

# COBOD CONNECT EVENT

This event will be recorded. 

Please use the chat to submit your questions during the presentations. Each presentation will be followed by a brief Q&A session.



## COBOD Presenters

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**HENRIK LUND-NIELSEN**

Founder & General Manager



**SIMON KLINT BERGH**

Co-Founder & Head of Asia-Pacific



**ZOË A. C. KNUDSEN**

Head of Products & Communication



# Agenda

| Timing*       | Subject                                                 | Presenter           |
|---------------|---------------------------------------------------------|---------------------|
| 09.00 - 09.25 | State of The Union                                      | Henrik Lund-Nielsen |
| 09.10 - 09.25 | Customer Project Highlights & COBOD Support Initiatives | Simon Klint Berg    |
| 09.25 - 09.45 | Customer Presentation 1/3: HTL.tech (Ireland)           | Justin Kinsella     |
| 09.45 - 10.05 | Customer Presentation 2/3: PERI 3D Construction         | Chikaeze Ugwu       |
| 10.05 - 10.25 | Customer Presentation 3/3: Abyan Building Construction  | Ahmad Al-Naseem     |
| 10.25 - 10.45 | Product Developments and Innovations                    | Zoë A. C. Knudsen   |
| 10.45 - 11.00 | Q&A                                                     | All                 |

\*Central European Time (CET)



**Henrik Lund-Nielsen**  
CEO & Founder

# State of the Union – Scaling Technology, Size, and Demand



## Scaling of Technology

COBOD is transforming 3D printers into multifunctional construction robots, beyond extrusion to shotcreting, plastering, painting, insulation, and more, demonstrated with TU Braunschweig, where a robotic arm enabled shotcrete printing for curved geometries.



## Scaling of Project Size

Projects are becoming much larger in overall area. As example, the UCC project in Qatar covers 40,000 m<sup>2</sup> (430,000 ft<sup>2</sup>), demonstrating how individual builds are scaling up in size.



## Scaling of Units per Project

Projects now deliver far more homes per build. For example, PERI's 3HAUS project in Germany includes 18 apartments, while 3DCP Group's project in Denmark expands to 36 student apartments.



## Scaling of Customer Project Orders

Customers are committing to bigger pipelines of 3D printed projects. Just a handful of selected customers now represent over 300 units and 75,000 m<sup>2</sup> (807,000 ft<sup>2</sup>) of signed work.



## **Project Highlights & Support Initiatives**

**Simon Klint Bergh**  
Co-founder & Head of APAC

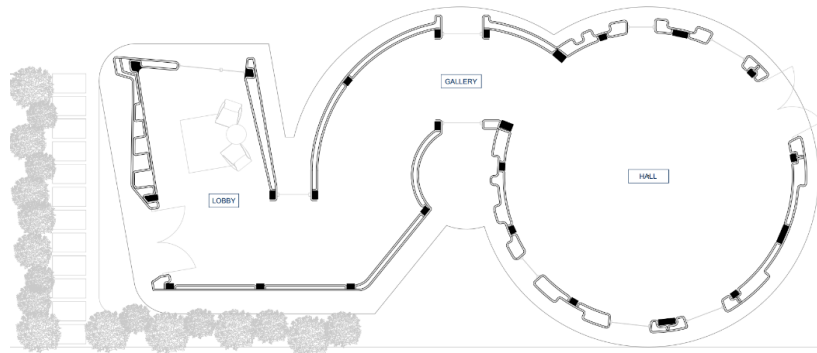
# Your Order Backlog Is Growing!

Selected on-going and signed customer projects – September 2025 (not exhaustive)

