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CONNECTING HERITAGE

Sharing Heritage Perspective among
Different Domains



Learning Sustainability from Heritage Architecture

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In Europe, the Building Sector emits 36% of the greenhouse gases consuming 40% of the Energy[1].

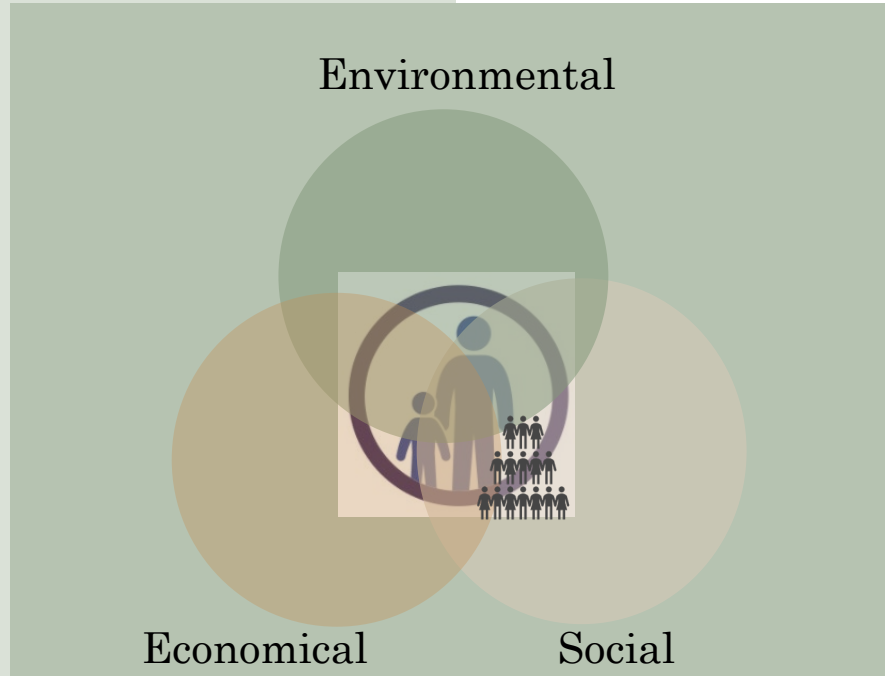


Figure 1 – Sustainability Fields [2]

Sustainable Development: is defined as 'Our Common Future' as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'. It seeks to reconcile economic development with the protection of social and environmental balance [3].

