WHAT THE CONSTRUCTION INDUSTRY SHOULD BE PREPARED FOR.

Dr. Jochen Wagner
20th April 2018

BMW GROUP

THE NEXT 100 YEARS

Rolls-Royce Motor Cars Limited

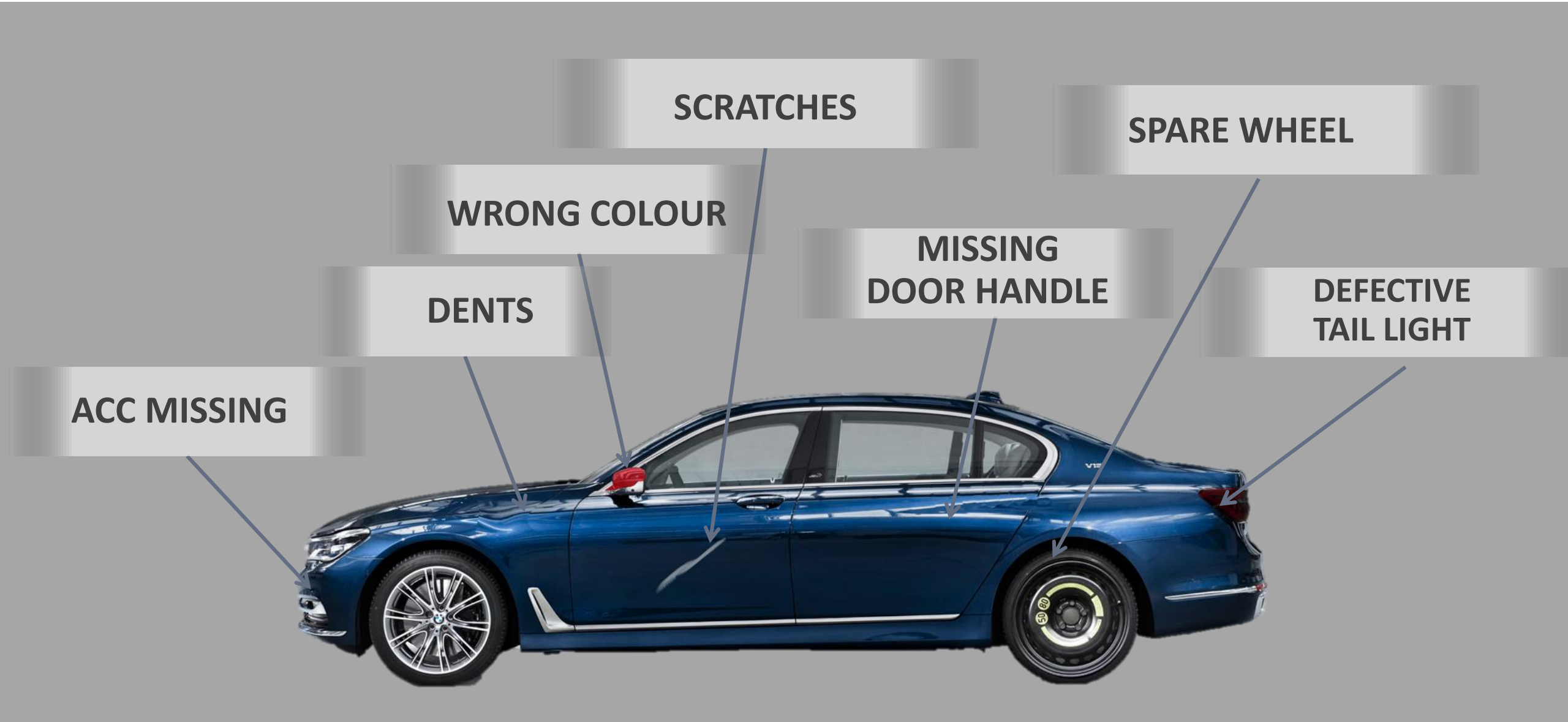
THE ACTUAL REPUTATION OF THE CONSTRUCTION INDUSTRY.

EXPECTATIONS FROM A CLIENT‘S PERSPECTIVE.

MY VIEW FROM A CONSTRUCTION ORGANISATION IN AN AUTOMOTIVE COMPANY.

BMW CUSTOMER EXPECTATION:
OPERATIONAL EXCELLENCE IN DAILY BUSINESS.

WHAT WOULD HAPPEN IF CONSTRUCTION COMPANIES BUILD VEHICLES…



WHAT IS DIFFERENT BETWEEN AUTOMOTIVE AND CONSTRUCTION? SERIES PRODUCTION VS. PROTOTYPES?

WHAT IS THE DIFFERENCE?
HIGHLY AUTOMATED PRODUCTION VS. CRAFT WORK.

BEFORE 1910

~~SERIES PRODUCTION~~ X

~~JUST-IN-TIME~~ X

~~PRODUCTION TIME 8HRS~~ X

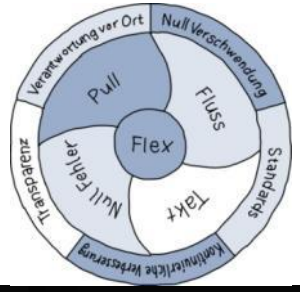
~~STANDARDIZED WORK~~ X

FIX ORDERS ✓

PRODUCTION IN A HALL ✓

WHAT IS THE DIFFERENCE?
AUTOMATED PRODUCTION ACROSS THE WORLD.