| Region                          | Customer            | Location                | # houses/buildings | Total footprint, m <sup>2</sup> | Notes                                                                                                             |
|---------------------------------|---------------------|-------------------------|--------------------|---------------------------------|-------------------------------------------------------------------------------------------------------------------|
| USA                             | Verotouch           | Colorado                | 55                 | 7,425                           | 55 units, standardized at 135 m <sup>2</sup> each                                                                 |
|                                 | Emergent            | California & New Mexico | 23                 | 5,412                           | Multiple projects (separate overview)                                                                             |
|                                 | LX Construction     | Illinois                | 21                 | 3,074                           | 5 + 15 units (each incl. 2-door garage), 150 m <sup>2</sup> each + 74 m <sup>2</sup> local architectural building |
|                                 | <b>Subtotal</b>     |                         | <b>99</b>          | <b>15,911</b>                   |                                                                                                                   |
| Europe                          | Havelar             | Portugal                | 90                 | 3,452                           | 1×500 m <sup>2</sup> , 31×1,952 m <sup>2</sup> total, 58×1,000 m <sup>2</sup> total                               |
|                                 | PERI Group          | Germany                 | 30                 | 2,500                           | 4 apartment buildings and 1 office building                                                                       |
|                                 | 3DCP Group          | Denmark                 | 36                 | 1,654                           | 6 units per building, 6 buildings, 36 total                                                                       |
|                                 | <b>Subtotal</b>     |                         | <b>156</b>         | <b>7,606</b>                    |                                                                                                                   |
| Middle-East                     | UCC                 | Qatar                   | 2                  | 40,000                          | 2 schools each of 20.000 m <sup>2</sup>                                                                           |
|                                 | Abayan              | Kuwait                  | 31                 | 8,600                           | 30 units (~220 m <sup>2</sup> each) + 1 mosque (1,000 m <sup>2</sup> )                                            |
|                                 | <b>Subtotal</b>     |                         | <b>33</b>          | <b>48,600</b>                   |                                                                                                                   |
| Asia-Pacific                    | Modula Tiga Dimensi | Indonesia               | 15                 | 982                             | 3 projects (2 Jakarta, 1 Sumatra)                                                                                 |
| <b>Total across all regions</b> |                     |                         | <b>303</b>         | <b>73,099</b>                   |                                                                                                                   |

## Example #1: Modula Tiga Dimensi

Lampung and Jakarta, Indonesia: 3 Commercial projects on order.



## Example #2: PERI

Bezzanes, France: 12 apartments – 1025 sqm.



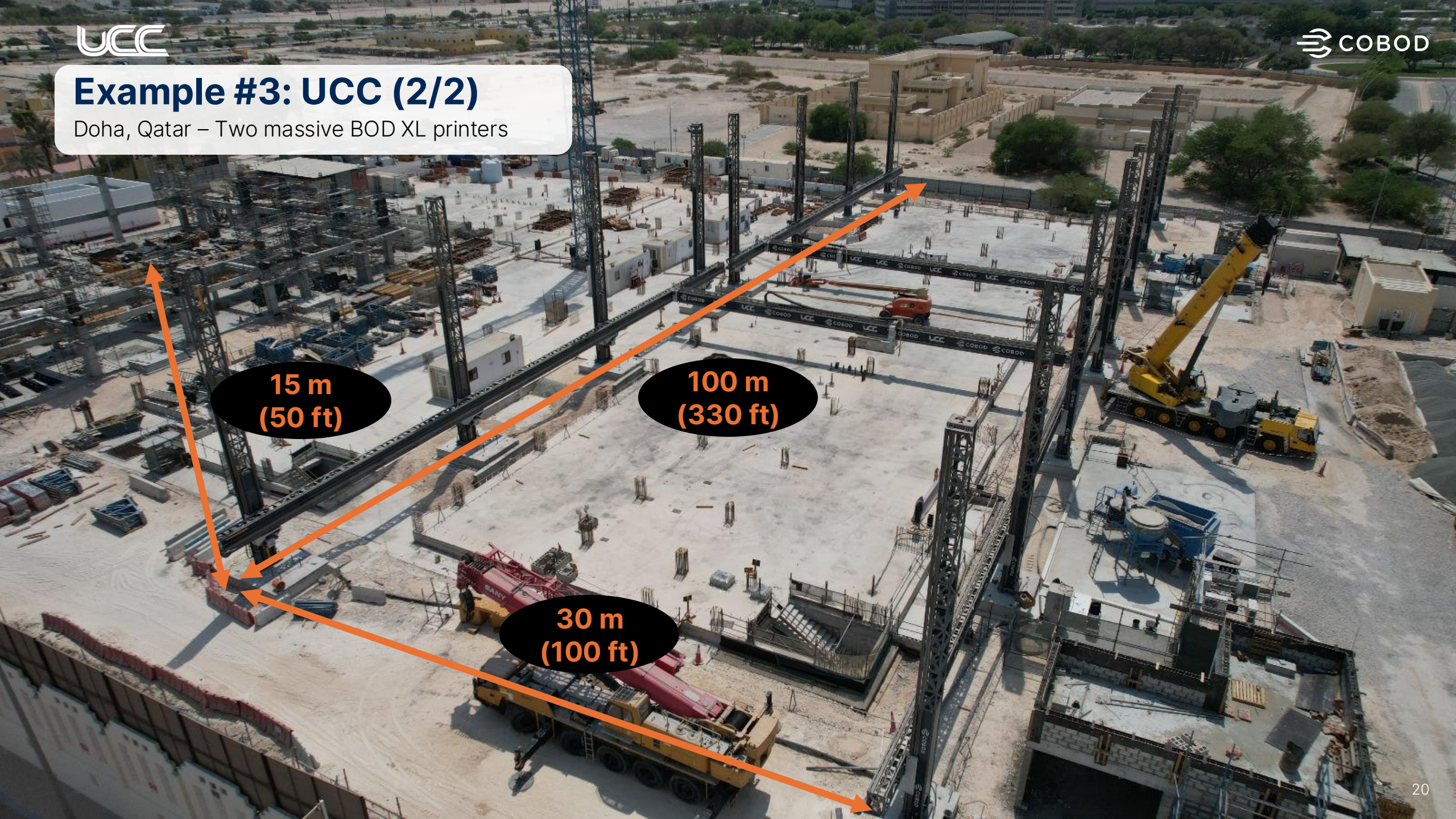
## Example #3: UCC (1/2)

