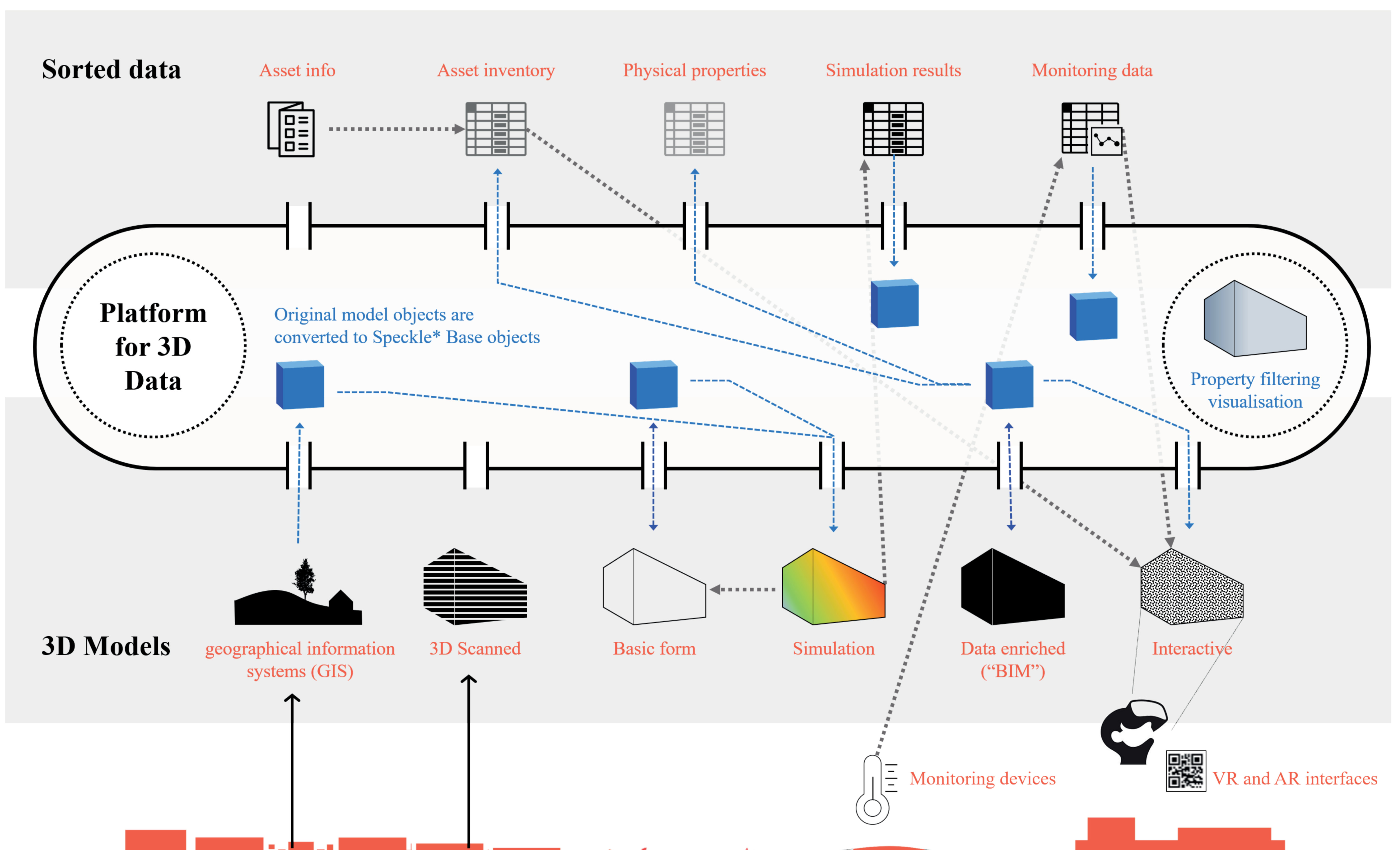
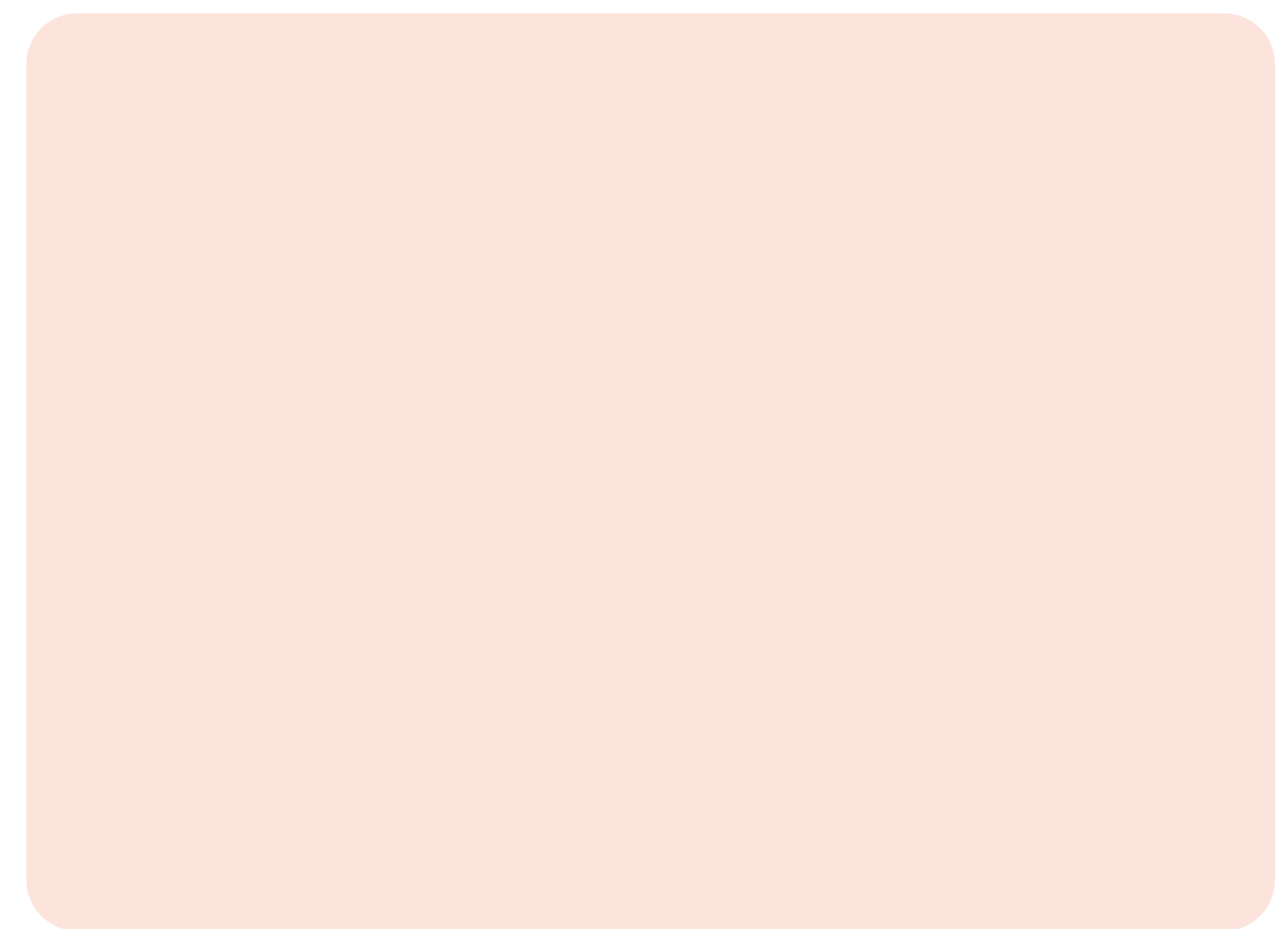


