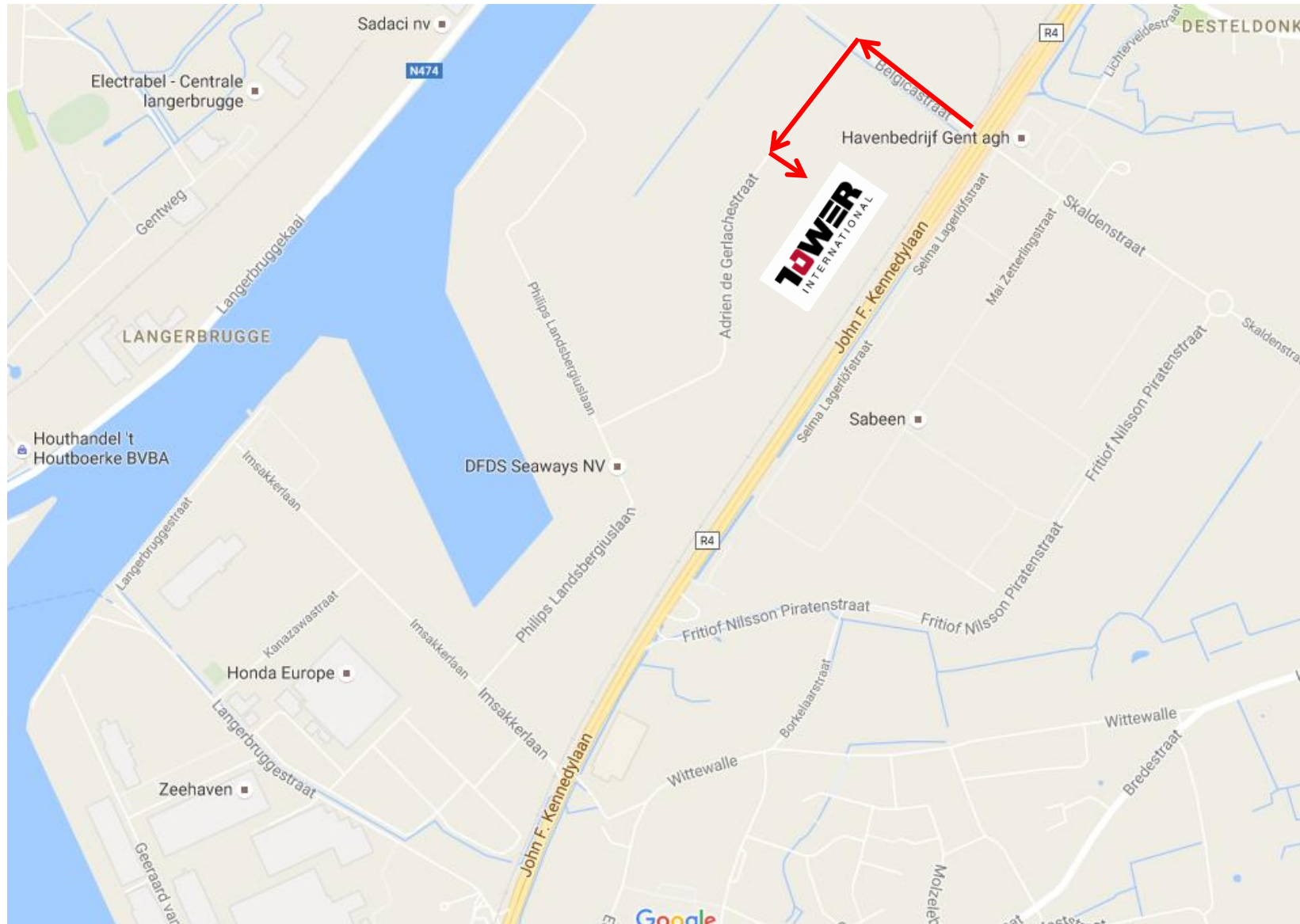


# TOWER INTERNATIONAL GENT

## GENERAL PRESENTATION

# Wegbeschrijving



Adres:  
Tower International Gent  
Adrien de Gerlachestraat  
(Belgicastraat)  
9042 Gent –Desteldonk

Coordinates:  
51.119899 , 3.767538

# Tower International Gent

## Agenda



- Tower International as a group
- Tower Gent at a glance
  - ✓ Organization
  - ✓ Customer and product structure
  - ✓ Plant layout
  - ✓ Certifications & CI
- Strengths / core competences Tower Gent
- Reference projects Tower Gent

# TOWER INTERNATIONAL

# Tower International as a group

## Company History



**/ 1993**

Founded R.J.  
Tower Corporation

**/ 1997**

Initial acquisitions in  
Europe

**/ 2003**

Opening of Greenfield in  
Gent, Belgium

**/ 2004**

Opening of Greenfield in  
Duisburg, Germany

**/ 2005**

Voluntary reorganization  
under Chapter 11

**/ 2007**

Sale of assets to an affiliate  
of Cerberus Capital  
Management, L.P.

**/ 2010**

Tower International, Inc.  
became public as TOWR

**/ 2010**

Acquisition of a plant in  
Artern, Germany

**/ 2012**

Opening of Mlada Boleslav,  
Czech Republic

**/ 2015**

Opening of the first  
hotforming line in Europe

# Tower International as a group

## Overview



- Leading integrated global manufacturer of engineered metal components and assemblies
- Broad portfolio
  - Body structure stampings
  - Frames
  - Chassis structures
  - Complex welded assemblies
- 29 manufacturing locations
- 8 engineering & sales locations
- Traded on NYSE as TOWR