Upcoming 430,000 SF (40,000 m<sup>2</sup>) school project in Qatar by UCC



## Example #3: UCC (2/2)

Doha, Qatar – Two massive BOD XL printers



15 m  
(50 ft)

100 m  
(330 ft)

30 m  
(100 ft)

## Example #4: 3DCP Group

Holstebro Denmark – 36 student housing units (18 completed)



# COBOD Software Updates – You Spoke, We Listened

| Category                                                                                                               | Your feedback                                                                                                                   | Our response – the new software setup                                                                                                                                                 |
|------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Pricing &amp; Value</b><br>        | The previous COBOD Slice price (€7,500+) was too high and difficult for you to justify. You asked for a more affordable option. | <b>The price is now €2,950 per year (printer-based license)</b> – a simpler model that still ensures continuous development and support. This equals about €250/month, paid annually. |
| <b>Product Offering</b><br>           | You felt paying separately for COBOD Slice, Configurator, and Nozzle Builder wasn't fair. You wanted everything in one package. | <b>We have bundled COBOD Slice, Configurator, and Nozzle Builder into one, single license:</b> the COBOD Software Suite.                                                              |
| <b>License Type</b><br>              | You told us floating licenses were confusing and that short-term licenses added unnecessary complexity.                         | <b>We have simplified the setup to annual printer-based licenses only</b> and removed emergency/commercial licenses.                                                                  |
| <b>Connection to COBOD Care</b><br> | You expected software licenses to be included in Care Packages, not just discounted.                                            | <b>Choosing COBOD Care Silver or Gold now gives you the COBOD Software Suite bundled in,</b> so you avoid separate software charges and €180/hour support costs without a package.    |

# The COBOD Software Suite is now part of COBOD Care

|                               | BRONZE | SILVER | GOLD |
|-------------------------------|--------|--------|------|
| Remote Diagnostics            | ✓      | ✓      | ✓    |
| Firmware Update               | ✓      | ✓      | ✓    |
| COBOD Connect Access          | ✓      | ✓      | ✓    |
| Ticket Support                | ✓      | ✓      | ✓    |
| Yearly Maintenance Visit      | ✓      | ✓      | ✓    |
| Additional Maintenance Visit  | (✓)    | (✓)    | ✓    |
| COBOD Software Suite          | (✓)    | ✓      | ✓    |
| Priority Support              | -      | ✓      | ✓    |
| Extended Maintenance Coverage | -      | ✓      | ✓    |
| Add-on Integration Support    | -      | ✓      | ✓    |
| Access to New Upgrades First  | -      | ✓      | ✓    |
| 1-Year Extended Warranty      | -      | -      | ✓    |

✓ = Included (✓) = Can be purchased separately - = Not included

# EXAMPLE PROJECT IMPROVEMENTS (1/2)

## SEAPI PROJECT, INDONESIA – DAILY REPORTS

### Print Data Collection Daily Printing Report

**Project Name:** SEAPI Project  
**Unit type and Number:** [MPL, WP2, S1, S2, S3, S4, M1, M2, CH1, CH2, CH3, Panel, Panel2]  
**Date:** 14/07/2024  
**Report by:** KF, BST  
**Nozzle Type:** 50x40mm Bendy

