

# AZO® e&s

## Pre-Engineering, Proofs of Concept & Feasibility Studies all from a single source

- Analyses
- Conceptualisation and Planning
- Potential Media Consumption
- Technology Management
- Documentation
- Visualisation

### Our mission

As one of the most experienced manufacturers of plants and systems for automated materials and processes handling, we know exactly what the number one priorities are when developing production facilities that are viable for the future.

Our engineering team, composed of AZO experts, will support you with services relating to a multitude of questions on plant engineering and construction and making sustainable and effective use of your production plants.

### We deliver solutions

We provide proofs of concept, conduct feasibility studies and analyse your processes. At the same time, comprehensive project management services are also available to you, as are individual planning and development packages. Likewise, we can research suitable process technologies on your behalf.

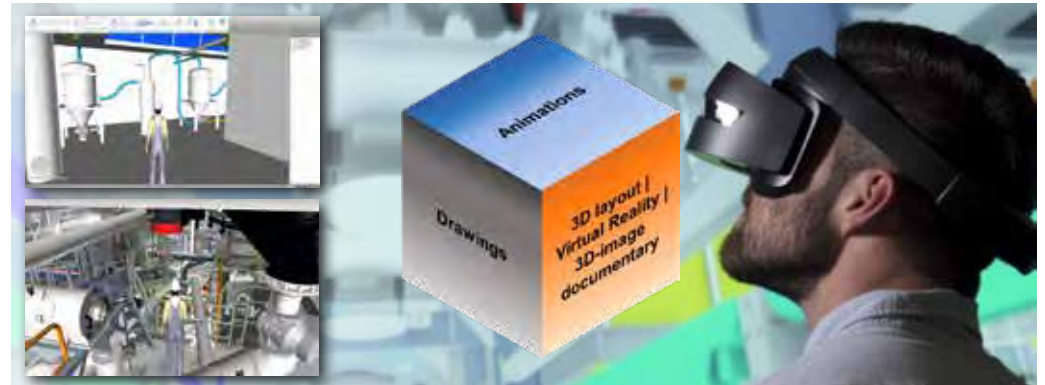
Our comprehensive understanding of production processes in the sectors of foods, pharmaceuticals, chemicals, cosmetics and plastics guarantees our ability to develop tailored solutions for you. A main

focus of our work is retrofits: plant refurbishment, expansion of existing plants, bringing control engineering up-to-date and in compliance with requirements. We can assist you by using our individual 3D laser scans on your site for reliable planning of plants. We can conduct a survey of the current situation for you, support you in establishing the basis for the controls system and in updating plant documentation. The focus is always firmly maintained on keeping plant downtimes to a minimum and sequential commissioning in plants that are in production.

## SERVICES

Greenfield  
AZO Brownfield  
PRE-ENGINEERING  
Retrofit  
3D-Scan  
Punkt-point cloud  
As-Built Modell  
VR

### 4 Business Divisions – 1 collaborative engineering



Methods of representation and visualisation improve understanding and are the guarantee for a result that matches expectations exactly



## Range of services provided by the AZO® e&s department

### Analysis

#### Raw materials analysis:

- Safety data sheets
- Technical specifications
- Explosion characteristics
- Raw materials analysis
- Preparation and documentation for product data

#### Analysis of formulations/recipes:

- Varieties of formulations/recipes
- Structure
- Components
- Cross-contamination formulations
- Required dosing rates
- Annual capacities

#### Process analysis:

- Types and sizes of containers
- Timings for adding components
- Media
- Material flows / Staff
- Cleaning

#### Review of the current situation:

- Equipment
- Buildings
- Control engineering
- Process / safety

### Design

#### Block diagram:

- Preliminary / detailed planning
- Prioritisation of information flows
- Storage & production areas, zones, travel and transport paths, logistics
- Manpower planning
- Interfaces

#### Process flow diagram:

- Process flow
- Components & structure
- Schematic diagram
- More detailed representation

#### Piping & instrumentation Diagram:

- More detailed process flow
- EI&C symbols
- Defined sizes & components
- Dependencies as regards mechatronics

#### 2D layout:

- Components
- Integration of existing buildings
- Routes for staff
- Product flows
- Storage capacities
- Maintenance rooms
- Required production areas

#### 3D layout:

- Production facilities
- Representations for specific sectors
- Detailed height requirements
- Location of equipment
- Analysis of specific problem areas
- Plans for penetration and loading plans

### Media

#### Considerations regarding media:

- Media property check
- Media survey

#### Interface consideration:

- Existing equipment
- Coordination for new plants

#### Demand & space planning:

- Guarantee of supply
- Communications with suppliers
- Maintenance consideration
- Spare parts

#### Consumer list:

- Connected loads
- Consumption data
- Detailed depiction of individual loads/data

### Technology management

#### Process equipment:

- Functions
- Interfaces
- Areas of application
- Ongoing communications (suppliers)

#### Benchmark for creating concepts:

- Arriving at solutions for specific projects
- Enquiry process
- Clarifying the standard of current technology
- Coordination of project content

#### Checking integration / layout:

- Detailed coordination
- Planning security
- Compatibility
- Coordination for specific sectors

#### Bid process / documentation:

- Coordination & preparation
- Project communications
- Consistent
- Phased arrangement

### Documentation

#### Design base:

- General project information
- General site information
- Specific plant parameters
- Communication interfaces

#### Functional specification:

- Mechanical plant functions
- Control engineering functions

#### Safety requirements documents:

- Risk assessment
- Considerations regarding safety requirements (dust explosion)

#### Existing plant / equipment:

- Records of measurements/photos
- Custom documentation
- Acceptance of draft project

#### Retrofits:

- Preparations for control engineering and mechanical retrofits
- Custom preparation

#### 3D image documentation:

- Based on 3D scan technology
- Project content and result
- Custom preparatory work