# Tower International as a group

## International Locations



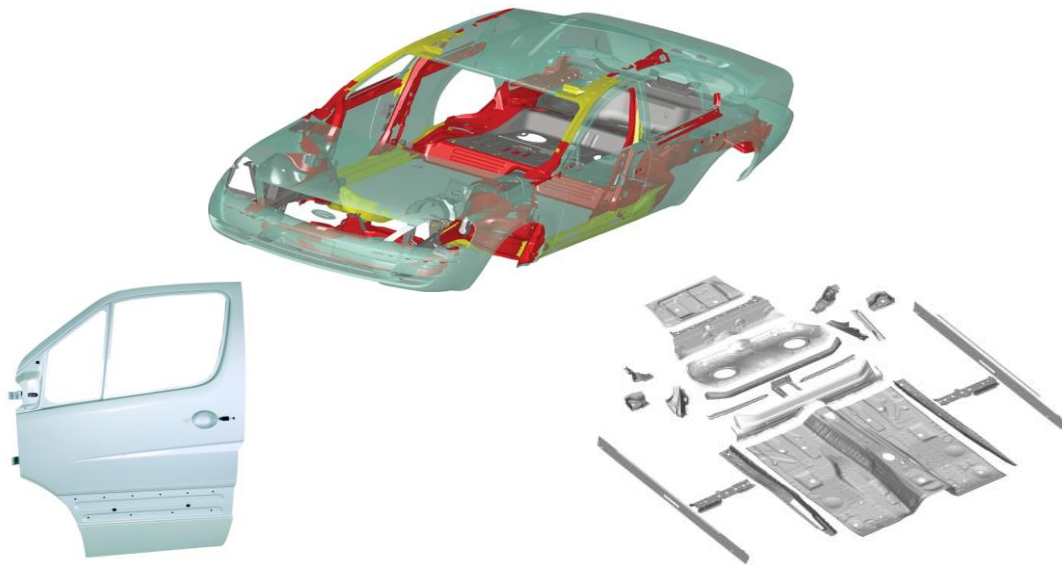
# Tower International as a group

## Product capability



### Body Structure and Assemblies

- Basic upper large body structures of the vehicle such as body pillars, roof rails, side sills and IP Beams.
- Class A surfaces - exposed sheet metal components such as body sides, pick-up box sides, door and roof panels.



### Chassis

- Lower structure of vehicle including full frames (pick-up and SUV).
- Sub frames, cradles, cross members and trailing axles.





# TOWER INTERNATIONAL GENT

# Tower International Gent

## At a glance



### Facility Details:

- Start up: 2003
- Size: 130,000 m<sup>2</sup> (32,000 m<sup>2</sup> roofed)
- Colleagues: 300

### Manufacturing Capabilities:

- 180 Robots / 50 cells
- Curing oven for glued doors and closures
- Logistics centre with rail link

### Products:

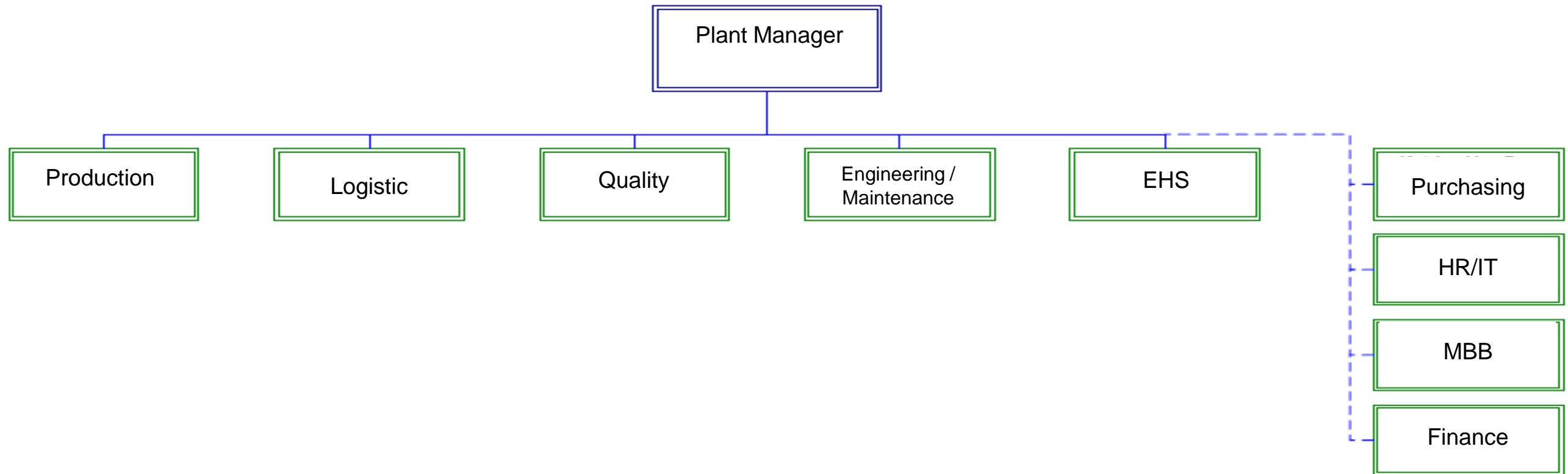
- 45 Body structure assemblies for S60, XC60, V40, V40CC
- After sales body structure assemblies

