



**You have the goal.
We know the way,
Our suitable offer**

T&O FabPlan

The way to a successful master and structure plan!

Ihre

T&O Unternehmensberatung GmbH

Elsenheimerstrasse 47

80687 München

Unternehmerische Höhenflüge fangen mit Tiefgang an
T&O geht ins Detail, damit das große Ganze stimmt

01 | Goals ▶ Page 4

02 | Performances ▶ Page 7

03 | Procedure ▶ Page 10



01 | Our goals for your factory

We make factories!

Today's factory – ready for tomorrow

Lean & economical



Transparent, efficient and waste-free assembly process and material flow with maximized space efficiency

Flexible, fit & faster



Cost-saving and rapid change to market and production conditions

Attractive

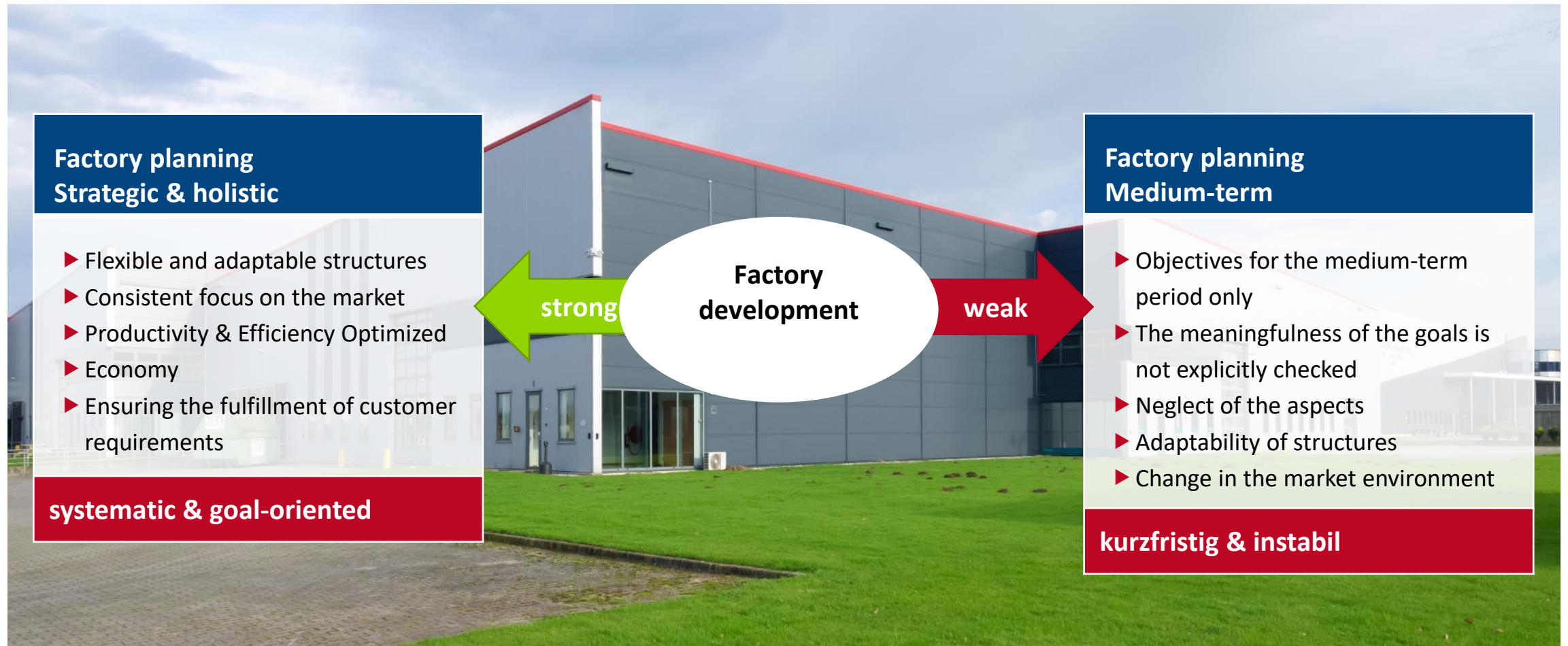


Optimization of working conditions in ergonomic and friendly functional surfaces

Value Creation 4.0



Agility & Digitization



The planning of a factory is the chance to align investments with the corporate strategy!



02 | The T&O Lean Services

T&O goes into detail,
So that the big picture is right.

T&O FabPlan – the general planning *



Master and structural planning

- ▶ Potential analysis
- ▶ Feasibility study
- ▶ Variant investigations, strategic orientation
- ▶ Greenfield
- ▶ Brownfield
- ▶ Global Footprint

Functional planning and implementation

- ▶ Expansion & Restructuring
- ▶ Site Merge
- ▶ Detailed planning of production, warehousing and logistics as well as offices and workshops
- ▶ Design of functional specifications
- ▶ Use of digital planning methods (BIM-supported planning)

Building planning and implementation (in the network)

- ▶ Architectural planning of complete locations (domestic and foreign) Lph 1 – 9
- ▶ Structural and TGA planning in phases 1 – 9
- ▶ Green Building Planning (Energy and Resource Efficiency) in Phases 1 - 9

Integration, project and cost management

- ▶ Project management with regard to planning, procurement, commissioning of factories and equipment
- ▶ Change management
- ▶ Assumption of project responsibility and client support

T&O FabPlan - connects technology, organization and people



Production

- ▶ Assembly/pre-assembly/production
- ▶ Ancillary workshops
- ▶ Production logistics/intralogistics

Warehouse and Logistics

- ▶ Storage areas (conventional, automatic)
- ▶ Goods receipt, goods issue, shipping, ancillary areas
- ▶ Material flow concepts, conveyor technology

