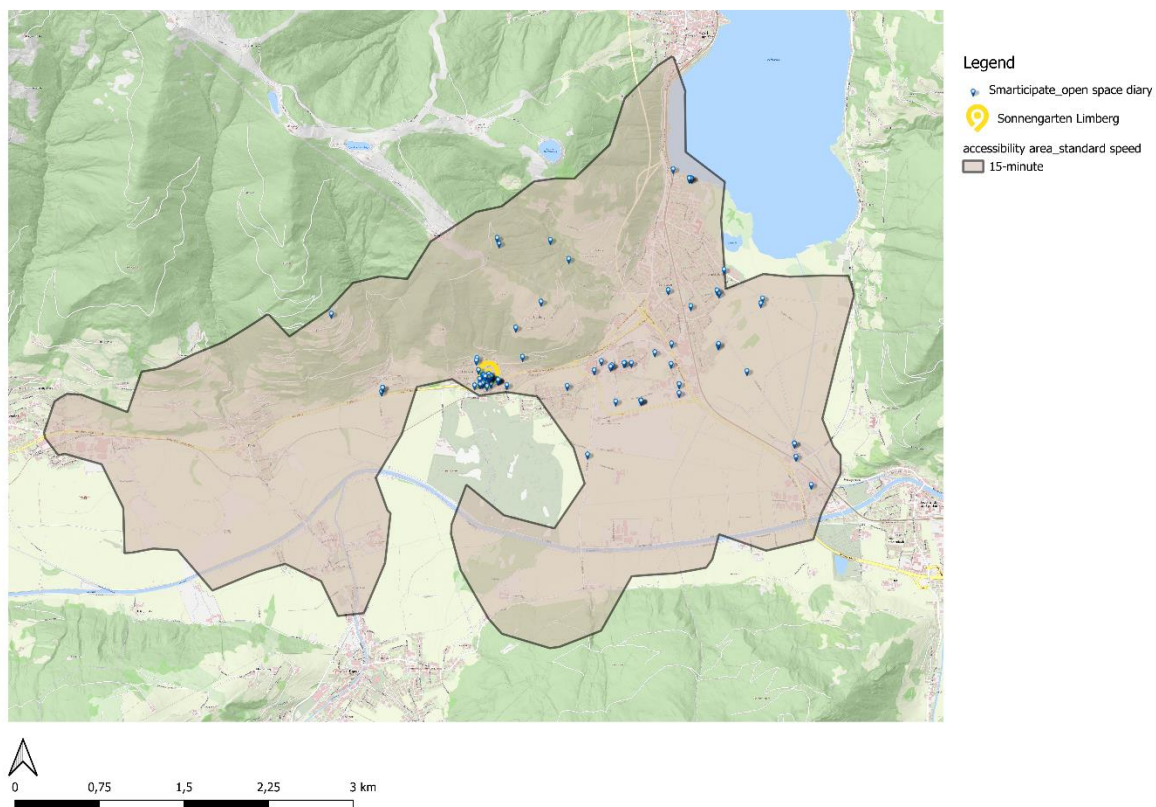


Figure 4: Points of interest in open space diary outside the Sonnengarten Limberg, marked by all participants on different days of the week using “Smarticipate”, filtered only in the 15-minute-accessibility area, Own illustration (Map basis: OpenStreetMap (OSM) CC-BY-SA 2.0)

However, it’s important to emphasize that only a small fraction of the residents participated in the open space diary. This limitation implies that the statements and outcomes obtained from the survey cannot be definitively confirmed with a widespread agreement. However, this could provide a basis for further deliberation and exploration in the context of the “Draußen Daheim” project.

What modes of mobility do they use most often?

