



Here's where engineering matters

Here's where engineering matters



Oct. 2025 | **Life Sciences**



**A global engineering firm
specialized in designing
systems that make
manufacturing facilities and
laboratories work**

Our promise to you:
state-of-the-art manufacturing
facilities and laboratories

Facts about us

1928

Founded in 1928, Deerns is a highly experienced multinational engineering consulting firm designing state-of-the-art building systems and manufacturing facilities.

€80 Mln

We successfully deliver over €80 mln per year in services and products to our clients. Our people are proud of the value we create together with our clients.

Solutions

We specialize in the delivery of complete solutions with a strong focus on sustainability and science-based design.

750+

Deerns employs over 750 experts, designers, engineers and project managers. We have in-depth understanding of the latest technology and of what drives the needs and business activities of our clients.

17 | 10 | 60

With 17 offices in 10 countries, various strategic local partnerships, and a project track record in over 60 countries, our teams have a hands on and in-depth understanding of what it takes to deliver global expertise locally and to make projects a success.



Where we work

Here's where we know local markets well

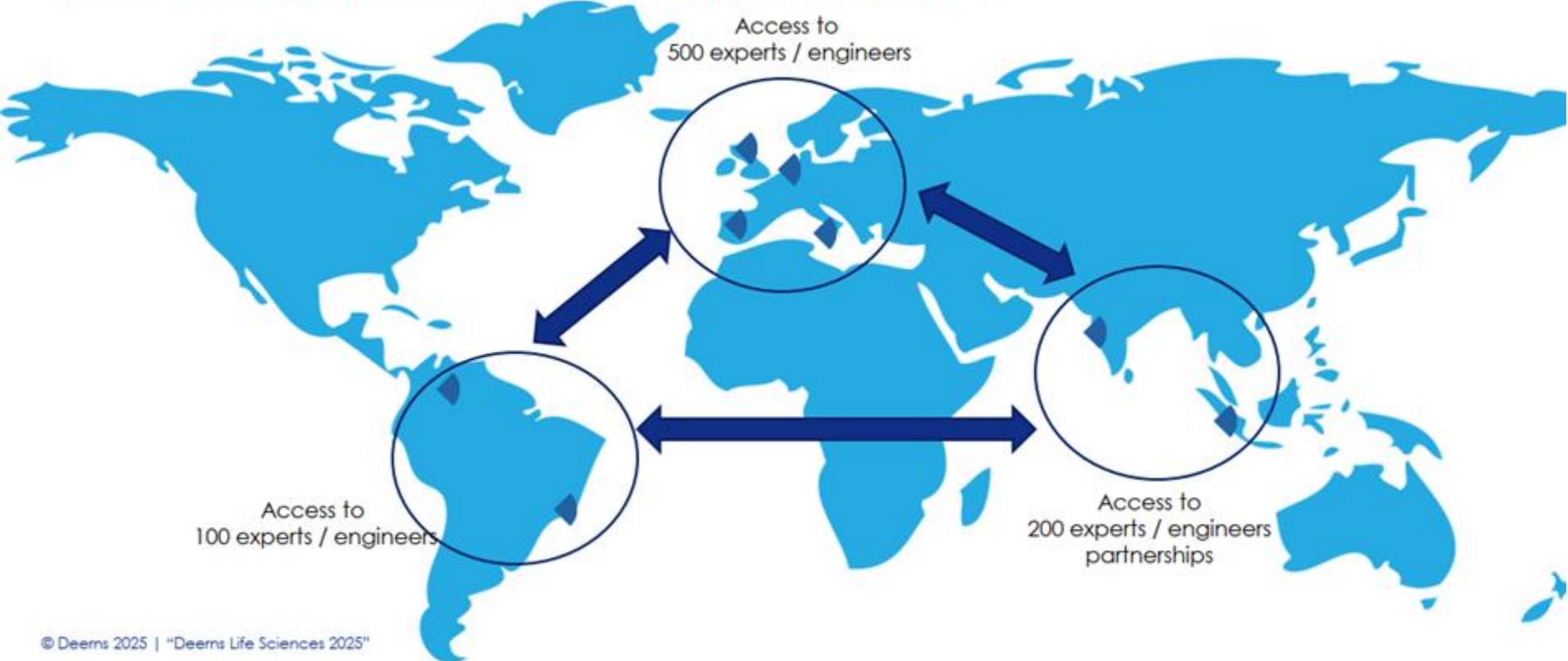
- EMEA** Global presence is centred in Europe
- LATAM** Strong team in Brazil
Partnerships in Americas
- APAC** Partnerships