AUTOMOTIVE PRODUCTION.
WHAT ARE THE KEY SUCCESS FACTORS?

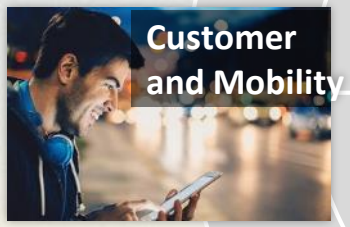


- Standardised Processes
- Just in Time Delivery
- Flow and Takt Production
- Waste Eliminiation
- Automation
- Continuous Improvement
- KPIs for Productivity
- Supplier Integration
- Employee Qualification
- Quality Orientation
- Modularisation
- Plattform Strategy
- Digitalisation
- Customer Focus

AND FINALLY A GLIMPSE INTO THE AUTOMOTIVE FUTURE.

FUTURE TRENDS IN AUTOMOTIVE?
CUSTOMER ORIENTATION IS THE ONLY CONSTANT.

FRESH THINKING.
ADAPTING AUTOMOTIVE TO A CHANGING ENVIRONMENT.



TREND ANALYSIS 2018

- Digitalization
- Modified Customer Requirements
- Market and Competitive Environment

6 TOP TRENDS

- New Technologies and Services
- Tightening of Regulatory Requirements
- Volatility

FRESH THINKING.
CORE ELEMENTS OF THE BMW STRATEGY (“ACES”).

TODAYS AUTOMOTIVES ARE DRIVEN BY DIGITALIZATION. NEXT IS AUTONOMOUS DRIVING.