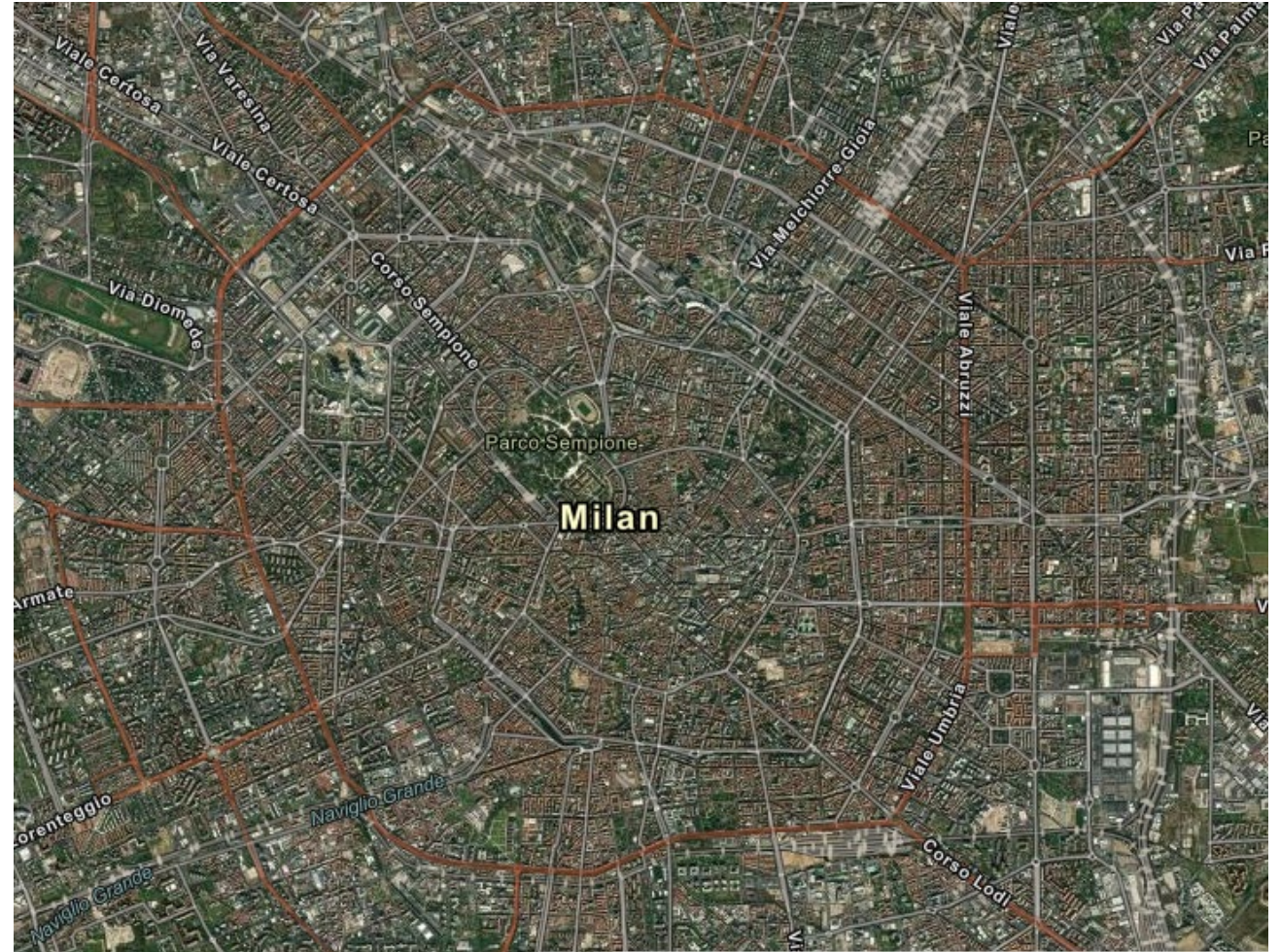


Figure 2 – Aerial view of Milan City – ArcGIS online [4]

Introduction - The Crave for Urban Sustainability

These emissions emanate through the life-cycle of the building(s) from construction, usage, renovation and demolition.