We support many clients globally



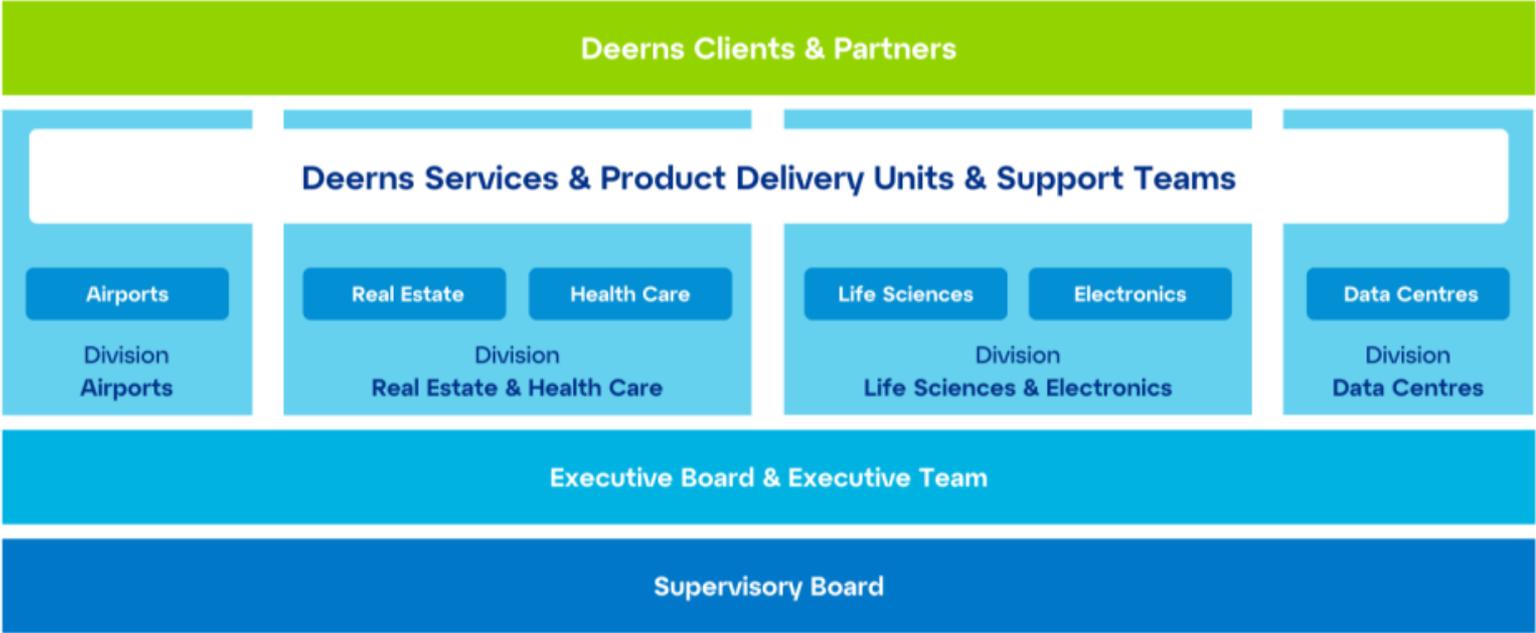
Project approach to our international clients

Tailored Strategies and Seamless Execution for Global Success



How we are organised

Specialised client and market focused delivery Units, embedded in operational Divisions



Our focus markets

Innovative design for building installations and industrial processes requiring high performance



Airports



Real Estate



Health Care



Life Sciences



Electronics



Data Centres

people centric
public/private clients
usually locally embedded

process/technology centric (industrial)
private clients
mostly international networks

Life Sciences

Here's where we create a healthier world

compliance

cGMP (including ANNEX1), GxP, operational safety, occupational health, biocontainment.

sustainable

ESG, LEED, BREEAM, CRREM, WELL, energy efficiency, circularity, Whole Life Carbon

smart

digitally enabled and future-ready designs

end-to-end

Master Planning to Commissioning, Qualification and Validation

industry leading

working with industry leading clients in pharma, biotech, nutraceuticals and MedTech



End-to-End

We support you throughout the life cycle of your assets, from initial idea to creative redefinition



End-to-End Solutions

Planning & Development

- Project management, controls & quality assurance (audits)
- Programming and pre-positioning
- Master Planning
- Technical Programme of Requirements
- User Requirements Specifications
- Conceptual Design/Estimating
- Risk Assessments & Business Continuity
- Strategic Consulting (cGMP)
- Sustainability Requirements
- Energy Advice/ Auditing / Monitoring
- Permitting and H&S
- Commissioning, Qualification and Validation