In order to structurally learn from on-site printing so we can improve both technology and as onsite teams, data from the specific on-site printing days are super important. Please fill in this document on a daily basis and upload it to our shared folder: [Daily Printing Reports - SEAPI Project](#)

The data will be used to:

- Improve overall efficiency on site
- Understanding root measures for the specific building
- Improving technology and use going forward

NB: THIS IS NOT A PERFORMANCE MEASURE. INDIVIDUALS WILL BE EVALUATED ON - ONLY FOR PRINTING AND TECHNOLOGY PROGRESS UNDERSTANDING AND EVALUATION

**Comments for the day - Printing:** [How did it go overall? - Position and negative? Any stops due to: Printer Issues, Operation Issues or other?]

Today's printing process went smoothly overall, despite encountering several challenges. We managed to print up to layer 11 (44 cm), since plumbing installation required at layer 12.

Stops were necessary at the following points:

- Material Issues: In the early layers, there was a stop due to the material being too liquid caused by a leak at the drying stiffener additive connector on the print head.
- Socket Installation: Stops occurred during the installation of electrical sockets in the living room and TV at layers 7 and 8. Material dried out after a prolonged stop (10 minutes), causing a blockage in the nozzle flow, required a pause to remove the material before continuing.
- Nozzle Cleaning: There was a stop for cleaning the nozzle to address dried material. Afterward, we encountered issues with the U-axis movement, with the nozzle shifting angles (30°, 90°, and 180°) during transitions between walls. This was initially resolved by resetting the U-axis, however, the problem occurred approximately four times per layer, requiring us to reset the U-axis again each time.

Overall, despite these challenges, today's printing results were satisfactory, although not entirely meeting our expectations.

**Comments for the day - Material (please further upload all material recipes):** [How did it go with testing and material consistency throughout the day - any big findings (positive or negative)?]

Today, the material was prepared in 2 batches, each sized at 0.2 m³, totaling 1.0 m³. The resulting material have a shear vane value in the range of 9-10, consistent with yesterday's printing, using the same recipe and mix load.

In the first four layers (1-4), the material consistency was good. However, after layer 5, we encountered inconsistencies that required adjustments during printing. Some material was excessively dry, causing interruptions in the flow from the nozzle, while other material was too liquid, resulting in over-extrusion.

Overall, the material met the printing size requirements, despite the inconsistency observed in the final three layers.

| Recipe Name | Recipe Type | Recipe ID | Recipe Description |
|-------------|-------------|-----------|--------------------|
| Batch 1     | Batch 1     | 001       | 0.2 m³             |
| Batch 2     | Batch 2     | 002       | 0.2 m³             |
| Batch 3     | Batch 3     | 003       | 0.2 m³             |
| Batch 4     | Batch 4     | 004       | 0.2 m³             |
| Batch 5     | Batch 5     | 005       | 0.2 m³             |
| Batch 6     | Batch 6     | 006       | 0.2 m³             |
| Batch 7     | Batch 7     | 007       | 0.2 m³             |
| Batch 8     | Batch 8     | 008       | 0.2 m³             |
| Batch 9     | Batch 9     | 009       | 0.2 m³             |
| Batch 10    | Batch 10    | 010       | 0.2 m³             |
| Batch 11    | Batch 11    | 011       | 0.2 m³             |
| Batch 12    | Batch 12    | 012       | 0.2 m³             |
| Batch 13    | Batch 13    | 013       | 0.2 m³             |
| Batch 14    | Batch 14    | 014       | 0.2 m³             |
| Batch 15    | Batch 15    | 015       | 0.2 m³             |
| Batch 16    | Batch 16    | 016       | 0.2 m³             |
| Batch 17    | Batch 17    | 017       | 0.2 m³             |
| Batch 18    | Batch 18    | 018       | 0.2 m³             |
| Batch 19    | Batch 19    | 019       | 0.2 m³             |
| Batch 20    | Batch 20    | 020       | 0.2 m³             |