# Collaborative platform for EPFL campus building data

EPFL campus Lausanne can function as an urban-scale Living lab, a community encompassing academic activities (education and research) and day-to-day operations in which effective collaboration between stakeholders is essential to reach a sustainable and decarbonized campus. Under Building2050 group's drive, in collaboration with the PL-MTI, the Smart living lab develops an open-source, **interactive and collaborative Digital Research Infrastructure (DRI)**. The DRI is meant to foster cross-sector collaborations, structuring and interconnecting digital data, linking 3D models, simulation, performance and asset data of the EPFL campus Lausanne.

A platform providing **rapid and intuitive 3D navigation, an inventory** of buildings, trees, green areas, pedestrian paths, riverbanks, and many other assets essential to evaluate campus resilience, **including** the integration of **Building Information Models (BIMs)**. These models contain detailed and structured information of construction elements describing and quantifying their geometrical and physical characteristics as well as properties useful for life cycle analysis and facility management. BIMs include as well space-related information such as usage, occupancy, furniture, equipment, lighting conditions, or consumption rates.

The platform allows to **send and receive 3D data** and information from and to specialized software. For example, to evaluate the cumulative solar radiation on buildings envelopes, on the ground level, or on the campus current PV installation. Results can be "injected" back into the platform to be shared. This is especially helpful to test different renovation scenarios and to **assess** the performance gap comparing **simulation and real monitored data**, in order to achieve a decarbonised campus.



## Physical environment

- .....▶ Export-based data transfer
- ▶ One way data streaming (send)
- ↔----- Two ways data streaming (send and receive)

\* Speckle is open source digital infrastructure for anything designed in 3D. It handles interoperability between software silos, real time collaboration, data management, versioning and automation.  
→ <https://speckle.systems/>

Speckle Base objects

▲ **Data flow for Campus 3D model**  
Elaborated by: Building2050 & PL-MTI  
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