Design & Engineering

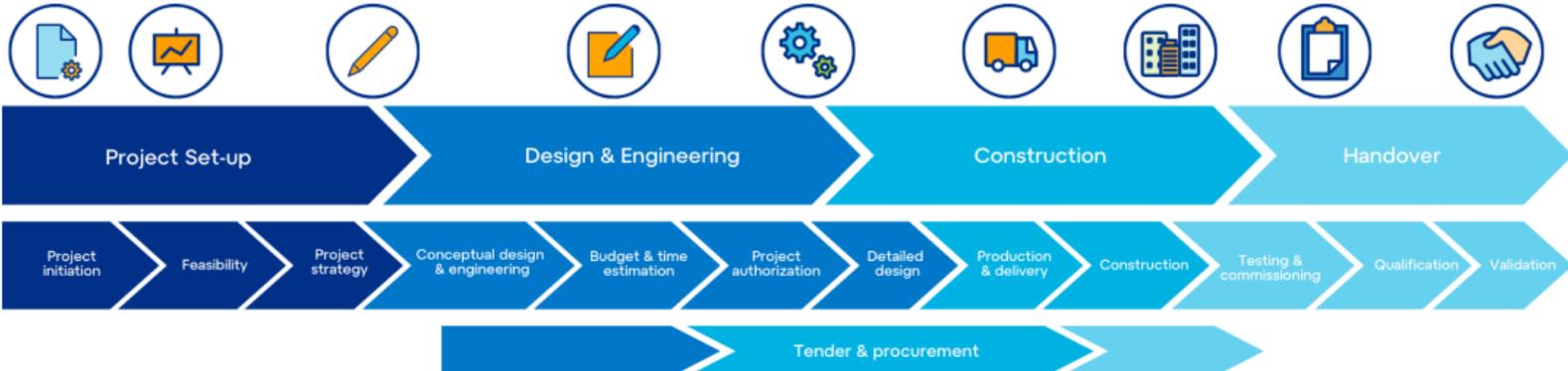
- Engineering Design
- Construction Physics
- Process Critical Systems / High Purity
- Mechanical/HVAC / Electrical
- Plumbing & Fire Protection
- Instrumentation & Controls
- Circular / Waste reduction and recovery
- Life Safety systems
- Health and Safety by Design
- Sustainable impacts (social, Well, other)
- Equipment hook-up
- Commissioning, Qualification and Validation
- Low Carbon AI Design tools
- Life Cycle Analysis

Construction & Handover

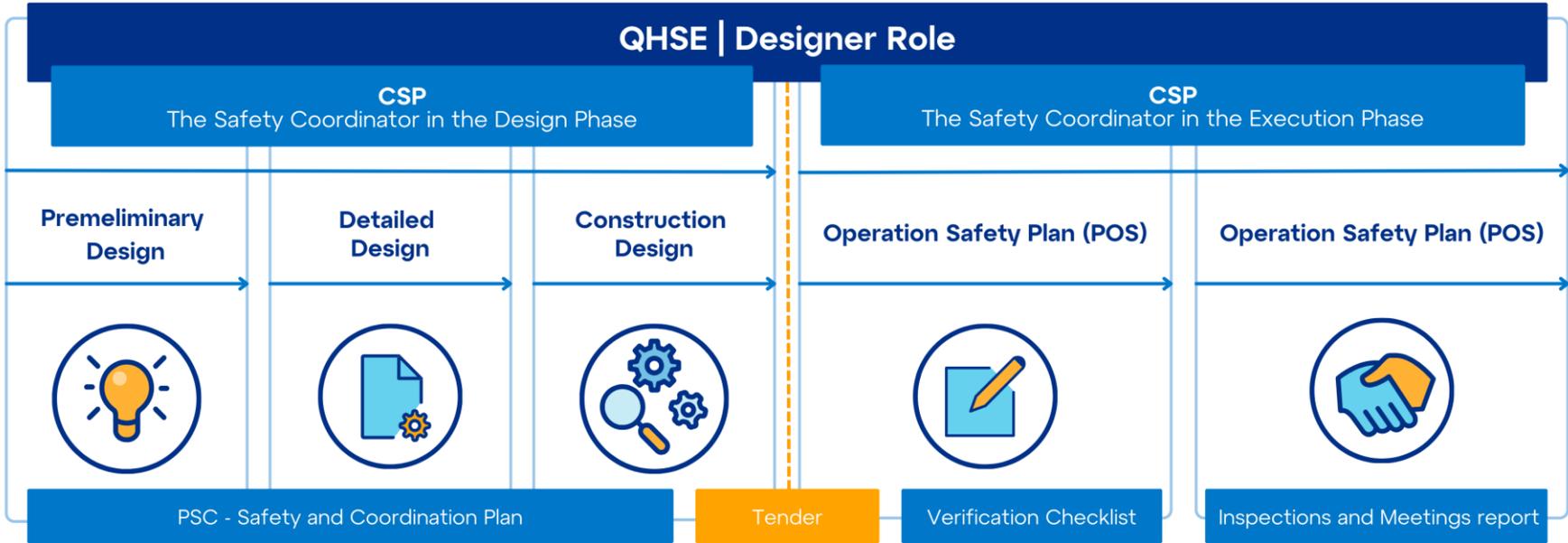
- Certification Management (BREEAM, LEED, Well)
- Health and Safety
- Construction Management
- Equipment hook-up
- Commissioning, Qualification and Validation

Operating & Redefining

- Monitoring of the equipment start-up activities
- Ad-hoc consultancy for trouble shooting
- OPEX, CAPEX and TCO calculations
- Planning and preparation of upgrades and/or expansions
- Energy Performance Data Collection
- Building Comfort Performance



QHSE | Designer Role



Our commitment

- Pursue zero-accident policy during construction, commissioning & qualification
- Fully compliant projects