Date: 14/07/2024

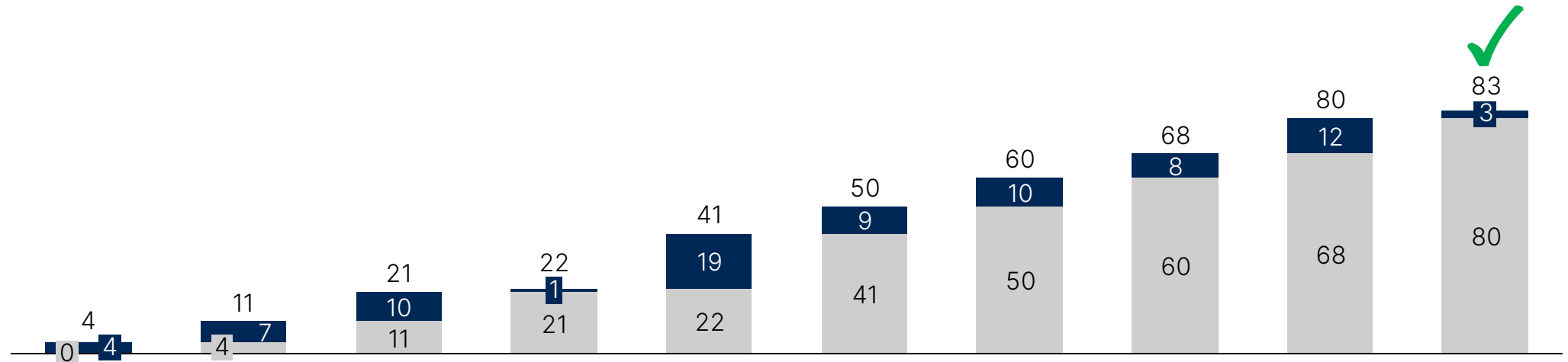
| Data point                                                 | Value                        | note (if any)                                                |
|------------------------------------------------------------|------------------------------|--------------------------------------------------------------|
| Print day number [H]                                       | 2                            |                                                              |
| Number of Layers done [Total, first layer, last layer]     | 7, 5, 11                     |                                                              |
| Site arrival time [HH:MM]                                  | 11:00                        | We have a lunch break from 12.30 until 14.00                 |
| Printing start time [HH:MM]                                | 15:00                        |                                                              |
| Printing stop time [HH:MM]                                 | 17:05                        |                                                              |
| Site left (after cleaning) [HH:MM]                         | 23:00                        |                                                              |
| Time stopped total (during printing): [min]                | 45 min                       |                                                              |
| Material Use [m³]                                          | 1.8 m³                       |                                                              |
| Material Wastage [m³]                                      | 0.2 m³                       |                                                              |
| Number of Batches [H]                                      | 9                            |                                                              |
| Other tools active (Electrical, plumbing etc.)             | ElectricSocket, Wall Sanders |                                                              |
| Number of Operators on site (printing) [H]                 | 2                            | 1 PO, 1 MO                                                   |
| Number of Workers on site (printing) [H]                   | 7                            | 6 Workers, 1 Forklift Operator                               |
| Weather (Min Temp, Max Temp, Rel Humidity, Sunshine/Hours) | 29°, 30°, 70%, 0h            |                                                              |
| Cost of Electricity used [£ or kWh]                        | 35 £                         |                                                              |
| Water consumption [l or m³ - please specify]               | 4500 l                       |                                                              |
| Water Temperature (Inlet) [Degrees C]                      | 29°                          |                                                              |
| Any stop of print due to Materials? [H] - please add note  |                              | Material Inconsistency                                       |
| Any stops of print due to Printer? [H] - please add note   |                              | Socket Installation, Material Inconsistency, Nozzle Cleaning |

# EXAMPLE PROJECT IMPROVEMENTS (2/2)

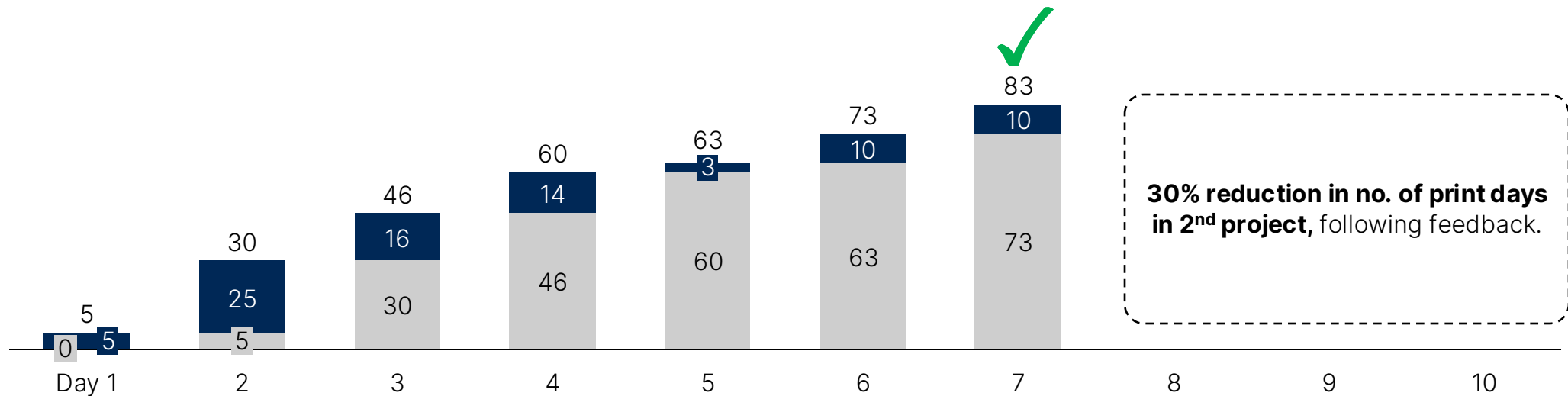
SEAPI PROJECT, INDONESIA – LAYERS PER DAY

