

Increasing construction site productivity

The art of the impossible

10 February 2023

AIFOR **SITE**

Agenda

- Introductions
- Aiforsite in brief
- The NEED
- Aiforsite solution
- Scope within RIBA work stages
- Technical support
- Data protection
- Integration into Project Information Management System (PIMS)
- Productivity Road Map
- Lifetime Access
- Way Ahead - Discussion

Aiforsite enables a step change in construction productivity

Company in brief

- Founded in 2016 and is a privately owned company
- Offices in London & Helsinki
- 28 employees
- Delivered > 120 projects in 9 countries
- Client feedback score average 9/10



- Reference cases of over 500% ROI
- Web-based user interface, data in cloud
- Tried & tested methodology for site data collection and data privacy
- Standardized & globally available data collection devices

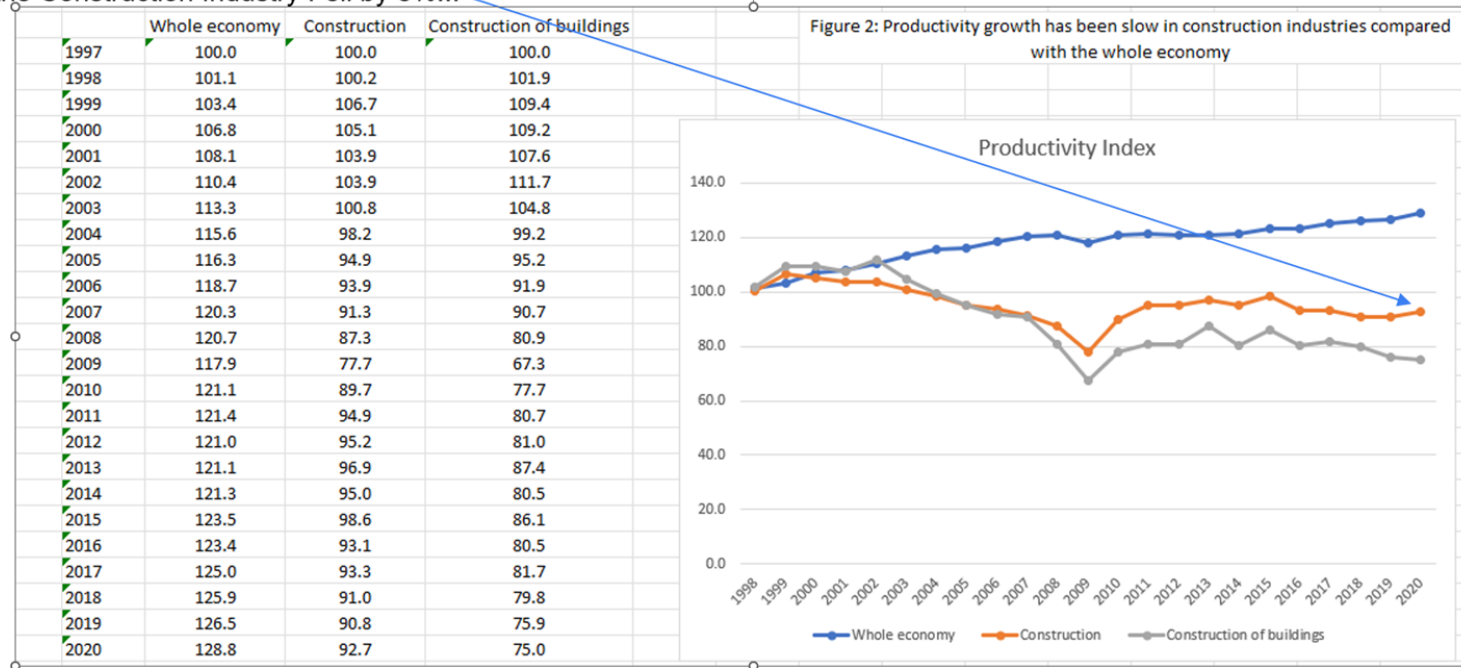
Our mission

To remove Wasted Tool-Time in the construction industry by turning excess into progress

The NEED

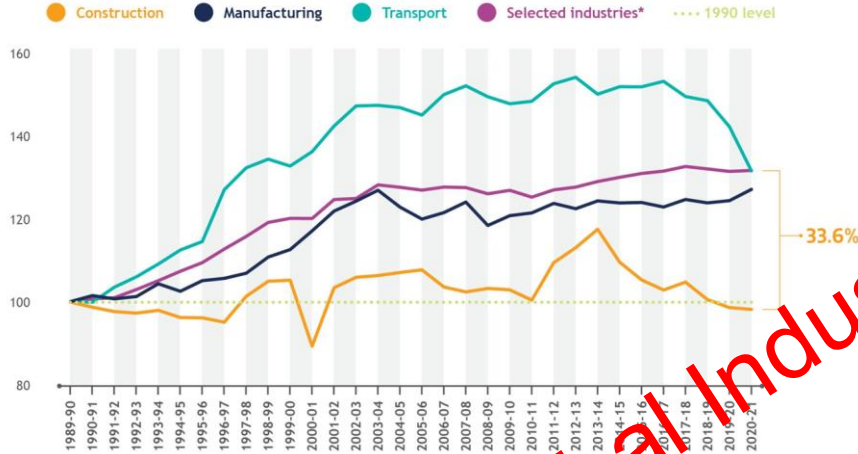
ONS Report on UK Productivity - 2021

Despite the “advances” in construction over the last 50 years, MMC, BIM, New techniques, new industrial systems etc.. the Productivity of the industry has not changed. According to the ONS Report on The UK PLC Productivity has steadily grown by 30% the Construction Industry Fell by 8%!!!



The NEED – We are not Alone

Multifactor Productivity indexes by industry (FY1990–FY2021)

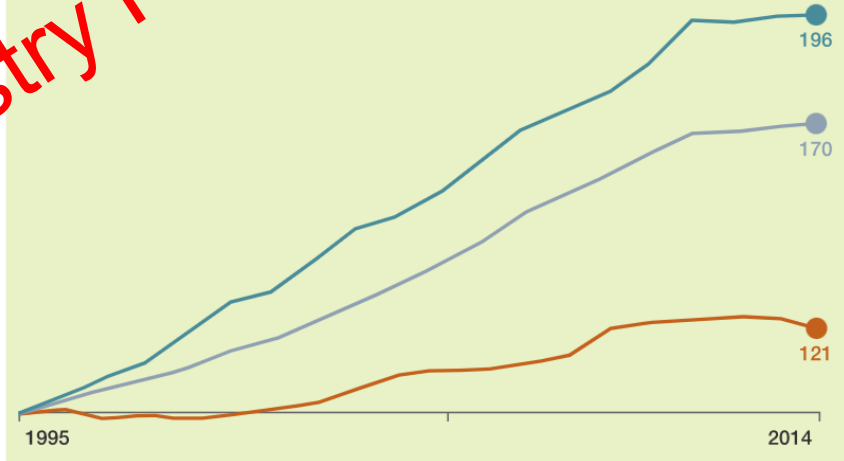


*Selected Industries Includes the following: Agriculture; Forestry and Fishing; Mining; Manufacturing; Electricity, Gas, Water and Sewerage Services; Construction; Wholesale Trade; Retail Trade; Accommodation and Food Services; Transport, Postal and Warehousing; Information and Media; Telecommunications; Financial and Insurance Services; Arts and Recreation Services.

Note: Gross Value Added based Multifactor Productivity (hours worked basis); Index (base = 1990 = 100). Selected Industries* include ANZSIC Divisions A-K and R. Source: ABS, ACA.

Globally, labor-productivity growth in **construction** lags far behind that of **manufacturing** or the total economy.

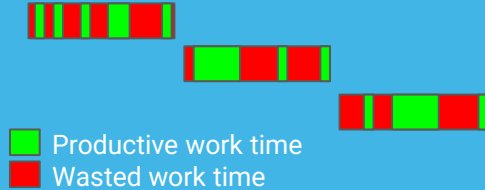
Real gross value added per hour worked, index of 2005 \$: 100 = 1995



Source: GGCD-10; national statistical agencies of Turkey, Malaysia, and Singapore; OECD, Rosstat; US Bureau of Economic Affairs; US Bureau of Labor Statistics; WIOD; World Bank; McKinsey Global Institute analysis

How – Eliminating Wasted Tool Time

Total time of subcontracted tasks



Root causes of wasted tool-time

- Subcontracted work inherently includes approx. 70% wasted work time - historical experience
- There is no Real Time, task level data that enables root cause identification of wasted tool-time
- Site management have no experience or training on why and how to reduce wasted tool time
- Predictability \neq Productivity