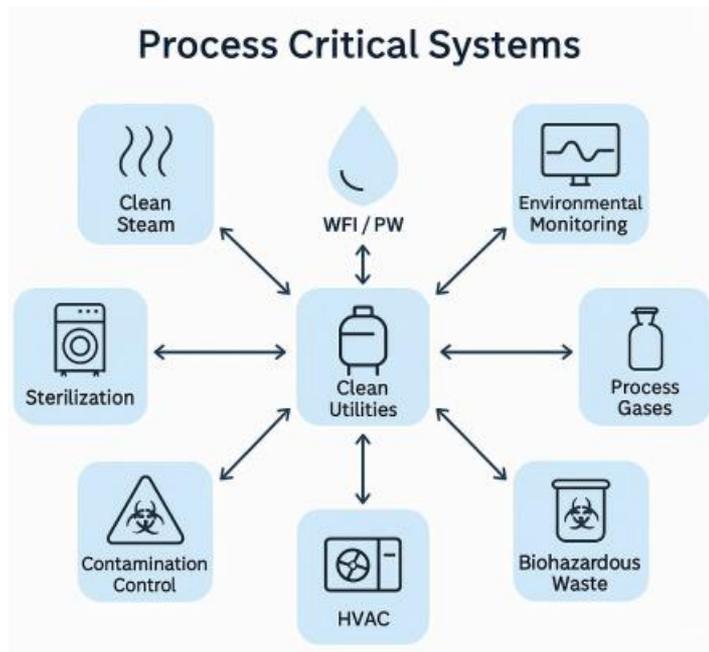
Specific areas of attention

- Existing production environment
- ATEX
- Machinery Directive
- Bio safety levels
- High Containment

Deerns internal resources

- HazOp Chairmen
- Safety Supervisors
- CSE/CSP

Process Critical Systems (PCS)



- UPW/DI-water production and -supply
- Water for Injection (WFI), purified water (PW)
- High Purity Bulk Gases generation & distribution (N₂, O₂, CO₂, H₂)
- Compressed Air (XCDA)
- Process gases / Specialty Gases
- Process cooling water supply
- Vacuum/Process Vacuum
- AMC (Airborne Molecular Contamination)
- Clean steam systems
- Biowaste deactivation systems
- Autoclaves and sterilizers
- Environmental Monitoring Systems (EMS/BMS)
- CIP (Clean-in-Place) / SIP (Sterilize-in-Place) systems
- Pharmaceutical-grade HVAC (Air Handling Units, HEPA, BMS controls)
- Regulatory compliance: GMP Annex 1, FDA 21 CFR Part 11, GAMP5

Environmental and Safety Systems

Risk and Safety Systems



- Expertise with international safety regulations (ATEX, PGS, FM Global, NFPA, REACH, GHS, External Safety, Seveso III)
- Risk assessment, Safety Audits, HAZOP, QRA and Explosion Safety Documents
- Process wastewater treatment / Recovery
- Chemical waste treatment and Recovery
- Waste-air and exhaust-gas treatment
- Gas detection, leak detection Safety Systems (gas detection, sprinkler, fire detection)
- Performance surveys, impact assessment and permitting
- Contamination control
- Product integrity and patient safety
- Regulated waste (biohazard, cytotoxic, etc.)
- Modify safety scope to include:
 - GMP-based validation, qualification, and documentation
 - Environmental classification zones

Specialist Services

Deep technical expertise combined with in-depth understanding of your business needs

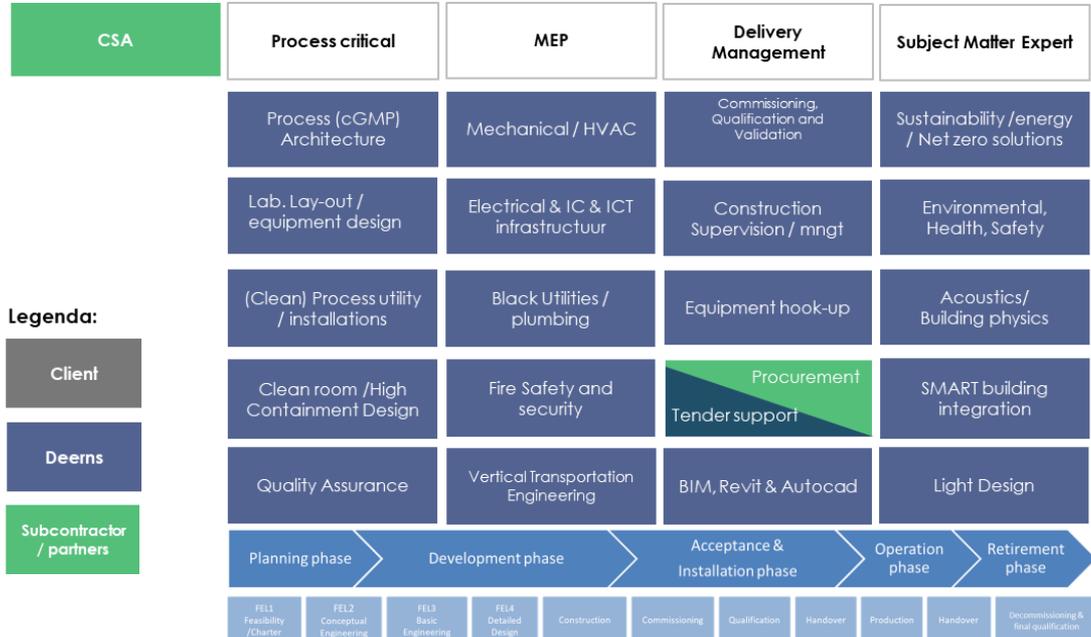


Expertise for integrated project delivery

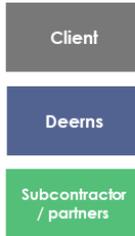
Over the past decades, Deerns has significantly expanded its expertise by bringing in specialized knowledge. In addition to **MEP engineering**, the company now offers a wide range of **specializations** and **supporting functions**.