Bureaus

- ▶ Workshop and warehouse offices
- ▶ Office and administration buildings

Workshops in industry and public enterprises

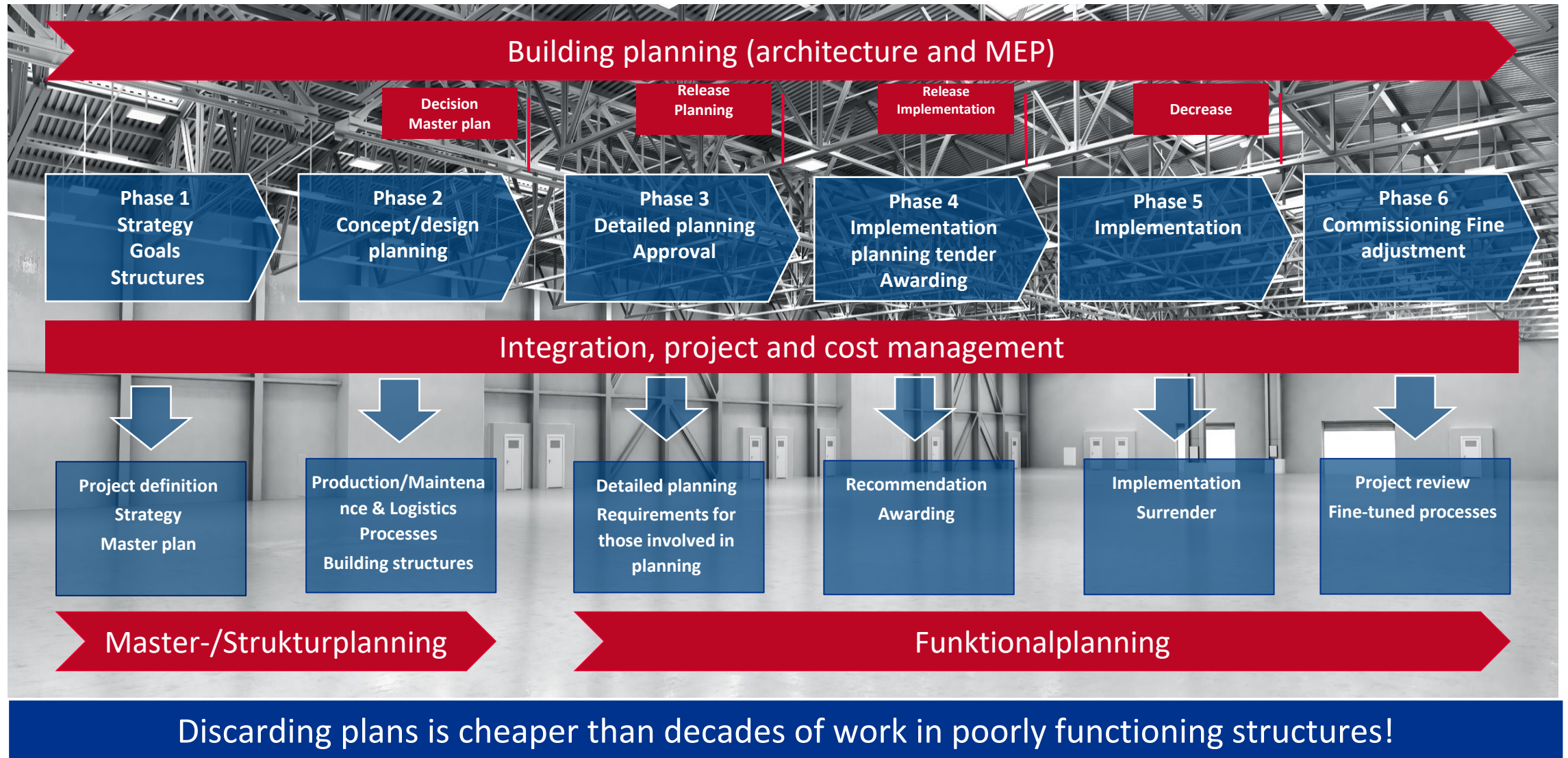
- ▶ Maintenance workshops, buildings and machines
- ▶ Tool and fixture workshops
- ▶ Workshops in public companies

In-depth knowledge of factory processes and many years of successful project implementation



03 | T&O Vorgehensmodell

T&O optimises/designs factories through the strong community of a wide variety of disciplines and the associated holistic interlocking of services



Interval

Products, manufacturing processes and communication relationships are changing at ever shorter intervals. The existing growth problems can be compared to tree rings, similar to a tree. There's always something to come.

Factory struktur

The examination of the operational and strategic input variables along the entire logistical chain – right through to communication structures and ecology – leads to a creative process of optimization of the plant structure.

Strukturplans

Strukturpläne können dabei auf Basis vieler Entwicklungsvarianten Übersicht schaffen, die ökonomische Nutzung der Flächen fördern. Sie sind deshalb ein unverzichtbares Entscheidungs- und Steuerungsinstrument für das Unternehmen.