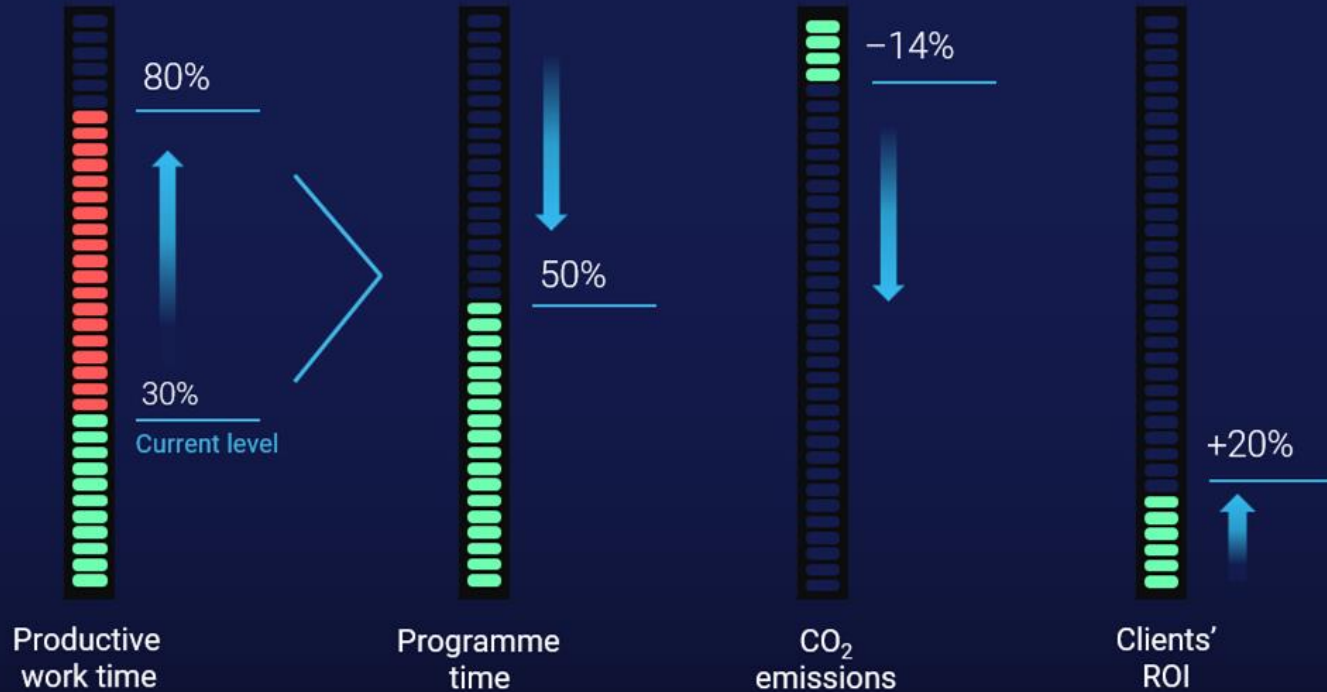
Total time of subcontracted tasks



Solution

- Contracts to include tool time data collection, management of task prerequisites, and principles of elimination of wasted time management
- Wasted tool time and related root causes to be made visible in Real Time using technology and trained professionals
- Site management is trained to manage process (Collaboratively) with focus on eliminating wasted tool time

Huge potential to reduce wasted tool-time, reduce construction programme, cost and carbon & increase contractor and/or clients' ROI



* Sources:

Aalto University: Waste in HVAC and Electrical work, November 2021

Aalto University: Building 2030 - Measuring waste in design and production, June 2020

Aiforsite is the solution to the Tool Time Waste challenge

Value for all project stakeholders

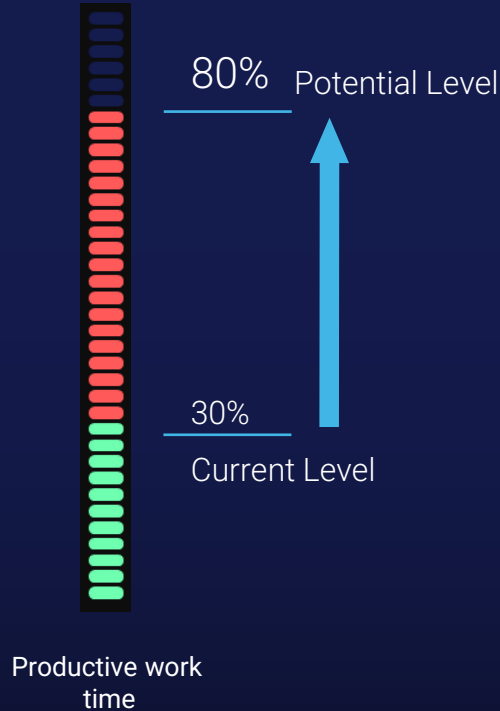
VALUE

How do we create value

AIFOR SITE



The Solution



TECHNOLOGY

Data is automatically collected from project/package schedule, material flow and site conditions. Site is visually documented continuously. Information is easily accessible in Real Time and enables data driven of wasted tool-time management.

PROCESS

MUDA management is an integral part of everyday site management and is based on up-to-date data.

PROFESSIONAL

There is an assigned professional monitoring MUDA issues and making recommendations for improvement. This person contributes to site management meetings and supports project management.

Aiforsite is a modular technology solution to reduce construction project wasted tool-time

Value



Shortened Programmes



Reduced Costs



Reduced CO2 Emissions

Platform

Aiforsite Platform

- web browser access
- secure cloud
- data privacy
- rapid deployment & scaling



Wasted Tool-Time Analytics



Site Visualisation



Conditions Management



Site Observations & Ticketing

Site data collection

Aiforsite data sources



Resource Positioning



360 Video



Drone Model

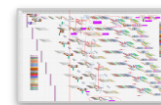


Aiforsite Cameras



Condition Sensors

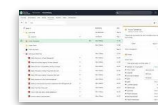
Customer data sources



Scheduling



Material management



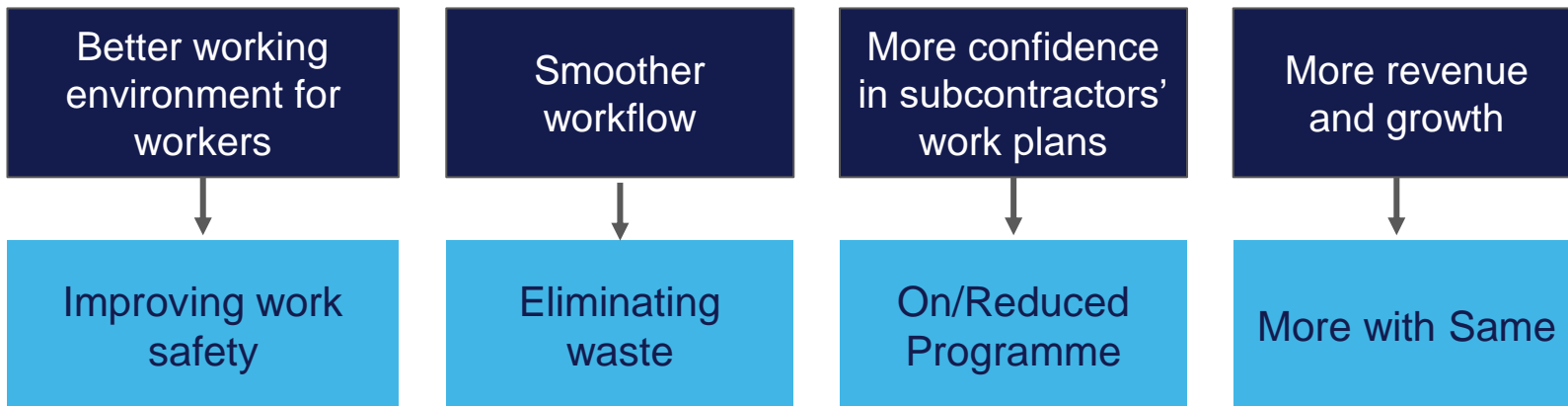
Project share

Resource Positioning

Towards next level construction project productivity

What is resource positioning system?

- Aiforsite's resource positioning system is a tool for streamlining and improving construction production process of the entire site, which benefits everyone: site management, main contractor, supervisor, subcontractors, and operatives
- This makes it easier to manage work phases on site by making waste visible

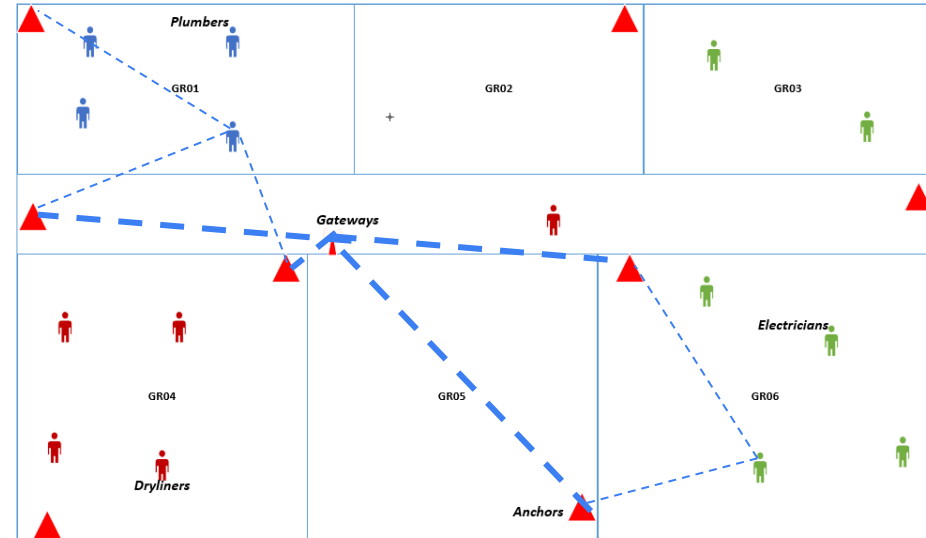


Resource Positioning

Towards next level construction project productivity

How does it work?