Top View Remote

Crossing traffic warning rear / front

Night Vision

Lateral parking aid

Distance information

Lane departure warning

Lane keeping assistant with active side collision protection

Active cruise control with Stop&Go function

Rear collision prevention

Crossroad Assist

Wrong Way Assist

Lane change warning

Speed Limit Assist

Approach control warning with braking function

3D View

Top View

Parking assistant

Steering and lane control assistant

Speed limit and No Pass information

Active Park Distance Control

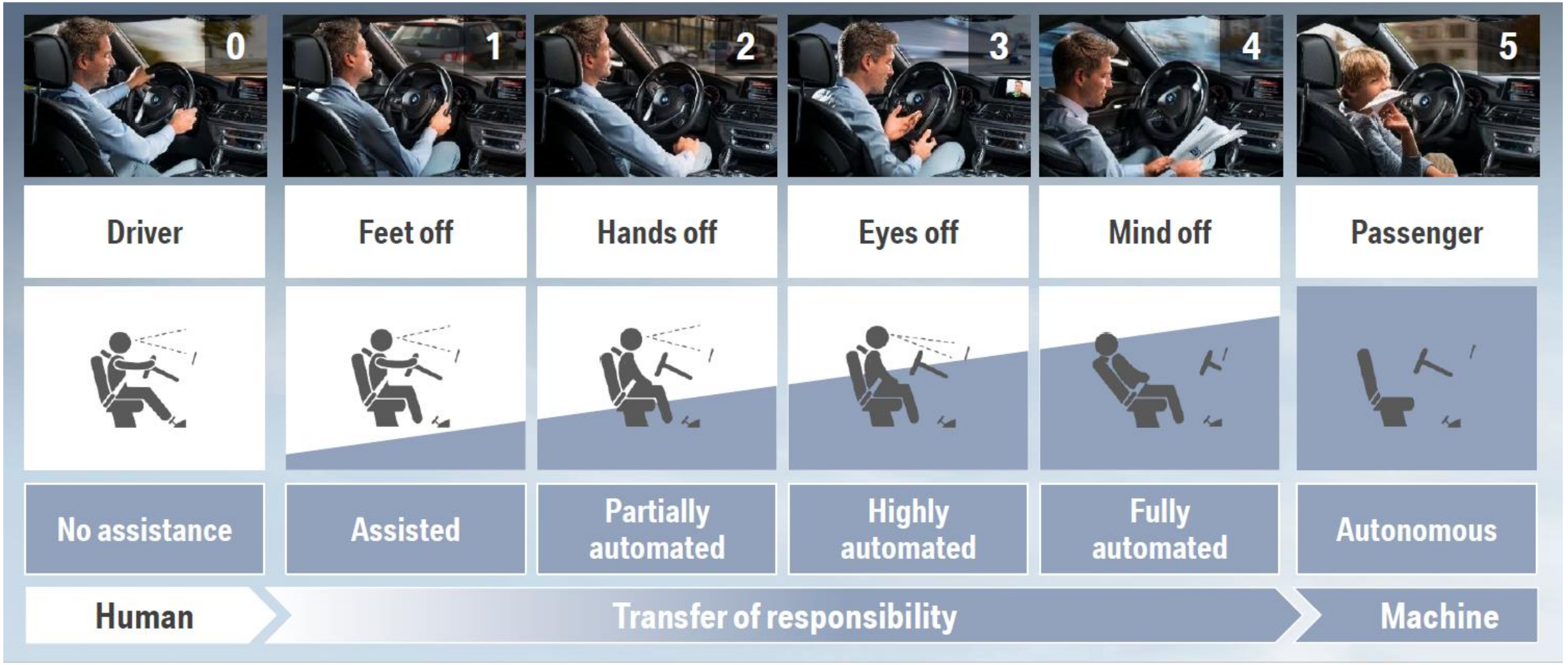
BMW Selective Beam

Panorama View

Remote Control Parking

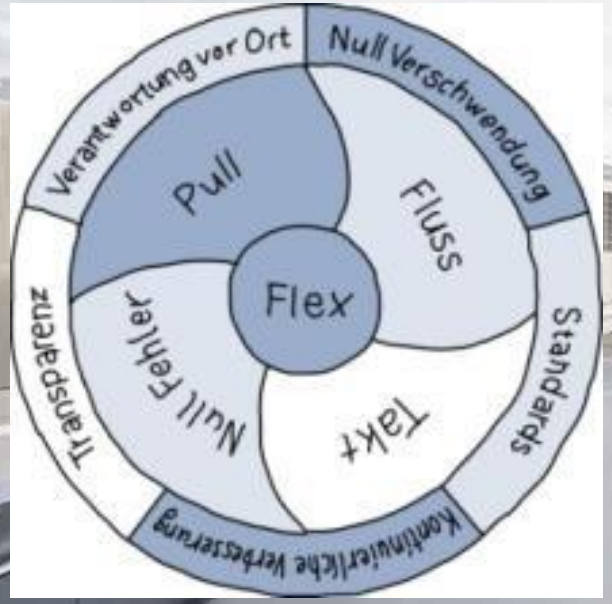
Speed Limit Device

THE FUTURE OF MOBILITY.
THE NEXT STEPS ARE HIGHLY AND FULLY AUTONOMOUS DRIVING.



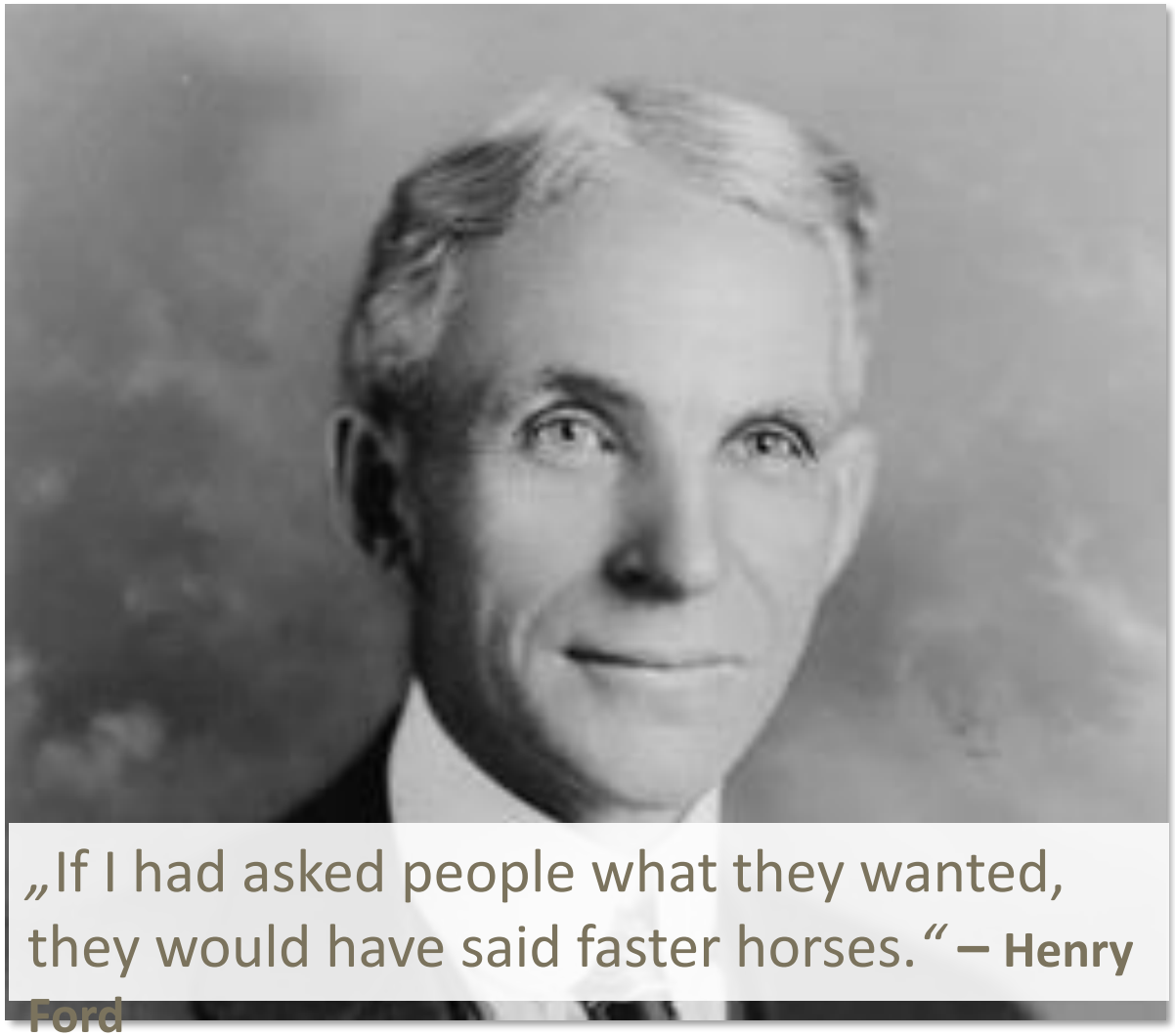
TRANSFER FROM AUTOMOTIVE TO CONSTRUCTION.