### Major Customer:

- Volvo Cars Gent
- Volvo Cars Customer Service

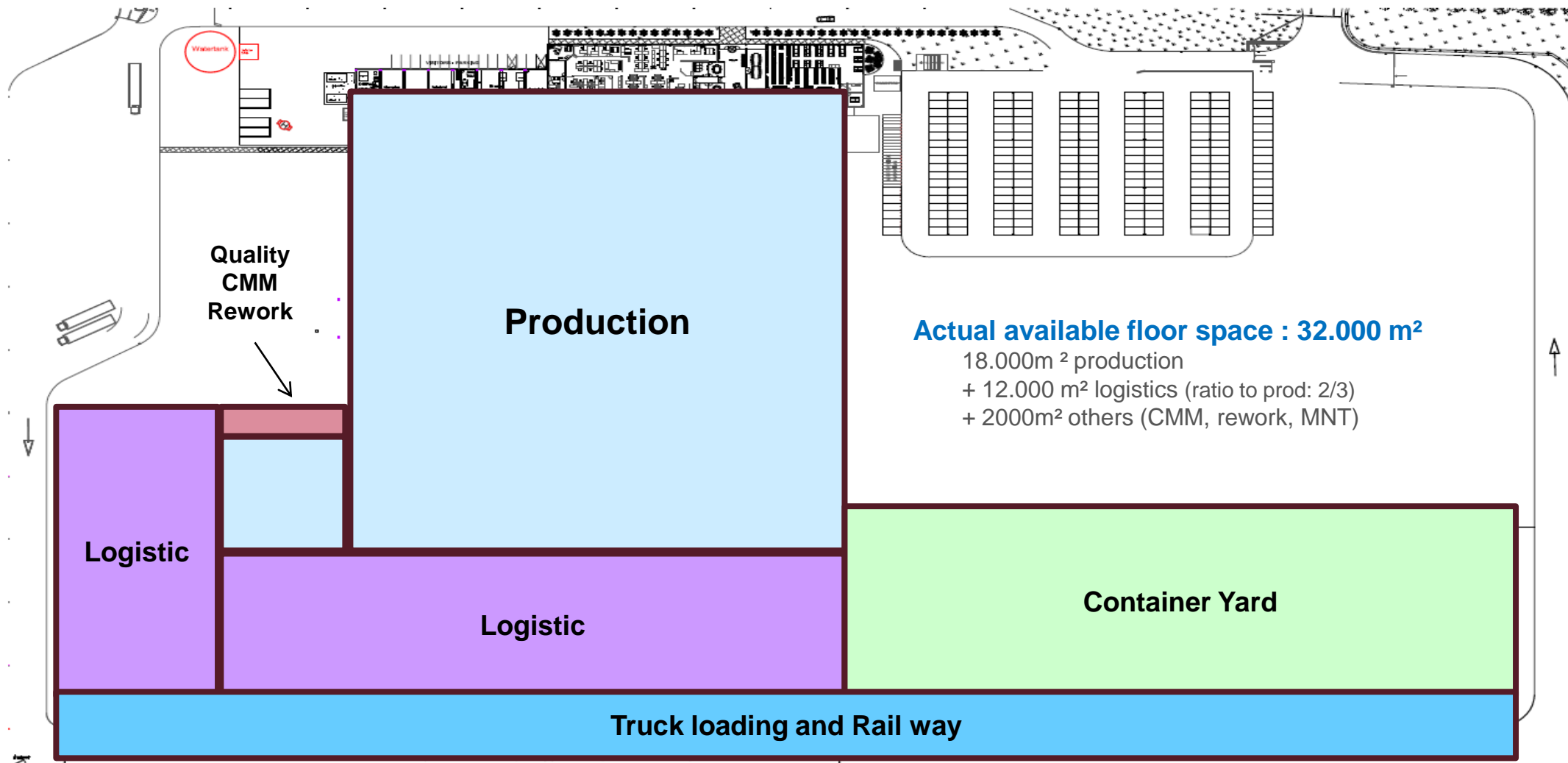


# Organization



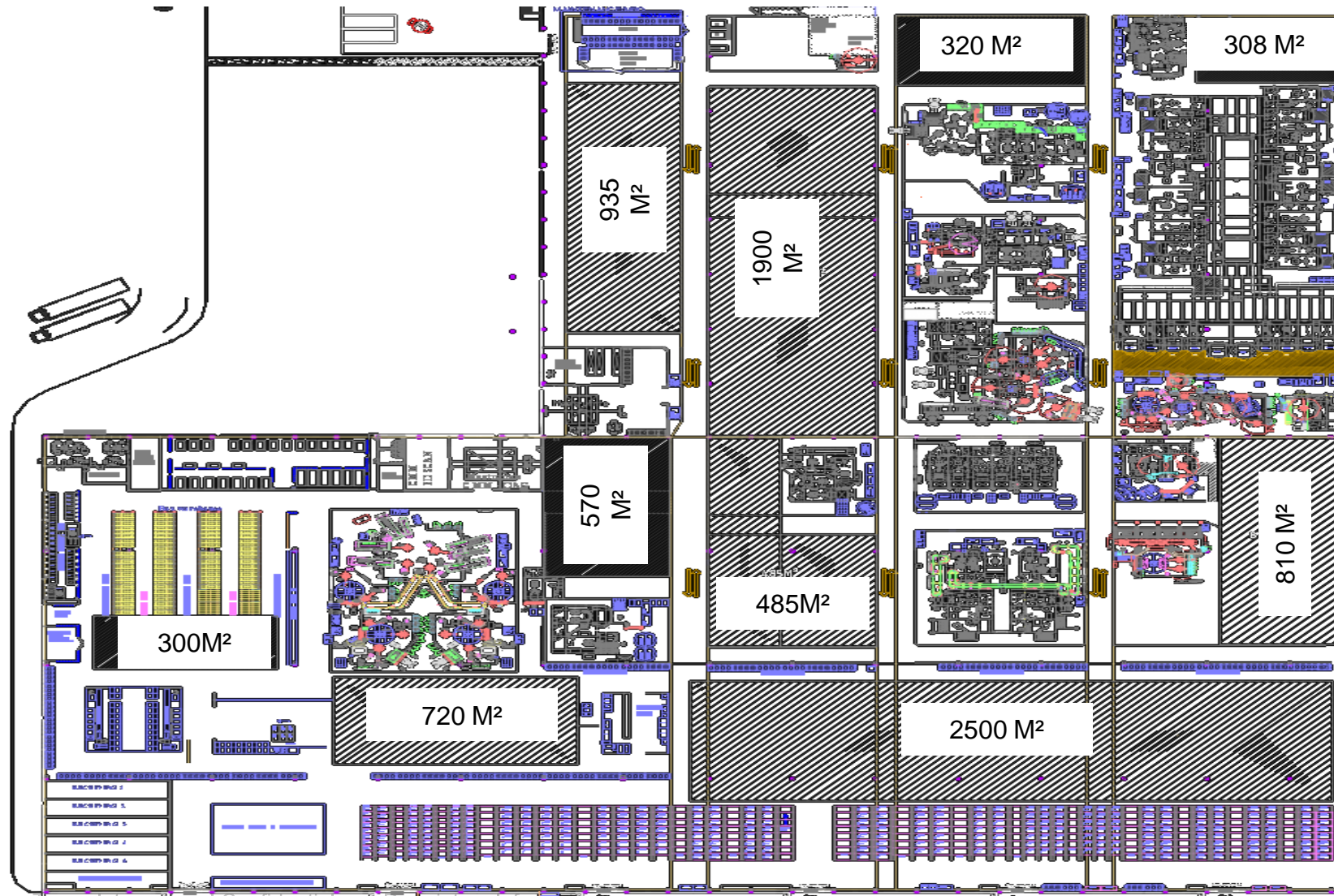
# Tower International Gent

## Plant Lay-out



# Tower International Gent

Space availability (2017)



