

## Layout Planning



### Our service ...

We offer you central expertise for all of your layout planning needs. Our spectrum of services ranges from preparation of your concept layout draft all the way up to detailed arrangement planning. Our domain is the interdisciplinary implementation of all the requirements placed on the locality of a chemical plant – both for investment projects and for operations management.

We provide you with flexible support for your individual solution and can also assist in the preparation of layouts for standard plant types. Let us help you in the professional preparation of your:

- 3D layout models and 2D arrangement plans;
- space requirement and feasibility studies;
- maintenance, assembly and disassembly concepts;
- plant and building concepts;
- variant comparisons and assessments.

### ... is your gain.

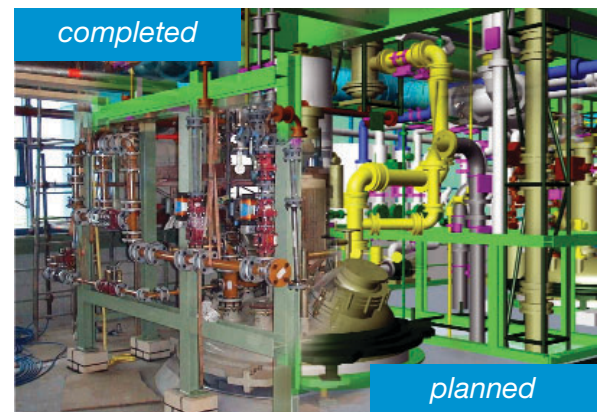
The use of planning standards together with compatible tools ensures the high level of efficiency of our planning work, thus minimizing your planning and life-cycle costs. Avoid costly misplanning by involving us in your projects at an early stage. We provide transparency in the integration of the various disciplines and offer you solutions from a single source. You benefit from our experience gained in numerous projects in the field of arrangement and layout planning, along with the associated potential for costs savings.

Your goals are our goals. Our most important tasks with respect to your problems are to:

- meet planned completion deadlines;
- achieve low planning, operating and investment costs during planning;
- ensure the highest degree of quality.

We are aware of your concerns and will find solutions!

- Consideration of adequate space for maintenance and operating activities.
- Piping routes are kept short for efficient material flow.
- Easy accessibility and operation of apparatus and valves.
- Paths for plant personnel are kept short.
- Dependable and error-free planning for on-schedule performance at the job site.



The consolidation and coordination of the requirements imposed by all disciplines involved, such as piping engineering, construction, steelworks, HVAC, process control, occupational health and safety, safety engineering and permitting, is an important task as we plan the site.

The objective is to enable the trouble-free erection of your plant or plant components, and a smooth workflow is vital to remaining within budget and on schedule. Our expertise, performance, creativity and team spirit all make cost-effective contributions to the success of your project.



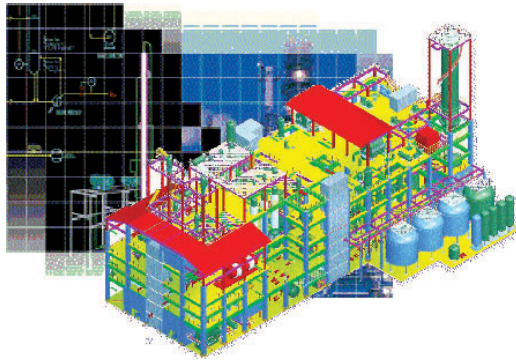


As you know, short paths are crucial for the smooth handling of orders – and we are always nearby! Flexibility in scheduling and deployment are vital for reliably fulfilling your requirements. That is why you can always find our employees close to your operating facilities or directly on site for your projects, providing you with contact persons who can be reached quickly and directly.

### Our approach

Our planning expertise becomes apparent in the transparency of our processing methods:

- the use of checklists, coordination summaries and rule catalogs based on many years of planning experience;
- the keeping of decision-making records so that planning work already completed can be easily traced back;
- the use of modern CAE tools for realistic visualization.



We use these tools to ensure that all essential requirements are considered and fulfilled. The value of our planning activities for you is the ability to preclude problems in the execution of your project, providing you with greater assurance of achieving your objectives.

Our array of planning tool-based services ranges from the generation of conventional two-dimensional drawings to preparation of intelligent, three-dimensional computer models, with all the associated benefits.

We use standard commercial CAE software to perform our work for you:

- Microstation;
- Intergraph PDS 3D.

We also provide products specific to our own branch of industry:

- Bayer ASP (2D arrangement planning software);
- Bayer AGAB (operational hazard prevention planning).

The unwavering use of consistent, intelligent planning tools means that we can complete your project without redundancies or errors. The results of this process enable in most areas the computer-assisted generation of planning results, such as automatic generation of 2D arrangement plans and equipment drawings from 3D models. This means that you are provided with “conventional” and digital documentation that can be directly used as is for subsequent follow-up projects and plant extensions.

- Automatic generation of planning results.
- Consistent, redundant-free processing.
- Uniform documentation that can be reused in subsequent projects.

Defined interfaces and formats ensure smooth, interdisciplinary exchange of data with other professional disciplines for the preparation of flow diagrams and specialized piping planning.

### References

- Bayer CropScience multi-purpose plant
- Bayer Polymers BPA/SPC plant, China
- Bayer Polymers LDA plant, China

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