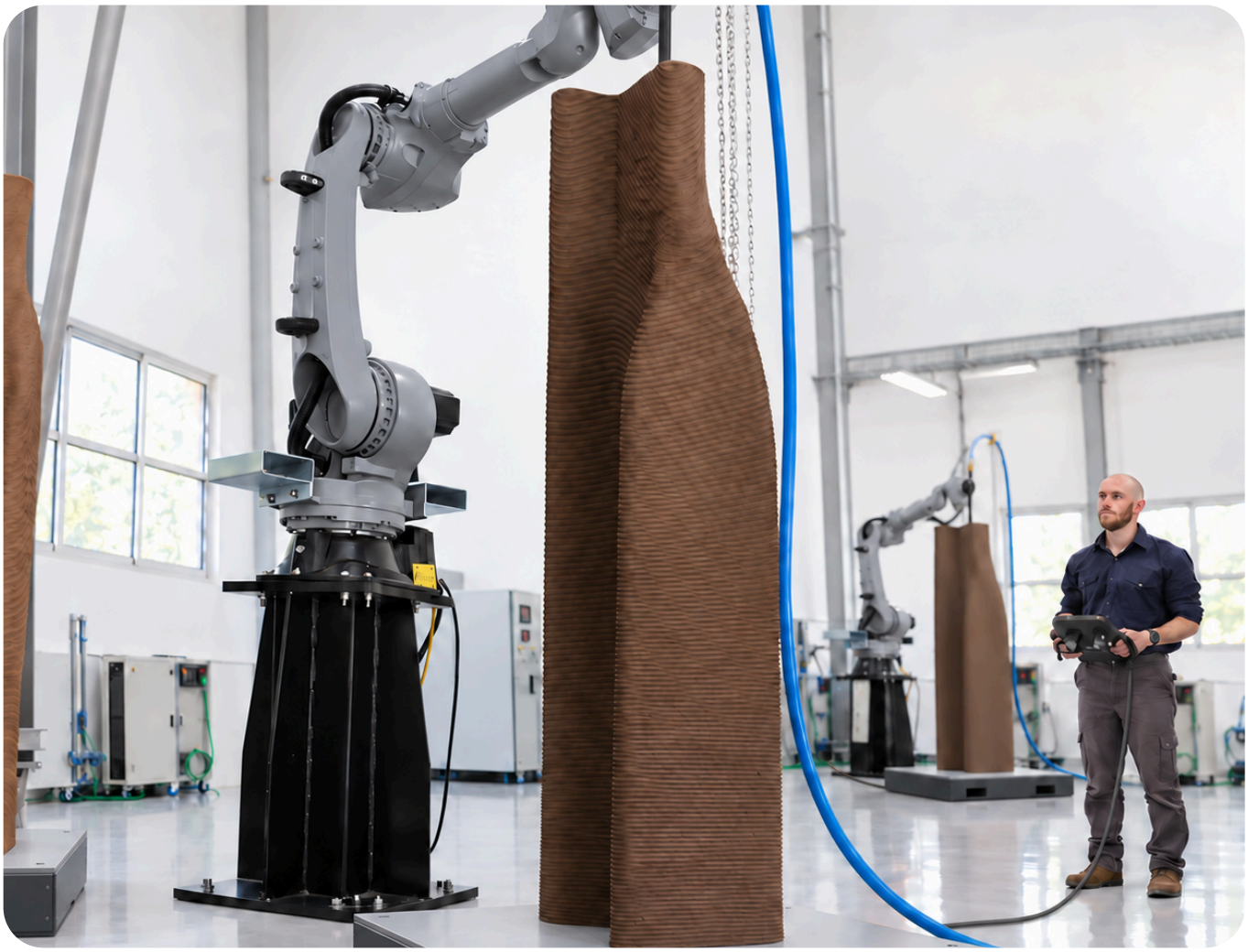


The technology and its applications.

How materials engineering, computational design and robotic manufacturing work as one system - and what it produces: cladding panels, envelope walls, data center envelopes and custom components.