- Resource positioning system installed on site including **Gateways** that transit the data to the **AIFORSITE via internet**
- **Anchors** that record positioning data from tracking devices, ie tags.
- The anchors installed on the construction site, forming a positioning data network that registers the positions and movements of the tags.
- The site operatives wear a **positioning tag** on a lanyards, or wear it on their PPE clothing, so the tag is in use during the work shift. The tag does not require any activation from its wearer.
- The tag transmits only the tag's location information to the positioning data network
- Tag's technology is the same as Bluetooth technology used in smartphones and safe for human health



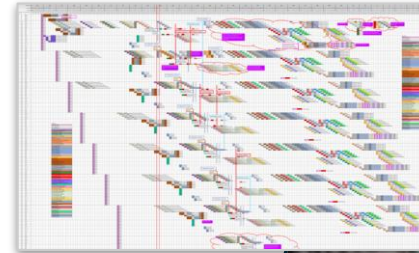
Floor 12

Step 1: Update production plans

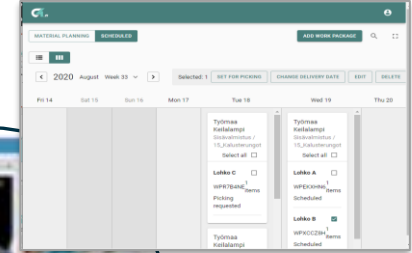
- Update task schedule
- Update material plan
- Update resource plan
- etc.

...using your existing methods & tools enabled with
information from site provided by Aiforsite APP

Your scheduling software



Your material management software

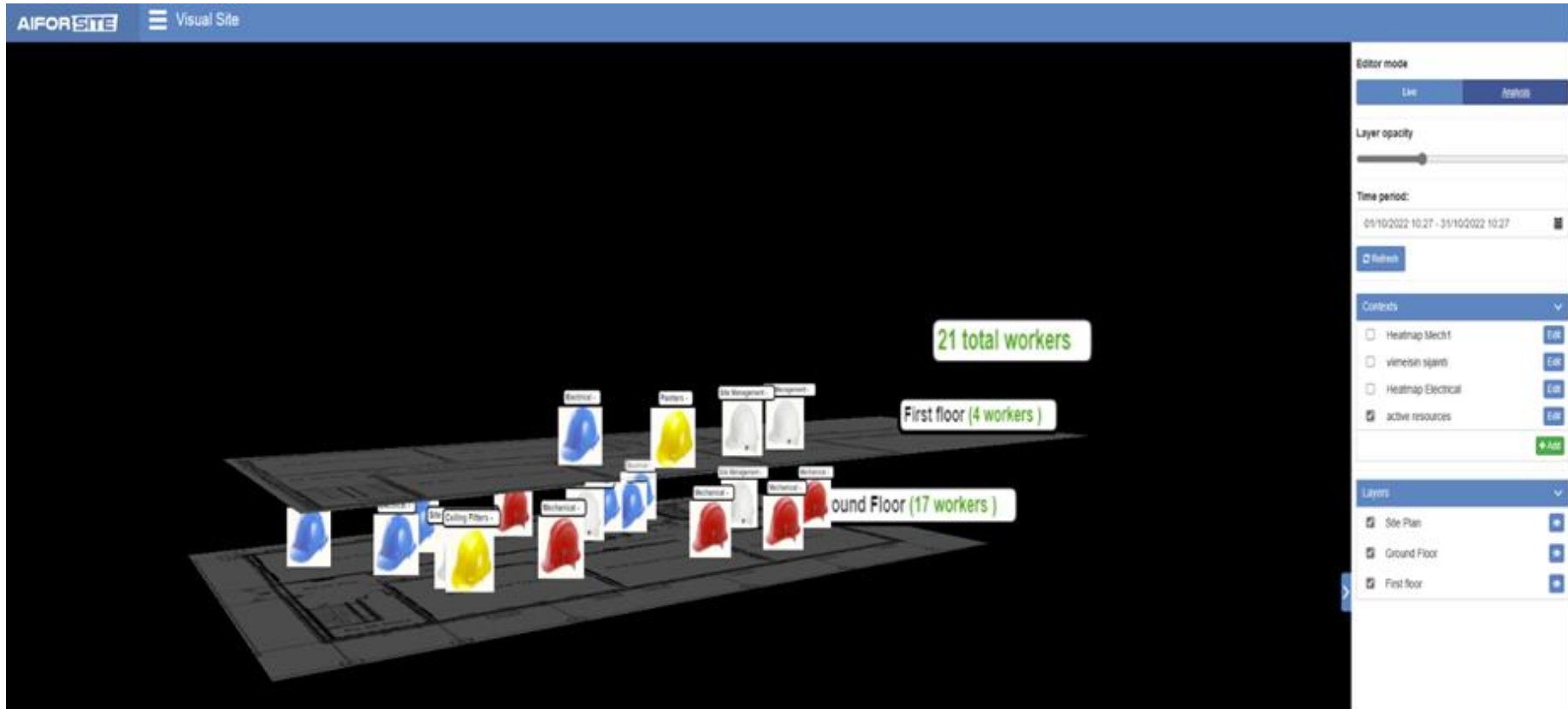


Aiforsite APP

Step 2: Compare actual situation against planned

PROCESS - DO

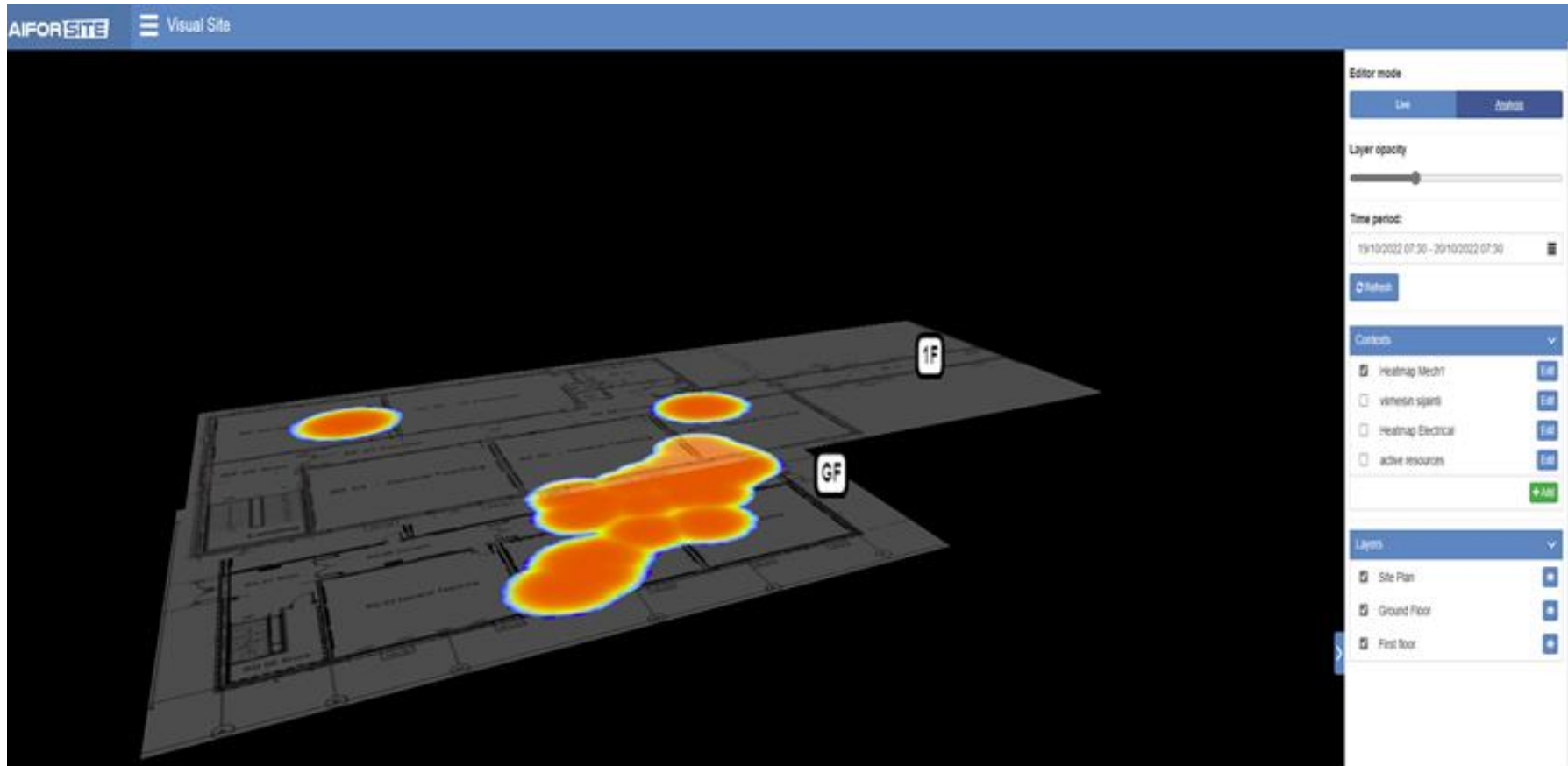
Real Time Resource Tracking shows actual resource locations/pathways



