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Smart Factory
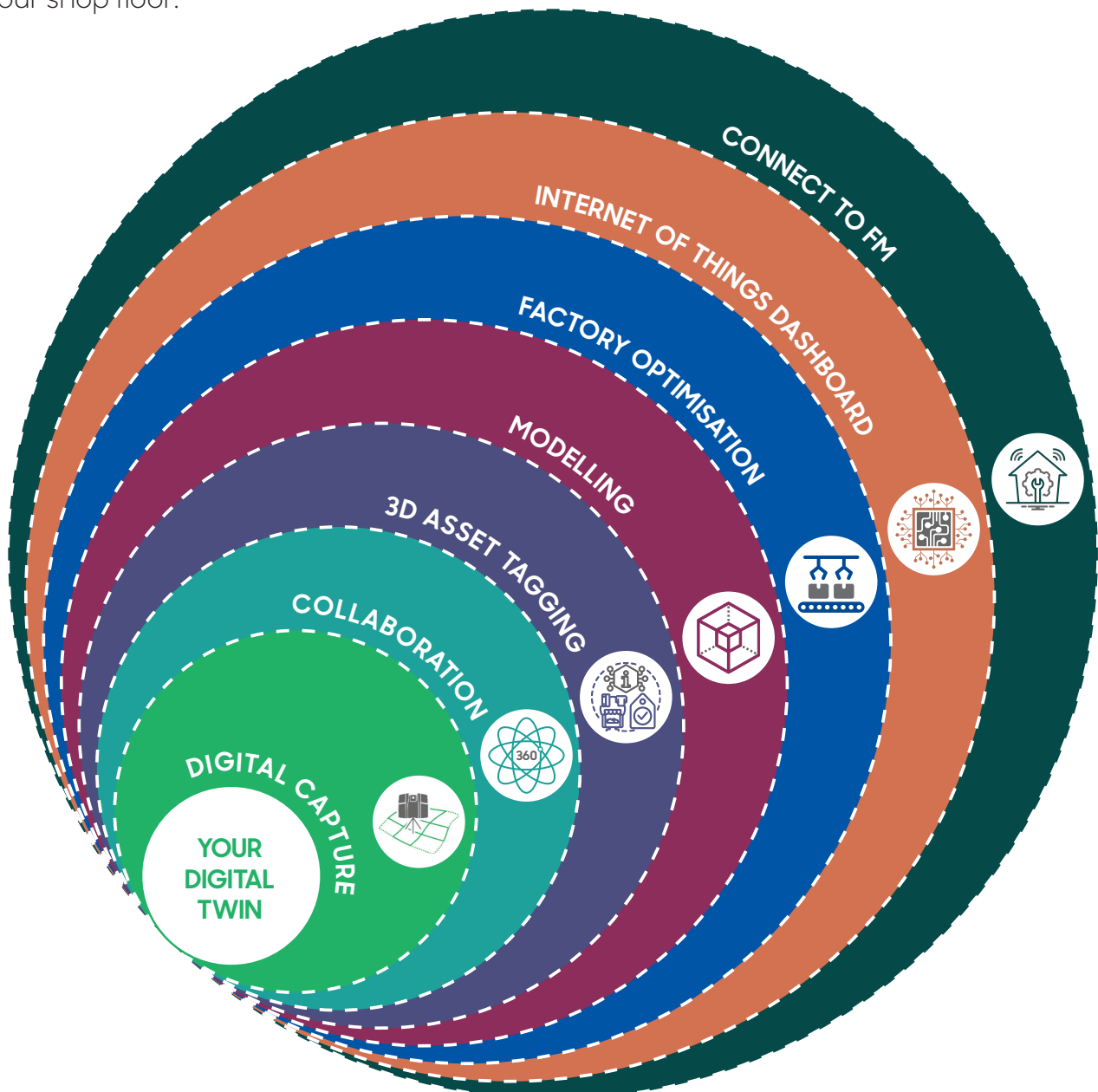## Build and Host your Manufacturing Digital Twin

Digital Twin – Your Choice, Your Priorities

Creating a digital twin means different things to different people. The approach to building your digital data may differ greatly depending on whether you're working with existing sites (brown field) or new sites (green field). For brown field sites, your focus may be capturing your existing assets and the opportunity to remodel and redesign. On the other hand, green field sites, particularly those in the design and construction phase, will require incorporating multiple model formats. This includes BIM models from the architect and structural engineers, as well as factory layout and coordination models. If you are extending an existing facility, then a hybrid approach may need to be considered.

In manufacturing, flexibility is crucial, and having a central hosting system is essential. Manufacturers often strive to achieve secure access to a single version of accurate and reliable information, which is the common goal.

Cadline's Digital Manufacturing team possess the necessary skills and industry expertise to assist in defining a digital strategy, helping to deliver the specific components that are important within a unified hosted environment.