Available m²

Production : 5500

Logistics : 3500



# Tower International Gent

## Certification



- **Certifications**

- ISO TS 16949 IV Edition
- ISO 14001
- OHSAS 18001
- VQE – Volvo Quality Excellence Award



- **Continuous Improvement**

- 6 Lean Six Sigma Black Belts supported by European Master Black Belt
- Operational Leaders are all Black Belts
- Mid management trained on Lean Six Sigma principles
- Team leaders trained on Lean principles

# STRENGTHS & CORE COMPETENCES

## TOWER GENT

# Tower International Gent

## Strenghts / Core competences

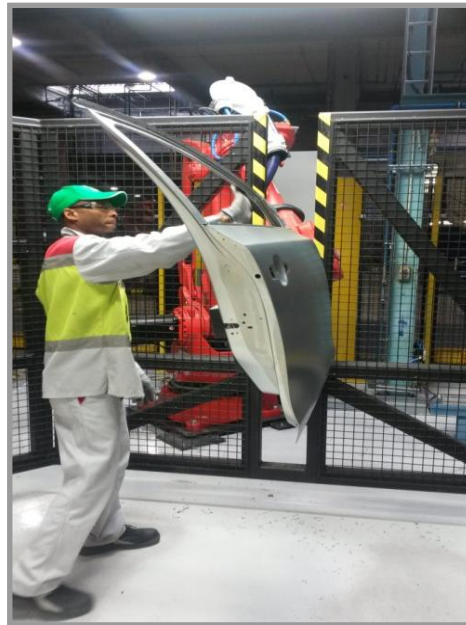
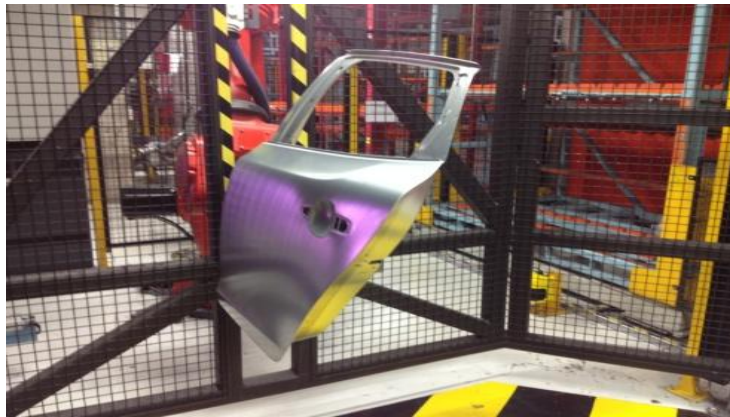


- Operational shopfloor competence
  - Supported by global standards and processes including Lean Six Sigma
- Engineering competences
  - Process engineering
  - SE support (Design)
  - Equipment design and build
  - PLC / robotic programming
  - Spot welding and Projection welding
- Contact / support VCG
  - Full time presence at A-shop VCG (Liaison)
  - Support on quality issues investigation towards VCG and directed suppliers
- Launch capabilities
  - For launches, ressources / knowledge can be pulled out of global Tower organization
- Management with high experience in core business : Body in White
  - Vice President, Plant Lead, Project Lead, Engineering, Maintenance ...



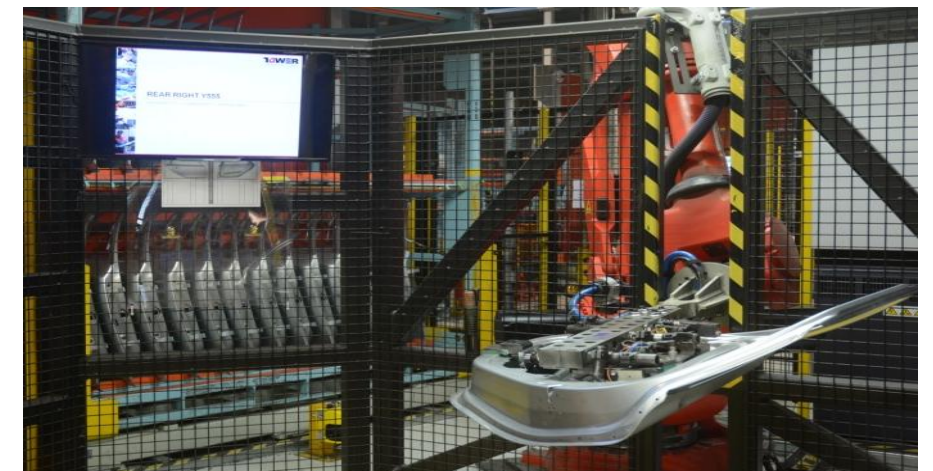
# Tower International Gent

## A Class surface



- Fully automated loading and unloading process. This eliminates possible damages caused by manipulation.

- Visual guide (tv screen) added to display latest quality issues + Work instructions + critical points.



# Tower International Gent

## A Class surface



- Detailed Defect Tracking have been implemented to record, follow up, and analyse identified defects => root cause analyze and actions defined

- Light check
- Beside Standard checks – CCC (Complete Closure Check) is executed 3 times per shift – 100% Check in light with oil application



# Tower International

## HF Stamping



- **Expertise in HF (Tower Zwickau – Germany)**
  - Hotforming press MSP-2-12000
  - 1200 (2x600) t double ram technology
- **Several customers with a variety of structure parts**
  - Skoda Superb, Snow man
  - GM Opel Astra
  - VW Touran
  - Maserati Levante
  - Volvo XC 60