A master or structure plan is not so much a plan as a process and a way of thinking
A master or structure plan is an indispensable element of agile and successful corporate management

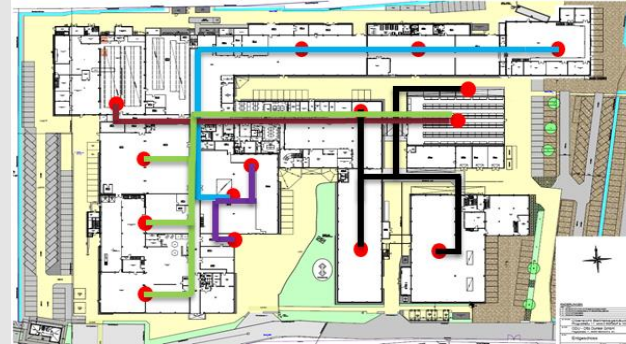
Agile Corporate Governance

03 | Contents Master and Structural Planning (selection)

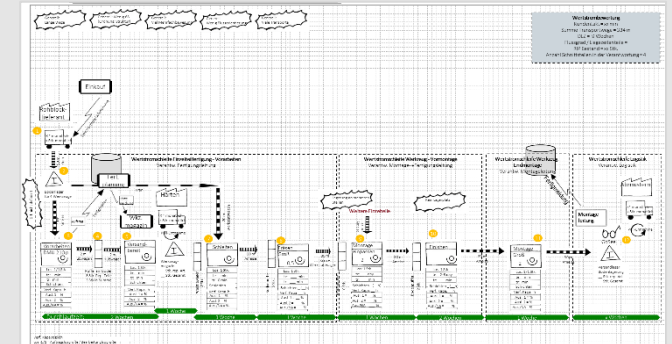
Location & Building Options



Material flow diagram



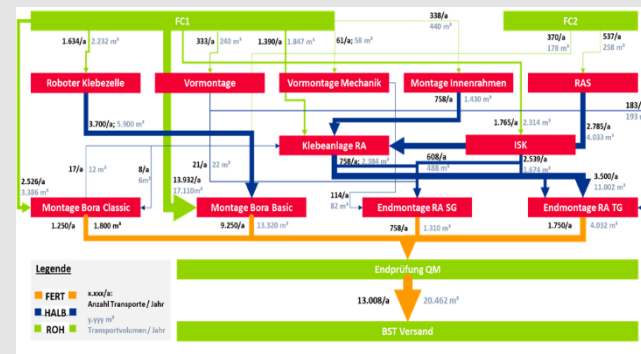
Value stream



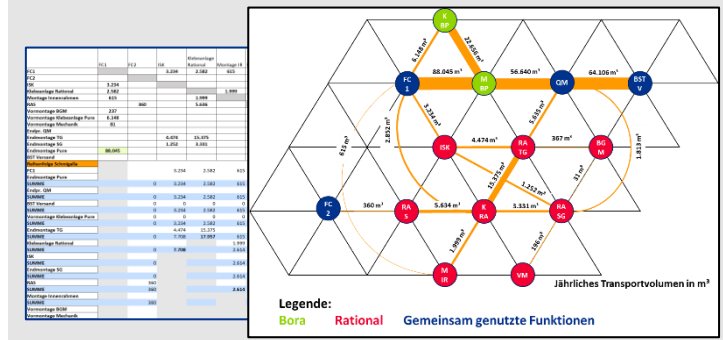
Structures

Struktur	1	2	3	4	5	6	7	8	9	10	11
1.000											
2.000											
3.000											
4.000											
5.000											
6.000											
7.000											
8.000											
9.000											
10.000											
11.000											
12.000											
13.000											
14.000											
15.000											
16.000											
17.000											
18.000											
19.000											
20.000											
21.000											
22.000											
23.000											
24.000											
25.000											
26.000											
27.000											
28.000											
29.000											
30.000											
31.000											
32.000											
33.000											
34.000											
35.000											
36.000											
37.000											
38.000											
39.000											
40.000											
41.000											
42.000											
43.000											
44.000											
45.000											
46.000											
47.000											
48.000											
49.000											
50.000											
51.000											
52.000											
53.000											
54.000											
55.000											
56.000											
57.000											
58.000											
59.000											
60.000											
61.000											
62.000											
63.000											
64.000											
65.000											
66.000											
67.000											
68.000											
69.000											
70.000											
71.000											
72.000											
73.000											
74.000											
75.000											
76.000											
77.000											
78.000											
79.000											
80.000											
81.000											
82.000											
83.000											
84.000											
85.000											
86.000											
87.000											
88.000											
89.000											
90.000											
91.000											
92.000											
93.000											
94.000											
95.000											
96.000											
97.000											
98.000											
99.000											
100.000											

Factory Sankey



Schmigalla Analysis



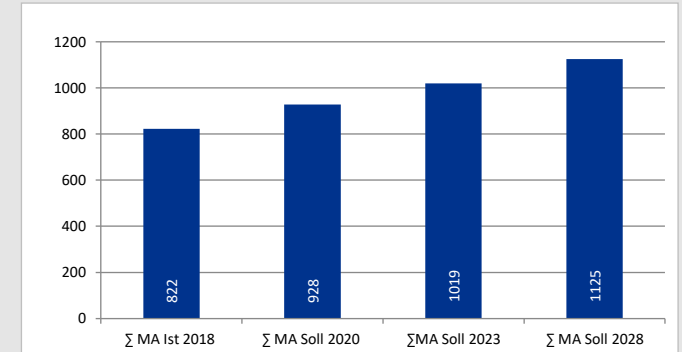
Area Survey

Area	Unit	2018	2020	2023	2028	Σ MA Ist	Σ MA Soll
Area 1	Unit 1	10	15	20	25	50	65
Area 2	Unit 2	20	30	40	50	100	150
Area 3	Unit 3	30	45	60	75	150	225
Area 4	Unit 4	40	60	80	100	200	300
Area 5	Unit 5	50	75	100	125	250	375
Area 6	Unit 6	60	90	120	150	300	450
Area 7	Unit 7	70	105	140	175	350	525
Area 8	Unit 8	80	120	160	200	400	600
Area 9	Unit 9	90	135	180	225	450	675
Area 10	Unit 10	100	150	200	250	500	750

