



Walraven

Van ETO naar CTO: "De strategische versnelling naar schaalbare prefab met DFMA"

WOENSDAG 8 OKTOBER

13:00 - 13:30 uur

Digi Theater - Hal 1



Danny van Rij-Roks
Walraven

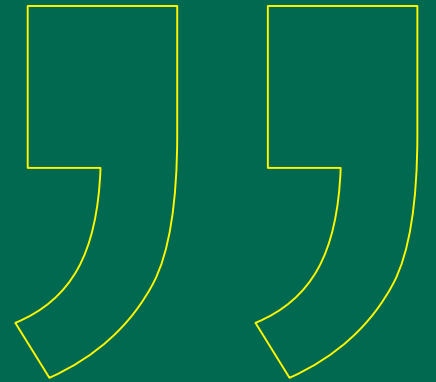
Gratis toegang via www.prefabbeurs.nl





*Van ETO naar CTO:
De strategische versnelling naar
schaalbare prefab met DFMA*

DvRR









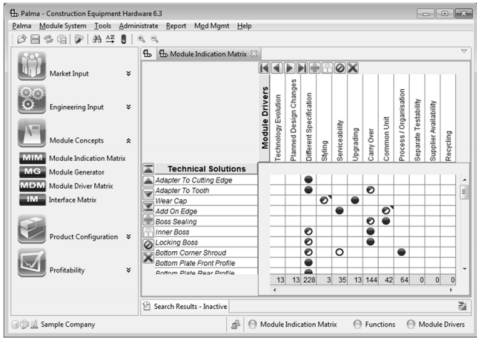
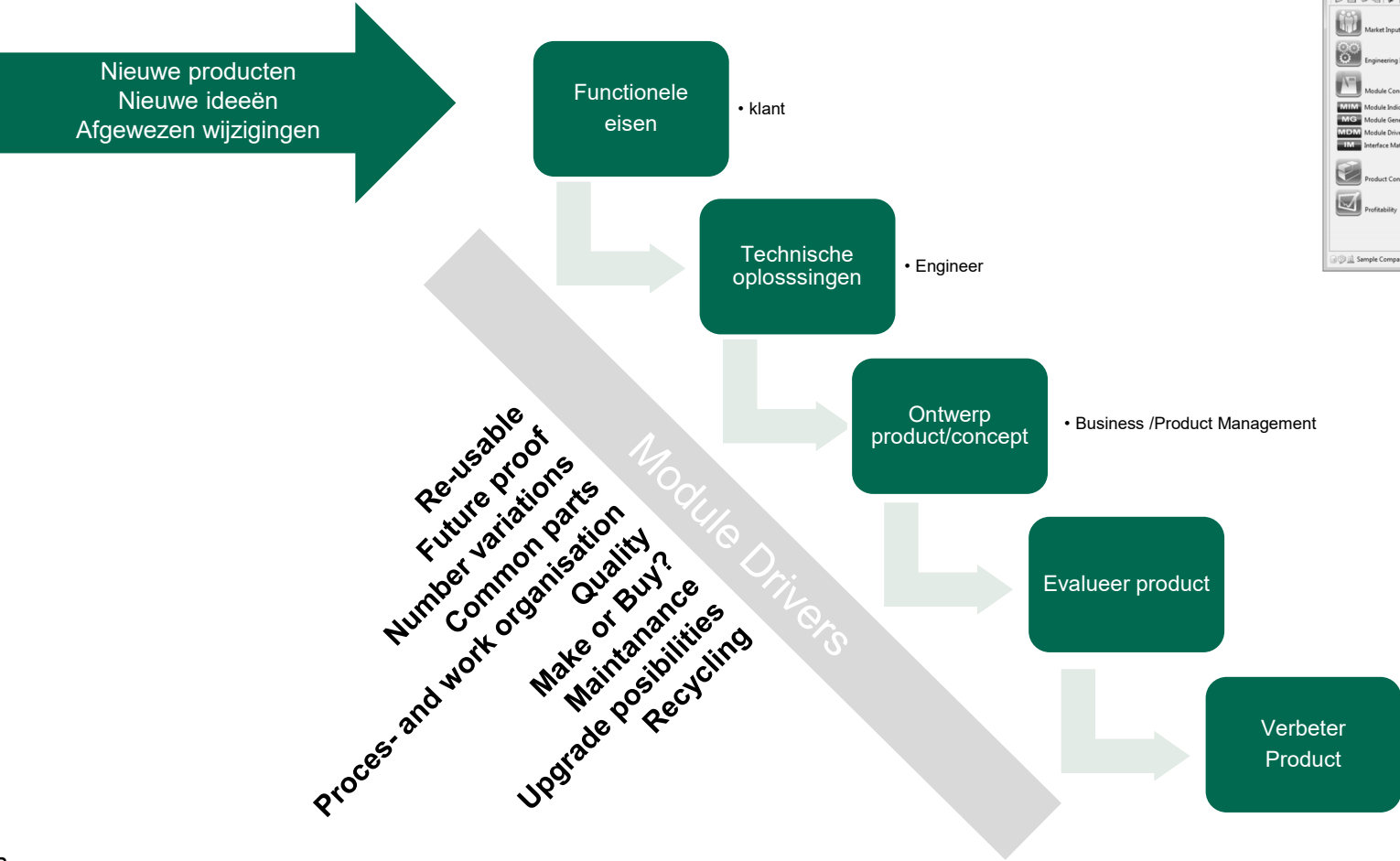