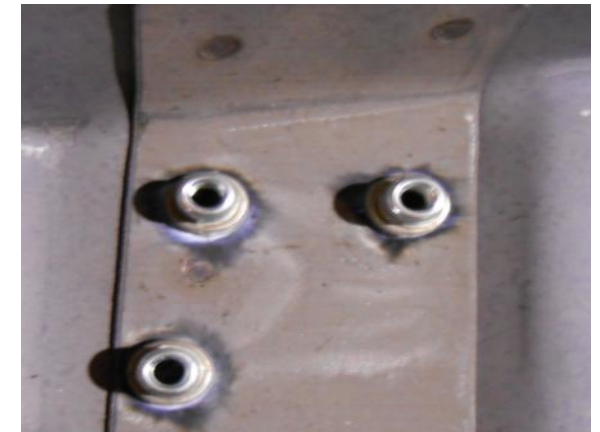
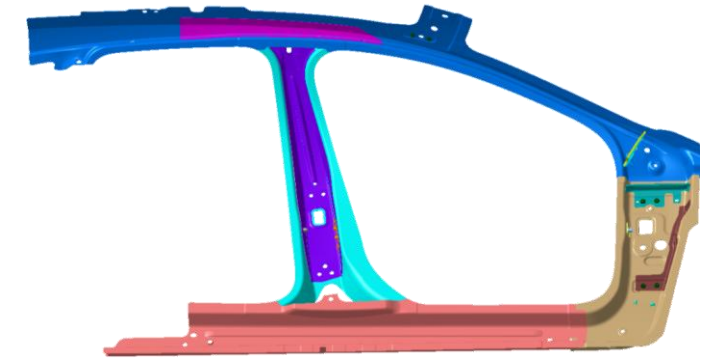


# Tower International Gent

## HF Assembly

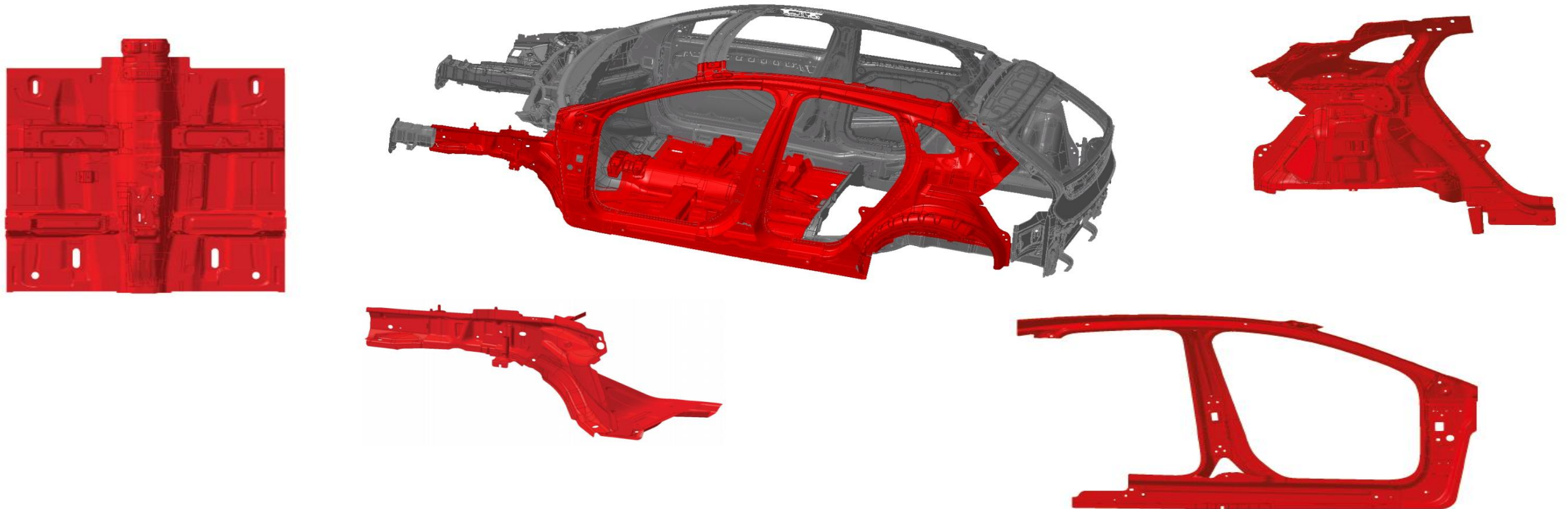


- **Expertise in HF assembly (Tower Gent)**
  - Welding HF parts since 2004
  - Recognized competence by VCG
  - All Body sides spindle (V40, XC60, S60) are today assembled at Tower Gent
  - State of the art technology (adaptive welding)
  - Up to 3 sheets thickness welding of Usibor
- **Development of processes to weld nut on HF for VCC (Spider S60)**
  - Weldnut on double sheet of Usibor developped in collaboration with ARO welding and used now at VCT