This is reflected in the organizational chart for a fictional project team in the pharmaceutical sector.

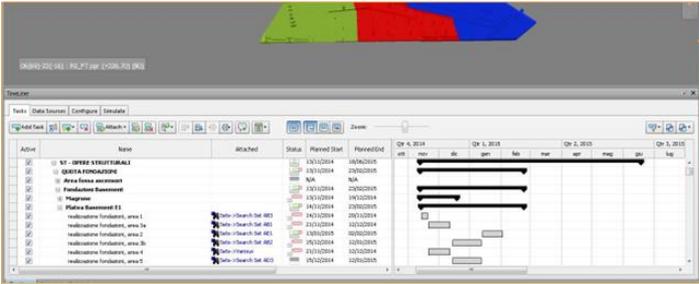
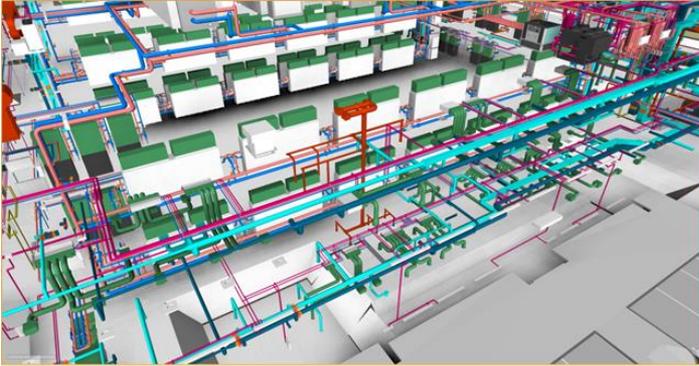
This team ensures an **integrated approach**, **seamlessly** managing all aspects of the project—from **design** and **tender-support** to **construction supervision** and **qualification**. This results in efficient execution and a higher-quality outcome.



Legenda:



Building Information Modelling



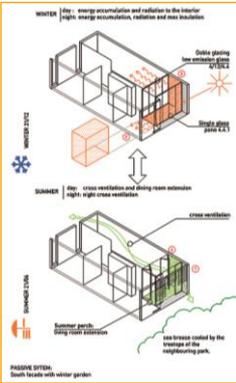
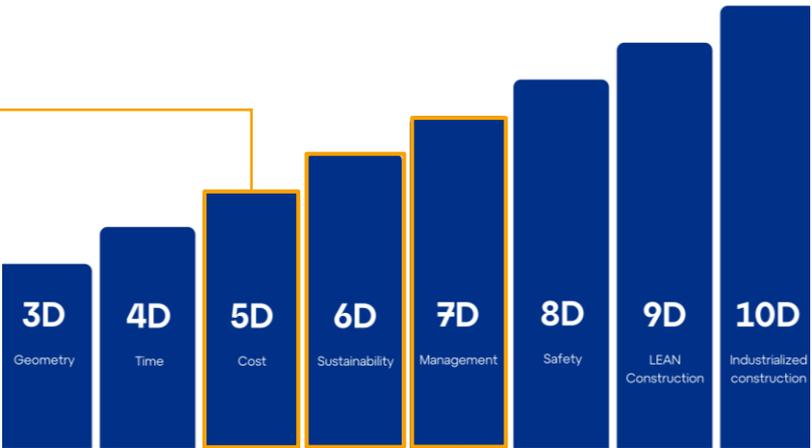
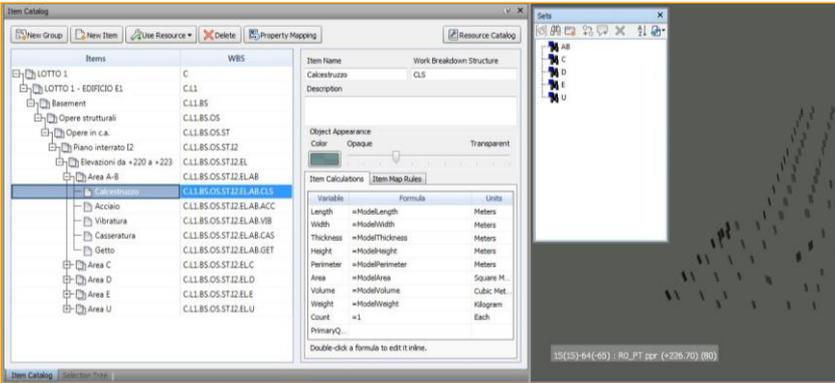
3D Geometry

Digital Model for Integration, Visualization, Clash Detection, Digital Twin

4D Construction Simulation

Schedule data added to the Digital Model for Workflow analysis, Coordination, Simulation