Printed that day  
 Printed previous days

## House #1



## House #2



# Importance of Travel Speed

Printing speed – 250 mm/s



## Printing Speed

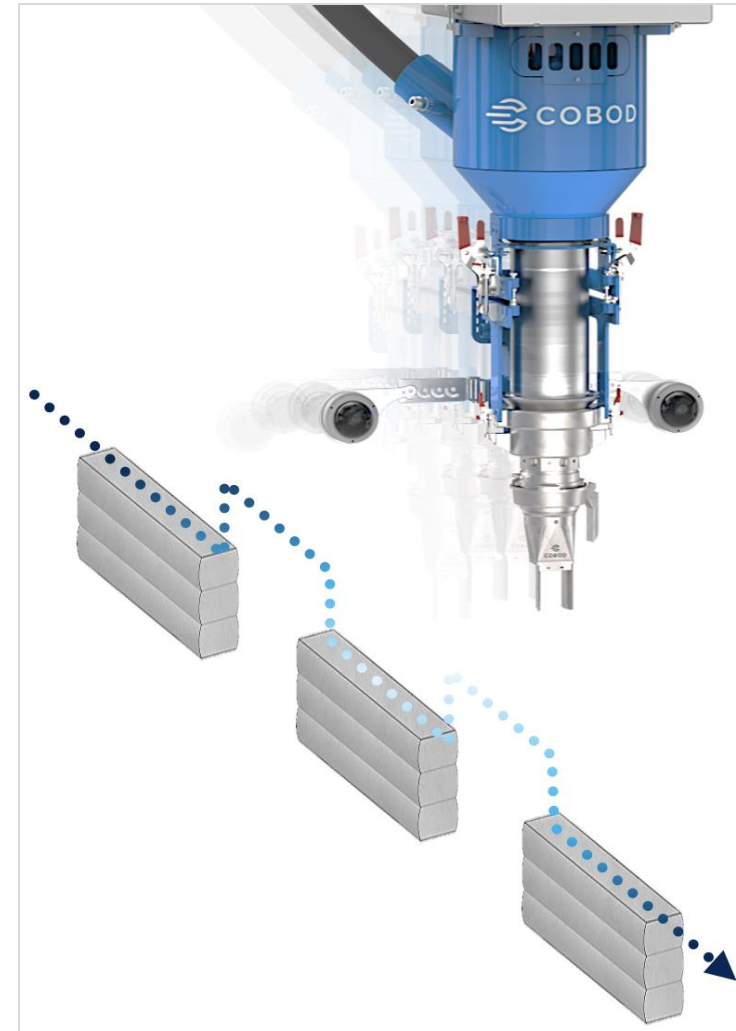
**Printing speed** describes the rate at which the 3d printer machine moves while **actively depositing concrete layers** and ranges from 0 to 250 mm/s.

Optimizing printing speed significantly enhances project execution productivity and consequently ROI.

The Printer Operator (PO) controls this speed through the Duet interface while actively monitoring **other parameters**.

Adjustments to printing speed directly alters layer time, material flow through the hoses, concrete mixing cycles, curing intervals and must also account for site weather conditions to ensure a positive outcome.

Traveling speed – 250 mm/s horizontal and 50 mm/s vertical



## Traveling Speed

**Traveling speed** refers to the rate at which the 3D printer moves between your designed printed elements sequence.

The speed covers lift, movement and descend, and It is typically set at **50 mm/s vertically** and **250 mm/s horizontally**.