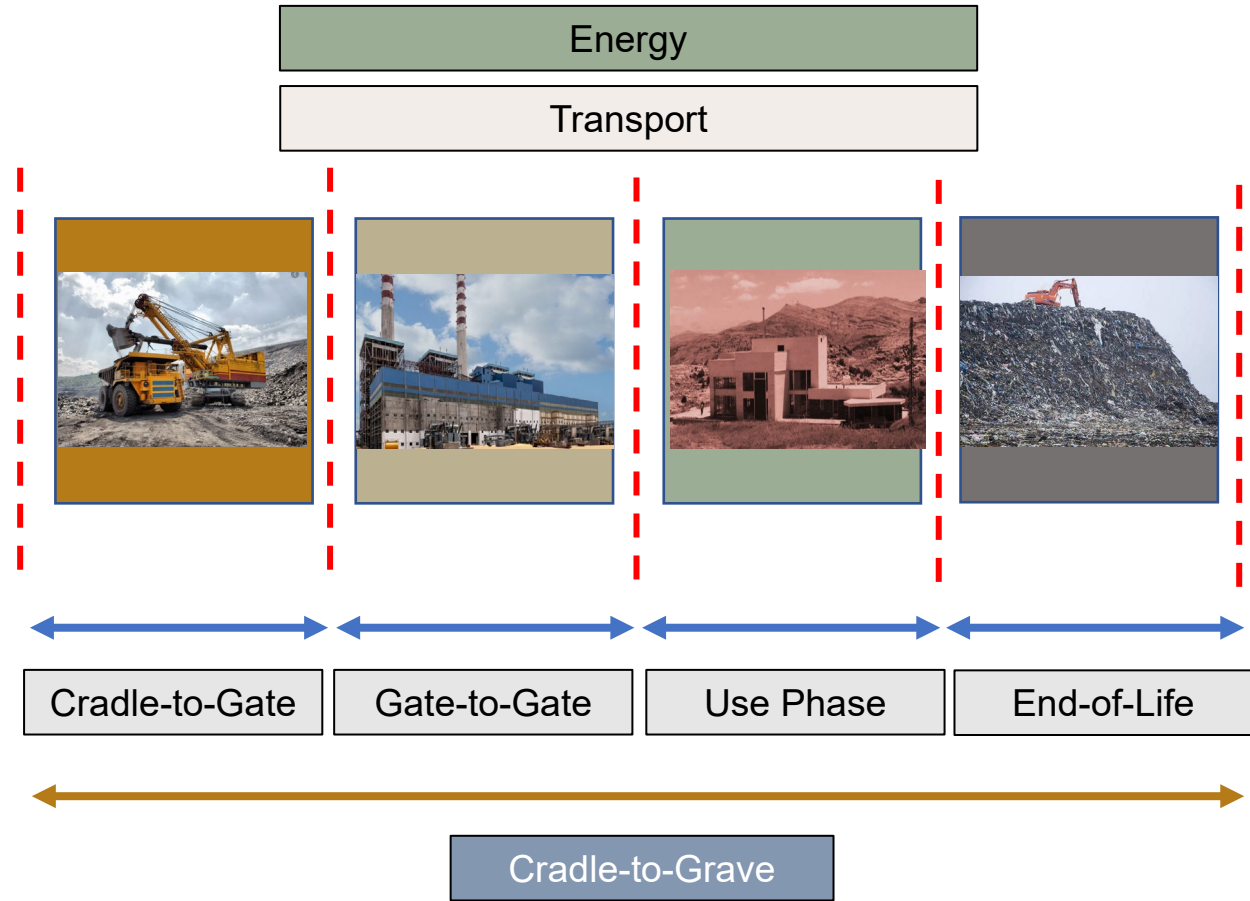


Figure 3 – Life-Cycle Phases of a Building (based on[5])

Introduction - The Crave for Urban Sustainability

A wise approach would be to learn from the wisdom of the lasting Architecture.



Figure 4 – Piazza Duomo – Milan [6]

Focus – Piazza Duomo Architectural Sustainability

Major architectural impact on the square is contributed to architect Giuseppe Mengoni's renovational activities between 1865–1873 [7].



Figure 5 – Mengoni's Master Plan [7]



Figure 6 – Urban Integration map [4]

Heritage buildings exhibited mastery of passive design strategies in their layout and form as well as their urban integration, scale and functional adaptability

Urbanely Integrated Focal Center

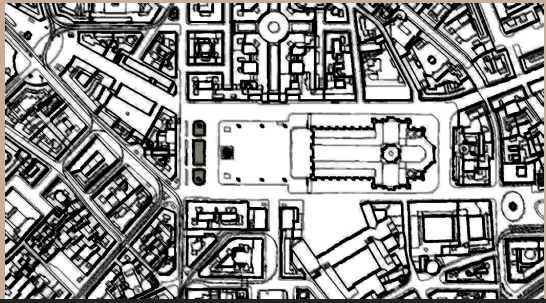


Figure 7, 8 & 9 – Urban plan [9],
Study by Author, Google image [6]



Figure 10 – Piazza & Cathedral - Photo by Author

Space / Street Definition & Articulation

The building envelope protected the inner space / functions as well as defined the external space / functions.

The buildings demonstrated perfect ability to adapt to various modern functions.

Figure 11 – Galleria Vittorio Emanuele
- Photo by Author

Functional Adaptability





Figure 12 – View from Piazza - Study by Author

While harmoniously defining the external space i.e., piazzas and streets, heritage building envelopes, effectively, shed the inner space from harsh climatic conditions.

Figure 13 – The Arcade - Photo by Author



Buffer Climatic Spaces



Figure 14 –View from Piazza Duomo - Photo by Author

The building envelope is composed of massive walls (thermal insulation properties) from local materials (reduced trajectories).

Massive Walls / Use of Local Materials

The building envelope exhibited harmonious composition



Figure 15 –View from Piazza Duomo
- Photo by Author

Harmony

The building envelope is to the scale of the people and possesses a language which communicates with them.