We will help you host your digital content, add data and value over time, integrate with downstream facilities systems or simply scan, model and provide virtual walk throughs of your shop floor.
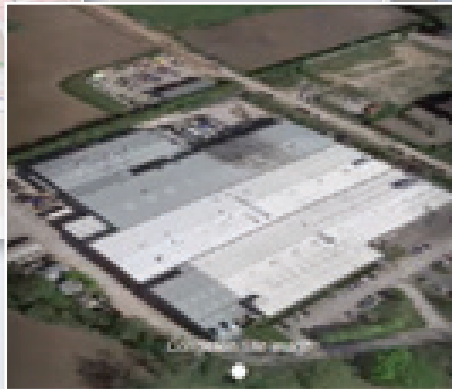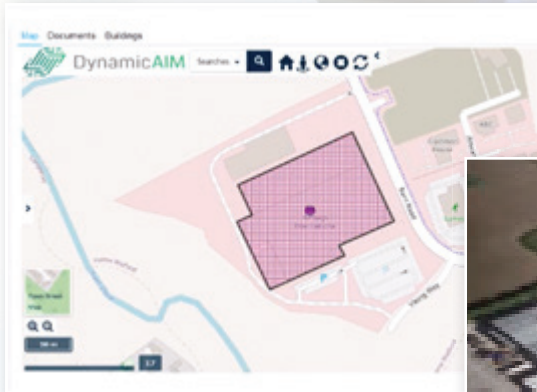
Digital Capture

Factory, Equipment, Building, Plant and Site – capture assets within 1mm accuracy and deliver a usable model of the equipment, internal and external environment and plant providing the accurate data needed as a foundation for a digital twin.
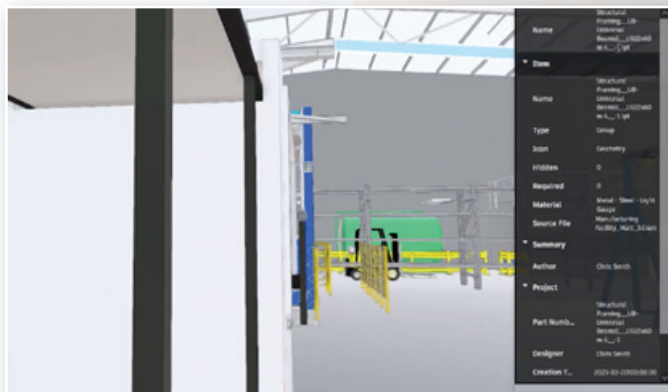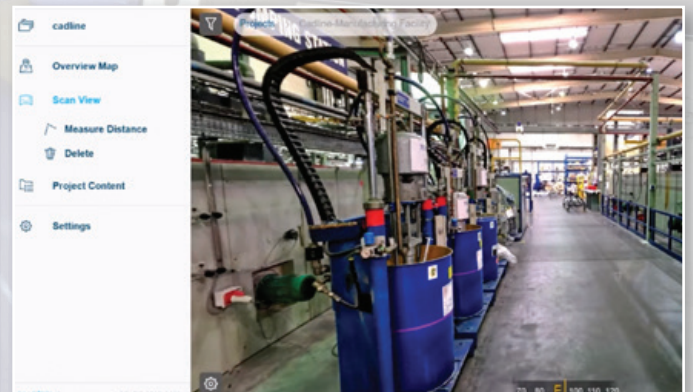
Site Level

Factory Level

Collaboration

Create a secure immersive 3D virtual user experience with walkthroughs for multiple stakeholders using rapid 3D Photo scanning of factory, production facilities, buildings, core, boiler rooms, IT Hubs, corridors, interiors, corridors, ceilings, floors, balconies and assets to capture digital data and real-world special representations.

3D Model Interaction

3D Point Cloud Interaction
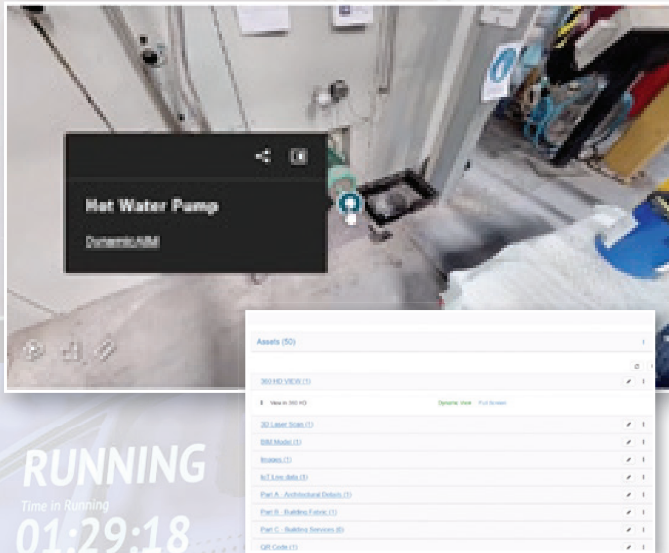
3D Asset Tagging