DFMA

Design for manufacture and Assembly

- Ontwerpmethodiek die productontwikkeling eenvoudiger , snelle en goedkoper maakt
- Design for manufacture (DFM): ontwerpen met het oog op eenvoudige en kostenefficiënte productie
- Design for Assembly (DFA): ontwerpen zodat onderdelen gemakkelijker en foutloos te monteren zijn.
- Doel: minder onderdelen, lagere kosten, hogere kwaliteit en snellere doorlooptijd

Modular Function Deployment

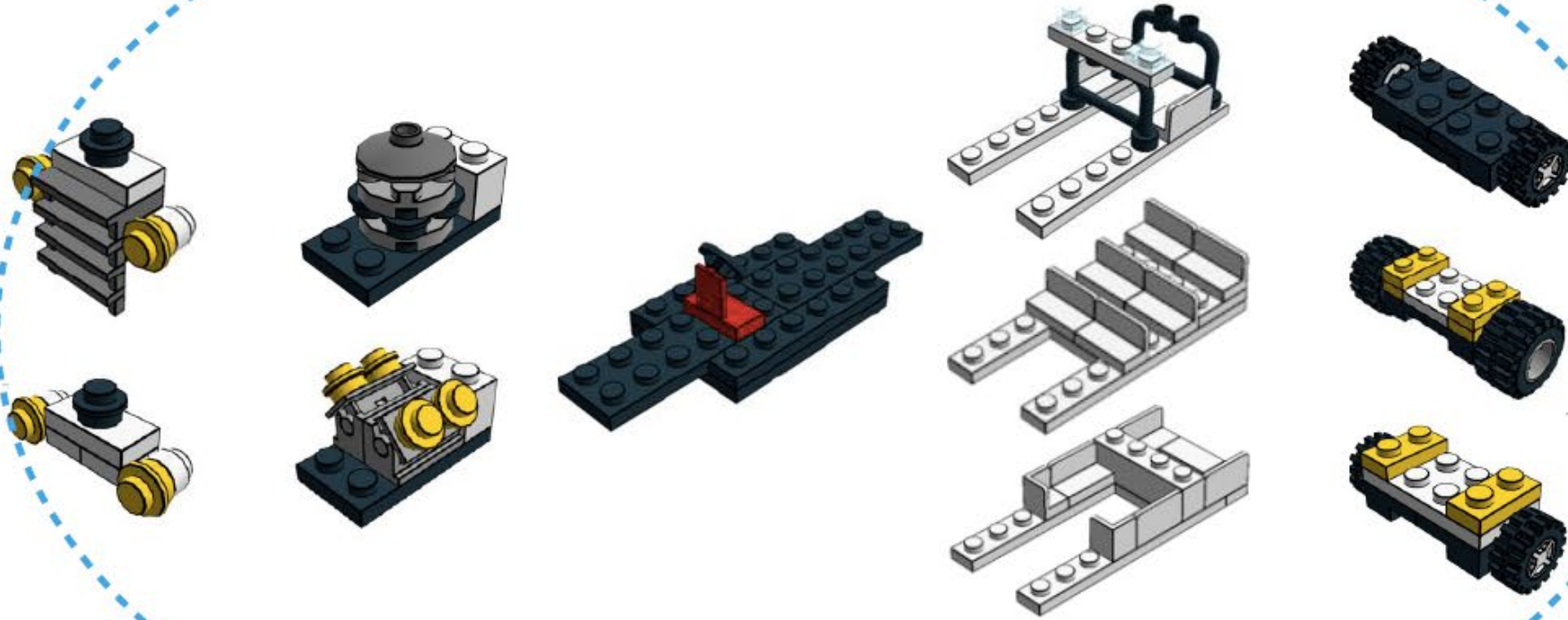


Module Driver Combination	Product Leadership		Customer Intimacy		Operational Excellence	
	Technology Evolution	Planned Design Changes	Different Specification	Styling	Service / Maintenance	Upgrading
30						
4						
1						
1						
2						
6						
1						
1						
1						
1						
1						
1						
13	27	24	0	12	3	367
61	63	0	0	0	0	0

Module Indication Matrix (MIM)

Bronnen:
Ericsson A, Erixon G (1999) Controlling Design Variants: Modular Product Platforms. Society of Manufacturing Engineers
Erixon G (1998) Modular Function Deployment – A Method for Product Modularization. Doctoral