Area analysis and development



Staff development



Material structure analysis

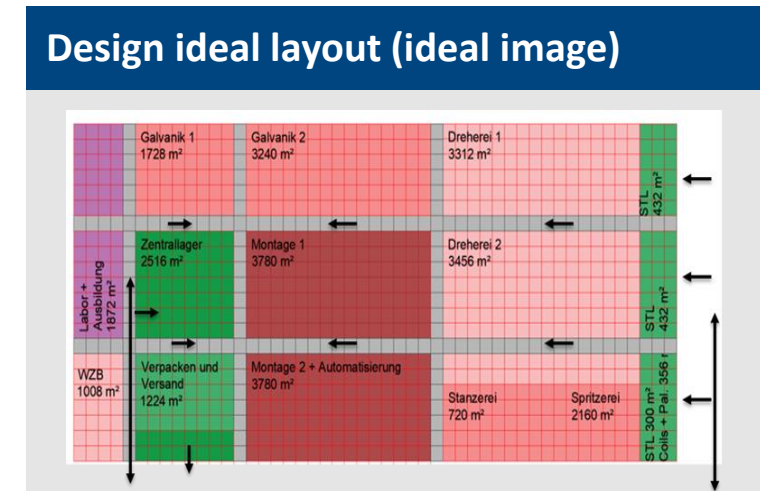
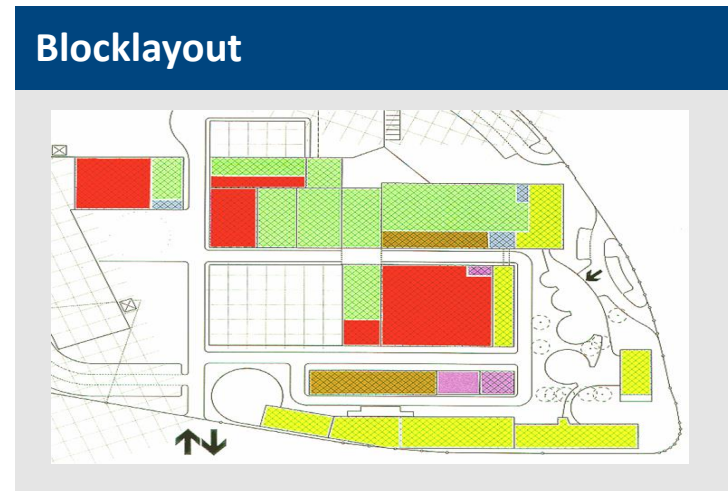
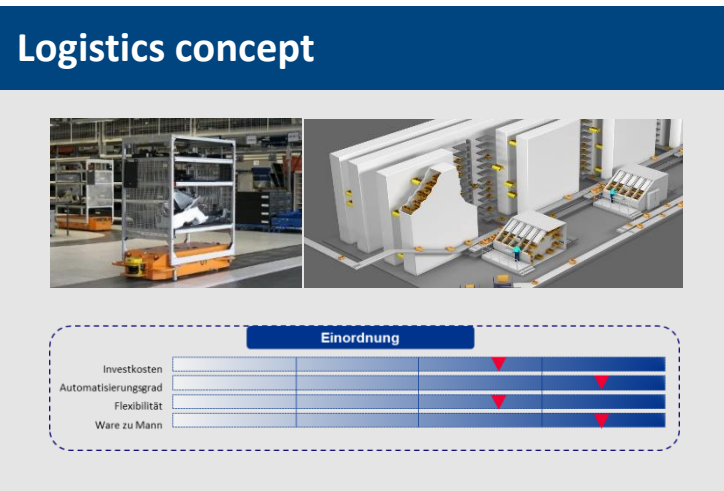
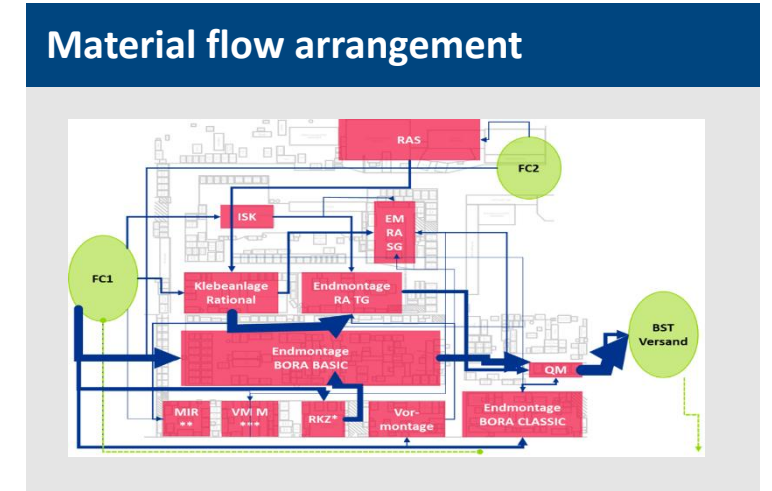
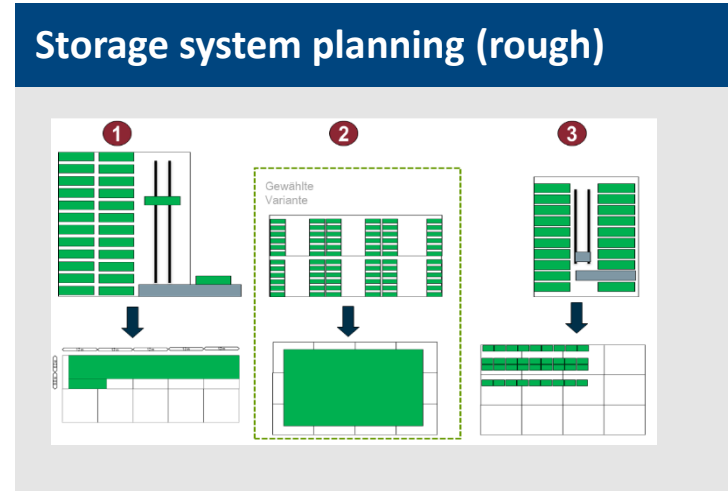
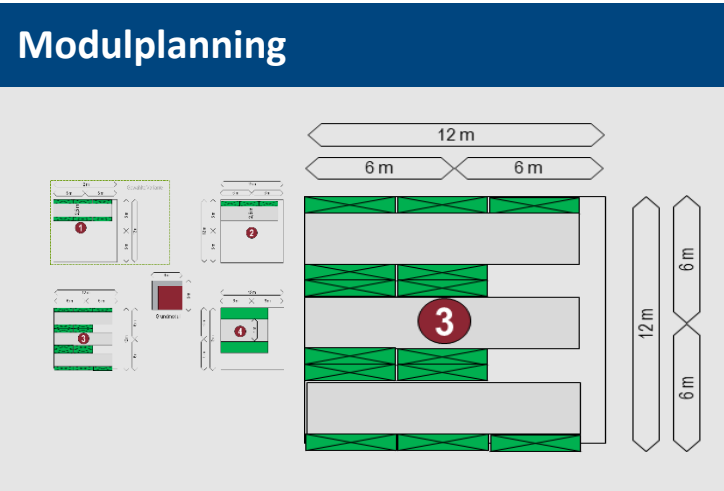
AKL	29247				Nur AKL Filter kein LagerFilter		
ABC - Kriterium	xyz Menge	x	y	z	zz	Summe	
A	121	552	1.405	45	2.123	10,9%	
B	63	506	2.975	256	3.800	19,5%	
C	21	308	7.613	5.616	13.558	69,6%	
Summe	205	1.366	11.993	5.917	19.481	100,0%	
%	1,1%	7,0%	61,6%	30,4%	100,0%		
Nicht bewegte Artikel						9.546	
geeignet für eine Verbrauchssteuerung						1.242	6%
bedingt geeignet für eine Verbrauchssteuerung						4.709	24%
nicht geeignet für eine Verbrauchssteuerung						13.530	69%
bewegtes Sortiment						19.481	100%