Step 2: Compare actual situation against planned

PROCESS - DO

Heat Maps of production areas



Step 2: Compare actual situation against planned

PROCESS - DO

Visibility of Trades in the system – NOT Individuals

AIFOR SITE Visual Site							
+ Add new resource							
Search							
Contractor	Resource Type	Name	Code	Device	Stream start	Status	
	Carpentry	Carpentry [3559]			6814376	14-10-2022 11:24	Created
	Ceiling Fitters	Ceiling Fitters [3555]			6814307	14-10-2022 09:31	Created
	Ceiling Fitters	Ceiling Fitters [3556]			6814309	14-10-2022 09:32	Created
	Electrical	Electrical [3272]			6814314	29-09-2022 15:45	Created
	Electrical	Electrical [3273]			6814315	29-09-2022 15:46	Created
	Electrical	Electrical [3274]			6814317	29-09-2022 15:46	Created
	Electrical	Electrical [3275]			6814318	29-09-2022 15:47	Created
	Electrical	Electrical [3276]			6814319	29-09-2022 15:47	Created
	Electrical	Electrical [3277]			6814320	29-09-2022 15:47	Created
	Electrical	Electrical [3278]			6814321	29-09-2022 15:47	Created
	Electrical	Electrical [3279]			6814322	29-09-2022 15:48	Created
	Electrical	Electrical [3280]			6814323	29-09-2022 15:48	Created
	Mechanical	Mechanical [3281]			6814258	29-09-2022 15:55	Created
	Mechanical	Mechanical [3282]					
	Mechanical	Mechanical [3283]			6814260	29-09-2022 15:56	Created
	Mechanical	Mechanical [3284]			6814261	29-09-2022 15:56	Created
	Mechanical	Mechanical [3285]			6814262	29-09-2022 15:56	Created
	Mechanical	Mechanical [3286]			6814263	29-09-2022 15:56	Created
Paine Manwaring	Carpentry	Paine Manwaring - Carpentry [3558]			6814255	14-10-2022 11:18	Created
	Painters	Painters [3554]			6814316	14-10-2022 09:30	Created
	Site Management	Site Management [3267]			6814374	29-09-2022 15:42	Created
	Site Management	Site Management [3268]			6814383	29-09-2022 15:42	Created
	Site Management	Site Management [3269]			6814304	29-09-2022 15:43	Created
	Site Management	Site Management [3270]			6814305	29-09-2022 15:43	Created
	Site Management	Site Management [3271]			6814306	29-09-2022 15:43	Created

Analyse specific time spent on production areas

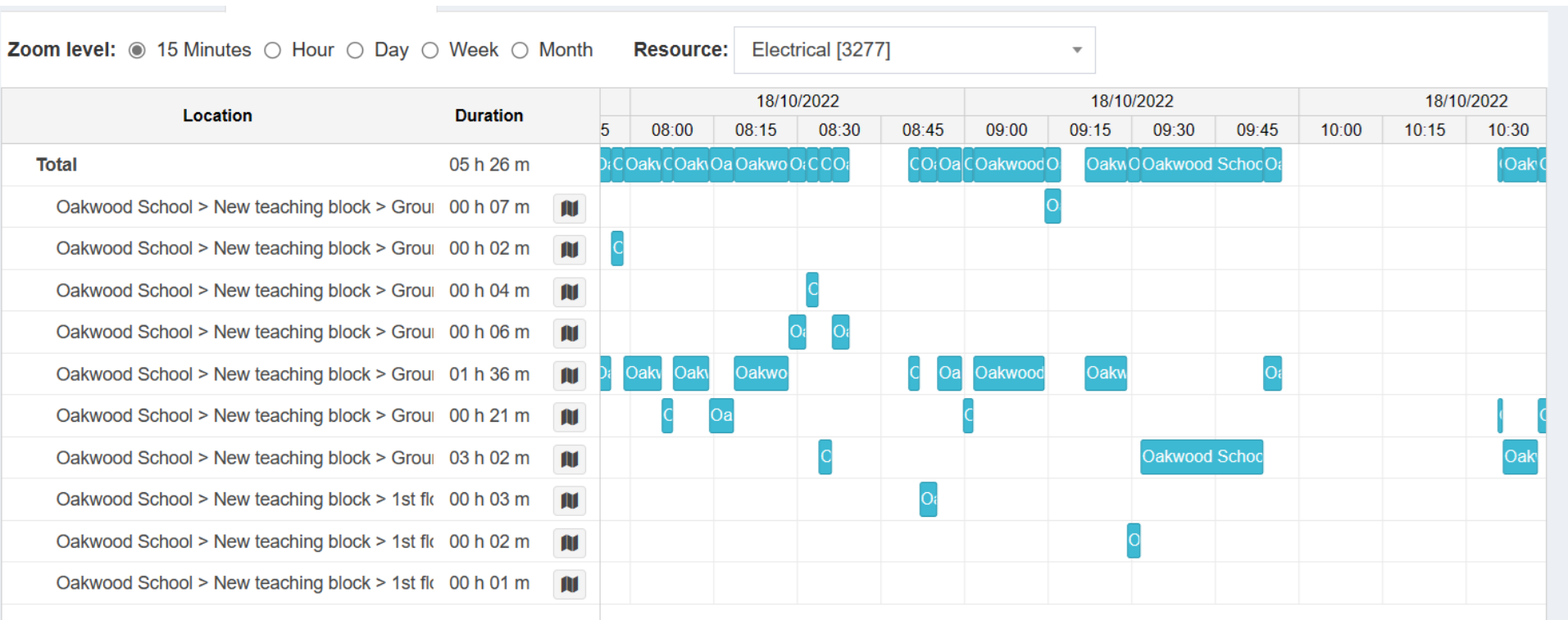
Productivity Analysis		Period: 03/10/2022 - 01/11/2022 Displayed dataset: <i>Productive presence</i>																				
		School > New floor > RG 01 GT	School > New floor > RG 02 GT	School > New floor > RG 03 GT	School > New floor > RG 04 GT	School > New floor > RG 05 IT	School > New floor > RG 06 STAIR	School > New floor > RG 07 COR	School > New floor > RG 10 & RF 09	School > New floor > RG 01 GT	School > New floor > RG 02 GT	School > New floor > RG 03 GT	School > New floor > RG 04 GT	School > New floor > RG 05 GT	School > New floor > RG 07 STAIR	School > New floor > RG 08 COR	School > New floor > RG 09 COR	School > New floor > RG 11	School > New floor > RG 12	School > New floor > RG 13	School > New floor > RG 14 WC	Total hours
+ Carpenter		0:00 00:04	0:00 0:00	0:00 0:00	0:00 0:00	0:00 0:00	0:00 0:00	0:00 00:11	0:00 00:05	0:00 00:01	0:00 0:00	0:00 00:03	0:00 0:00	0:00 0:00	00:11 00:48	0:00 0:00	00:35 01:37	0:00 0:00	0:00 0:00	00:46 02:49		
+ Electrical		05:12 11:30	16:49 28:31	00:17 00:53	05:18 19:07	0:00 01:02	01:53 06:01	01:29 03:34	00:41 06:18	05:36 10:33	01:11 07:18	0:00 00:17	0:00 03:46	0:00 26:47	12:41 09:04	06:20 21:53	16:34 00:55	00:12 04:42	02:49 04:42	81:17 183:57		
+ Mechanical		00:49 02:49	00:41 03:25	0:00 00:02	00:44 08:30	0:00 00:07	00:55 06:27	08:35 19:27	02:14 04:52	09:35 15:49	02:56 09:53	0:00 00:03	01:05 05:09	05:41 28:05	01:47 07:45	01:07 08:09	0:00 01:40	26:43 43:00	73:07 187:38			

- Tag location data entering the Aiforsite system is displayed as a percentage or duration according to the work areas on the site
- Comparing location data with the site programme provides a true, fact-based picture of progress of work in different work areas
- Deviations are detected, their root causes are clarified and deficiencies are rectified more quickly
- Dark Blue is Productive Time - Light Blue is Total Time – Total Available Time on Location For Electrical was 183.57 mins of which only 81.17hrs were Productive – **44%**

Step 2: Compare actual situation against planned

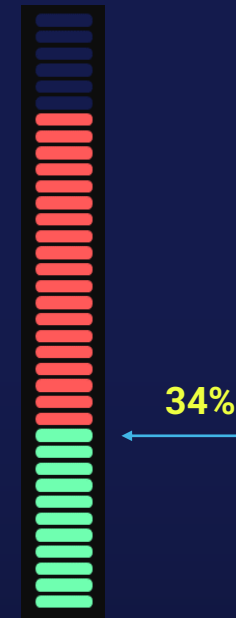
PROCESS - DO

Analyse specific time spent on production areas



Step 2: Productivity measurement example

- Based on data, sprinkler installers had **34%** of productive time:
 - Schedule: resources were allocated 160 work hours
 - Positioning data: uninterrupted* presence at production area 54 work hours
- Tasks have been incorrectly marked as complete, e.g. sprinkler installation:
 - Project management software: ready on week 39
 - Positioning data shows that work ended on week 41
 - Positioning data shows that 81% of work was done during weeks 40-41