Tag 3D equipment and data with digital asset information such as O&M manuals, equipment training manuals, assembly and disassembly videos, maintenance schedules or any BIM models and asset documentation that needs to be securely accessed by wider teams.
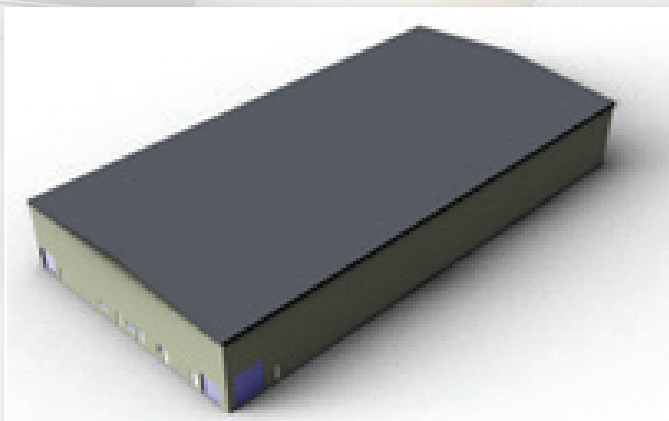
Tagging the Asset

Access the BIM Model and Data

Modelling

Define the models and collaboration experience based on purpose and usage. For example, create a digital asset strategy; scan existing building and equipment assets, model and tag for use by maintenance and facilities.

Optimise the environment ahead of construction work taking place, incorporate BIM construction models early in the design phase to allow space to be digitally planned and factory and production layouts to be reviewed and simulated.

Integrated BIM Model

Factory Modelling
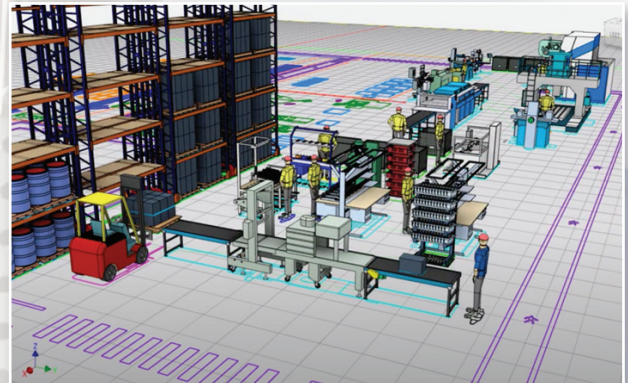
Factory Optimisation

Digitally capturing factory assets is just the start. Once captured, add manufacturing through put data to model, simulate and optimise factory layouts, proving what if scenarios without moving any equipment or people until optimal solutions have been found. **Simulate energy consumption comparisons** to help reduce costs and environmental impact.

Simulate and Optimise in 2D

Or 3D or both – it is up to you
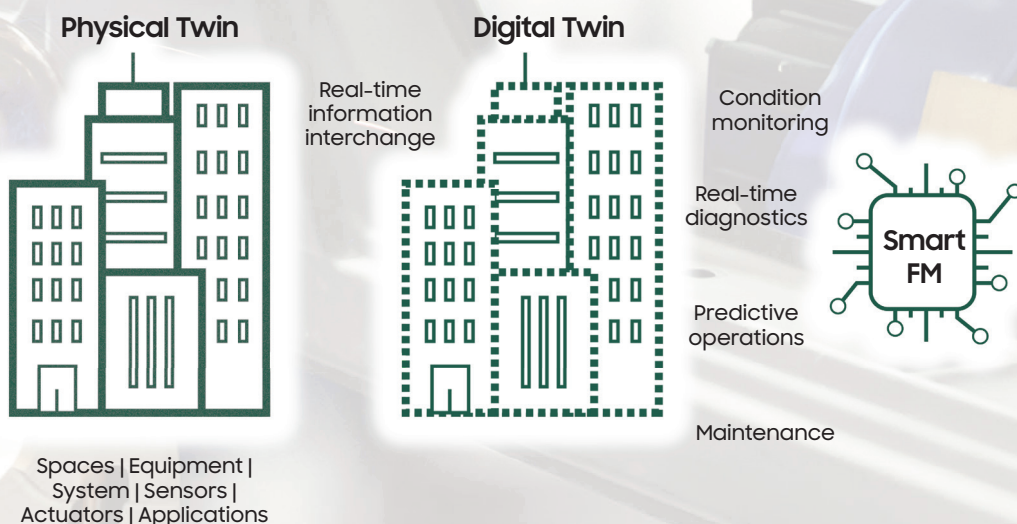

Internet of Things Dashboard

Capturing sensor dashboard information for proactive maintenance of equipment can be hosted and accessed in the same environment as any other digital twin assets. Linking real world IOT data back to a central environment delivers the best real-time experience for teams and perhaps provides opportunities for new product offerings and go to market experiences for customers.

Connect to FM

Better manage asset lifecycles through Design, Build, Operate and Maintain phases when you integrate digital twin data and facilities management systems and connect teams to up to date information.

Physical Twin

Spaces | Equipment | System | Sensors | Actuators | Applications

Real-time information interchange

Digital Twin

Condition monitoring

Real-time diagnostics

Predictive operations

Maintenance

Smart FM

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