Resource

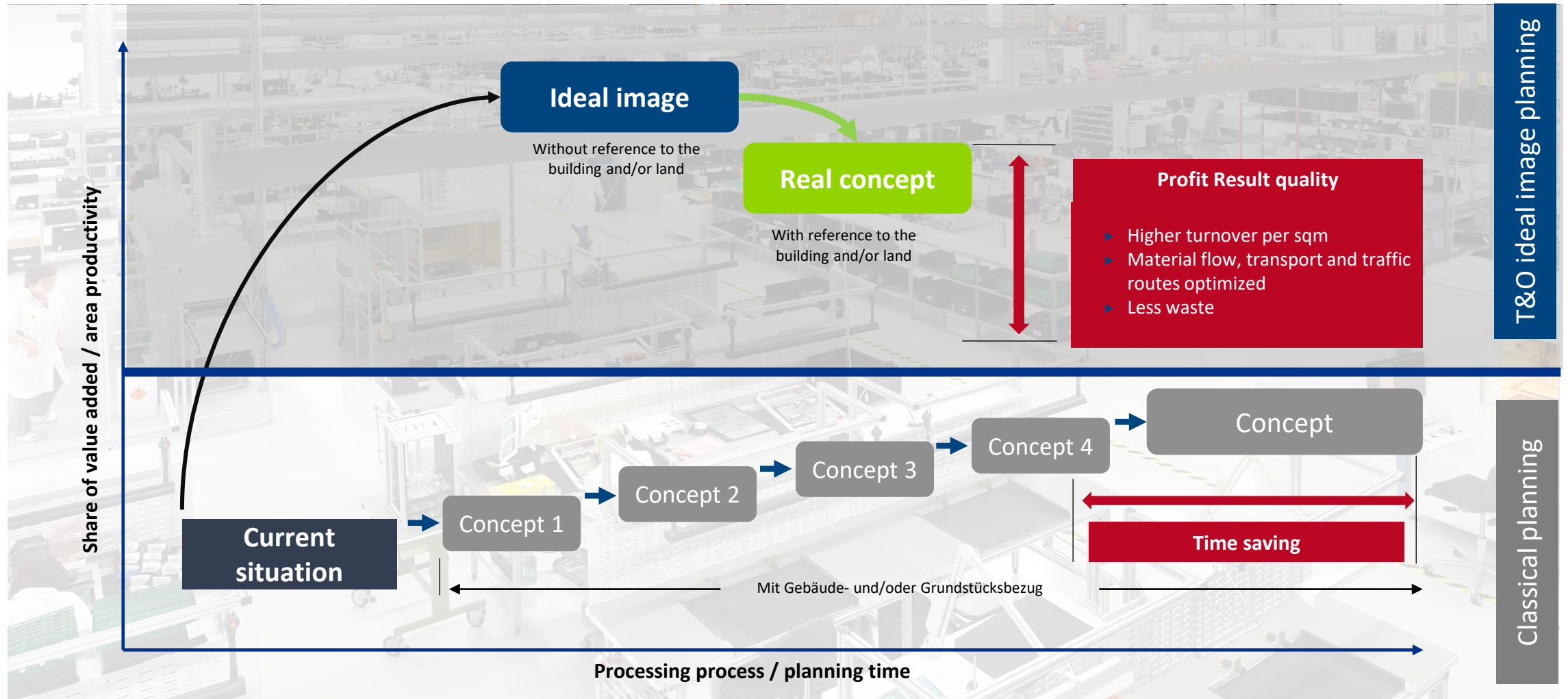
Bezeichnung	Verfügbare Jahreskapazität (PAP) (tatsächlich)	2018	2019	2020	2021	2022	2023	2024	2025
AKL	8.400	85,7%	86,9%	91,1%	102,0%	101,4%	101,4%	101,4%	101,4%
HRL	8.400	67,0%	72,7%	79,1%	88,0%	98,6%	98,6%	98,6%	98,6%
Stangenlager	8.400	60,9%	67,7%	74,5%	81,2%	87,2%	87,2%	87,2%	87,2%
Dreherei	8.400	104,6%	116,1%	129,4%	146,5%	165,9%	185,3%	185,3%	185,3%
Stanzerei	8.400	98,2%	102,2%	111,2%	123,7%	138,7%	138,7%	138,7%	138,7%
Spitzreiss	8.400	94,9%	102,2%	111,2%	123,7%	138,7%	138,7%	138,7%	138,7%
Werkzeugbau	2.800	96,3%	99,1%	62,0%	65,1%	67,0%	67,0%	67,0%	67,0%
Bandgalvanik	8.400	77,1%	102,7%	128,3%	153,9%	179,0%	179,0%	179,0%	179,0%
Schüttgutgalvanik	8.400	150,0%	211,5%	273,0%	334,4%	384,7%	384,7%	384,7%	384,7%
Gestaltgalvanik	8.400	69,8%	73,2%	76,9%	80,7%	83,0%	83,0%	83,0%	83,0%
Automatisierung	2.800	75,0%	78,8%	82,7%	86,8%	91,2%	91,2%	91,2%	91,2%
Automotivmontage	2.800	53,1%	60,6%	68,1%	78,1%	90,6%	90,6%	90,6%	90,6%
Automatenmontage	2.800	57,5%	65,7%	73,9%	82,1%	90,3%	90,3%	90,3%	90,3%
Kabelmontage	2.800	63,2%	70,9%	79,6%	89,4%	100,0%	100,0%	100,0%	100,0%
Handmontage	2.800	73,4%	69,2%	62,7%	56,7%	70,7%	70,7%	70,7%	70,7%
Wareneingang	2.800	23,5%	26,5%	29,5%	32,5%	36,9%	36,9%	36,9%	36,9%