FROM BMW VALUE ADDED PRODUCTION SYSTEM IN VEHICLE PRODUCTION …

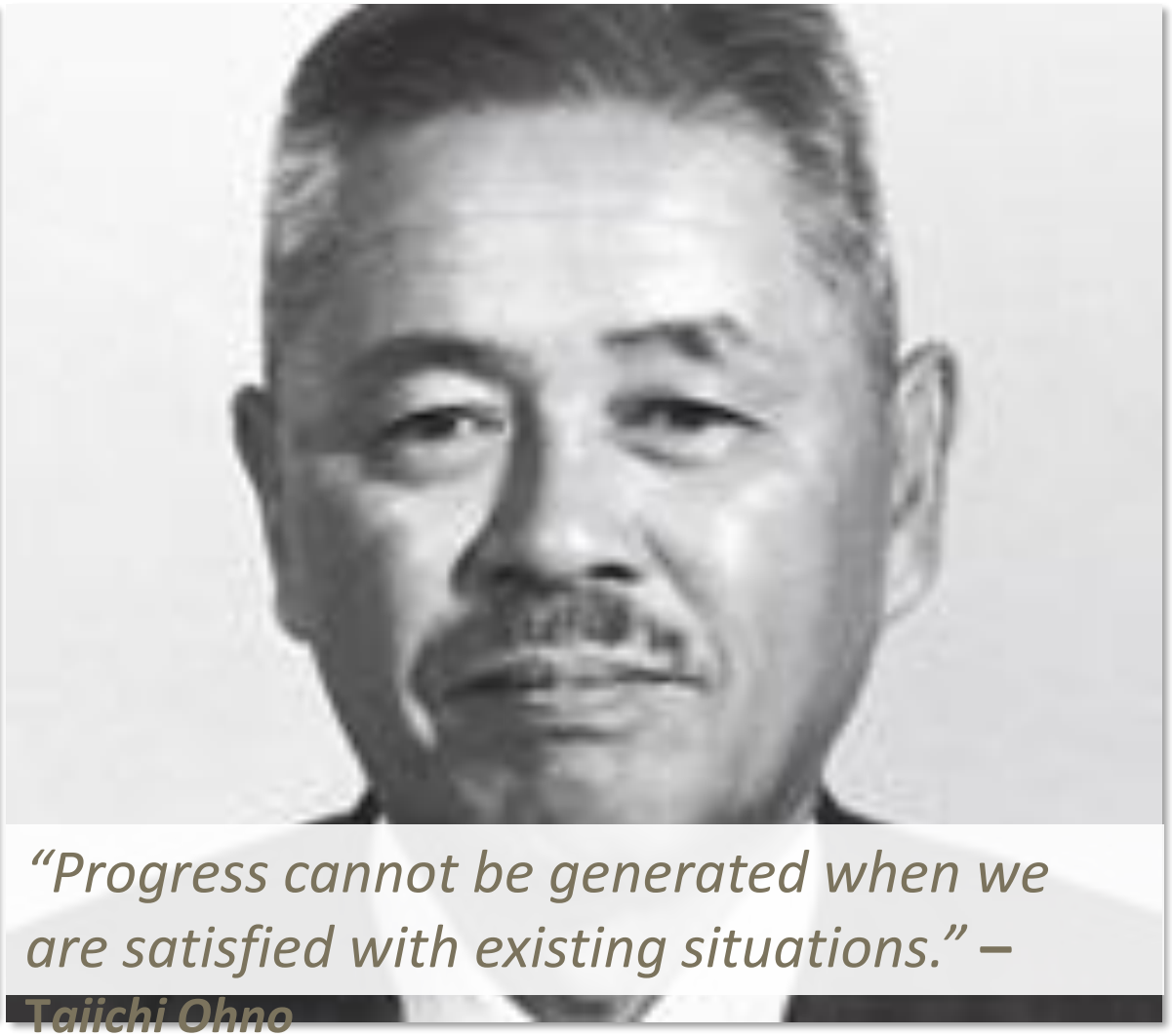


…TO LEAN BUILDING IN CONSTRUCTION.

LEAN - “LEARNING TO SEE”. MINDSET IS THE MAIN DRIVER.



„If I had asked people what they wanted, they would have said faster horses.“ – **Henry Ford**



“Progress cannot be generated when we are satisfied with existing situations.” – ***Taiichi Ohno***

LEAN BUILDING @ BMW.
LIGHT HOUSE PLANT BRASIL: TOP QUALITY, FAST AND LOW PRICE.