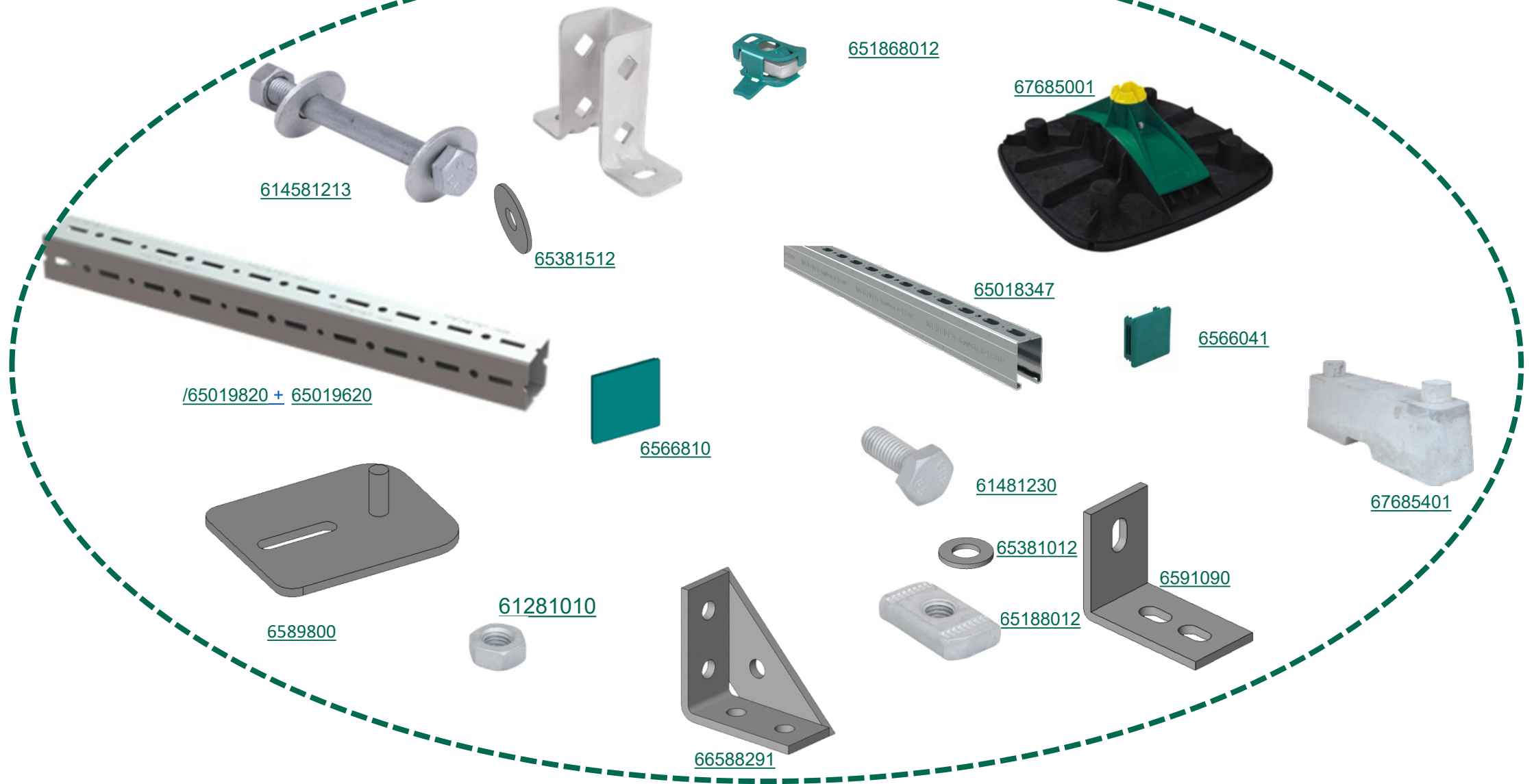
Platform

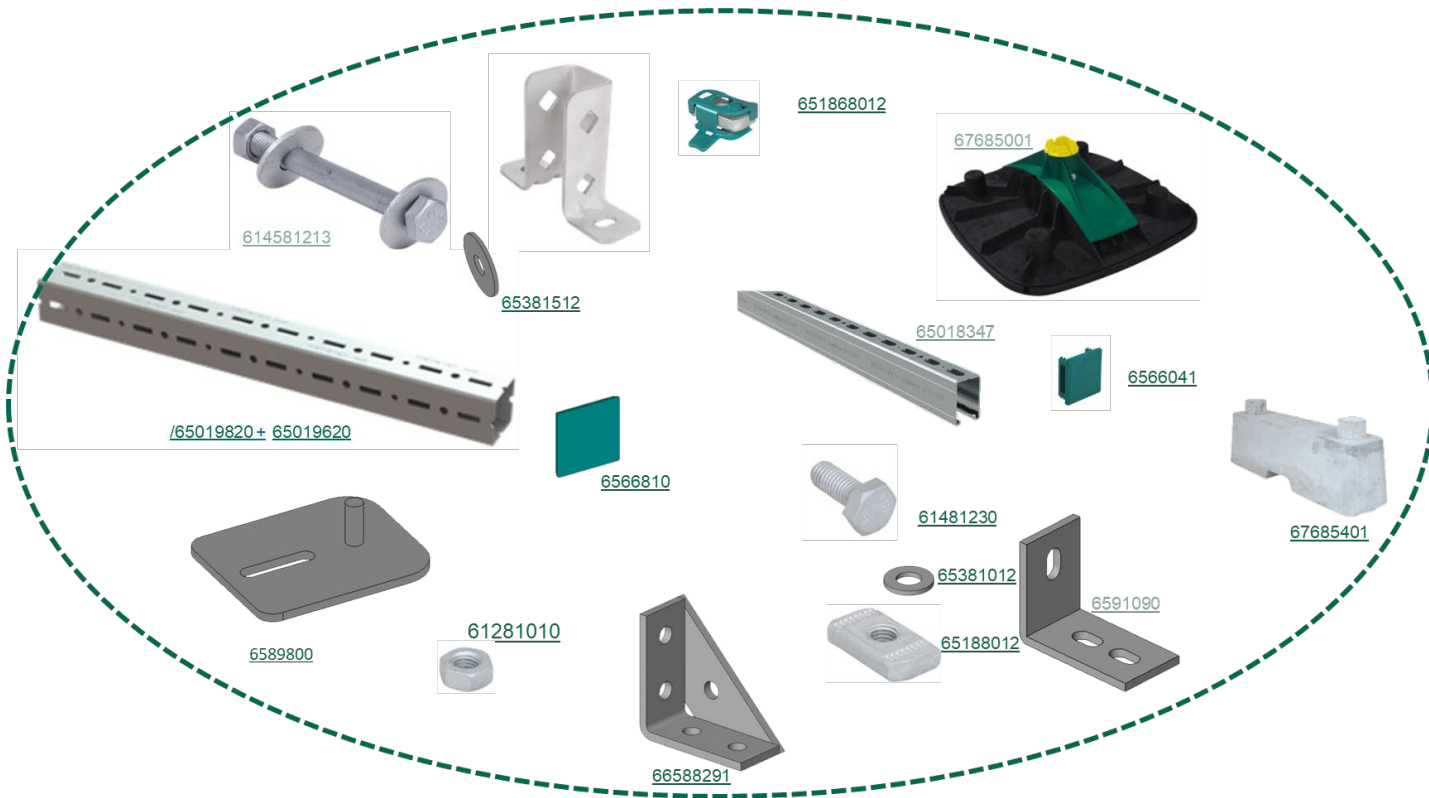


11

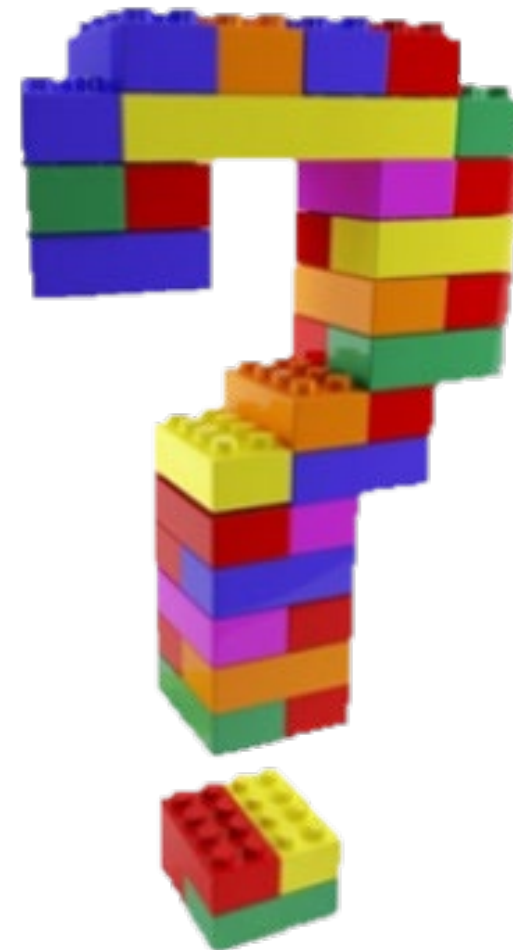


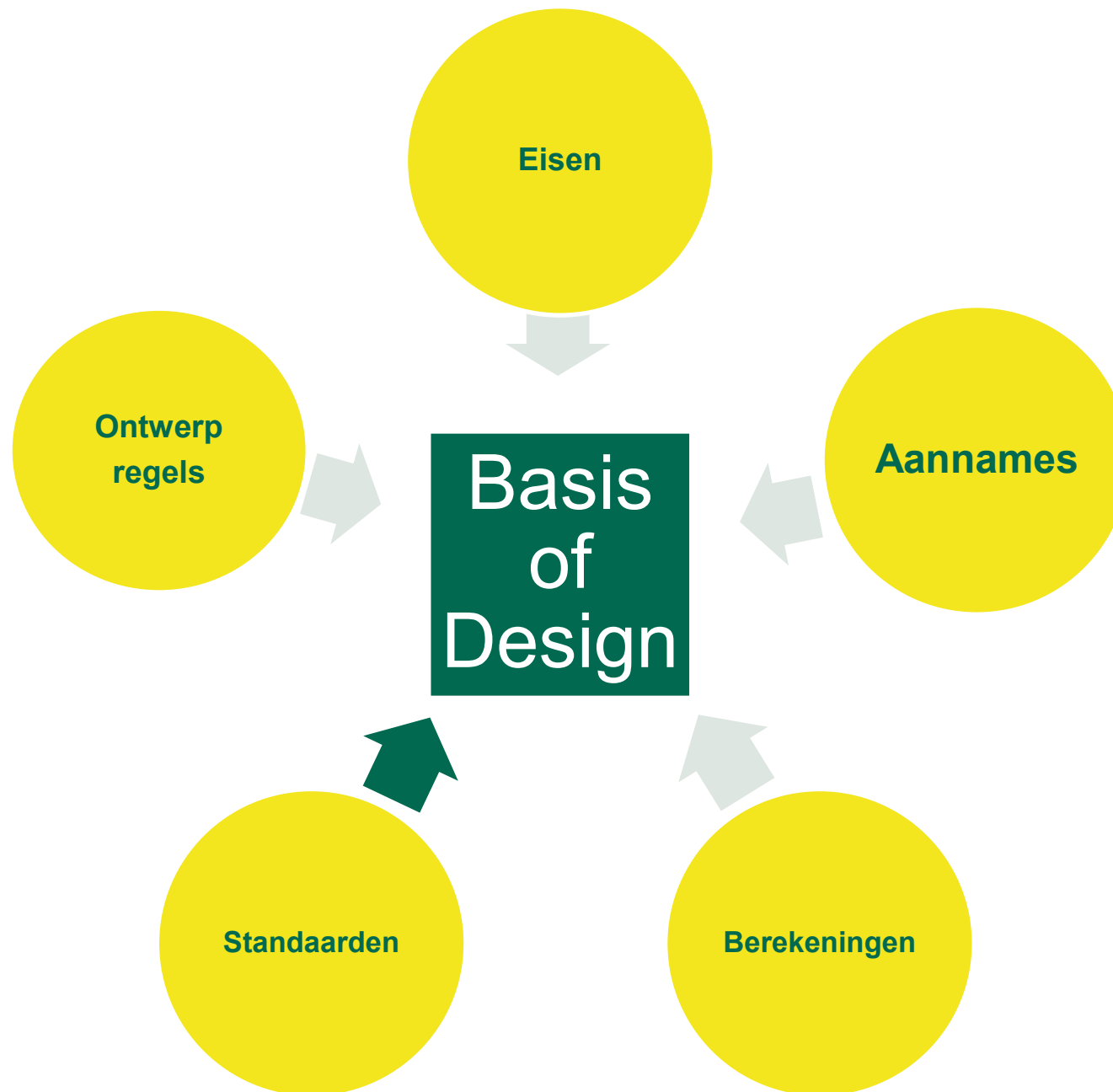
Component Platform (18 pcs)





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“Gebruik een Basis of Design template om ontwerpregels, aannames en randvoorwaarden vast te leggen en zo modulaire concepten consistent en schaalbaar te ontwikkelen.”

This isometric view shows the completed bridge structure. It features a central span supported by two main piers, with additional smaller supports at the ends. The bridge is constructed using grey Technic beams and connectors, with green and grey base plates visible underneath. The structure is symmetrical and appears robust, designed to support a load across the gap.



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AutoSave On

20250106_walraven-iBase_Configurator_masterfile.xlsx • Last Modified: 21 juli

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Design Mode

Properties

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Run Dialog

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Map Properties

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Import

Export

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Refresh Data

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074

fx

Walraven iBase Input	
Bolt Pitch length 1	2002
Bolt Pitch length 2	
Bolt Pitch length 3	0
Bolt pitch length of device [mm]	2002
Bolt pitch width of device [mm]	1017
Number of supports	4
Number of spacers	2
How many adaptors in total?	0
Holesize [mm]	M12
C-to-C distance of damper mounting holes [mm]	188
Beam clamp?	4
Device Weight [kg]	1600

Output: Final Frame	
Overall Length of frame [mm]	2502
Overall Width of frame incl supports [mm]	2017
Number of supports	4
Number of spacers	2
Weight Support Frame [kg]	100
Total Weight (Supportframe + Device) [kg]	1700
Compressive stress [kN/m2]	9,04
Variables for configurator:	
Standard support Model (mm)	600

