Smart Building Management Systems for Managing Workplace and Sustainability

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The building sector represents...

Global Alliance for Buildings & Construction, 2020

35% Of the World Energy Consumption
38% Of the World CO2 emissions
Maintenane Dependency

**Reactive**
- Traditional
- Always too late
- 5 Times more expensive
- Large risk

**Proactive**
- Current
- Often to early
- 80%+ random failures
- Moderate risk

**Condition**
- Smart Building
- Just In Time
- Optimal performance
- No risk
Components of Smart Buildings Technologies

Building Maintenance Management Diagnostic Tools

- Smart Building Platform
- Decision Support System
- Translate Decisions into Actions

Asset and Maintenance Integrated Management Systems Business
Building Management (BMS) Diagnostic Tools

Analyze row data from BMS Systems and multi-site IoT platform, constantly monitoring equipment to **proactively** address building inefficiencies.

**Energy**
Reduce energy consumption, cost, and emission

**Comfort**
Enhance occupant experience

**Maintenance**
Extend asset life and reduce cost of operation
IoT Focus: buildings, assets, people, footprint..

- Solar Panel Input
- Electricity Grid / Micro Grids
- Wind Input
- External Power Supply
- External Water Supply
- External Gas Supply
- Boiler 1
- Boiler 2
- Boiler 3
- Water Cooler
- Sinks
- Toilets
- Kitchen

- Elevators
- HVAC
- Lighting
- Refrigeration

- Loading
- Storage

- Climatic conditions
- Workplace
- Comfort
- Location
- Health & Safety
- Waste
- Assets

- Power
- Water
- Gas
Traditional CMMS / CAFM focused on Asset and Maintenance Management
Real Estate and Property Managers started to require integration of Asset and Maintenance with their systems.
During COVID the demand of tightly integration of Property Asset and Maintenance Management with Space and Workplace Management increased
.... providing capability of managing the use and allocation of space in 2D ....
... and 3D through a BIM model
Strategic Planning Scenarios – Workspace Allocation

**Scenario**
- **SSP Project**: UK_HC, Long term planning UK operation
- **SSP Scenario**: SCN_1, Scenario 1
- **Planboard - Linked properties**:
  - **SSP project**: UK_HC, Long term planning UK operation
  - **Scenario**: SCN_1, Scenario 1
- **Period**: 2022 - 2022

**Demand**
- **Business unit**
  - 01. Finance
  - 02. Human Resources
  - 03. Research & Development
  - 04. ICT
  - 05. Procurement
  - 06. Sales & Marketing
  - 07. Legal Affairs
  - 09. Corporate Real Estate
  - 10. Facility Management
  - 11. Maintenance Management

**Flex HC - Factor**
- 01. Finance: 2 - 1.00
- 02. Human Resources: 0 - 1.00
- 03. Research & Development: 0 - 1.00
- 04. ICT: 5 - 1.00
- 05. Procurement: 5 - 1.00
- 06. Sales & Marketing: 22 - 9
- 07. Legal Affairs: 5
- 09. Corporate Real Estate: 3
- 10. Facility Management: 19
- 11. Maintenance Management: 7

**Supply**
- **Fixed**
  - 04: 55 / 30
  - 03: 39 / 39
  - 02: 142 / 142
  - 01: 53 / 53
  - 00: 28 / 28
- **Flex**
  - 04: 0 / 0
  - 03: 0 / 0
  - 02: 0 / 0
  - 01: 0 / 0
  - 00: 0 / 0

**Add a new floor to UK Office (14, *London)**

- **Load current occupancy**
- **Clear**
- **Copy**

- 04: [Room Details]
- 03: [Room Details]
- 02: [Room Details]
- 01: [Room Details]
- 00: [Room Details]
iWMS: Integrated Workplace Management Systems

Real Estate Management

Space & Workplace Services Management

CMMS / CAFM Asset & Maintenance Management

Energy & Sustainability Management
Real Estate Management
Usage of portfolio data

Space & Workplace Management
Usage of utilization data

Asset & Maintenance Management
Offering of people centric services

Integrated Services Management
Insight into contract and vendor data
Energy & Sustainability Management

Obtain insight into and report on energy consumption and CO2 emissions.

Realize your Environmental Social and Governance (ESG) ambitions in the built environment, and prove footprint reduction.
Energy & Sustainability Management provides the capability of setting your ESG Objectives, Measuring and Collecting info, reporting, monitoring and improving ....

Corporate ESG Strategy
Define ESG activities for the Built Environment

Measure & Collect
Capture and Compile data
- Connect assets, devices, data sources
- IWMS as a single source of truth

Report & Disclose
Analyze insights

Improve & Monitor
Set and reach objectives & find opportunities
- Run and audit improvement programmes
- IWMS as a single pane of glass

Comply or Explain
Live up to regulatory requirements of Governments and Accounting Boards
Allowing you to produce reports and dashboards by Energy Data Capture providing Energy Monitoring against objectives / targets
Manage Sustainability Improvement Projects
iWMS systems fully integrate with IoT systems

IWMS Planform

- Real Estate Management
- Workplace & Services Management
- Asset & Maintenance Management
- Energy & Sustainability Management

Digital Twin

- Process Database
- Data Lake

Assets
BMS
Sensors

IoT Connectivity Services

IoT Hub

Time Series Data Store

© Planon Software
Digital Twin – preview of (future) content

- **Digital Twin-Information:** current condition
- **Digital Twin-Controls**

Historic behavior
Smart Building Management Systems are integrated BMS comprise of Diagnostic Tools, IoT and iWMS.

How do they work Together?

EcoStruxure™ Building Advisor

Communication

Onboarding

Response updates

Diagnostics

Analytics

Assets

Work

Building users

Assets Contracts SLAs

Recommendation

Automatic reject

Automatic accept

Scheduling & projects

Planon

Building Connections

Decision model

Response updates
Objectives of Smart Building Technologies

• Connecting **buildings, people and processes**, by eliminating data silos and aligning solutions into one shared information platform.

• Empowering all building stakeholders with **actionable and meaningful insights**.
THANK YOU!

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