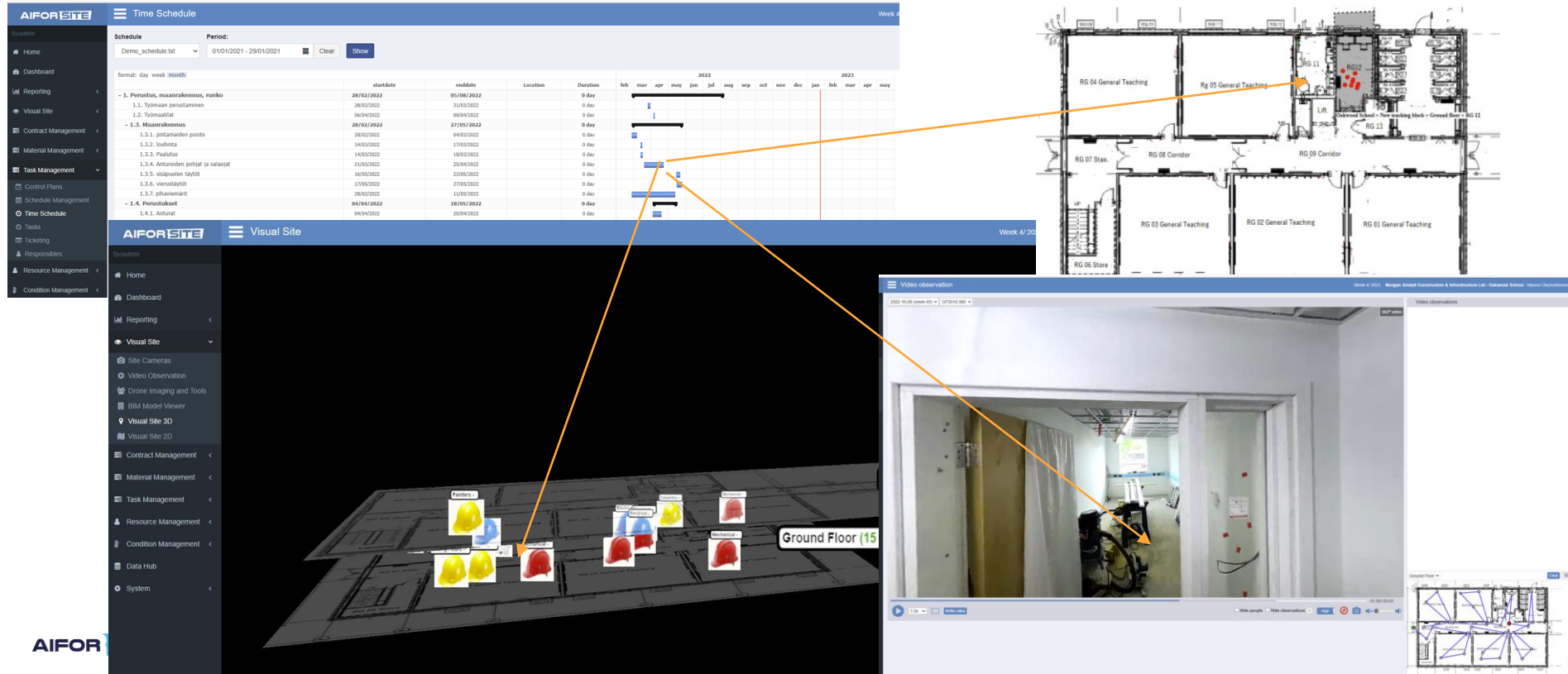


Productive work time of
sprinkler installers

* Uninterrupted / productive work time: Worker has been over 10 minutes at the designated production area

Monitoring/reporting actual against planned activities

From the Contract Schedule/preferably a lookahead programme or weekly Last Planner Task list we can monitor if operatives are working where they suppose to be working in Real Time, how productive they are and utilising supported 360 video footage the Productivity Engineer can identify and report works completed, issues that caused non productive time daily or weekly.



Step 2: Compare actual situation against planned

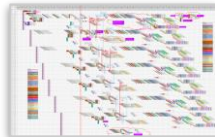
Productivity Engineer analyses and reports means to improve productivity

Use Aiforsite Real-Time
Schedule to identify
scheduling issues

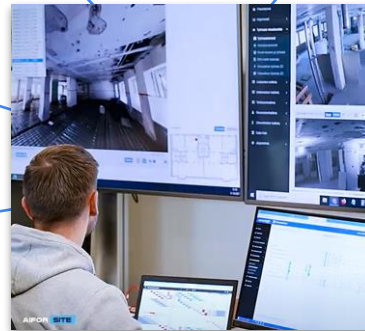
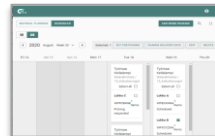
Get detailed data
from Aiforsite
Resource Tracking



Analyse planned
task schedule

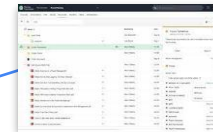


Analyse material flow
using customer's
information & systems



Productivity Engineer

Flag changes to plans &
instructions using
customer's project share



Support & validate
analysis with Aiforsite
Site Visualisation



Information analysis and reporting for improvement

Provided by Aiforsite or customer professional trained by Aiforsite

Executive Summary provides key information at a glance

Improvement Report

Executive summary week 34/2022



MUDA



WTT Index = 67%



SCHEDULE



Schedule delay = 3 days



LOGISTICS



Delivery accuracy = 92%



CONDITIONS



Temperature alarms = 8
Humidity alarms = 3
Dust alarms = 0



DESIGNS & INSTRUCTIONS



New/updated designs = 8
New/updated instructions = 4

Analysis & recommendations per domain

Designs & instructions - Analysis & Recommendations

Conditions - Analysis & Recommendations

Logistics - Analysis & Recommendations

Schedule - Analysis & Recommendations

Wasted Tool-Time- Analysis & Recommendations



Analysis 1



Analysis 2



Analysis 3



Analysis 4



Recommendation 1



Recommendation 3



Recommendation 2



Recommendation 4

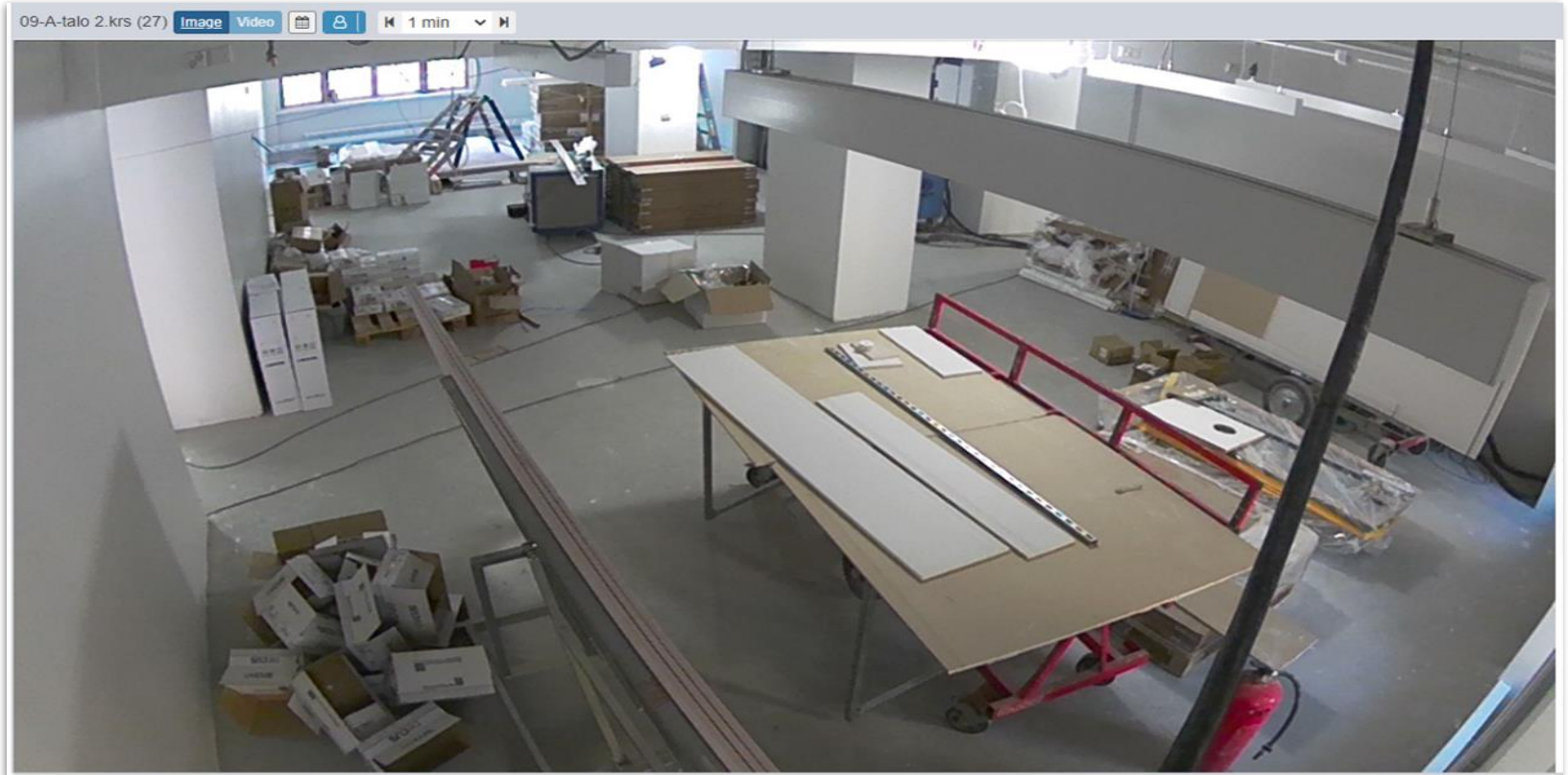
Analysis	Resurssien lähtökäyt.				Analyysin raskaudet				Resurssien lähtökäyt.			
	Joulukuun 1. viikoksi				Joulukuun 1. viikoksi				Joulukuun 1. viikoksi			
	1	2	3	4	1	2	3	4	1	2	3	4
+ IV-asentajat	10%	8%	10%	6%	7%	8%	7%	8%	7%	8%	7%	8%
+ Kittaajat	17%	18%	2%	2%	1%	1%	1%	1%	1%	1%	1%	1%
+ Logistikka	7%	27%	1%	2%	6%	1%	1%	1%	1%	1%	1%	1%
+ Rakennussuivous	17%	21%	13%	8%	18%	1%	21%	21%	18%	1%	21%	21%
+ Sprinkleriasentajat	8%	18%	14%	22%	18%	0%	18%	0%	18%	0%	18%	0%
+ Valvontajärjestelmät	21%	2%	1%	31%	32%	0%	18%	0%	18%	0%	18%	0%
+ YIT Suomi Oy	10%	14%	0%	3%	3%	1%	1%	1%	1%	1%	1%	1%