Figure 16 – Entrance to Vittorio Emanuele

Scale & Language



Figure 17 – Details of ceiling in Arcades

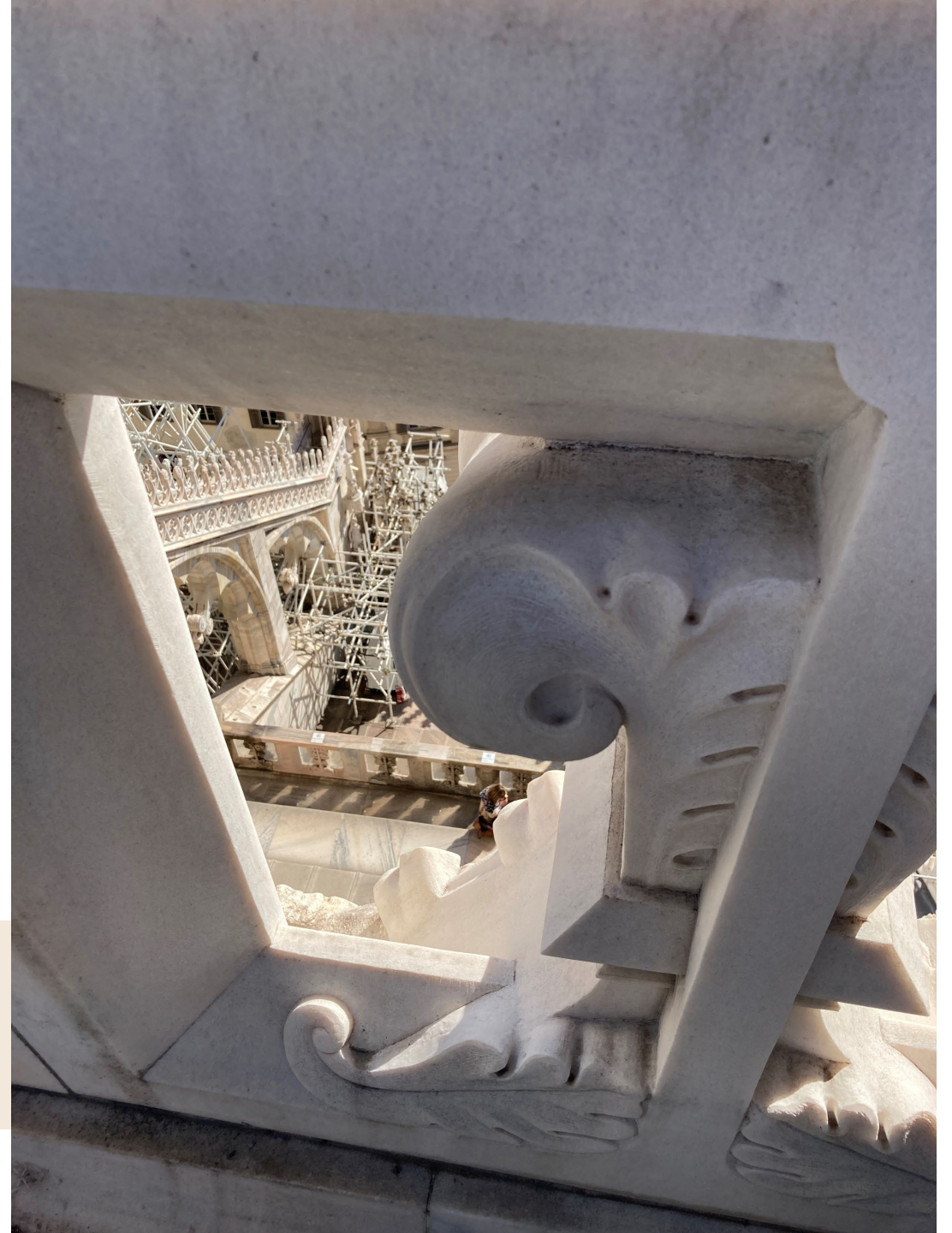
Sustainability in Exquisite Beauty



Use of local materials such as stone, timber and brick not only reduced transportation trajectories, but also, displayed artistic mastery