Building Information Modelling



5D Estimation

BOQ extraction, Estimating, Earned Value mng

6D Sustainability

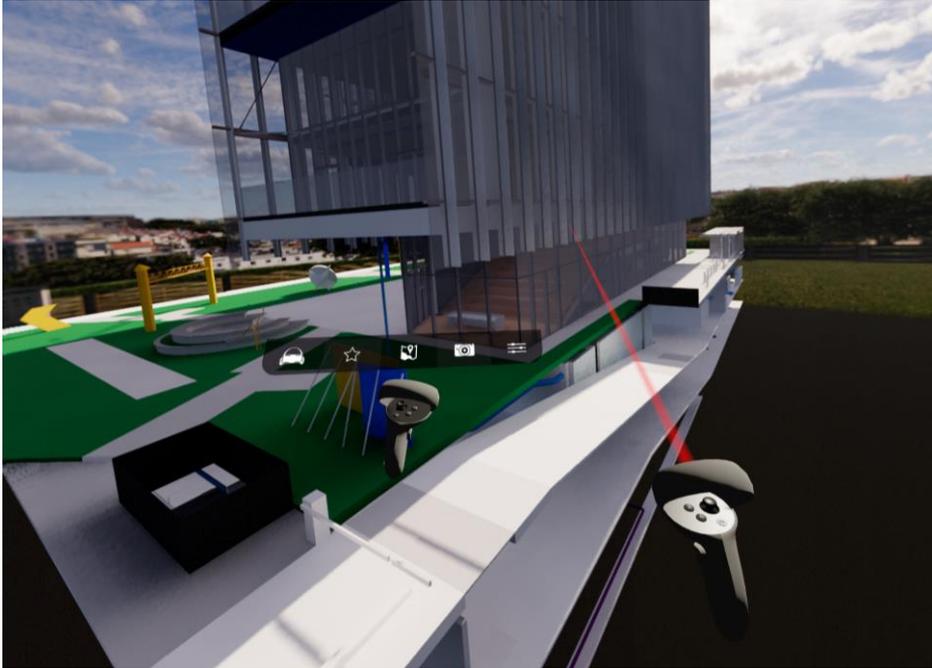
Energy efficient design, Lifecycle Assessment

7D Facility Management

AsBuilt data, Technical documentation

Building Information Modelling

Augmented reality for model **inspections**, **coordination** and **clash detection**



Sustainability approach

In consecutive concrete steps to achieve sustainable ambitions



Sustainability and EHS

- Energy savings in HVAC
- Reuse of WFI/PW, cold chain optimization.
- Disposal of biohazardous materials.
- Water conservation and recovery
- CO₂ emissions reduction
- Resource consumption (water, electricity)
- Waste recycling rates
- Compliance with environmental standards (e.g., ISO 14001)



Sustainability Challenges & Opps in LS facilities

Energy Consumption

High energy usage, primarily from non-renewable sources

Greenhouse Gas Emissions:

Use greenhouse gases, PFCs which have high global warming potential

Water Usage:

Manufacturing is highly water-intensive

Chemical Use and Waste:

Use of hazardous chemicals posing environmental and health risks

Material Sourcing:

Limited availability and extraction and refinement is environmentally challenging.

Supply Chain Sustainability:

Sustainability impact of suppliers (Scope 3 emissions) is significant

Sustainability Targets



CO₂ reduction



Water reuse



Energy efficiency



Circularity

Compliance Targets



Validated systems



Contamination control



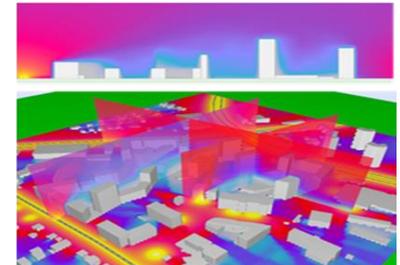
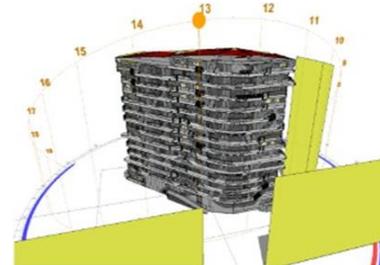
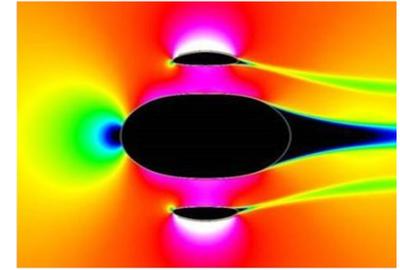
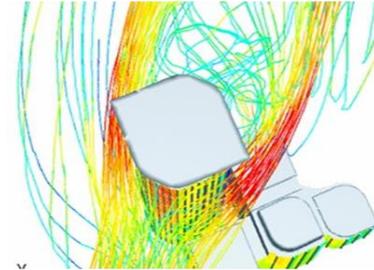
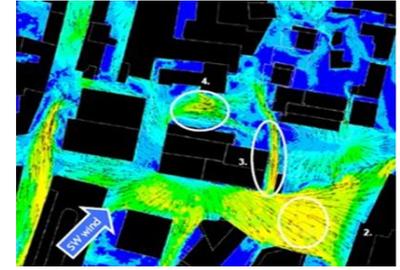
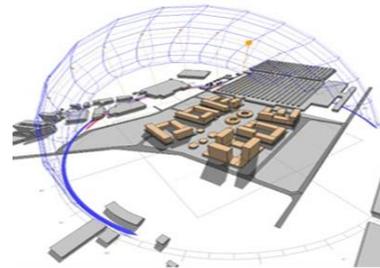
Cleanroom standards