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The platform

Three disciplines. One manufacturing system.

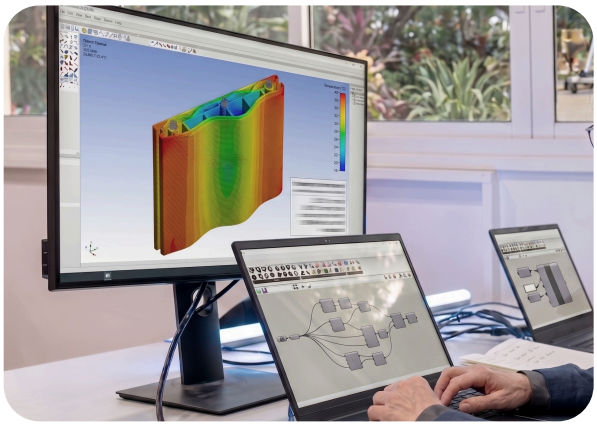
Material, design and manufacturing are tested and tuned together, in one process. Every printed element is thus born as a complete built product, rather than an assembly of separate components.



SYS.01

Materials engineering

Mineral mixes made from local raw materials and industrial by-products, tuned to structural performance and climate conditions.



SYS.02

Computational design

Algorithms derive geometry from performance targets - strength, thermal and acoustic insulation, and self-shading.



SYS.03

Robotic manufacturing

Printing at a uniform layer thickness, on site or at a local plant, with precise repeatability from unit to unit.

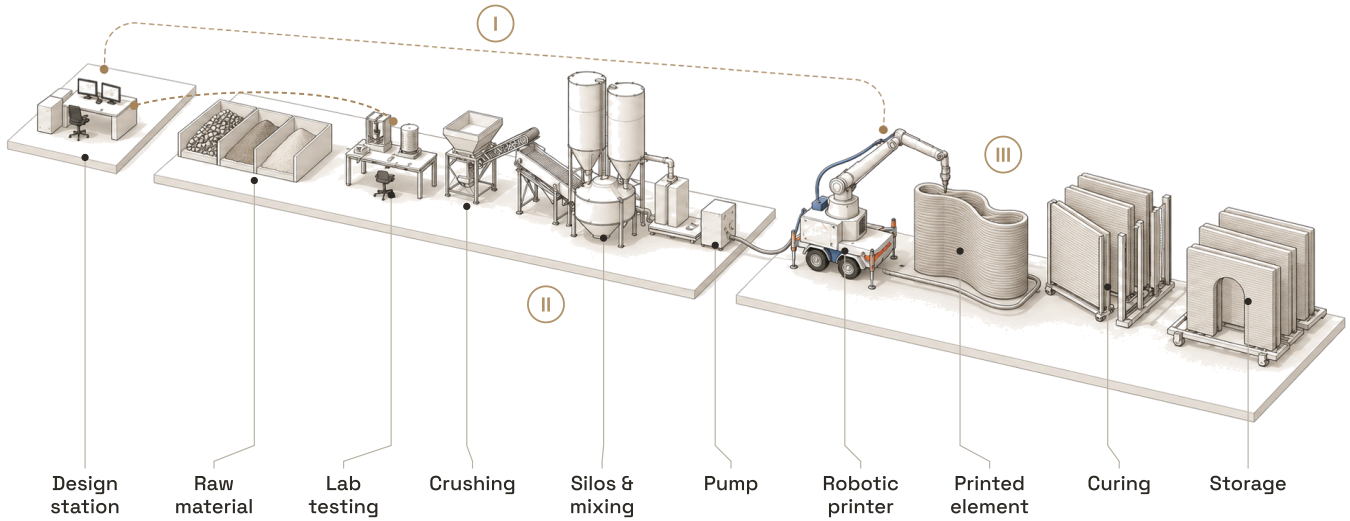
The process

From model to architecture.



Production line

Schematic · not to scale



I Digital model.

The digital model is translated directly into machine instructions, with no intermediate steps between design and production.

II Material.