Plant Brasil:
A LEAN Light House Project

- 50% cheaper
- 50% faster
- 0 claims
- 0 notices of delay
- Smart project management

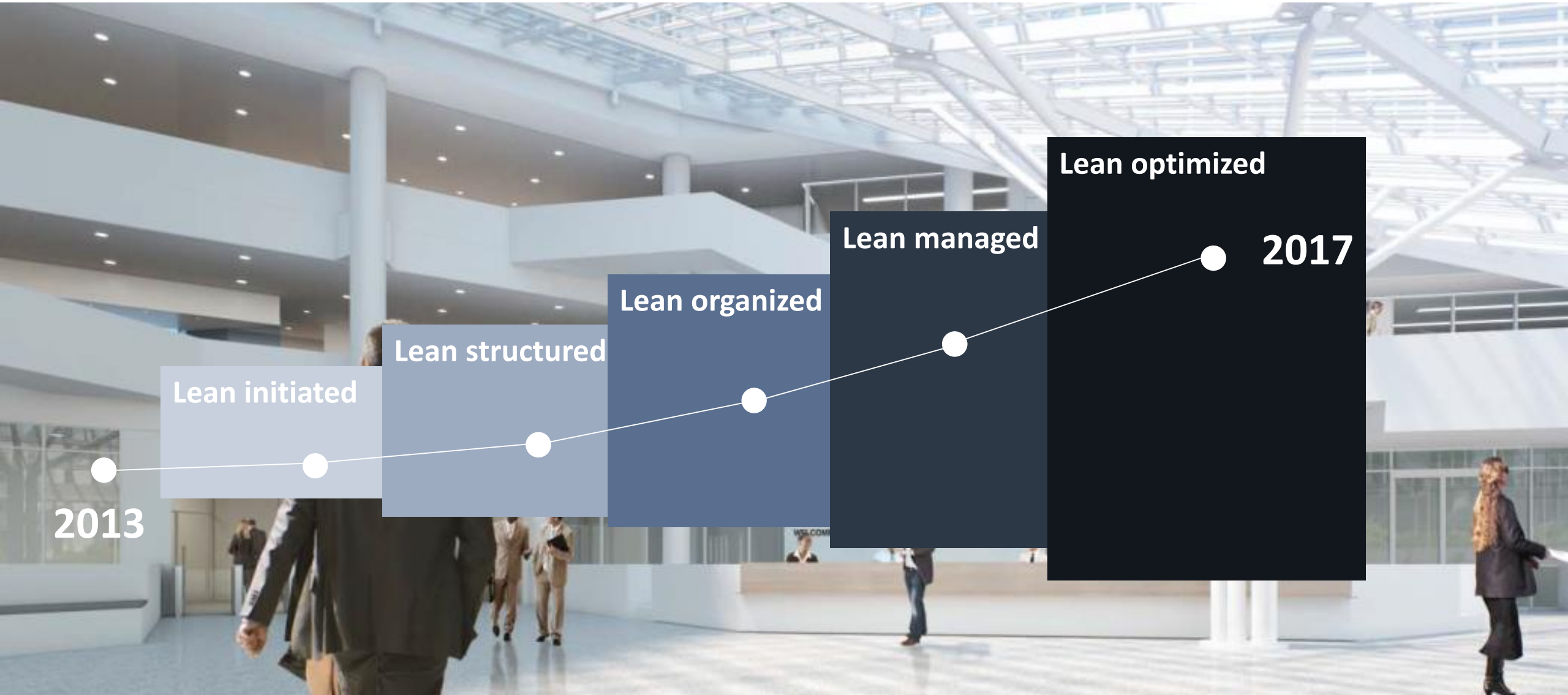
„One of the best projects ever!“

Emerson Edel, Director PerVille Constructions

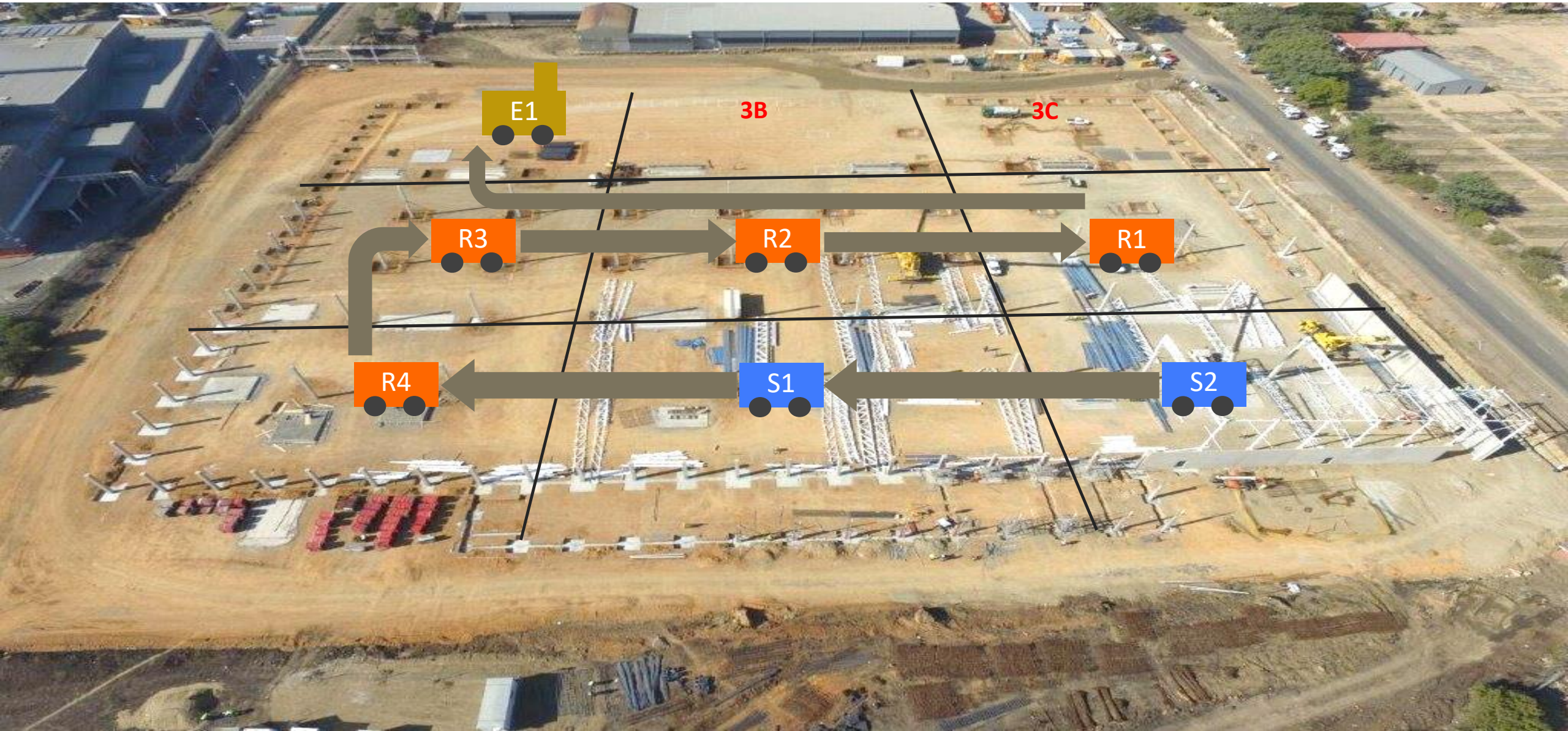
DEUTSCHER PROJECT
EXCELLENCE
AWARD 2015

LEAN EFFECTS.