Auditability

Building Physics

- **CFD** Computerized fluids dynamics
- Sustainable master planning design
- Sustainable design consultancy
- Life Cycle cost assessment
- Technical due diligence
- Energy management & efficiency
- Assessments
 - Environmental impact
 - Sun path and solar signature
 - Natural & mixed mode
- Daylight & Thermal comfort analysis
- Acoustics and noise assessment
- Façade environmental assessments
- Dynamic Thermal Modelling



Project management

Deerns Project Managers

- Prince2 ® Certified
- Strong technical background, thus understand:
 - design related issues
 - associated costs
- 360° expertise, cover all project phases
 - conceptual design to close out phase
 - schedule management
 - cost management



Project reporting to fit client needs

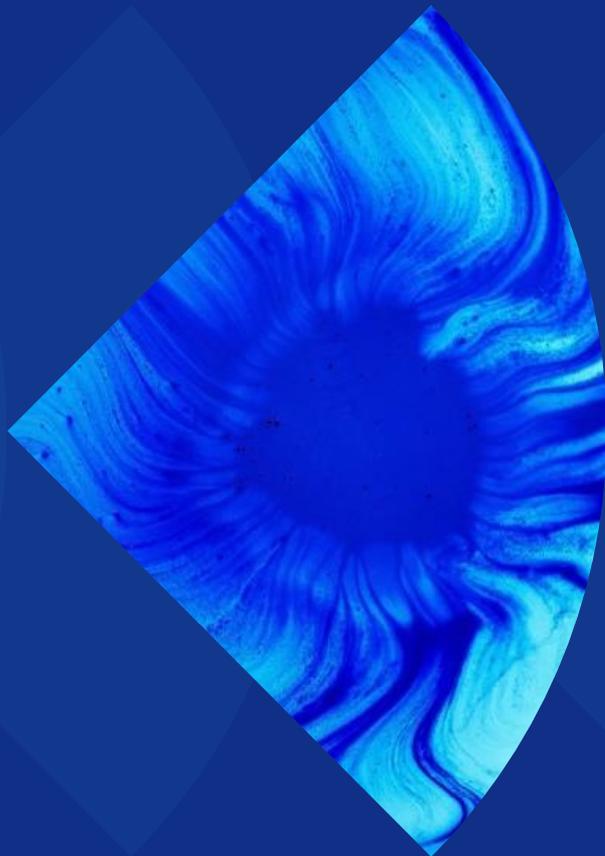
- Supported by Senior Management
- DEERNS project sponsor on complex projects
- Strong ethics as per DEERNS policy
- Internally developed tools for project control.

Deerns supports throughout building lifecycle phase
Strategic to concept | Construction to operation

Construction management

- Execute construction management across Europe
- Flexibility to build ad-hoc teams:
 - blending full time site personnel & part time resources
 - On demand to enhance cost effectiveness.
- State of the art software platforms
 - consistent data management throughout the entire C&Q lifecycle
 - incl. management of submittals, punch list resolution, hand over
- Constructability studies incl. evaluation of opportunities for modularization and off-site construction





Project References

EPCM for manufacturing GMP Environments
and laboratories



Confidential client , Italian Switzerland

Manufacturing site expansion

ON-GOING New production area located in building expansion for **effervescent** oral solid dosage

Scope

GMP Review, Basic Design, Building Permit Desing for MEP Systems, HVAC, clean utilities and architectural design of pharmaceutical finishing

5,000 m² Building
2,600 m² Clean Rooms

Cleanliness Class: EU GMP "D"



Archimica spa, Italy

Non-sterile API GMP KILOLab and Chemical QC Lab

Full Revamping of existing building with new cGMP API KILO Lab, QC chemical Lab, Pharmaceutical warehouse and canteen

Scope

URS Definition, Conceptual Design, Building Permit, Basic Design, Tender support.

2,700 m² Building
1,000 m² Clean Room

Cleanliness Class: EU GMP "D"



Fresenius Medical Care, Italy

New Clean Room Area IMD4

New production area located inside prior warehouse & fast track schedule

Scope

URS Definition, Conceptual Design, Building Permit, Detailed Design, Construction Management and Equipment Hook-Up Design

6,000 m² Building
2,000 m² Clean Room

Cleanliness Class: ISO 8



Fresenius Medical Care, Italy

New Clean Room IMD 5

Upgrade & expansion of existing production facility

Scope

URS Definition, Conceptual Design, Building Permit, Detailed Design, Construction Management & Equipment Hook-Up.

4,500 m² Building
2,500 m² Clean Room

Cleanliness Class: ISO 8



AXXAM Biotech Milan campus. Italy

5.000 m² biotech laboratories building

New stand-alone 5.000 m² lab building to be integrated within MIND Village North Milan.