Microsoft Visual Basic for Applications - 20250902-WalraveniBase-Basis of Design.xlsx

File Edit View Insert Format Debug Run Tools Add-Ins Window Help

Project - VBAPProject

Microsoft Excel Objects

- Sheet1 (BoD purpose)
- Sheet10 (7. Translations)
- Sheet2 (0. Revision history)
- Sheet3 (1. Configurator Explanation A)
- Sheet4 (1. Configurator Explanation B)
- Sheet5 (2. User experience)
- Sheet6 (3. Geometry-Rules Variant A)
- Sheet7 (3. Geometry-Rules Variant B)

Properties - Sheet1

Sheet1 Worksheet

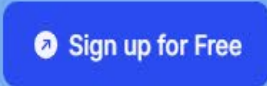
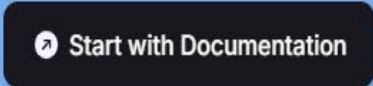
Alphabetic Categorized

(Name)	Sheet1
DisplayPageBreaks	False
DisplayRightToLeft	False
EnableAutoFilter	False
EnableCalculation	True
EnableFormatConditionsCalculation	True
EnableOutlining	False
EnablePivotTable	False
EnableSelection	0 - xNoRestrictions
Name	BoD purpose
ScrollArea	
StandardWidth	11,78

O	P	Q	R	S	T	U	V	W	X	Y
Rule: length <=3m, than 6, if not: length <=4m, than 8, if not: length <=6m than 6, if not: length <=8m than 8										
Rule: if the amount is 2, then 2x length of product - amount of meters, if 1 piece is necessary then (length of product - 2*amount of meters)										
Rule: Width <= 1m, than 2, if not: width <=1.5m, than 3, if not: Width <=2m than 2, if not: Width <=3m than 3, if not: 6 meter										
Rule: If 2 pieces are needed, then 2x length of product - amount of meters, if 1 piece is needed, then (length of product - 2*amount of meters)										

Build and share your parametric solutions

Create web apps from Grasshopper definitions without code. Share and sell them with your team & clients online.