Quo Vadis – Fundamentals of development



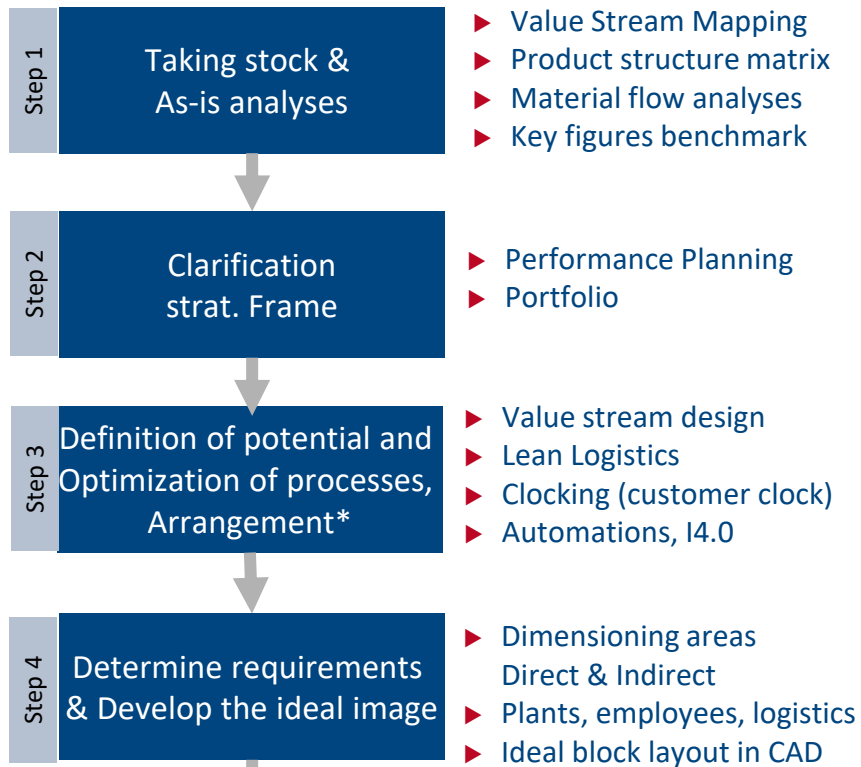


03 | T&O Planning Approach versus Classical Planning

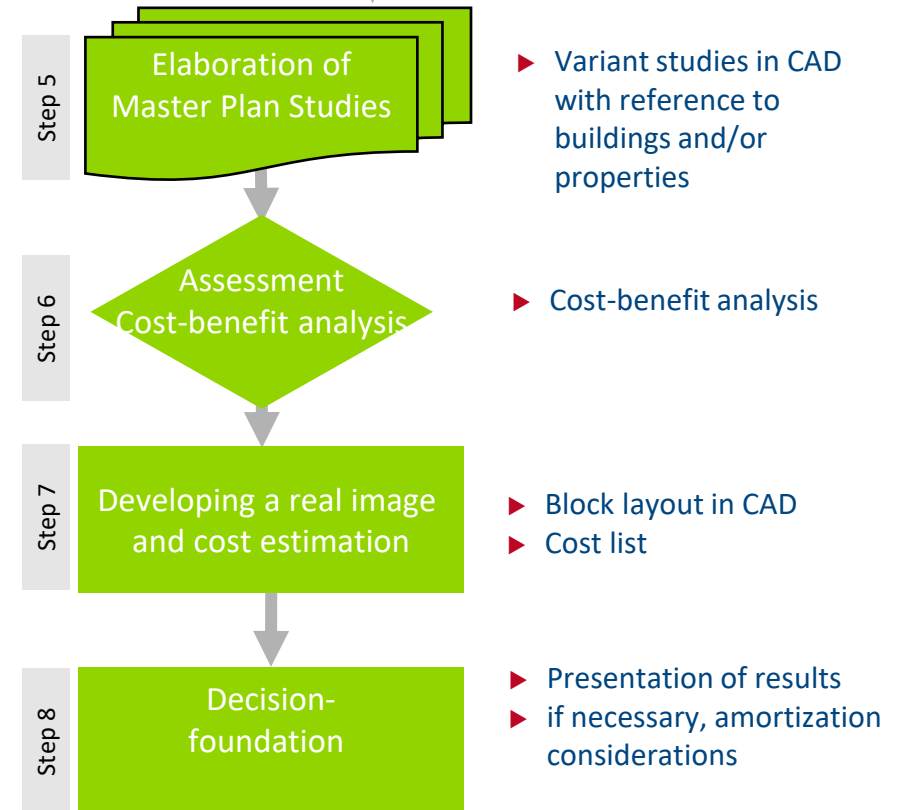


03 | In 8 steps to an optimized real image

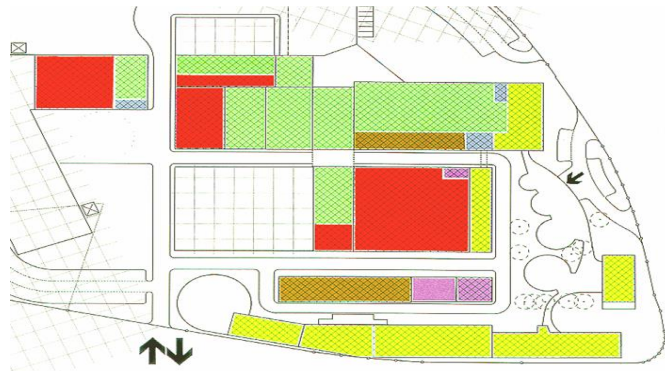
Ideal image development without reference to buildings and/or land



Real-world image development with reference to buildings and/or land



Concept studie



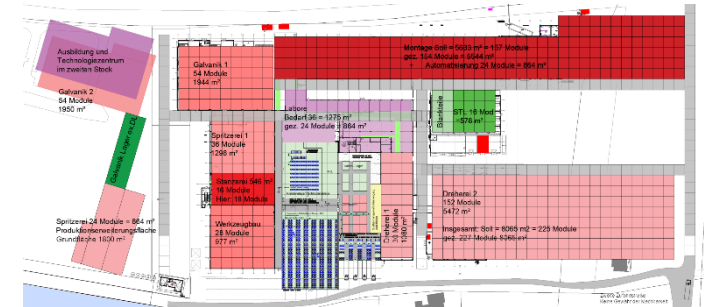
- ▶ Basic structuring of the factory premises
- ▶ Functional
- ▶ Central traffic and material flow axes
- ▶ Development and expansion axes

Variant representation



- ▶ Development of plant assignment variants