- Skilled craftsmanship

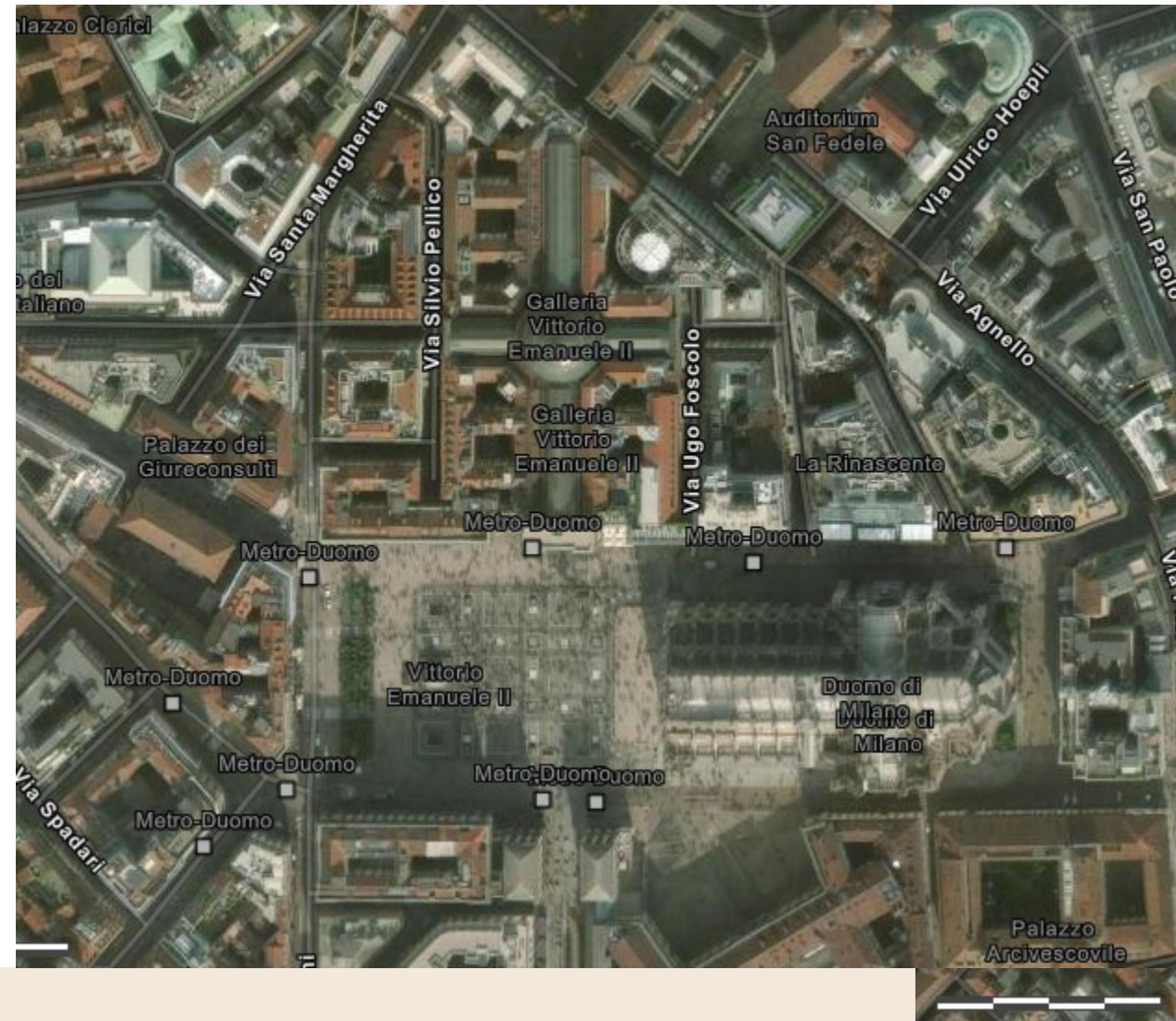
Figure 18 – Stone detail from Duomo terrace – Photo by Author



Subtle Introduction:

- Running fresh water
- Greenery

Figure 18 – Top view ArcGIS [4]



Enhancing Environmental Sustainability

Heritage Architecture showed understanding of the dual role of the building envelope: towards the inner space as well as towards the external environment – where the lasting sustainability.

Figure 18 – The iconic Cathedral – Photo by Author



Conclusion

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THANK YOU !!

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