- 
- 



Building costs

Construction



Steel reinforcement

Structural



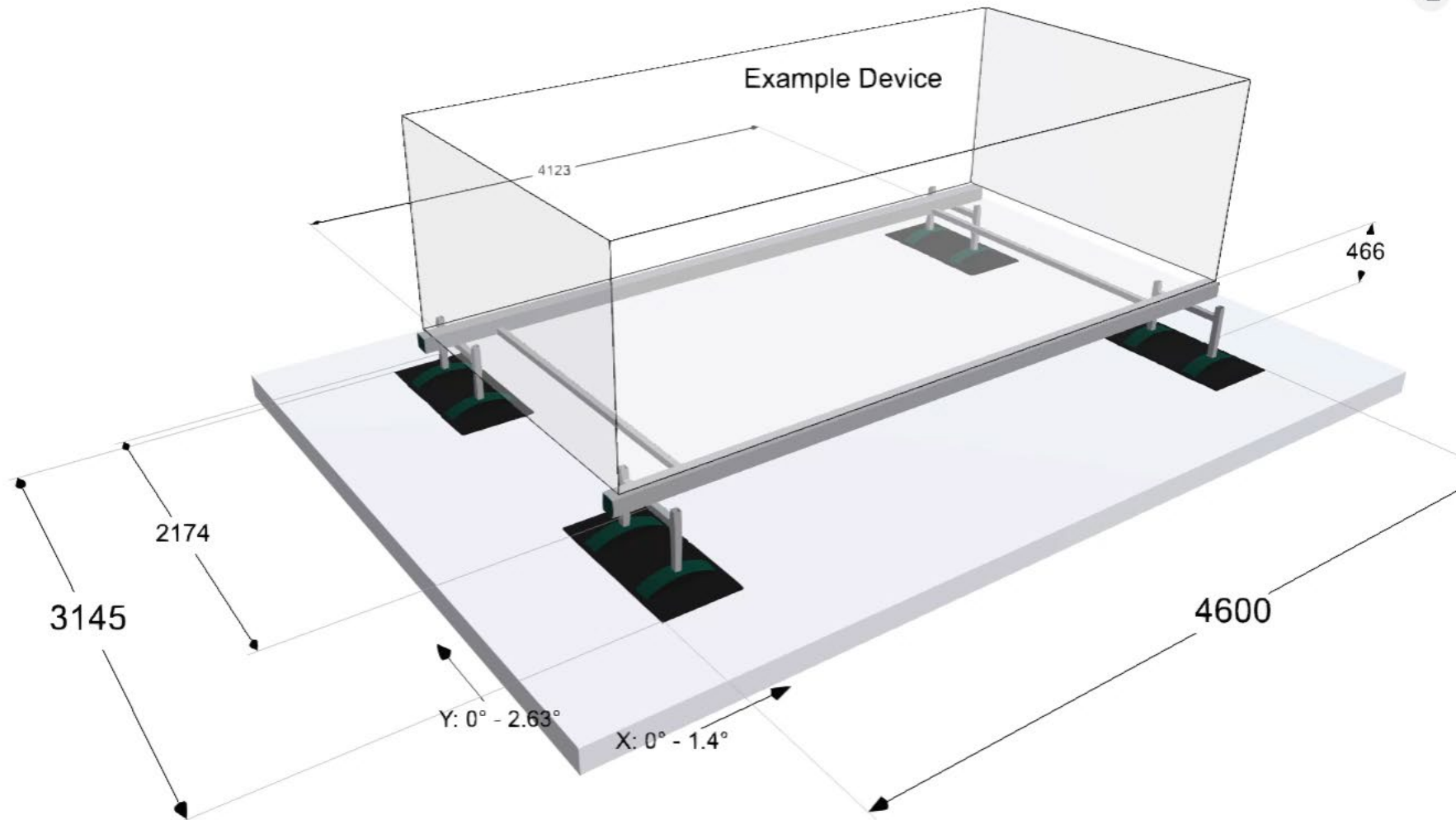
Nitrogen check

Building physics



Energy performance check

Building physics



Device information

Device brand

Select

If your device or type is not in, select 'Custom device' in the dropdown of 'Device brand'



Request quote

Walraven iBase – Integrated solution across Europe

CTO

CSV

walraven

60-80%

Device information

Device type
LBK-type: VKT-0304 / VKT-0404 / Right

If your device or type is not in, select 'Custom device' in the dropdown of 'Device brand'

Dimensions and select
• Device brand: Range C
• Device type: VKT-type: 0304 / VKT-type: 0404 / Right
• Bolt pitch: 100 mm
• Total width: 4500 mm
• Device height: 4470 mm
• Device weight: 1200 kg

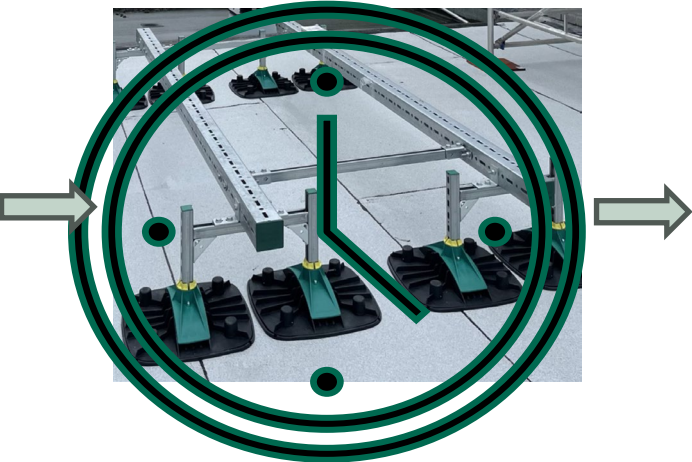
Overview >

Sales price: € 3,459.94
incl. delivery in NL (excl. Waddenslanders), includes Device

Request quote

Download files

File	Name	Page Layout	Formulas	Data	Review	View	Help
File	Home	Insert	Page Layout	Formulas	Data	Review	View
Formulas	Home	Insert	Page Layout	Formulas	Data	Review	View
Formulas	Home	Insert	Page Layout	Formulas	Data	Review	View
Formulas	Home	Insert	Page Layout	Formulas	Data	Review	View
Formulas	Home	Insert	Page Layout	Formulas	Data </tr		



Making it digital before making it real!

walraven

inkoopnr Trane 30017660 (13-09-2025)