Machine instructions are translated into material: structure, insulation, acoustics and service routing are formed together in one printed body, instead of formwork and separate on-site construction stages.

III Architecture.

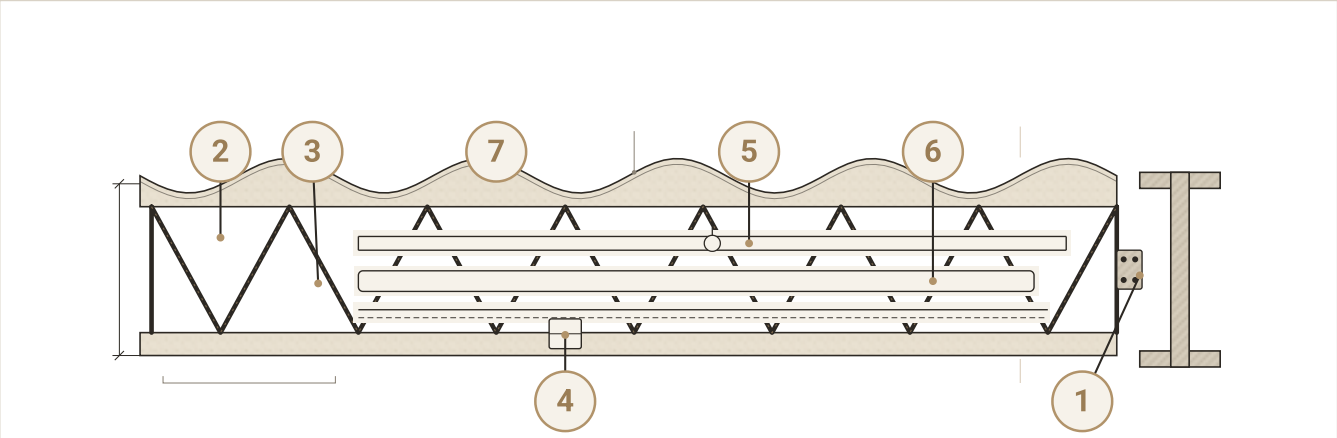
Material becomes architecture - through robotic manufacturing, on site or at a local plant.

Computational intelligence, translated into architecture.

Within the wall

Fewer separate stages in building the envelope.

In conventional construction, the envelope is built through seven separate processes, one after another - months of wet work on site. N-FORM integrates a substantial share of them into the printed element, significantly reducing wet work and on-site interfaces. Completion work - threading services, connections and finishes - is carried out on site, in cavities designed for it in advance.





1	2	3	4	5	6	7
Anchoring to structure	Thermal insulation	Acoustic insulation	Electrical and data	Plumbing	Air conditioning	Façade and finish

One print, installed dry.

Material bank

Material drawn from the place.

N-FORM's material bank is based on local raw materials - soil, stone, construction waste and industrial by-products. The examples below illustrate the range of tones available. Where required, a dedicated mix can be developed from locally available raw materials. Every mix is subject to engineering design and compliance with standards.



Jerusalem stone

Tone and texture continuous with the Jerusalem stone façade



Local soil

Raw materials from excavation and surplus earthworks near the project



Negev sand

Warm tones for desert regions and arid climates



Urban aggregate

Recycled construction waste, in an urban concrete-grey tone

Applications

One technology. Many applications.

The same platform serves different scales - from a single façade element, through envelope walls for high-rise buildings and data centers, to complete buildings.



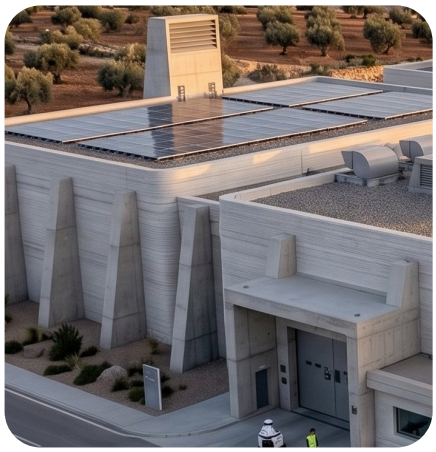
Cladding panels

Form, texture and thermal performance in one surface.



