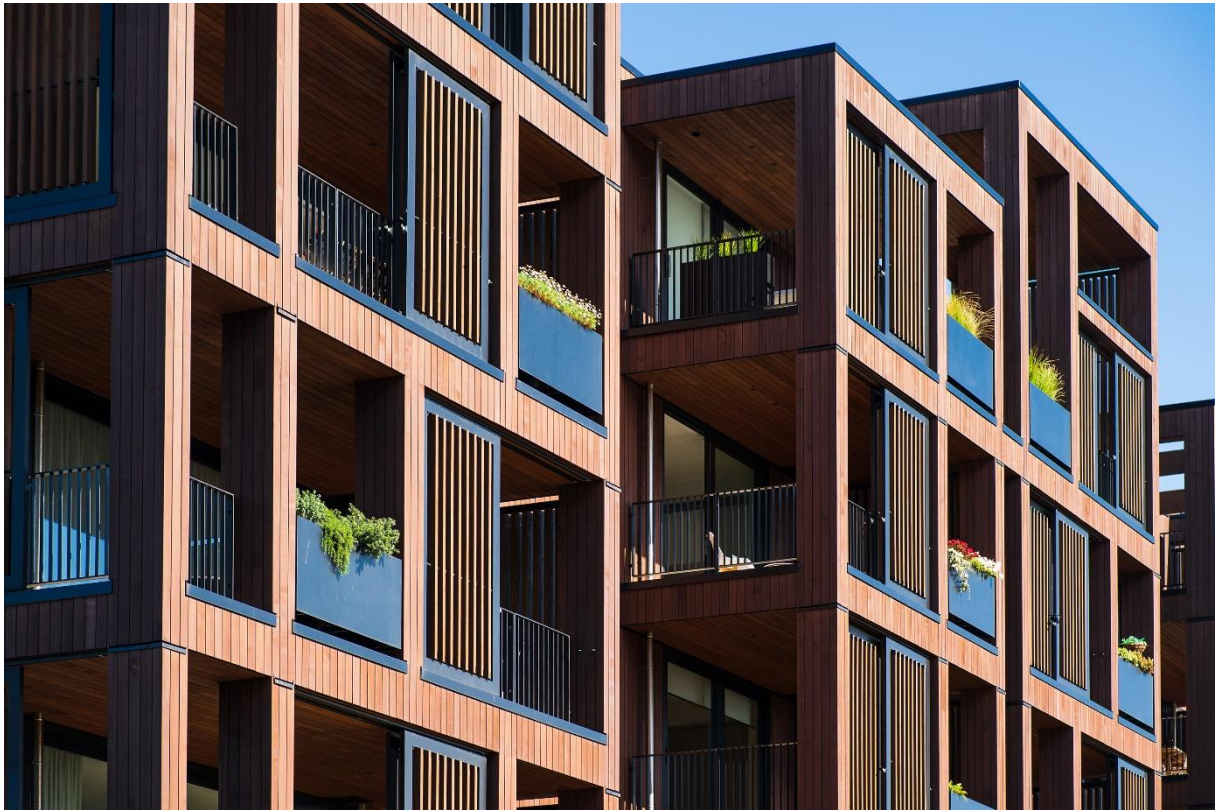# ΛTUM
Building Insights API for German Properties

Enhancing Energy Efficiency in Building Portfolios with ATUM

Background: The Urgent Need for Energy Efficiency in Buildings

In Germany, buildings are responsible for roughly one-third of the country's overall energy consumption, primarily for heating spaces and providing hot water. This sector alone accounts for a significant share of CO_2 emissions and energy expenses. The push for increased energy efficiency in buildings is more pressing than ever as Germany strives to meet its ambitious climate targets and reduce energy dependency. With energy costs rising and sustainability becoming a key focus in building management, improving the efficiency of existing building stock is no longer optional; it's essential for both economic and environmental sustainability.

The impact of inefficient energy use in buildings is considerable, resulting in wasted resources, increased operating costs, and avoidable environmental impact. Enhancing energy efficiency in Germany's buildings offers a powerful lever for reducing overall energy consumption, lowering emissions, and achieving compliance with the nation's regulatory frameworks for building energy standards. This need becomes even more significant when managing large property portfolios, where inefficiencies in multiple buildings can cumulatively lead to substantial energy losses and expenses.

Why Assessing a Building Portfolio is Essential

For property owners, facility managers, and investors, understanding the energy profile of each building within a portfolio is crucial for effective resource allocation and management. Traditional methods of energy assessment are often limited by high costs, lengthy evaluation periods, and incomplete data, making it challenging to obtain a clear picture of a building's energy performance. Without precise, data-backed insights, it's difficult to make informed decisions regarding renovations, retrofits, and energy system upgrades.

A data-driven approach to portfolio management offers a transformative solution. With accurate and comprehensive building data, property managers and owners can:

- **Identify Energy Inefficiencies**: Pinpoint specific buildings or systems that consume excessive energy.