# Tower International Gent

Large assembly



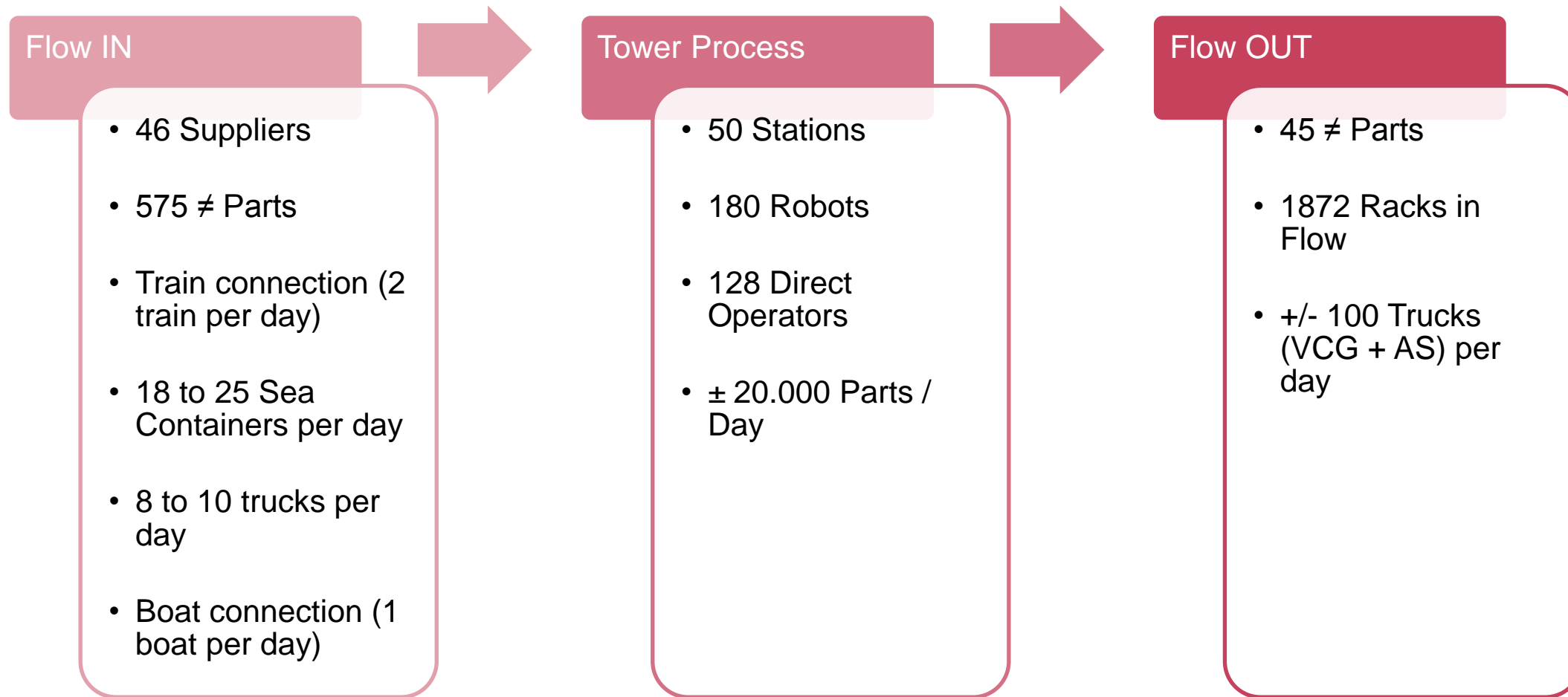
- **Expertise in Large assembly**

- Front Floor, Body Side Spindle, Side Member Front and Rear, Body Side Inner
- State of the art technology (adaptive welding)

Tower International Confidential and Proprietary Information

# Tower International Gent

## Logistics



# REFERENCE PROJECT AUTOMOTIVE PRODUCTION

## TOWER GENT

# Tower International Gent

Reference project



## Volvo V40 / V40 CC

### Doors and Closures, Structural Assemblies



Project start October 2009 where Tower was part of the SE team, Job 1 was may 2012

**90% of all body sub-assemblies of the Volvo V40 / V40 CC**

State-of-the-art body-in-white with 180 Robots

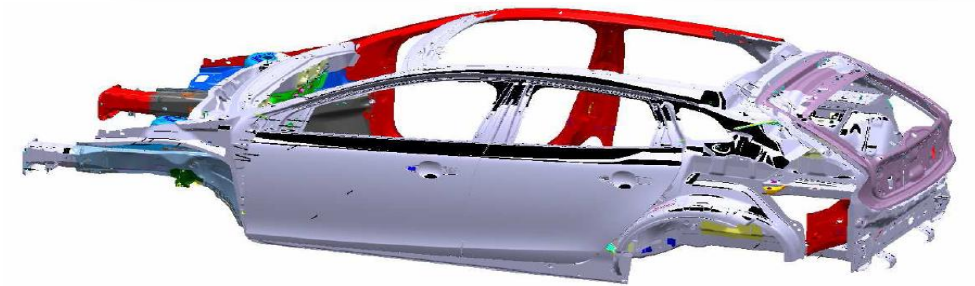
Supply base spread across more than 10 Countries

2300 Weld spots

239 Weld Nuts

19 Meters of Glue

Peak capacity 107,800 sets per year





# Tower International Gent

Reference project



## Volvo S40 / V50 / C30 (P1X)

Doors and Closures, Structural Assemblies

Project start 2000

Job 1 was may 2003

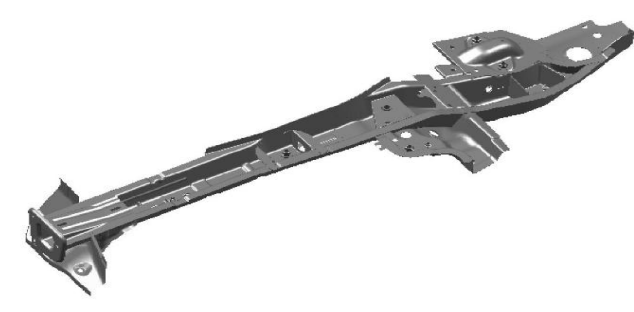
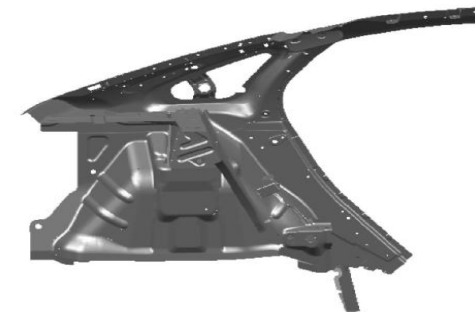
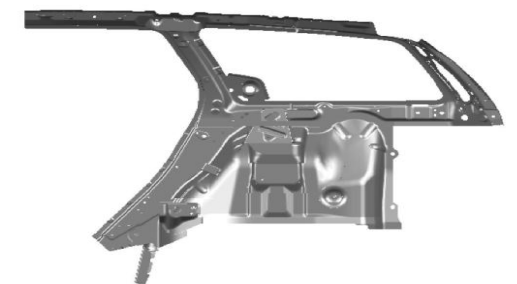
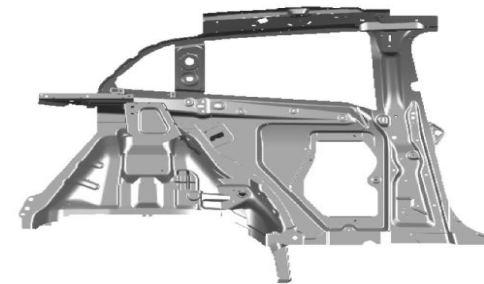
**90% of all body sub-assemblies of the Volvo S40 / V50 / C30**

State-of-the-art body-in-white with more than 200 Robots

Applications:

- Spot welding
- Nut & bolt welding
- Arc welding
- Structural glue
- Hem flange sealing doors

Peak capacity 200,000 sets per year



# Tower International Gent

Reference project



## Dashboard assembly

### Assembly of Cross Car Beams

Project start 2007

Job 1 was December 2007

Cross Car Beams on Volvo S60 and Volvo XC60 modules

Pre-assembly job on Cross Car Beams, delivered to final Dashboard supplier.