High-rise envelope walls

Insulation, acoustics and finish in one wall, with planned service routes.



Data centers and infrastructure

Reinforced hollow walls, designed for service routing.



Complete buildings

One- to two-story buildings with printed walls.



Defense applications

Protection and resilience.



Custom products

Architectural and infrastructure components made to order.

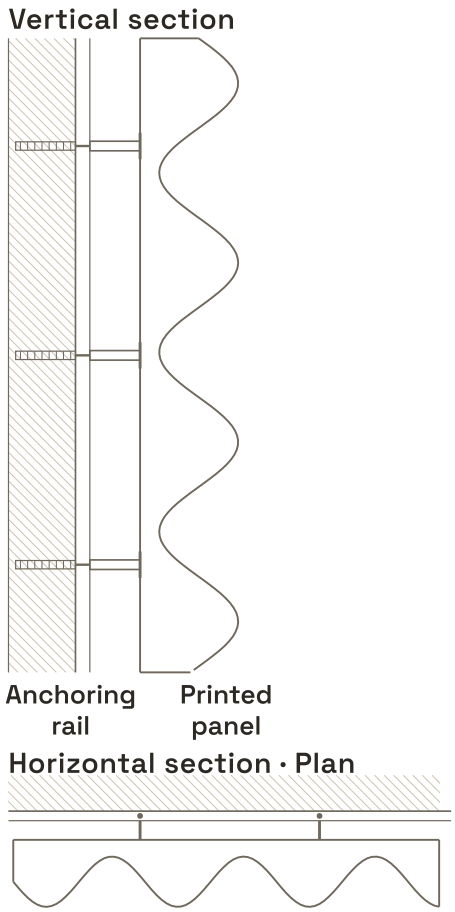
Cladding panels

Cladding panels Printed.

Form, texture and thermal performance in one surface. The morphology is derived from the architectural design and the performance targets, enabling depth, self-shading and a finished surface with no separate stone cladding.



Sections · Hanging detail



Free-form morphology

Curved and three-dimensional surfaces, with no rigid mold and no template constraints

Dry installation

Integrated hanging and anchoring interface, in place of wet work on site

Local tone

Texture and tone matched to the local material and the architectural context

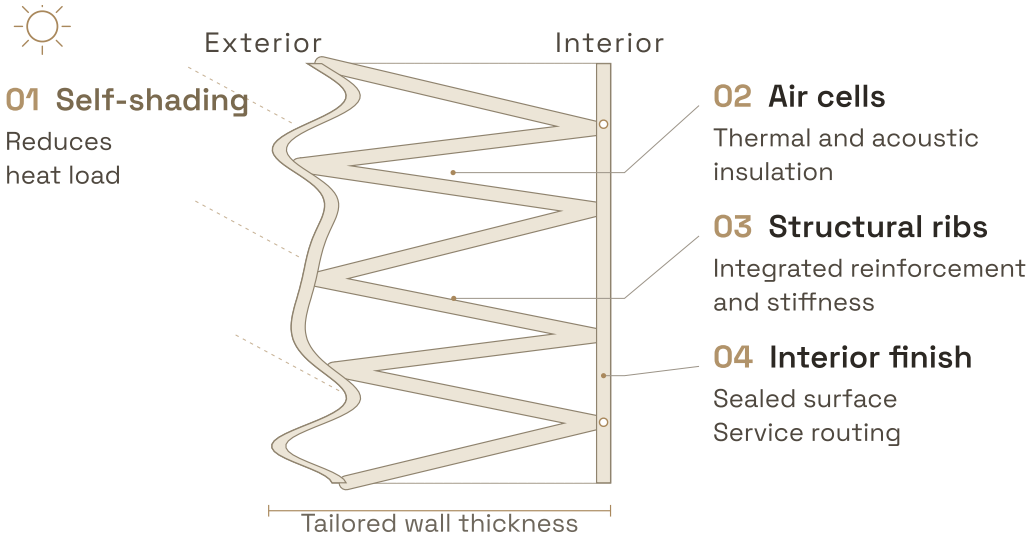
Envelope walls

Envelope walls for high-rise buildings.