AIFOR SITE

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Step 3: Check task prerequisites are as required

See from live camera what is really happening at the impacted production area



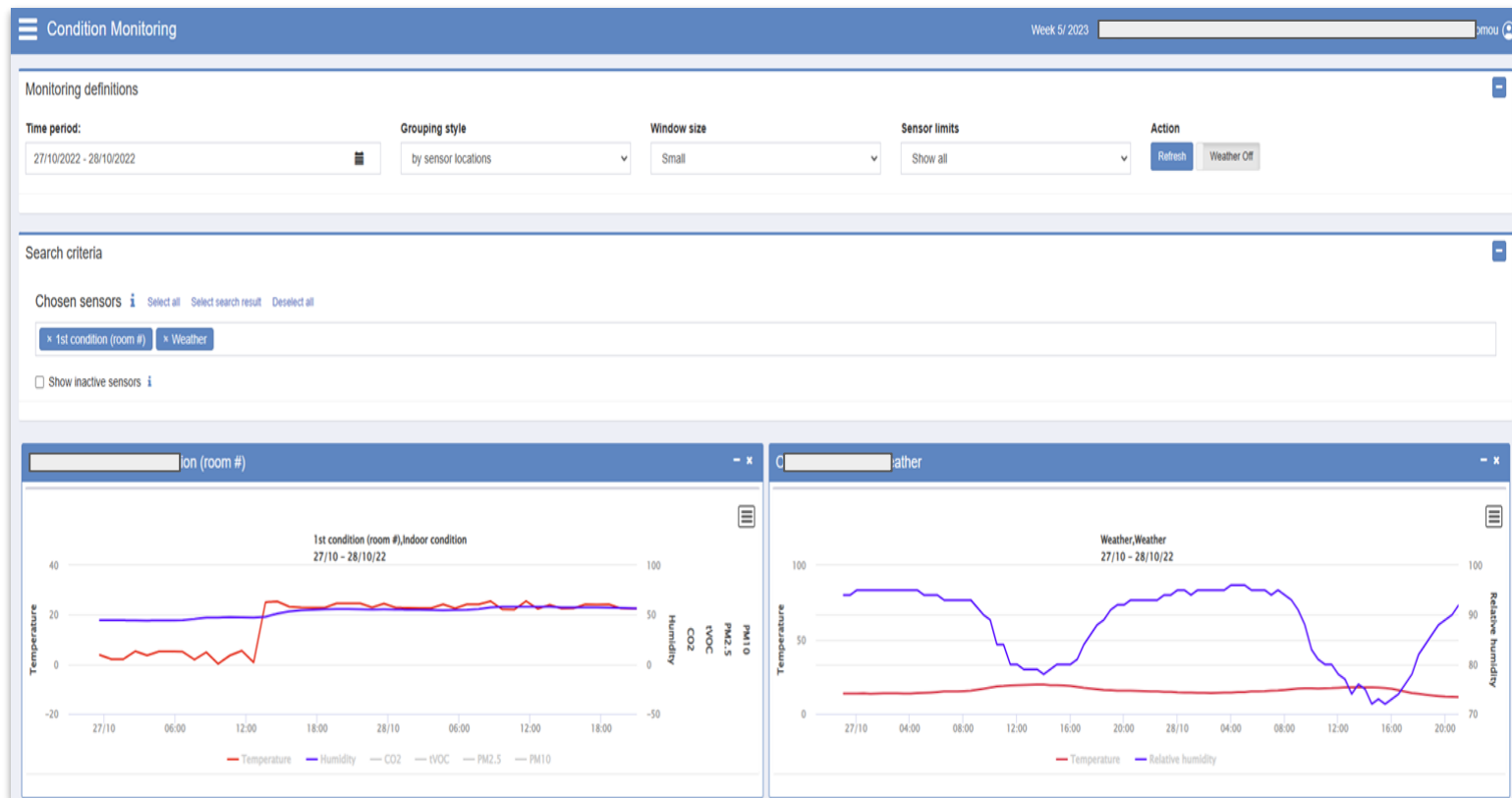
Step 3: Check task prerequisites are as required

See from 360 video what has happened at the impacted production area

Video observation interface showing a 360° video feed of a production area. The interface includes a top bar with "Video observation" and "Week 5/ 2023". Below the video feed, there are controls for "2022-10-26 (week 43)" and "GF2610.360". The video shows a worker on a scaffold in a large industrial space with various equipment and materials. A timeline at the bottom indicates "02:00/03:01". To the right, a "Video observations" panel displays a floor plan with blue lines indicating movement paths. The floor plan is labeled "Ground Floor" and includes buttons for "Clear" and "Edit off".

Step 3: Check task prerequisites are as required

Ensure the environmental conditions are appropriate for the next tasks



PROCESS - ACT

Image 0



Layer:

First floor



Created: 15.09.2022 (Vassos Chrysostomou)

Control target

Quality

Control plan

Observation category

Environmental

Condition

Not OK

Description [Clear](#)

Drain Hopper visually blocked - needs full investigation







Close

Delete

Save

Step 4: Assign tasks and manage them as tickets

PROCESS - ACT

Ticketing										Week 5/ 2023		Vassos Chrysostomou
Observed	Source	Images	Location	Category	Condition	Description	Ticket status	Responsible				
12.08.2022	Video (Roof 1208.360)		Roof	Other	Futureproof	A roof of aprox.700m2 with no PV Panels, Consideration of installing a series of line Plinths to enable South facing Solar Panels in the future. Also consider painting the Roof White to reflect Solar heat (research ahs shown that it reduces teh Roof temperature by at least 4C	Done	Morgan Sink				
12.08.2022	Video (2nd Scaffold Lift 1208.360)			ACCESS / EGRESS / SCAFFOLD	OK	Review of footage demonstrates excellent management of brickwork material distribution maintaining safe effective access and fire escape routes	Done	Morgan Sink				
12.08.2022	Video (GF 1208.360)		Ground Floor	SAFE WALKWAYS	Not OK	Fire exit doors are evidently wedged open during the working day. Should not be wedged open incase accidentally left open out of hours, presenting a breach to intended fire compartmentation	Done	Morgan Sink				
13.08.2022	Video (FF 1208.360)			ACCESS / EGRESS / SCAFFOLD	Not OK	Scaffold end cap missing - Requires safety scaffold cap	Done	Morgan Sink				
13.08.2022	Video (FF 1208.360)			SAFE WALKWAYS	OK	Excellent temp handrails to stairs with very clear access		---				
15.09.2022	Video (1stliftscaffold1509.360)		First floor	Enironmental	Not OK	Drain Hopper visually blocked - needs full investigation		---				

Step 4: Assign tasks and manage them as tickets

PROCESS - ACT

Menu icon

Ticketing

Observed	Source	Images	Location	Category
12.08.2022	Video (Roof 1208.360)		Roof	Other
12.08.2022	Video (2nd Scaffold Lift 1208.360)			ACCESS / EGRESS / SCAFFOLD
12.08.2022	Video (GF 1208.360)		Ground Floor	SAFE WALKWAYS
13.08.2022	Video (FF 1208.360)			ACCESS / EGRESS / SCAFFOLD
13.08.2022	Video (FF 1208.360)			SAFE WALKWAYS
15.09.2022	Video (1stliftscaffold1509.360)		First floor	Enironmental

Week 5/ 2023

Morgan Sindall Construction & Infrastructure Ltd - Oakwood School - Vassos Chrysostomou

	Ticket status	Responsible
Plinths to enable South facing Solar Panels in the future. Also consider painting the Roof White to est 4C	Done	Morgan Sinx
ation maintaining safe effective access and fire escape routes	Done	Morgan Sinx
arged open incase accidentally left open out of hours, presenting a breach to intended fire	Done	Morgan Sinx
	Done	Morgan Sinx

Ticket

This ticket is done!