- ▶ Variant evaluation process (utility analysis/economical)
- ▶ Determination of the preferred variant

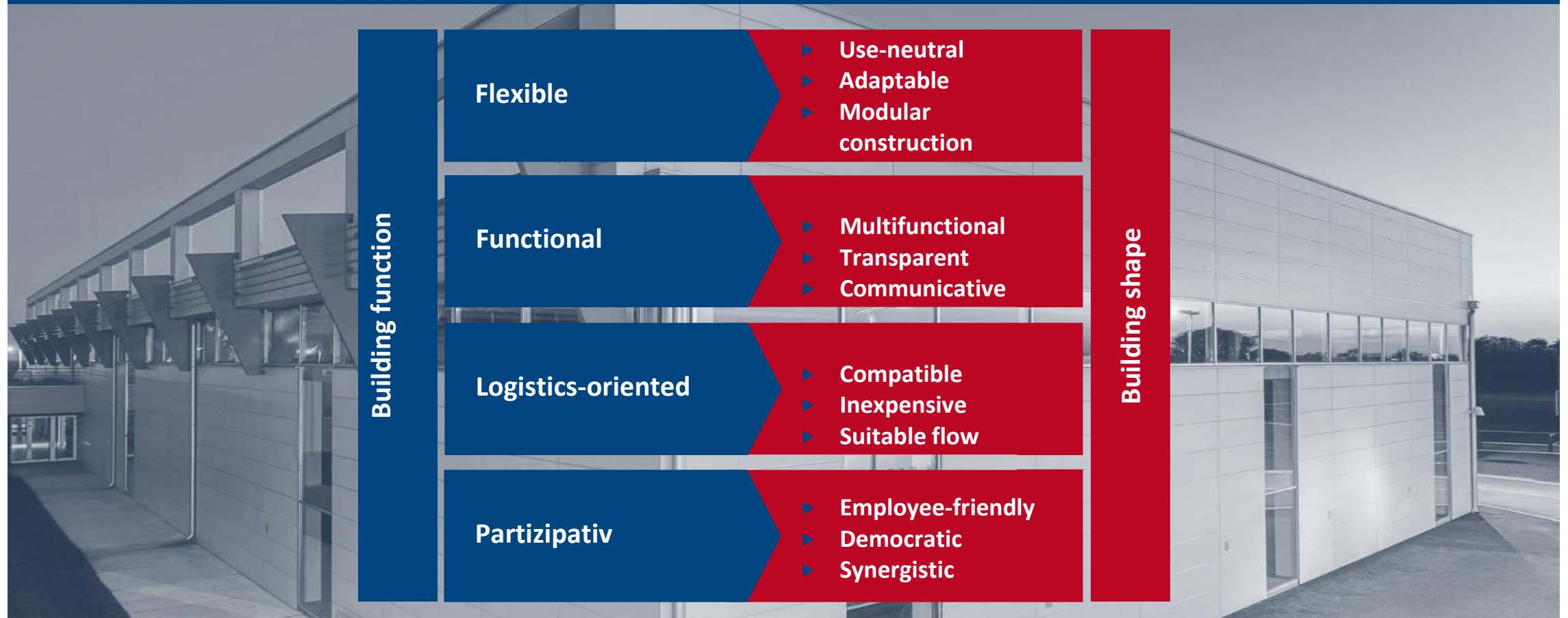
Optimal variant



- ▶ Elaboration of the preferred variant
- ▶ Definition of the building structure
- ▶ Block layout of the areas
- ▶ Traffic and material flow concept
- ▶ Implementation roadmap
- ▶ Investment

Creating an overview on the basis of many development options - promoting the economic use of valuable land

Definition of the requirements for a modern factory structure via the shape of the building



Discarding plans is cheaper than decades of work in poorly functioning structures!