Trane - CXC013

1. Total assembly > 2. Support modules > 3. Spacers > 4. Maxx. platform

1735

1595

1665

1400

165

235

1052

2023

2

1

0

0 Support Module 4

1 Maxx. Platform 2

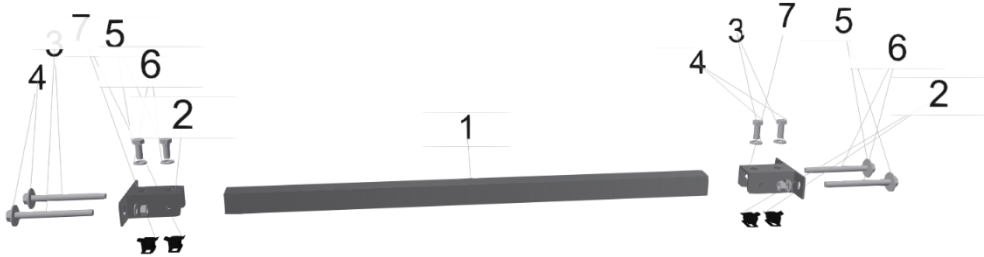
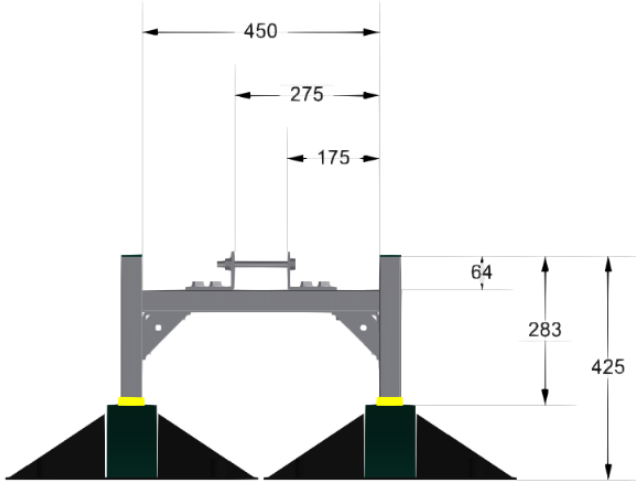
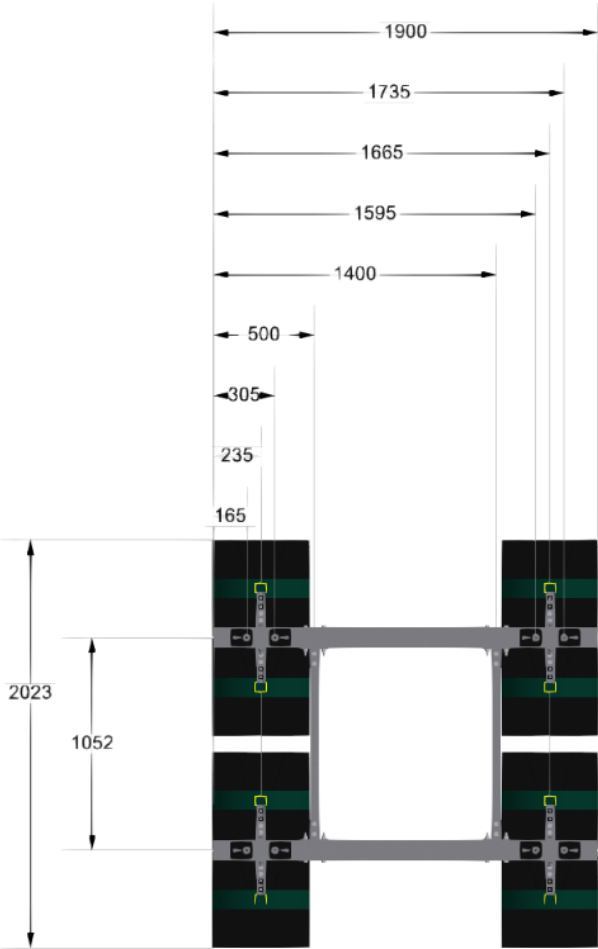
2 Spacers 2

About

walraven.com

18

Digital twin



No	Article	Description	Model	Quantity	Length
1	65018647	BIS RapidStrut Fixing Rail (BUP1000)	41x41H	1	952
2	66588361	base plate	BIS RapidStrut T-shape plate (BUP1000)	2	
3	614581213	Shoulder bolt	Maxx Bolt Set M12x140	4	
4	65381512	flat washer	BIS Washer (Flat) (BUP1000)	4	
5	61481230	hexagon head bolt	BIS Hexagon Head Bolt (BUP1000)	4	
6	65381012	flat washer	BIS Washer (Flat) (BUP1000)	4	
7	651866012	slide nut with plastic tabs	BIS RapidStrut Slide Nut with Plastic Tabs (BUP1000)	4	



DFMA in de praktijk



DFMA in de praktijk





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Zoeken

Classificatiesysteem

NL/SfB

Verklaringcategorie

☐ Categorie 1 (3)

Toepassingsgebied

☐ B&U (3)

Milieuverklaringen



Walraven RapidRail® and Walraven RapidStrut® Fixing Rail (41x82x2.5mm)

Hoofddraagconstructies; kolommenenliggers (B&U)

Categorie 1
Walraven B.V.



Walraven RapidRail® and Walraven RapidStrut® Fixing Rail (41x21x2.5 mm)

Hoofddraagconstructies; kolommenenliggers (B&U)

Categorie 1
Walraven B.V.



Walraven Maxx Heavy Rail Profile (100x120x4.0 mm.)

Hoofddraagconstructies; kolommenenliggers (B&U)

Categorie 1
Walraven B.V.

van ETO naar CTO:

“Starten met data, versnellen met digitalisering, slagen door samenwerking.”



Contact:

Ik geloof in de kracht van
échte, menselijke verbindingen.
Ik hoor graag waar jij mee bezig
bent en hoe ik kan helpen.”

✉ danny.van.rij-
roks@walraven.com

☎ +31 (0)6 28 81 64 43