Responsible:

Location:

Observed: 18.8.2022 15.10.02

Category: ACCESS / EGRESS / SCAFFOLD

Description: Review of footage demonstrates excellent management of brickwork material distribution maintaining safe effective access and fire escape routes

Ticket images:

History:

Sent ticket

Discussed with George Vulcan Brickwork site manager in start of shift and praise email issued to Vulcan Director John recognising the safety culture of his team

Mark undone

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Aiforsite provides a proven solution to reduce Wasted Tool-Time (WTT) on construction sites

PROCESS

Site WTT
management

PLAN

next production phase

DO

compare reality against plans

CHECK

task preconditions

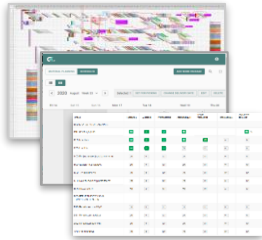
ACT

corrective actions

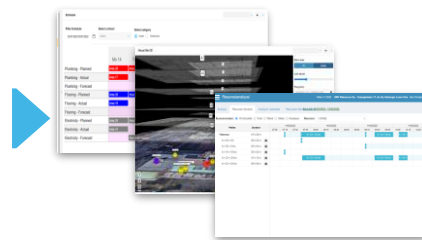
Technology

AIFOR SITE

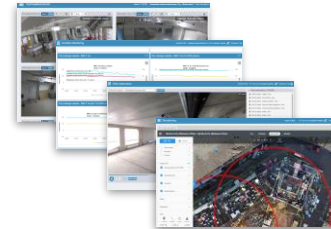
Improvement Report



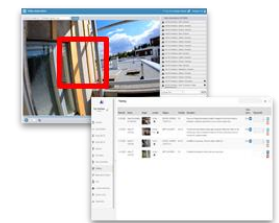
WTT Analytics



**Site Visualisation
Conditions Management**



**Site Observations and
Ticketing**



Professional
Productivity Engineer

AIFOR SITE

- Creates Improvement Report

- Schedule deviations & root cause analysis
- WTT analysis

- Task preconditions analysis

- Present recommendations in site meetings

Data

AIFOR SITE

- Productive work time
- Actual schedule status
- Logistics KPIs
- Conditions analysis

- Presence and productive work time
- Production area monitoring
- Resourcer monitoring
- Logistics

- Aiforsite Cameras
- 360 Video
- Drone Model
- Conditions data
- Logistics - Task based Material Packages

- Observations
- Assigned tickets
- Ticketing report

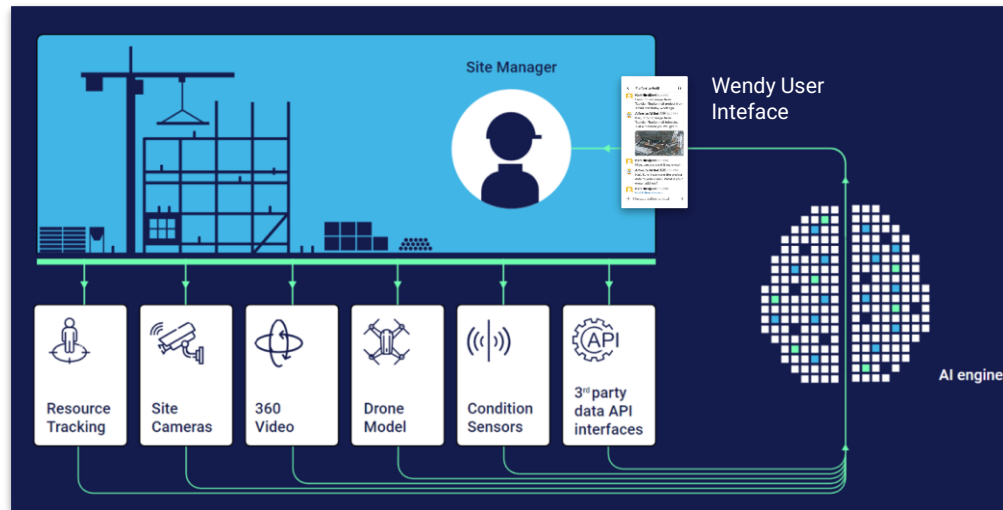
CONTINUOUS IMPROVEMENT

AIFOR SITE

We will simplify everything with AI

- Construction and Productivity AI, **“Wendy”**, coming out in spring 2023
- Brings all relevant project, customer and internet data into one interface
- Interactive user interface that will revolutionise the user experience and the industry productivity

Wendy in action with site management



An example of conversation between user and "Wendy"



You

Tell me about oakwood school project



Wendy

The Oakwood School Expansion Project is a major project carried out by Surrey County Council and Morgan Sindall Construction & Infrastructure Ltd. The project started in January 2022 and is expected to be completed in January 2023. The project is located at Oakwood School in Horley, Surrey, and the address is Oakwood School, Balcombe Road, Horley, Surrey, RH6 9AE. The project is estimated to cost £9.5m and is being overseen by Barney Sparrow as the project manager. The project is part of Surrey County Council's 2030 community vision to provide education and a greener future for residents. The project uses innovative materials and techniques with advanced sustainability and wellbeing properties, including the Streif closed panel structural timber building system, reducing construction time and CO2 emissions.



Wendy

Hi, how can I serve you?



You

How are you Wendy



Wendy

Hi there! I'm doing great, thanks for asking. How can I help you today?



You

What is Construction Excellence Midlands





Wendy


Construction Excellence Midlands is a regional construction network that provides support and resources to construction professionals in the Midlands region of the UK. They offer a range of services, including training, networking, and industry events.




An example of conversation between user and "Wendy"

 Who was present on site 12th dec 2022
You

 Resources at site (2022-12-12 00:00:00+00:00 - 2022-12-12 23:59:59+00:00):
Wendy
Site Management [3268]
Site Management [3270]
Site Management [3271]
Electrical [3275]
Electrical [3277]
Electrical [3278]
Electrical [3279]
Mechanical [3282]
Mechanical [3283]
Mechanical [3285]
Mechanical [3286]
Painters [3554]
Ceiling Fitters [3556]

 What are the conditions at the site on the 12th of Dec 2022?
You

 Answer: On the 12th of Dec 2022, the conditions at the Oakwood School New teaching block are as follows: 1st floor - RF 01 GT: 79% humidity, 21°C temperature; RF 02 GT: 76% humidity, 21°C temperature; RF 03 GT: 79% humidity, 19°C temperature; RF 04 GT: 75% humidity, 19°C temperature; RF 05 IT: 76% humidity, 24°C temperature; RF 06 STAIR: 77% humidity, 19°C temperature; RF 07 COR: 77% humidity, 20°C temperature; RF 10 & RF 09: 75% humidity, 19°C temperature; RF 13 LINK: 78% humidity, 25°C temperature. Ground floor - RG 01 GT: 78% humidity, 23°C temperature; RG 02 GT: 74% humidity, 24°C temperature; RG 03 GT: 75% humidity, 25°C temperature; RG 04 GT: 76% humidity, 25°C temperature; RG 05 GT: 77% humidity, 22°C temperature; RG 07 STAIR: 75% humidity, 23°C temperature; RG 08 COR: 77% humidity, 24°C temperature; RG 09 COR: 75% humidity, 21°C temperature; RG 11: 78% humidity, 23°C temperature; RG 12: 79% humidity, 24°C temperature; RG 13: 74% humidity, 21°C temperature; RG 14 WC: 78% humidity, 19°C temperature.



How else can I serve you?

Scope within RIBA Work Stages

RIBA Stage 1 – Preparation & Brief

AIFORSITE Modules

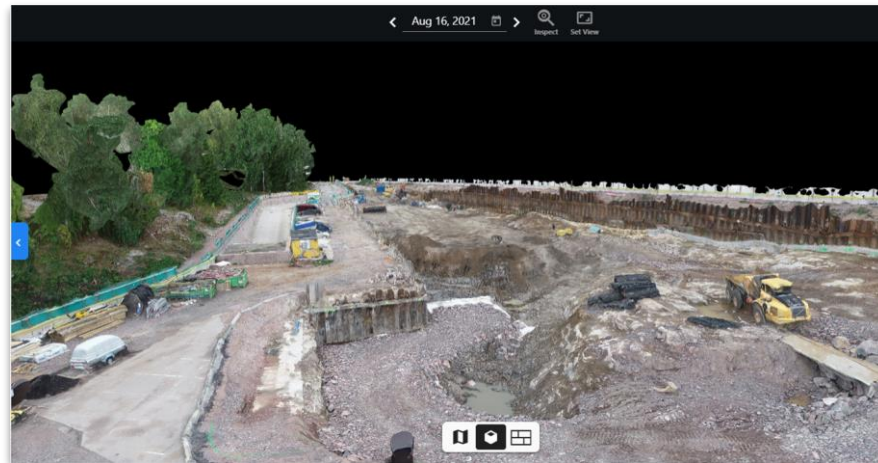
- Aiforsite 360
- Aiforsite Drone
- Aiforsite Conditions

Areas for WTT reduction

- Site visit management
- Brief validation / Collating site info
- Site & surrounding community planning

Use case examples

- Easy /quick site and landmass measurement
- Site appraisals
- Site planning / Logistics in tight city areas



RIBA Stage 2-4 – Design Development

AIFORSITE Modules

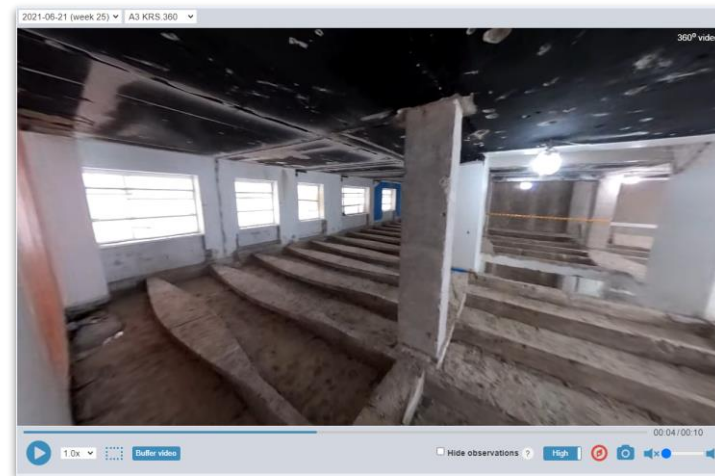
- Aiforsite 360
 - Aiforsite Drone
 - Aiforsite Conditions
- } From Stage 1