Max capacity 162,000 parts per year



# REFERENCE PROJECT INTEGRATION

## TOWER GENT

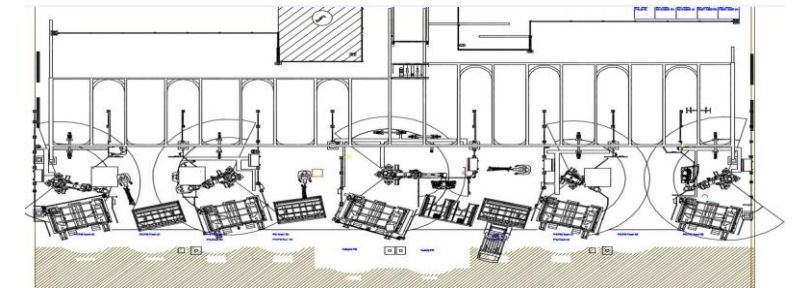
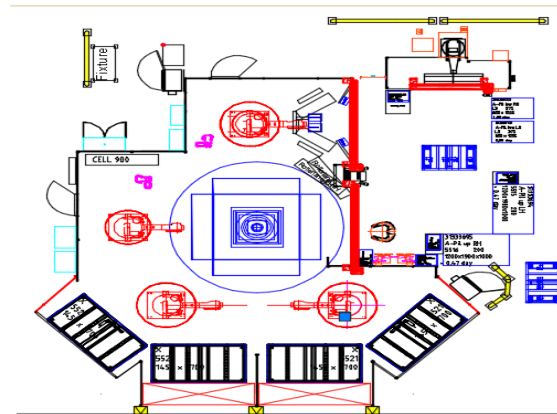
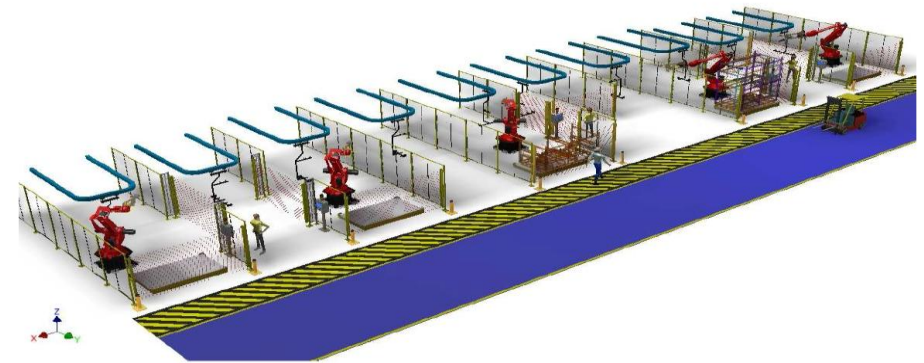
# Tower International Gent

Reference project



## Internal optimization project Tower Gent

- Improvement by designing new process lay-outs
- Automation of End check on closure parts resulting in:
  - quality improvements
  - higher efficiency
  - cost reductions



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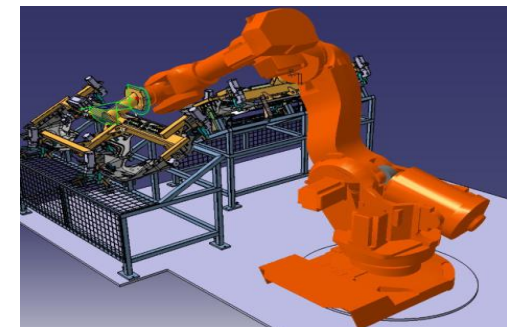
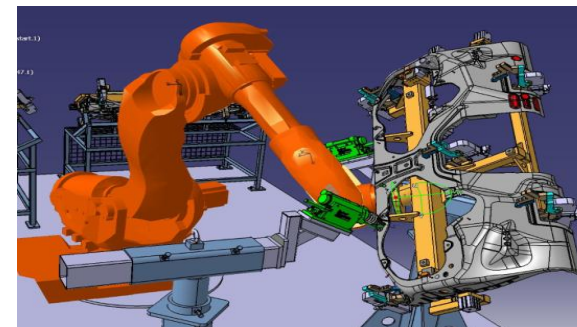
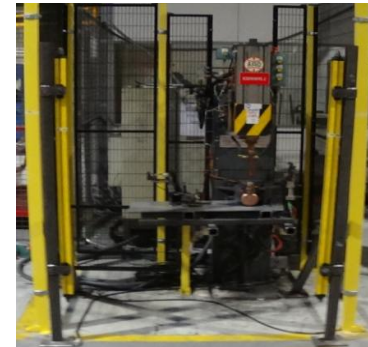
# Tower International Gent

Reference project



## Tower Gent supporting other European plants

- Building of automatic nutwelders for Tower Italy
- Build 3 assembly cells for Tower Slovakia



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# REFERENCE PROJECT R&D

## TOWER GENT

# Tower International Gent

Reference project



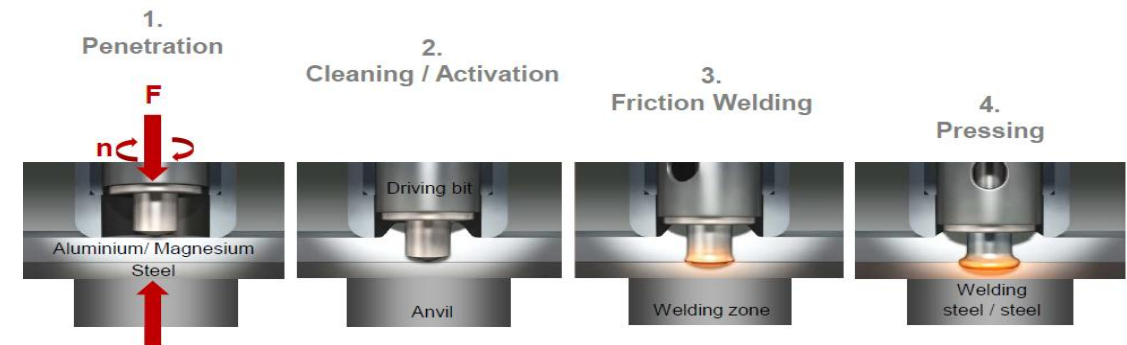
## Aluminium competence:

