

Why Your Building's Address Was Never Meant To Be Its Identity

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Ask any facilities director who oversees a hospital campus or a university with several buildings on one site, and they will describe the same frustration. The address on the deed says one thing. The property on the ground says another. A single mailing address can represent two, 12, or on a large campus, several dozen buildings.

Nearly every system the industry relies on, from permitting portals to CMMS platforms to insurance underwriting tools, still treats an address as if it points to one physical structure. That mismatch has a name: the Infrastructure Identity Gap, the space between where a record says a building sits and what it actually is. For decades, the industry has used addresses as a substitute for something they were never designed to provide: a persistent identity for each physical asset. Addresses and infrastructure identity are fundamentally different concepts and conflating them is the structural flaw at the center of the gap.

WHERE TREATING AN ADDRESS AS IDENTITY BREAKS DOWN

The logic of address-based recordkeeping made sense when most parcels held a single building. It stops working the moment a site accumulates history. A research campus adds a satellite lab in one decade and a shared utility plant in the next. Each addition belongs to a specific physical asset, not to the address on file, yet the recordkeeping systems the industry depends on were built to track addresses, not assets. Over the



years, the address becomes a folder of records from buildings that share little except a driveway.

FOUR WAYS COMPOUND SITES DEFEAT TRADITIONAL RECORDKEEPING

Fragmented and Isolated Records: On sprawling properties, archival drawings, permits, and repair histories are almost never consolidated in one place. Different buildings may change ownership at different times or have records digitized on different schedules, leaving several partial, competing versions of the truth.

Diverging Building Evolution: Each structure on a campus lives its own life. One building might be modernized every decade while the one next to it sits untouched since the 1970s.

Applying one set of assumptions to structures that evolved on different tracks misrepresents both.

Irregular Geometries: Heritage sites rarely offer straight walls, level floors, or standard dimensions. Add settling and decades of incremental change, and one accurate digital footprint for the site requires precision measured in millimeters, not feet.

Hidden Site Infrastructure: The space between buildings is often the least understood part of a campus. Utility lines and old foundations sit buried and undocumented, and a single missing record can throw off an entire site's spatial data.

Each of these challenges compounds the same gap. A GIS layer can plot where buildings sit. It cannot preserve a system's history once ownership changes hands.

A FAMILIAR KIND OF CONFUSION

Consider a mid-sized university with a single street address covering 11 buildings, three of which share a name because one was renamed decades ago and the paperwork never caught up. A contractor sent to service an electrical vault finds two nearly identical vaults attached to the same address, with no way to tell which one a work order refers to. The address is not wrong. What is missing is an identity for each vault. Bad or incomplete project data cost the industry an estimated \$1.8 trillion in 2020 alone, according to a [widely cited study](#) by Autodesk and FMI Corp, which also tied as much as 14 percent of otherwise avoidable rework, worth roughly \$88 billion, directly to bad data.

WHEN OWNERSHIP CHANGES, THE RECORD SHOULD NOT

Every building on a campus will change hands more than once in its life. Owners sell, operators turn over, and insurers or lenders reassess the property on their own schedules. Each transition is a point where historical knowledge can quietly disappear, because the industry tracks addresses rather than the physical assets those transitions affect. A new facility manager inherits a mailing address, not a verified history of what was built, repaired, or replaced. Buildings should not lose their memory every time ownership changes, yet under an address-based system, that is exactly what tends to happen.

FROM ADDRESSES TO INFRASTRUCTURE IDENTITY

The way forward starts with a shift in vocabulary before it becomes a shift in technology. Facility owners, and the design and build professionals who work on their properties, need to think in terms of physical infrastructure assets rather than addresses. Permits, inspections, commissioning reports, maintenance events, warranties, insurance claims, and future renovations never happen to an address. They happen to a specific physical asset that needs an identity durable enough to hold that history together across every transition it goes through.

That need has become urgent. For decades, address-based recordkeeping was simply an inconvenience. Today, digital twins, predictive maintenance, lifecycle analytics, climate risk modeling, autonomous inspections, and enterprise asset management all depend on precise infrastructure identity, and none more visibly than artificial intelligence. AI is only as reliable as the identity of the asset it analyzes. If historical records cannot be confidently tied to a specific building, AI does not reduce confusion, it accelerates it. What was once an operational annoyance has become a foundational requirement for the next generation of technology, and closing the Infrastructure Identity Gap is what makes that technology trustworthy.

THE NEXT EVOLUTION OF INFRASTRUCTURE

This problem will not be solved by adding another application. It requires a persistent identity layer beneath the software organizations already rely on, one that keeps every permit, inspection, and renovation connected to the physical asset it belongs to, regardless of who owns it or which platform recorded it. Every school, hospital, office building, warehouse, bridge, utility, and manufacturing facility has its own history. The next evolution of infrastructure begins when every physical asset carries a persistent identity capable of preserving its history for generations. 



About the Author

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