TRANSFER OF AUTOMOTIVE VPS TO CONSTRUCTION. IMPLEMENTATION OF LEAN BUILDING.



LEAN BUILDING @ BMW.
COMMON PROCESS TRANSPARENCY FOR HIGHER EFFICIENCY.



LEAN BUILDING @ BMW.
QUALIFICATION IS A KEY FACTOR – IN-HOUSE TRAINING CENTRE.

LEAN BUILDING @ BMW.
LIGHTHOUSE PROJECT BMW & PORR 2017/2018.

ENABLERS:

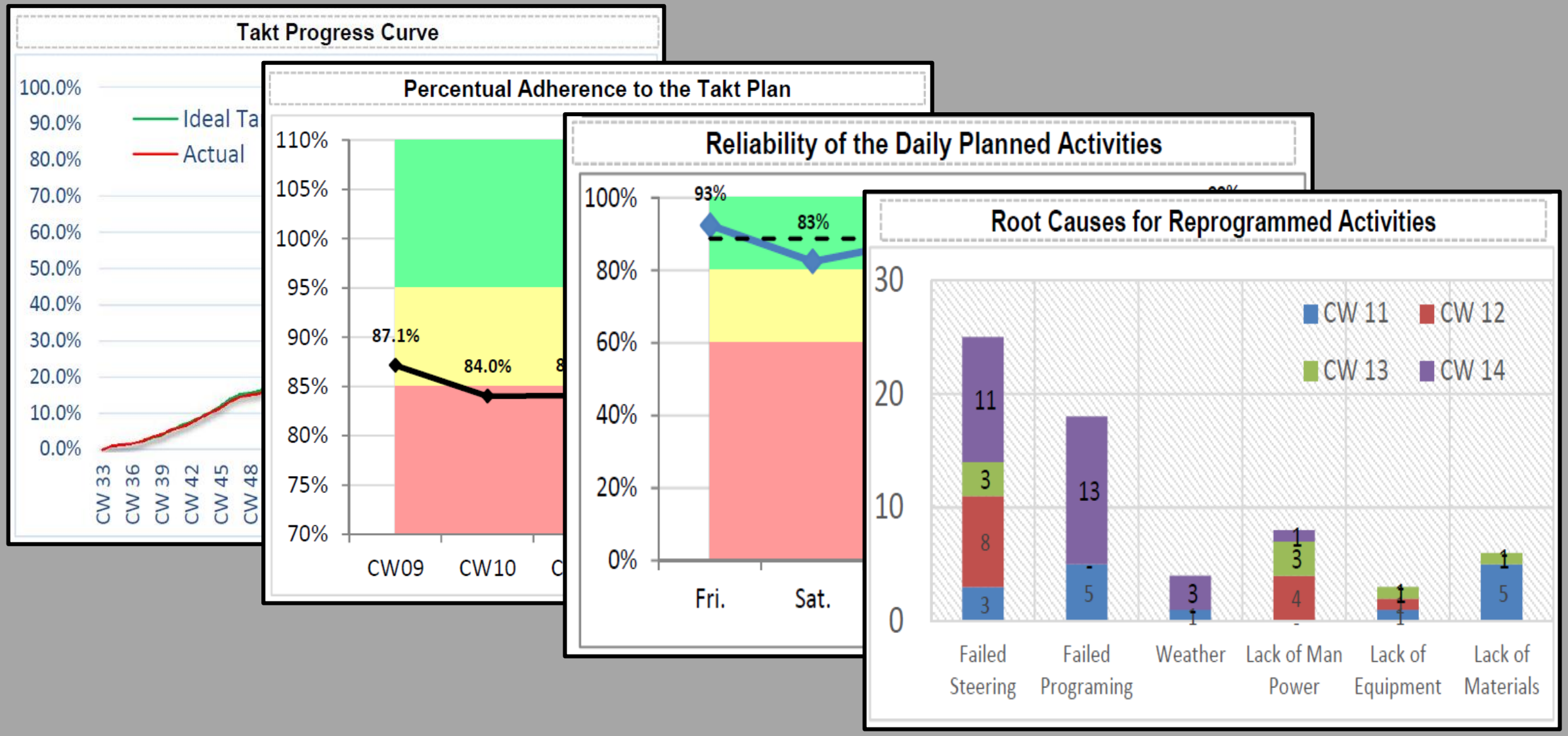
BMW & PORR Alignment to:

- Lean in Design and Construction
- Integrated BIM Model
- Partnering Model
- Close and open Collaboration
- Supply Chain Involvement
- Off Site Pre Produced Material

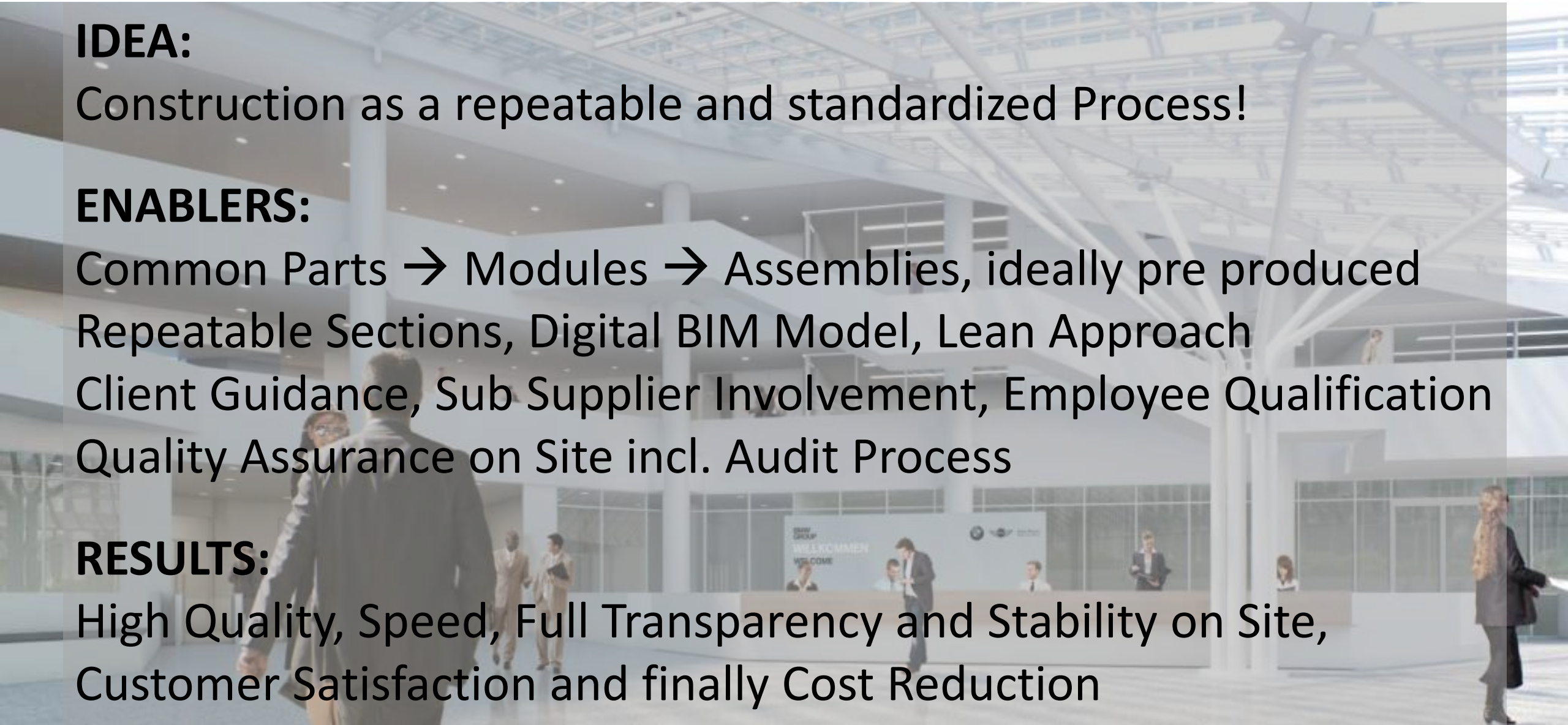
RESULTS SO FAR:

- Live Progress Transparency
- Takt Stability in Construction
- 0 Claims
- 0 Notices of Delay
- 0 Days Schedule Deviation
- Extraordinary Team Spirit

LEAN BUILDING @ BMW.
MAKING PROJECTS TOGETHER MEASURABLE & TRANSPARENT.



TRANSFER OF AUTOMOTIVE VPS TO CONSTRUCTION. SUCCESS FACTORS IN CONSTRUCTION – FOOD FOR THOUGHT.



