Bentley Education

Granularity of data examples

Campus level At the campus level, information is generally aggregated and provides a holistic view of the entire campus infrastructure. This level focuses on broad metrics and overall performance indicators. Examples might include:	
Geographic information system (GIS) data	Maps of the entire campus, including building locations, green spaces, roads, and utilities
Energy consumption	Total energy usage across the campus, broken down by building and energy source (e.g., electricity, gas, renewables)
Water usage	Aggregate water consumption data for the campus, including trends over time
Waste management	Data on waste generation and recycling efforts across the campus
Transportation and parking	Information on campus transportation systems, parking availability, EV charging points, and traffic flow patterns
Security and surveillance	Data from campus-wide security systems, including access control and surveillance cameras
Environmental monitoring	Air quality, noise levels, and other environmental metrics measured across the campus
Occupancy and utilization	Occupancy rates and space utilization metrics for different buildings and facilities on the campus
Pedestrian movements	Data on movements throughout the campus (incoming and outgoing) through different times of day

Building level At the building level, information becomes more detailed and specific to the operations and performance of individual buildings. This level focuses on building-specific metrics and systems. Examples might include:	
Structural information	Detailed architectural and structural models of the building, including floor plans and elevations
Building systems	Data on HVAC (heating, ventilation, and air conditioning) systems, elevators, lighting, and plumbing
Energy management	Energy consumption data broken down by system (e.g., lighting, HVAC) and time (e.g., daily, weekly)
Water usage	Water consumption data for the building, including usage by different systems (e.g., toilets, kitchens)
Maintenance records	Historical and scheduled maintenance data for building systems and components.
Indoor environmental quality	Indoor air quality, temperature, humidity, and lighting levels
Space utilization	Data on the usage of different areas within the building, such as offices, meeting rooms, and common areas, including as-planned/as-used space utilization (actual occupancy patterns)
Safety and security	Information on fire alarm systems, access control, and emergency exits

Building component level (e.g., product) At the building component level, information is highly detailed and specific to individual components or products within the building. This level focuses on the performance, condition, and life cycle of specific elements. Examples might include:	
Component specifications	Manufacturer details, model numbers, and technical specifications of components (e.g., HVAC units, lighting fixtures)
Performance data	Operational data for specific components, such as efficiency, power consumption, and output
Condition monitoring	Real-time data from sensors monitoring the condition of components (e.g., vibration, temperature, wear and tear)
Life cycle information	Information on the expected lifespan, warranty, and replacement schedules for components
Maintenance history	Detailed maintenance logs for individual components, including repairs, replacements, and upgrades
Failure rates and diagnostics	Data on failure rates, diagnostics, and fault detection for components
Integration with building systems	Information on how components are integrated with other building systems (e.g., HVAC integration with building automation systems)
User manuals and documentation	Digital copies of user manuals, installation guides, and technical documentation for components