Research & development project on several technologies

### - Composite Friction Fastener

In cooperation with EJOT

Joining technology aluminium to steel components

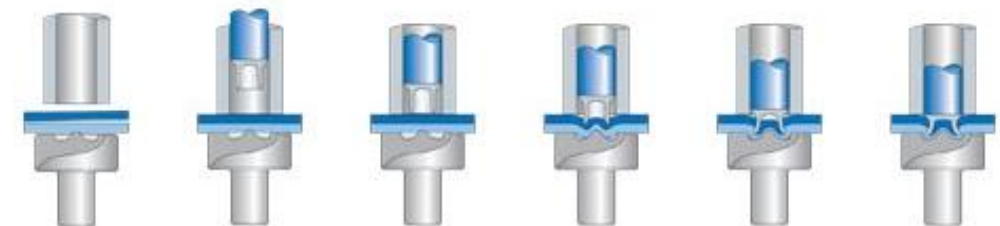


### - Self Piercing Riveting

In cooperation with Böllhoff

Joining technology:

- Aluminium to aluminium
- Aluminium to steel





# Tower International Gent

Reference project



## Aluminium competence:

Research & development project on several technologies

### - Flow Drill Screw

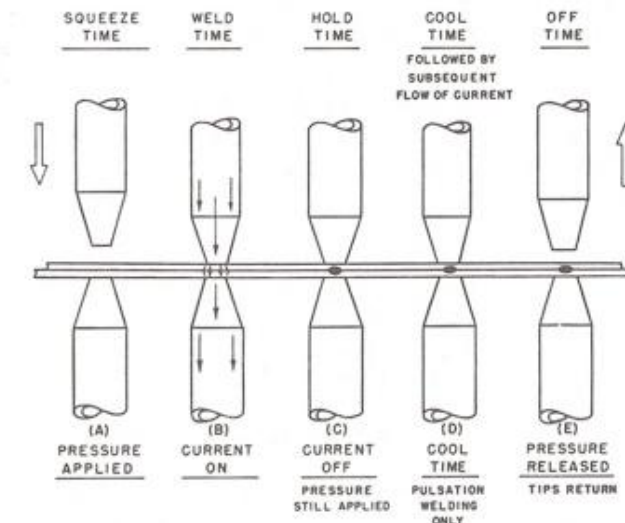
In cooperation with Weber

Welding technology:

- Aluminium to aluminium
- Aluminium to steel

### - Spot Welding (WPS)

In cooperation with Matuschek & ARO





# Tower International Gent

Reference project



## Aluminium competence:

Research & development project on several technologies

### - Stud Welding

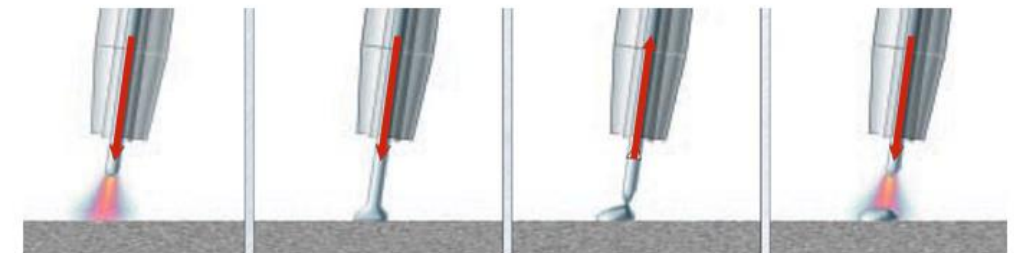
In cooperation with Nelson

Protection gas needed to avoid oxidation



### - Arc Welding (MIG)

In cooperation with Fronius CMT



# Tower International Gent

Reference project

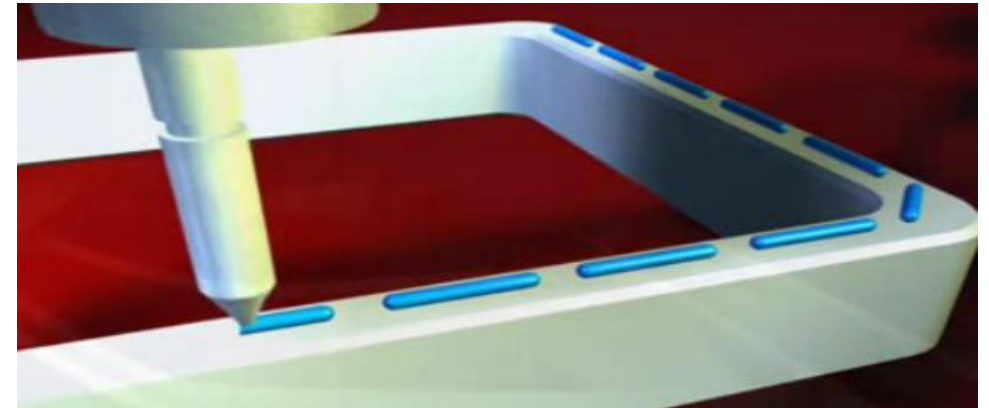


## Aluminium competence:

Research & development project on several technologies

- Adhesive application

In cooperation with Intec



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# Tower International Gent

## Safety instructions



Be aware of:



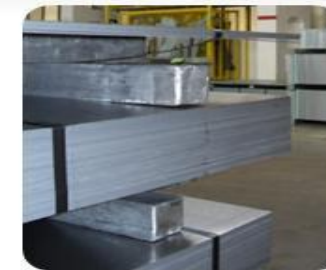
- traffic (forklift-trucks and lorries)



- sharp edges on all metal parts



- spatters (assembly shop)



**Please use the provided PPE:**