03 | Improvements of T&O



+5% bis +20%
Productivity



+10% bis +30%
Punctuality



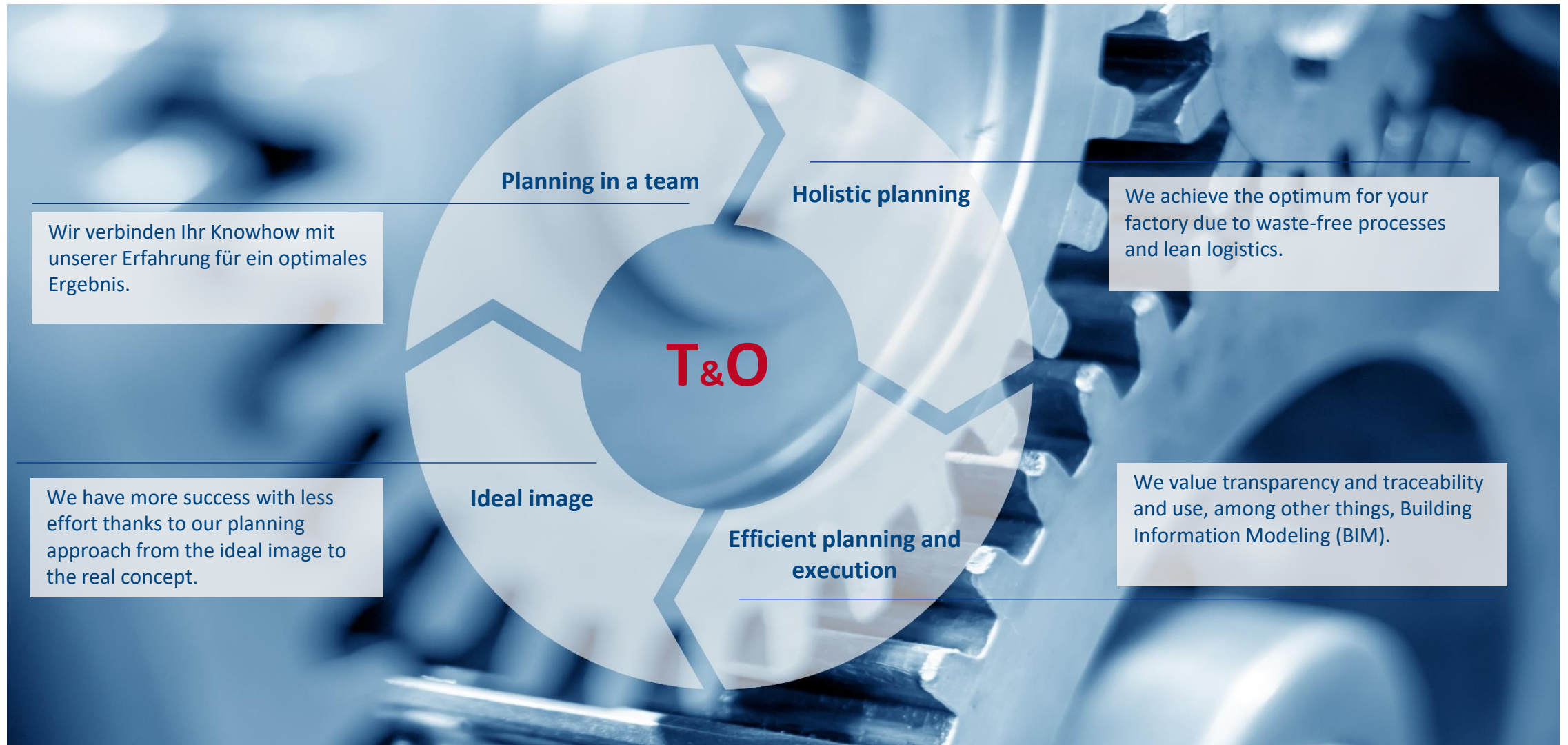
-10% bis -30%
Stock



-5% bis -15%
Cost



+5% bis +10%
Quality





**Technology needs people.
And people need organization.**

We do not view technologies in isolation from the organization in which they are applied. And we always see the organization as the sum of the people who work there. One cannot exist without the other two.

**Sustainable corporate success is only possible
if all three factors interact perfectly.**

To achieve this goal, we are here for you.

T&OGroup

info@tundo.de

togroup.company

T&O INDUSTRIAL
EXCELLENCE

info@tundo.de
info@tundo.ch

tundo.de/industrie
tundo.ch

T&O MOBILITY
MAINTENANCE

info@tundo.de
info@tundo.ch

tundo.de/mobility
tundo.ch

Lean & Green

info@tundo.de

lean-and-green.de

GEPRO

info@gepro.com

gepro.com

procon¹

office@procon.at

procon.at

agiplan[□].ch

info@agiplan.ch

agiplan.ch

ACADEMY
T&O Group

academy@togroup.company

togroup.academy

QUADRIGA
CONSULT

administrator@quadrigaconsult.com

quadrigaconsult.com

