### Reflection

# 1. Relation between the Graduation Project Topic, Studio Topic, Master Track, and MSc Programme

Question: What is the relation between your graduation project topic, your master track (A, U, BT, LA, MBE), and your master programme (MSc AUBS)?

My research project, "A multi-disciplinary approach to assessing the influence of facade on outdoor thermal comfort: A case study of Milan," aligns closely with the objectives of the MSc Architecture, Urbanism & Building Sciences (AUBS) program, specifically within the Building Technology (BT) track. The BT track emphasizes the technical aspects of architecture, allowing for a comprehensive integration of climate design, computational methods, and facade design principles. This alignment is reflected in my project, which investigates the impact of facades on outdoor thermal comfort and explores heat mitigation strategies through facade design. The focus on outdoor environmental quality and thermal comfort addresses significant urban challenges, particularly in Mediterranean climates. The computational design methodology used in my project facilitates rigorous data analysis and supports the creation of a robust, data-driven workflow for climate-responsive design solutions.

#### 2. Relevance of Graduation Work in the Larger Social, Professional, and Scientific Framework

## Question: How do you assess the academic and societal value, scope, and implication of your graduation project, including ethical aspects?

The relevance of my research extends to its potential contribution to urban climate design by addressing the critical issue of outdoor thermal comfort. By focusing on enhancing the thermal quality in the Acquabella district of Milan, the study offers practical solutions that can be directly applied to improve the built environment and building envelopes. This user-oriented approach ensures that design solutions are effective and resonate with the preferences and needs of the community and stakeholders. The integration of computational design not only enhances methodological rigor but also sets a precedent for future practices, emphasizing the importance of addressing user issues comprehensively and personally. The developed workflow can be broadly implemented, introducing innovative methodologies aligned with current trends in data-driven design. This approach fosters a multi-domain mixed-methods framework for shaping user-centered urban planning practices that prioritize comfort and sustainability.

#### 3. Assessment of the Value of the Approach and Methods Used

## Question: How do you assess the value of your way of working (your approach, your used methods, used methodology)?

The approach and methods used in my research have proven valuable in addressing complex outdoor thermal comfort issues. Combining qualitative and quantitative research methods, including computational simulations, surveys, and participatory workshops, allowed for a comprehensive assessment of facade impacts on thermal comfort. This multi-domain approach effectively captures user perceptions and environmental conditions, leading to actionable insights. The iterative workflow, with each step informing the next, ensures a systematic and thorough investigation, contributing to robust and reliable findings.

However, challenges such as the need for organization skills and constant communication with the Cista community were significant. The coordination of surveys and participatory workshops required meticulous planning and flexibility. The distance from the study area also posed limitations, as I could not conduct site visits or take real-time measurements. Despite these challenges, the use of reliable data sources and computational tools helped mitigate some limitations.

#### 4. Impact of Research on Design/Recommendations and Vice Versa

Question: How did your research influence your design/recommendations and how did the design/recommendations influence your research?

The research significantly influenced the design recommendations by providing a data-driven foundation for decision-making. The findings from computational simulations and user surveys guided the selection of facade materials and design strategies to improve thermal comfort. Conversely, the design recommendations shaped the research focus, highlighting the need for detailed analysis of facade impacts and user feedback. This iterative process ensured that the design solutions were both scientifically valid and practically applicable, enhancing the overall project outcomes.

#### 5. Reflection on Feedback and Learning

### Question: How do you reflect upon the feedback given by your mentors and how have you translated it into your work?

Feedback from mentors and the community has been instrumental in refining the approach and ensuring relevance and applicability. The iterative process of integrating feedback led to continuous improvement, making the final outcomes more robust and comprehensive. Learning from this experience highlighted the importance of flexibility and adaptability in research and the value of stakeholder engagement in achieving meaningful results.

Despite the challenges of limited time, the inability to conduct on-site monitoring, and the complexity of organizing community engagement, the project successfully developed a comprehensive and user-centered workflow. Moving forward, the final part of the graduation period will focus on further validating the results through monitoring campaigns and community engagement. The aim is to organize an event to collect real-time data and user feedback, enhancing the reliability of the findings and ensuring that the proposed solutions are grounded in actual user experiences.

#### 6. Transferability of Project Results

#### Question: How do you assess the value of the transferability of your project results?

The project's transferability is high due to the adaptable nature of the proposed workflow and the emphasis on user-centered design. The methodologies and findings can be applied to other urban areas facing similar challenges, making the project a valuable reference for urban planners, policymakers, and designers. The open-source tools and accessible methods ensure that the approach can be easily adopted and implemented in different contexts, fostering a broader impact on urban climate resilience and sustainable development.

#### Additional Reflections

## Question: Did you encounter moral/ethical issues or dilemmas during the process? How did you deal with these?

Ethically, the project prioritizes community well-being by considering the perspectives of vulnerable members and aiming to create more comfortable urban spaces. The transparency and community involvement further emphasize the project's ethical commitment to inclusive urban planning. Ensuring informed consent and protecting participants' privacy were central to addressing any ethical concerns.

### Question: How does your project contribute to sustainable development and what is its societal impact?

The project contributes to sustainable development by promoting climate-responsive design and improving outdoor thermal comfort, which can reduce the urban heat island effect and enhance overall urban livability. The societal impact includes increased awareness and engagement of the community in urban planning processes, empowering citizens to contribute to their environment's

improvement. The project's methodologies and findings offer valuable insights for sustainable urban development and can inform future policies and practices aimed at creating resilient and comfortable urban spaces.