Full range of state-of-the-art biotech research & test incl. Cellular Biology, Biochemistry, Molecular Biology, Cell factory.

Scope

URS Definition, Conceptual Design, Basic Design, Tender Support

5,000 m² Building
2,000 m² BSL-2 Labs

1,000 m² Clean Room
Cleanliness Class: ISO 8



MSD Biotech, The Netherlands

New HVAC for facility

Revamping of Sterile injectables department

Scope

- Advanced conceptual design + constructability study for constrained space
- Analyze operational requirements
- Evaluate technical and financial options + design scenarios

Sterile Environment



Merck KGaA, Spain

Upgrade existing OSD manufacturing line

Design & construction: existing area incl. new equipment installation

Scope

- Constructability study to ensure installation of FBD support structure minimize the down-time
- Verify progress & quality of installation of supplied structure

Equipment Hook up design and installation



Fagron, Spain

New Laboratory for Genomic and Proteomic studies

Design and construction management of state-of-the-art laboratory existing building.

Compliance: EU GLP and FDA requirements

Scope.

- Design to allow maximum flexibility; easy reconfiguration for future needs.
- optimized energy consumption: replacement façade materials
- fast-track construction schedule with no impact on adjacent facilities.

High sustainability requirements



Patheon, ThermoFisher company, NL

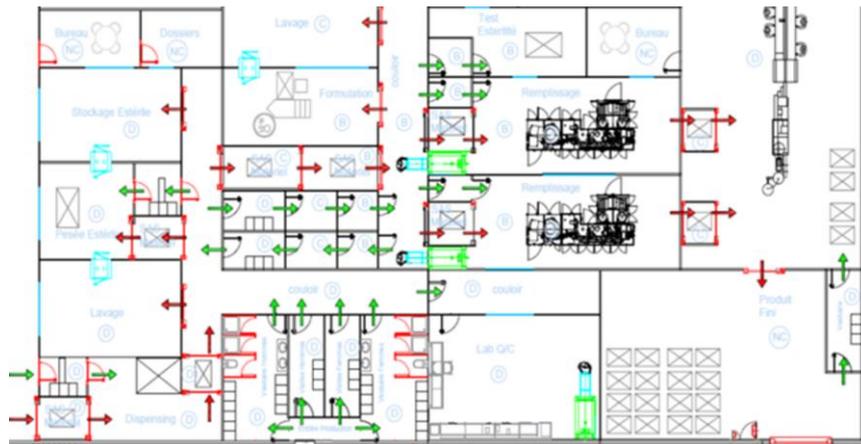
Upgrade of HVAC systems | Soft Gel capsules filling facility

Modifications of HVAC cubicle system for capsule filling area GMP regulations compliance

Scope

- increase air flow rates
- install pressure cascade between cubicles & corridor
- risk based design approach: C&Q activities minimised shut down duration

ISO 7 condition cubicles
ISO 8 corridor



BioLynk, Spain

Conceptual design | New sterile production facility

Conceptual Design in constrained space a fully equipped sterile suspension manufacturing area

Scope

- special attention to lay out arrangement: ensure unidirectional flows for personnel & material

High classification requirements



Danone Nutricia, The Netherlands

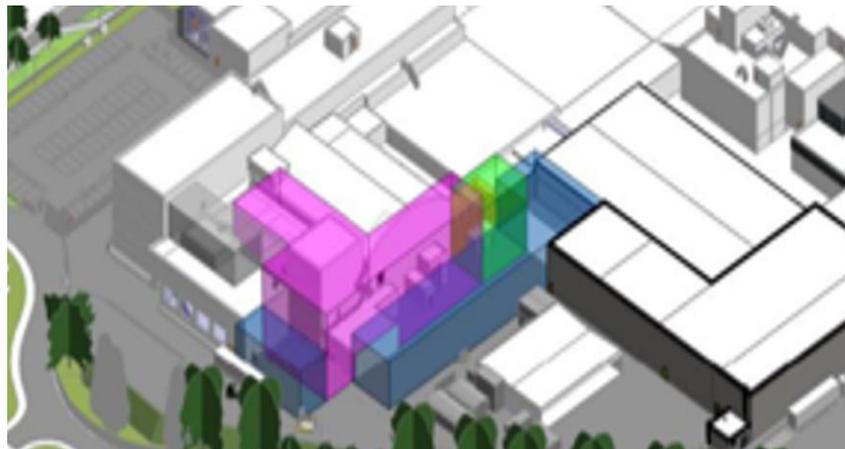
Integrated state of the art laboratories, offices & pilot lines

Design of innovation centre fit out

Scope

- Baby Nutrition & Medical Danone products: Overall design of laboratories, offices and production pilot lines
- Focus on ergonomics, efficiency & comfort of R&D personnel

22,000 m² Clean Room



Nestlé Health Science, The Netherlands

Expansion baby nutrition

Detailed design & construction supervision for internal plants

Scope

- Support tender phase & post order technical assistance incl. review/approval of construction drawings & calculations
- Advisor on management & maintenance of the installations

15,000 m² project
€80 mln investment

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Get in touch