- **Prioritize Renovation Projects**: Use data to determine which buildings offer the highest potential for energy savings and cost reductions.

- **Evaluate and Compare Properties**: Benchmark the energy performance of each building, allowing for more efficient investment strategies and better decision-making.

- **Reduce Carbon Footprint**: Achieve compliance with climate goals and regulatory requirements, contributing to a more sustainable property portfolio.

Assessing a building portfolio's energy efficiency with a data-driven methodology empowers stakeholders to create energy-saving strategies, drive down operational costs, and support broader sustainability objectives.

Introducing ATUM: A Data-Driven Service for Building Energy Assessment

ATUM is an innovative API service designed to facilitate fast, reliable, and data-rich assessments of buildings within a portfolio. Developed specifically for properties in Germany, ATUM aligns with national regulations, standards, and climatic conditions, providing insights tailored to the unique characteristics of the German market. This focus enables property owners, facility managers, and investors to gain a granular understanding of energy performance in their buildings, helping them to streamline energy management strategies across portfolios.

By integrating ATUM's insights, users can quickly and effectively:

- Evaluate the energy efficiency of each property.

- Identify opportunities for reducing energy consumption.

- Make informed, data-backed decisions that support long-term energy management goals.

Key Features and Evaluations Offered by ATUM

ATUM delivers a comprehensive suite of evaluations to provide a detailed understanding of building energy performance. Below are the core features and assessments that make ATUM an essential tool for building and energy portfolio management:

1. **Energy Source Optimization and Recommendations**

   o **Feature**: ATUM analyzes the current energy sources used in heating systems, identifying potential opportunities for switching to more sustainable options.

   o **Evaluation**: For instance, if a building is using Light Fuel Oil as its primary heating source, ATUM will recommend considering alternative, greener energy sources. This helps reduce both emissions and operating costs, contributing to a lower carbon footprint.

2. **Heating System Dimensioning Analysis**

   o **Feature**: Using full-load hours, ATUM evaluates whether the heating system is appropriately sized for the building's needs.

   o **Evaluation**: A heating system with full-load hours in the range of 1900-2100 is typically well-dimensioned. If the system operates at or below 1700 full-load hours, it is likely oversized. ATUM will highlight such cases,

advising that an optimized or downsized system could lead to energy and cost savings.

- o **Benefit**: This analysis is particularly useful in guiding decisions on system upgrades or replacements, ensuring that heating systems are not only energy-efficient but also cost-effective over their lifecycle.

3. **Performance Degradation Detection**

- o **Feature**: ATUM monitors changes in energy consumption over time, adjusting for climatic variations, to detect any signs of performance degradation in heating systems.

- o **Evaluation**: If the climate-corrected energy consumption for heating shows a steady increase year-over-year (e.g., 2018 < 2019 < 2020 < 2021), ATUM identifies a potential decline in system efficiency. In such cases, it recommends a detailed performance check and potential maintenance or adjustments.

- o **Benefit**: Early detection of performance degradation helps avoid costly repairs and reduces overall energy use, ensuring that systems run optimally for as long as possible.

4. **Energy Consumption Normalized to Heated Area**

- o **Feature**: ATUM calculates energy consumption per square meter of heated area, providing a standardized metric for comparing energy use across buildings.

- o **Evaluation**: This feature enables users to benchmark properties within the portfolio, identifying outliers with unusually high energy demands per unit area.

- o **Benefit**: Normalized energy metrics allow property managers to prioritize interventions in buildings that demonstrate disproportionate energy usage, maximizing the impact of efficiency initiatives.

5. **Climate-Adjusted Energy Consumption Corrections**

- o **Feature**: ATUM corrects energy consumption data based on climatic factors, making year-over-year comparisons more accurate and meaningful.

- o **Evaluation**: By adjusting for annual climate variations, ATUM ensures that energy use assessments reflect actual building performance, not just temperature fluctuations.

     o   **Benefit**: This enables a more precise evaluation of energy-saving measures and system improvements, supporting a clearer understanding of building performance trends.

Why ATUM is the Right Solution for German Properties

ATUM is specifically designed to cater to properties within Germany, with its analyses optimized for the country's regulatory environment and climatic context. This targeted approach means that ATUM's insights are highly relevant to the German market, unlike generic tools that may lack local applicability. Additionally, the service is not intended for use outside of the EU, as adaptation would require significant customization to align with non-EU standards.

ATUM offers a seamless way to incorporate energy data insights into existing property management software via an API. By integrating ATUM, property owners, managers, and investors gain access to critical energy insights that empower them to make smarter, data-driven decisions. This capability helps streamline portfolio management, ensuring each building contributes positively to sustainability and cost-efficiency goals.

With ATUM, the path to an optimized, energy-efficient portfolio becomes more attainable, offering a powerful tool for those committed to improving the energy performance of their building assets.

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