IDEA:

Construction as a repeatable and standardized Process!

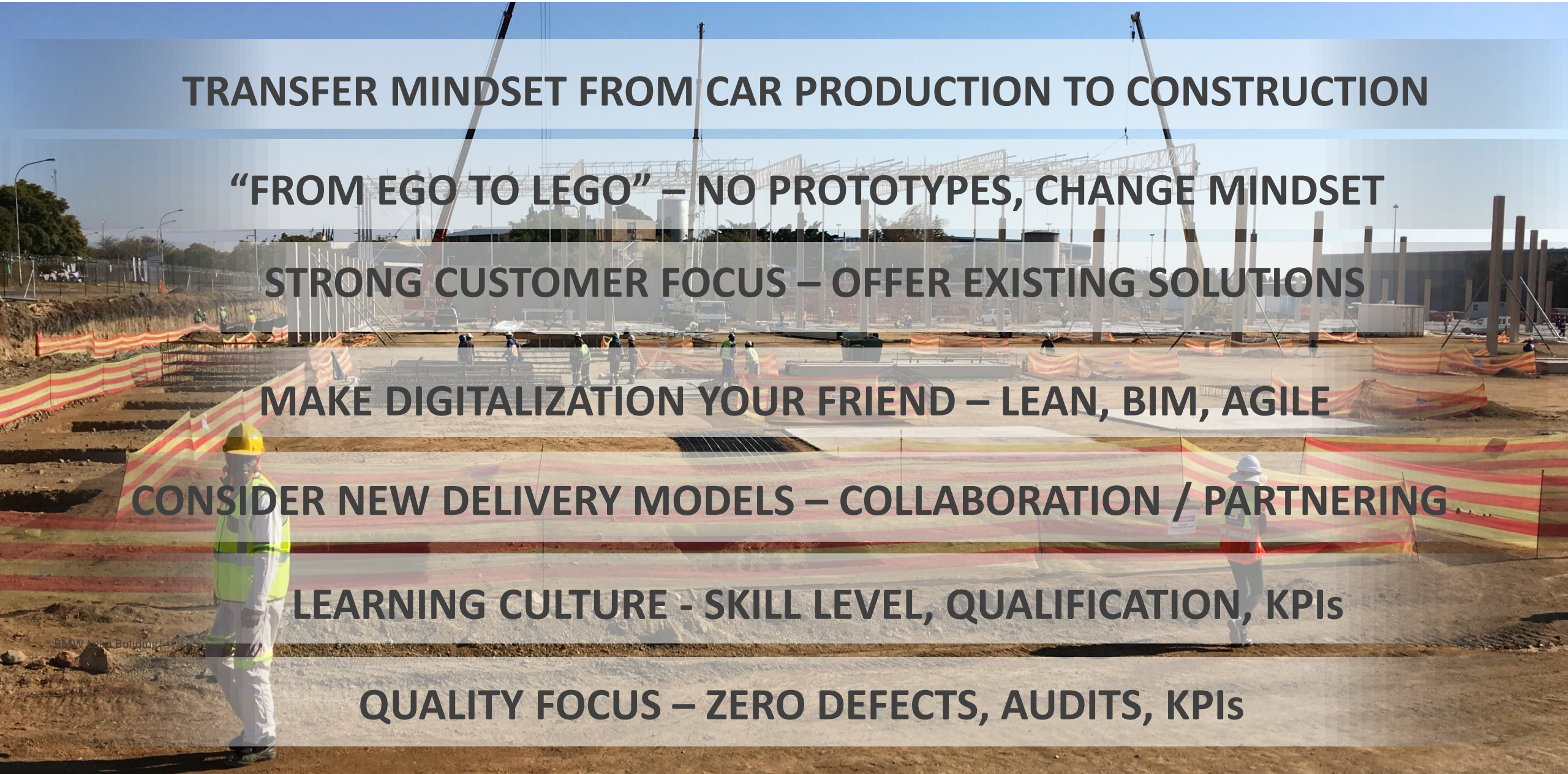
ENABLERS:

Common Parts → Modules → Assemblies, ideally pre produced
Repeatable Sections, Digital BIM Model, Lean Approach
Client Guidance, Sub Supplier Involvement, Employee Qualification
Quality Assurance on Site incl. Audit Process

RESULTS:

High Quality, Speed, Full Transparency and Stability on Site,
Customer Satisfaction and finally Cost Reduction

CHALLENGES AHEAD AND FOR TAKE AWAY.



TRANSFER MINDSET FROM CAR PRODUCTION TO CONSTRUCTION

“FROM EGO TO LEGO” – NO PROTOTYPES, CHANGE MINDSET

STRONG CUSTOMER FOCUS – OFFER EXISTING SOLUTIONS

MAKE DIGITALIZATION YOUR FRIEND – LEAN, BIM, AGILE

CONSIDER NEW DELIVERY MODELS – COLLABORATION / PARTNERING

LEARNING CULTURE - SKILL LEVEL, QUALIFICATION, KPIs

QUALITY FOCUS – ZERO DEFECTS, AUDITS, KPIs

THANK YOU FOR YOUR ATTENTION.

IT IS ALL ABOUT MIND SET !

1. NOTHING CHANGES IF NOTHING CHANGES

2. IF YOU CAN‘T CHANGE THE PEOPLE CHANGE THE PEOPLE