Areas for WTT reduction

- Design validation
- Reduce waste - Design iterations
- Reduce Risk - Collaboration / transparency with supply chain

Use case examples

- Reduce design iterations in Stages 2-4
- Environmental plan
- Logistics plan
- Health & safety plan



RIBA Stage 5

Project Phases to Reduce WTT

RIBA



Foundation phase



Frame phase



Indoor phase

AIFORSITE Modules

- Aiforsite Drone
- Aiforsite Cameras
- Aiforsite 360
- Aiforsite Conditions

- Aiforsite Drone
- Aiforsite Cameras
- Aiforsite 360
- Aiforsite Conditions
- Aiforsite Positioning

- Aiforsite Cameras
- Aiforsite 360
- Aiforsite Conditions
- Aiforsite Positioning

Areas for WTT reduction

- Easy /quick landmass measurement
- Validate invoices from contractors
- Site planning in tight city areas

- Track site progress also remotely
- Work supervision supported by real-time situational awareness

- Task level WTT management
- Validate actual schedule
- Identification of task level deviations and taking corrective actions

Reduce waste & buffers to reduce WTT and construction duration

Technical Support

Technical Support

- UK offices in Bromley and Nottingham
- Four stage introduction to the supply chain
- Dedicated trainers & support engineers
- Support availability:
 - Office hours
 - Email & phone
 - WhatsApp, etc.

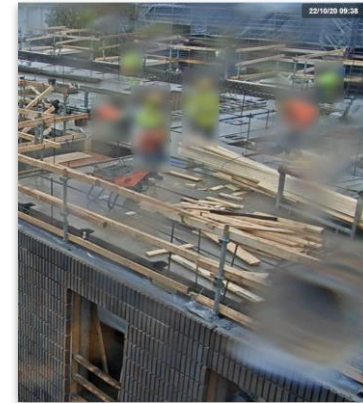


Data Protection

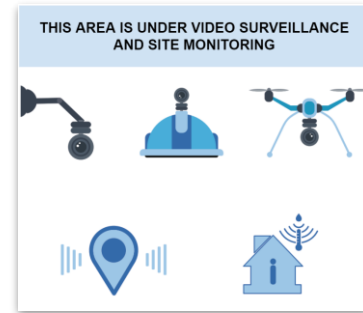
We take data privacy seriously

Aiforsite provides the following data privacy tools as part of the solution:

- Practical data privacy info package
- Construction site data collection sign templates
- Examples of model clauses to support stakeholder communication
- Example contracting clauses
- Automated people blurring



Automated
people
blurring



Construction
site sign
template

Integration into own Project Information Management System (PIMS)

Aiforsite API

- Aiforsite API
 - REST
 - End-point data
 - JSON format
- We can integrate with any appropriate data & AI integration to applications used by the industry



Reduced MUDA Road Map

The background of the slide is composed of several overlapping, wavy, organic shapes. On the left, there is a large orange shape. To its right is a red shape. The rightmost portion of the slide is a dark blue area filled with a fine, repeating pattern of small white diamonds, creating a textured effect.

Roadmap principles

Phased approach to decrease MUDA - Wasted Tool-Time (WTT)

1. Measure Current MUDA - Wasted TT

Understand actual level of wasted Tool Time and identify potential

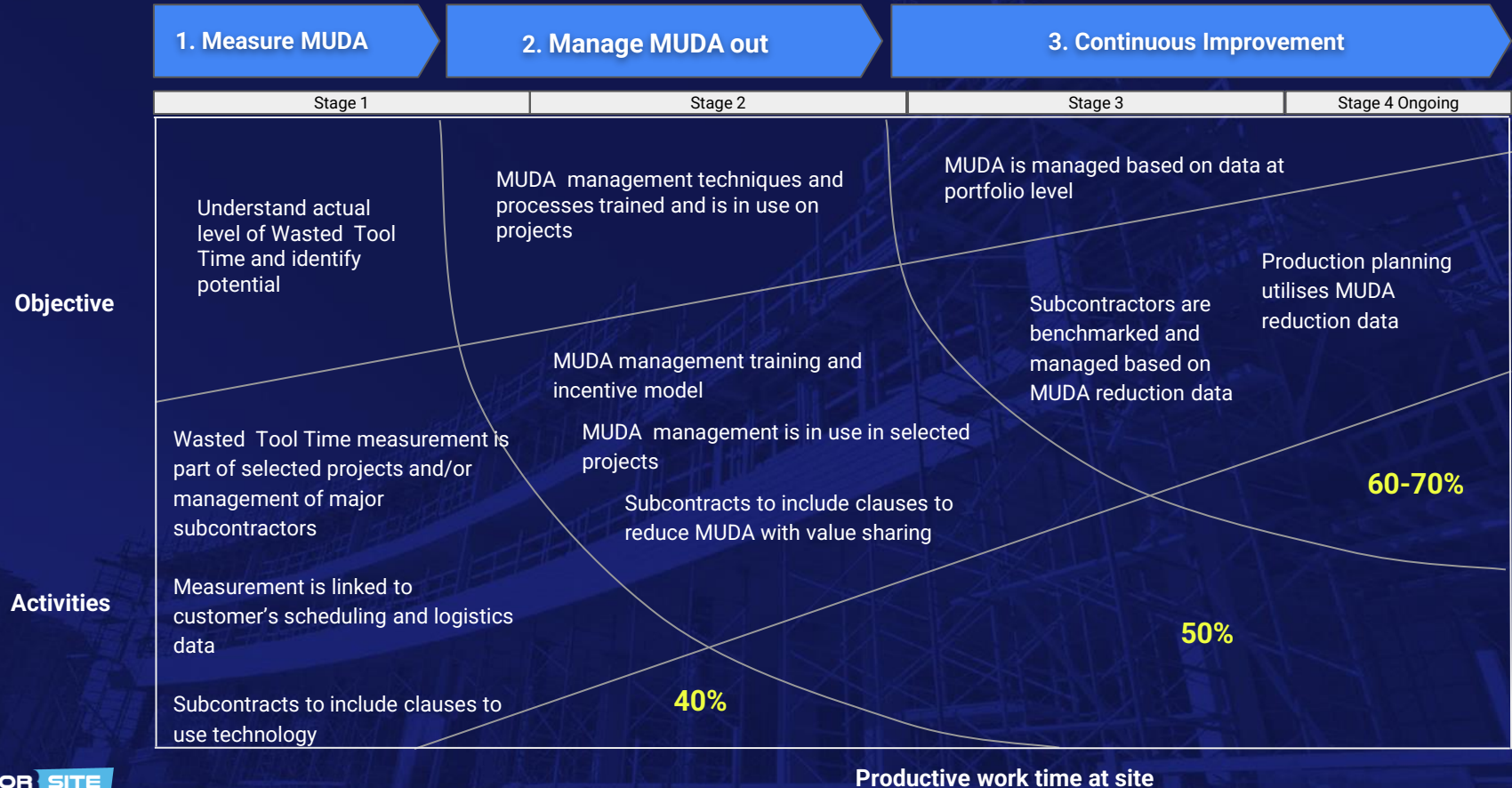
2. Manage MUDA out

MUDA management techniques and processes trained and is in use on projects

3. Continuous Improvement

MUDA is managed out based on data at portfolio level

Roadmap to Reduce MUDA



Group and project level approach

Group level

- **Licenses & Support** to cover all projects with agreed volume
- **Development roadmap** with phased MUDA reduction objectives and related actions
- **Joint governance function** to realise benefits and continuously improve

Project level

- **Site hardware** for specific projects needs with full reusability in subsequent projects
- **Data** costs for specific project needs
- **Data collection & analysis** carried out by Aiforsite trained employees

Joint governance to realise benefits

Level	Content	Participants & frequency
Operational Site Management	<ul style="list-style-type: none">• Project MUDA tracking & development• Further development of best operational practices• Bring necessary topics to tactical level	<ul style="list-style-type: none">• Site management• Aiforsite dedicated support engineer(s)• Weekly (or as needed)
Tactical Production Management	<ul style="list-style-type: none">• Production MUDA tracking & development• Development of cooperation on production level• Bring necessary topics to strategic level	<ul style="list-style-type: none">• Production management• Aiforsite management• Monthly (or as needed)
Strategic Business Management	<ul style="list-style-type: none">• Reviewing agreed KPIs• Setting strategic direction and objectives• Development of cooperation on management level	<ul style="list-style-type: none">• Business management• Aiforsite management• Quarterly (or as needed)

At Project level



Lifetime Access

The background features a series of overlapping, wavy organic shapes in shades of orange, red, and dark red. On the right side, there is a large area filled with a dark blue grid pattern, which appears to be a fine mesh or a digital texture.

Access to data after project completion

- **Option 1:** Customer can download raw data from Aiforsite APP after project completion
- **Option 2:** Aiforsite Archiving Solution
 - Access to project data using Aiforsite APP user interface
 - Typical cost range of £95 - £145/month depending on the amount of stored data



Excess out. Progress in.

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AIFOR **SITE**