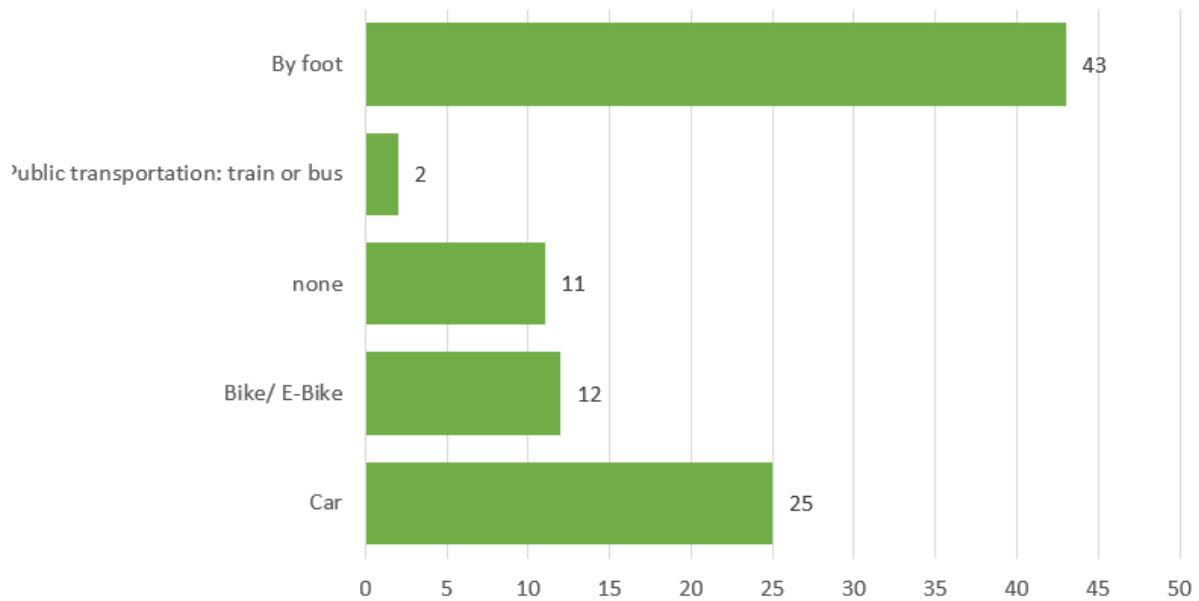


Figure 5: Modes of Mobility from the filtered result in the 15m region of "Smarticipate" under the question "What type of transportation do they use most often?", Own illustration.

Although our project primarily focuses on promoting active mobility (bicycling) in relation with 15-minute city concept, it is essential to note that the majority of residents predominantly use their cars for commuting and traveling to various destinations. Due to the relatively non-urban nature of the region, a significant proportion of its residents already own personal vehicles, which contributes to their frequent use of cars for transportation.

It is worth noting that the high level of accessibility on foot is due to residents taking brief walks within their community, which conveniently offers easy access to playgrounds and green spaces.

Results

The "DraußenDaheim" project, considering the framework of the 15-minute city concept, has shown the significant different needs of vulnerable groups, such as the elderly and caregivers. This is attributed to the project's gender group approach, explicitly acknowledging and incorporating the diverse needs and circumstances of these individual groups (Fesser et al., 2023). This has support to urban spaces that accommodate a variety of lifestyles, responsibilities, and mobility needs, consequently avoiding the undue marginalization of certain sections of the populace (Fesser et al., 2023s).

In the context of the 15-minute city concept, the investigated region showcases numerous strengths that can be utilized to establish a more accessible and lively "urban" setting. A significant benefit is the advantageous location, which can be tactically employed to enhance access to essential amenities. Furthermore, the availability of a variety of leisure options and local amenities within the region renders it an alluring place for inhabitants to reside and engage in activities in close proximity.

Nonetheless, it is imperative to recognize certain lack in the current infrastructure. A noteworthy limitation is the relatively small variability of the infrastructure, which can pose a challenge to the seamless integration of the 15-minute city concept. To fully embrace the 15-minute city concept, it is important that the infrastructure network is expanded in the region to ensure that access to various services is comprehensive.

This concept has the potential to enhance residents' overall quality of life. By decreasing travel time and boosting access to essential amenities and leisure facilities, it can create a more pleasant and living urban environment.

Conclusion/ Outlook

In conclusion, when assessing Sonnengarten Limberg's suitability for the 15-minute city concept, it is apparent that the region presents both favorable and challenging elements to its implementation.

The advantageous location of Sonnengarten Limberg and the availability of various leisure opportunities and local amenities in close proximity establish a solid foundation for aligning with the 15-minute city concept.

The challenge of implementing the 15-minute city concept is particularly relevant as many individuals favor using their personal vehicles due to the convenience, they provide offering personalized. Additionally, they may think that using public transportation costs more money, which discourages them from using it.

To completely establish its suitability, a thorough acceptability study, guided by human rights considerations, should be carried out, to understand the individual barriers turning to a more active mobility behavior. The 15-minute city concept needs a customized planning and development to foster that Sonnengarten Limberg can serve as a model for a more accessible, equitable, and sustainable urban environment that respects and promotes the fundamental rights of its residents.

Throughout this project and in possible subsequent follow-up project, the aim is to enhance awareness about active mobility and encourage residents to integrate bicycles as their primary mode of mobility, instead of cars for many daily needs.

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