Traveling speed can be optimized in two key ways:

- 1) **Designing a continuous toolpath** that minimizes starts, stops, and unnecessary movements.
- 2) **Adjusting the printer to the maximum traveling speeds** to reduce transition time between elements.



**HARCOURT TECHNOLOGIES**



# PERI 3D CONSTRUCTION



# ABYAN BUILDING CONSTRUCTION



**Product  
Developments  
& Innovations**

**Zoë A. C. Knudsen**  
Head of Products and Communication

# DN65 AHMS Upgrade for BOD2 Printers Unlocks Additional Benefits

## About the DN65 upgrade

**The DN65 upgrade is for BOD2 printers** already equipped with the DN50 AHMS, allowing existing DN50 hoses to be replaced with larger DN65 hoses.

**It minimizes cost** by reusing most DN50 AHMS components and requires only a few new parts. The upgrade involves installing DN65 components and reassembling the AHMS drag chains to fit the larger hoses. Minor onsite modifications to the Y bracket and Y-axis guide tray are also needed.

## Benefits to your project

### Key benefits

### Description

Larger Aggregates



Allows for usage of larger aggregates with diameters up to 12 mm.

Decreased Pressure



Reduces pumping pressure by minimizing internal friction.

Reduced Clogs



Minimizes the risk of clogs during operation by increasing the internal area.

## Example installation



# Update on BOD3

## Motion control tuning improves BOD3 stability and layer quality

Following customer feedback on BOD3 stability, we reviewed key motion control parameters. While the BOD3's mobile track system differs from the fixed Z-columns of the BOD2, we aimed to improve smoothness and stability.

By adjusting acceleration and deceleration values in the motion config file, we achieved more controlled printer movements. This refinement enhances mechanical stability and layer consistency without compromising print quality.

Testing also showed benefits when applying the updated config to the BOD2 in cases where higher speed is needed without losing precision.