Insulation, acoustics, planned service routing and architectural finish combined in one printed envelope wall - digitally designed, manufactured at a local plant or on site, and installed dry as a ready unit.



Wall structure



Printed outer shell

Deep texture with no separate stone cladding; a morphology that provides self-shading and reduces heat loads.

Air cells · Insulation

Ribs of uniform print thickness form enclosed air cells that contribute to thermal and acoustic insulation. The cell configuration is set by engineering design.

Inner face and services

The interior face is sealed and ready for finishing; electrical, data and air-conditioning routes are designed in advance within the wall cavity, with a uniform anchoring interface.

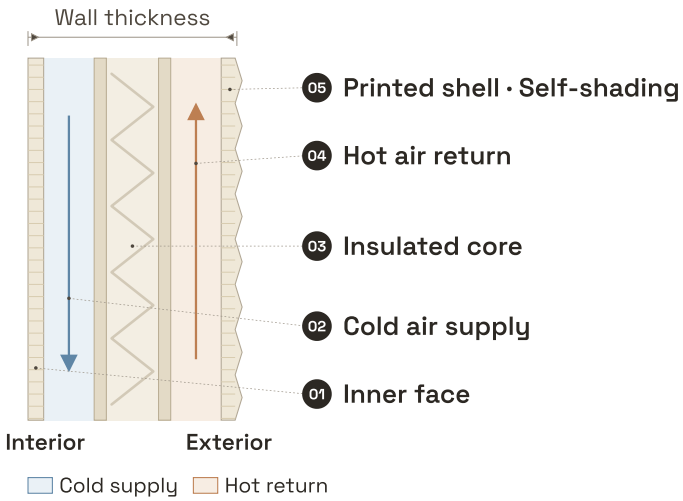
Data centers and infrastructure

Envelopes for data centers and infrastructure.

In infrastructure- and energy-intensive facilities, the wall itself does the work: its cavity routes services and cooling, contributes to thermal insulation and shortens the construction schedule.



Server hall · The printed wall as the facility envelope



Wall section · Air cells and cooling routes

Speed of construction

Production in parallel with site works, and fewer wet construction stages

Protection and durability

A reinforced printed wall with integrated reinforcement, subject to engineering design

Thermal performance

Air cells and rib configurations tailored to achieve insulation targets and accommodate HVAC routing.

Protection and resilience

Defense applications.

The ability to design the wall cross-section and its internal rib structure provides solutions for demanding and secured environments.



Local material

Reduced dependence on supply chains and long-haul transport.

On-site production

Local production and a short construction schedule.

Geometry by design

The wall cross-section is customized to the functional requirements, subject to engineering design and compliance with standards.

Custom products

The platform extends beyond the applications above. We design and manufacture architectural and infrastructure components to order - from outdoor furniture and urban landscape elements, through acoustic elements, to infrastructure components.



Environmental performance

Environmental performance.

Targets are assessed individually for each project. The mix is based on local raw materials and by-products, with reduced cement content.

Up to
50%
Cement reduction
Compared with a conventional concrete mix

Up to
55%
Lower carbon emissions
In embodied carbon of the printed component

Up to
70%
Less construction waste
Printing to shape instead of processing and cutting



Local raw materials and by-products
Using local soil, construction waste and industrial by-products shortens transport distances and reduces demand for virgin raw materials.

Built-in insulation, less energy consumption
Enclosed air cells and self-shading reduce heating and cooling loads over the life of the building.

Material only where needed
Printing places material according to the required form, reducing the use of moulds and excess material.

The targets shown are design targets, assessed against the mix and the functional requirements of each project, subject to compliance with standards.



Let’s build the future together.

For architects, developers, contractors, authorities and investors: we would be glad to explore potential projects, applications and investment together.

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The technology is patent protected. Figures in this document are research-based targets and do not constitute a commitment. Performance and compliance with standards are assessed for each project.