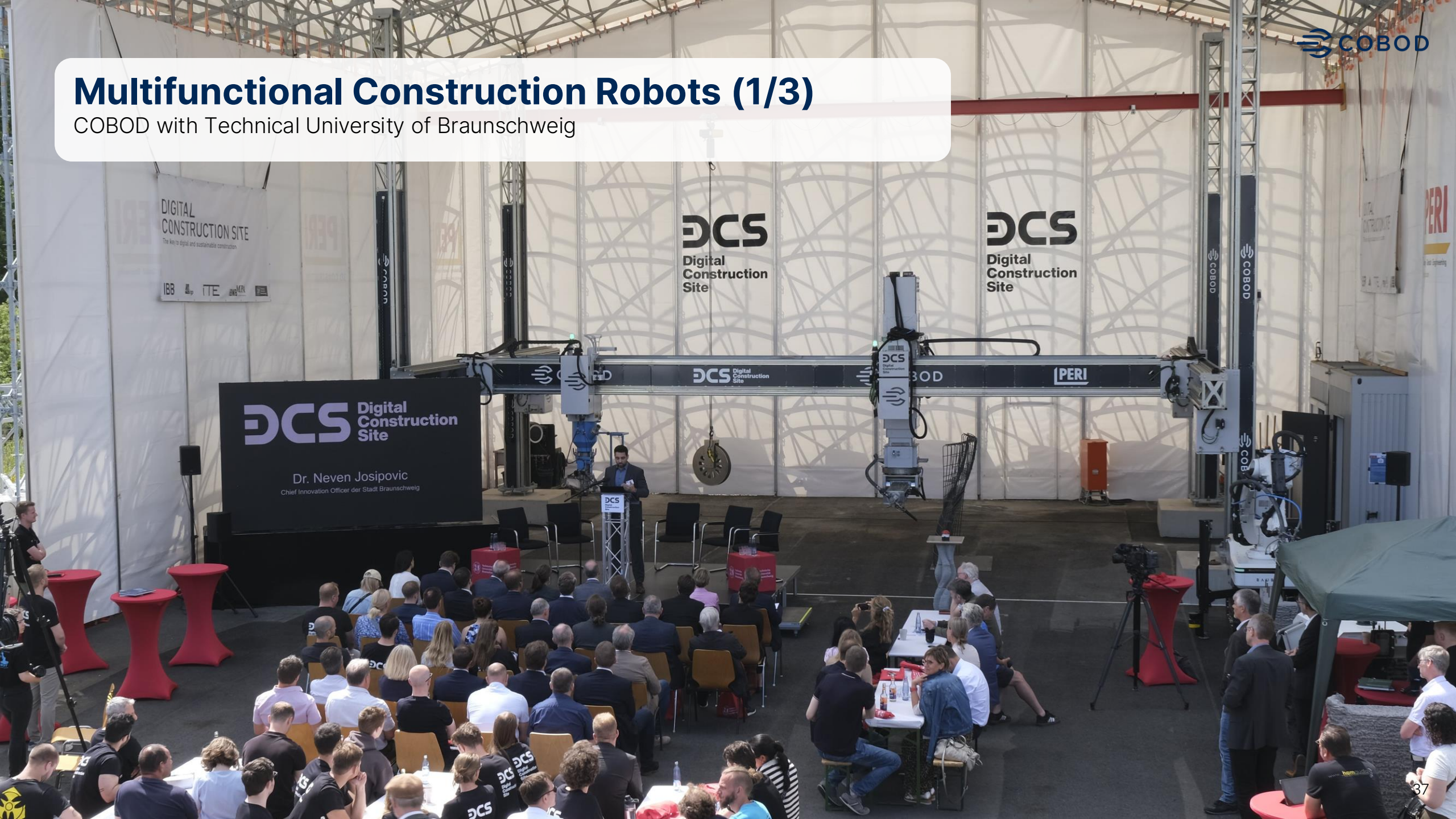


## Benefits of the updated config file

- Enhanced mechanical stability
- More consistent layers
- Improved print precision, incl. layer placement (especially in corners)
- Useful even where stability is already strong, offering an option to increase speed without compromising quality
- Applicable to both BOD2 and BOD3

# Multifunctional Construction Robots (1/3)

COBOD with Technical University of Braunschweig



## Multifunctional Construction Robots (2/3)



**COBOD's goal is to turn 3D printers into multifunctional construction robots,** beyond concrete extrusion.

**Already proven:**

- 2022 (GE): Printer with robotic crane placing reinforcement rings.
- 2025 (TU Braunschweig): Robotic arm for shotcrete printing, enabling curved and complex geometries.

**COBOD is the only company** bringing this multifunctionality into commercial use, strengthening our competitive edge.

# Multifunctional Construction Robots (3/3)

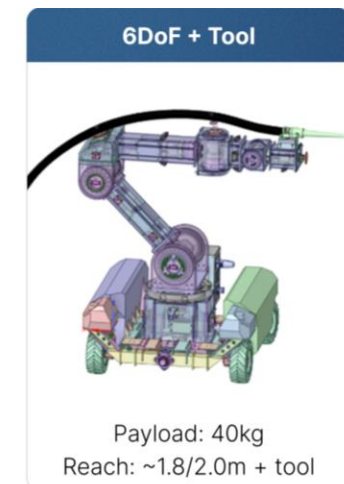
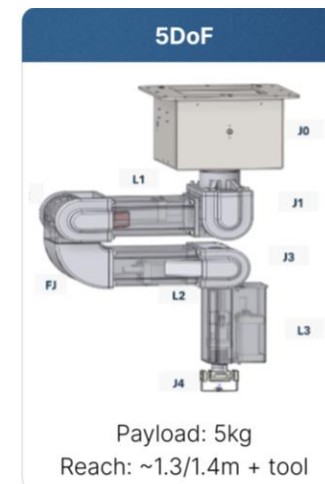
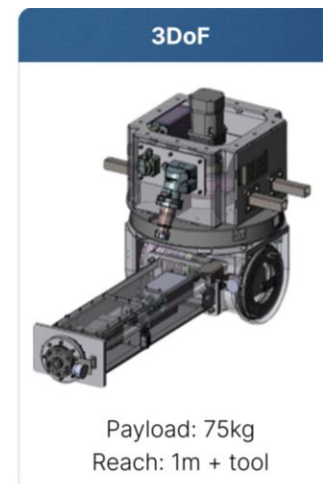


**The potential is vast:** painting, plastering, block/brick placement, insulation, conduit installation, plumbing, shotcreting, and more—all on a single COBOD platform.

**To achieve this, COBOD is driving a large-scale robotics development program,** with each task requiring a specialized robotic solution.

**We are developing a broad portfolio of in-house robotic arms,** purpose-built for construction and seamlessly integrated with COBOD printer controls—paving the way to true end-to-end automation

**Our robot development program** (DoF = Degrees of Freedom, i.e., of joints)



# Q&A



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