E-commerce concepts

Material Handling Forum

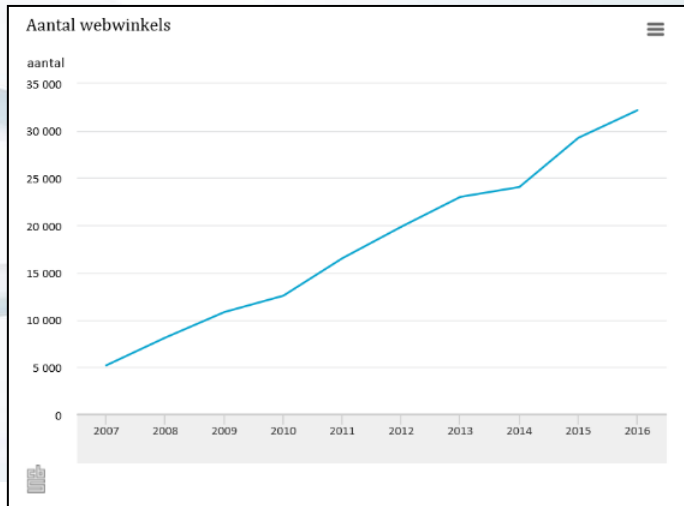Rotterdam May 22, 2017

LIVING LOGISTICS

Recognizable?

Anything. Anytime. Anywhere

Some more e-commerce

- € 11 bln turnover via web in NL

- # web-stores x5 in last 10 yrs

- Fashion on line most important

E-commerce logistic trends*

1. 1st autonomous packages will ride and not fly

2. Delivery vans will become smaller/cleaner

3. Returns as unique selling point

4. Fixed home addresses and fixed times deliveries are ending   * Alvar Paazl

What we as logistic professionals already now and do!

- What is exactly happening after placing an order on the internet?

- Order/consider ordering daily/weekly groceries on line?

Our reality

Content

- **TGW Systems BV**
- Typical design requirements
- Concept Solutions and Innovations
- Proven e-commerce concepts

TGW - Key facts

From our roots .... today

- Founded in 1969

- Revenue: 530 million EUR (2015/2016)

- > 2,700 employees (2016-17)

- 20 entities worldwide

- Privately owned and independent:

TGW today

A global systems integrator

Delivering solutions

Convincing performance in the core areas

- **Storage systems**
  - Shuttle and miniload systems
  - Pallet systems

- **Split case order fulfilment**
  - Goods-to-person FlashPick®
  - Person-to-goods

- **Full case order fulfilment**
  - Mixed case automatic palletising

Operating globally

TGW worldwide

Headquarters with Production, Services, Project Management

Services, Project Management

Production

- Decentralised entities
- Tightly networked cooperation
- One dedicated team

E-commerce and omni-channel

Providing flexibility to

Content

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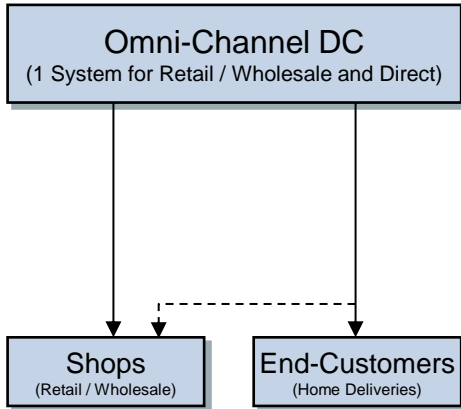
Typical design requirements

Recognized requirements for e-commerce operations

- Scale ability
- Flexibility
- Short order lead-times
- Many single line orders
- (Quick) Changing SKU-ranges
- Large variety of product characteristics
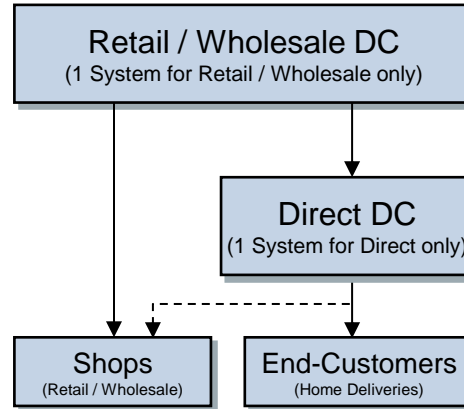- Many carton/packaging forms

Wholesale B2B → Retail B2B → Consumer B2C
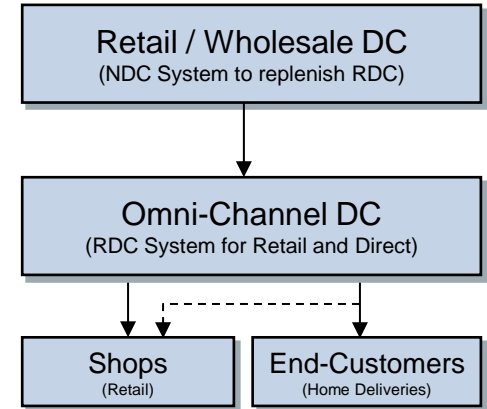
Omni-channel – E-commerce

Omni-Channel Supply Chain Designs

Alternatives concepts (in fashion)

Omni-Channel Operation

Omni-Channel DC (1 System for Retail / Wholesale and Direct)	Retail / Wholesale DC (1 System for Retail / Wholesale only)	Retail / Wholesale DC (NDC System to replenish RDC)

Direct DC
(1 System for Direct only)

Omni-Channel DC
(RDC System for Retail and Direct)

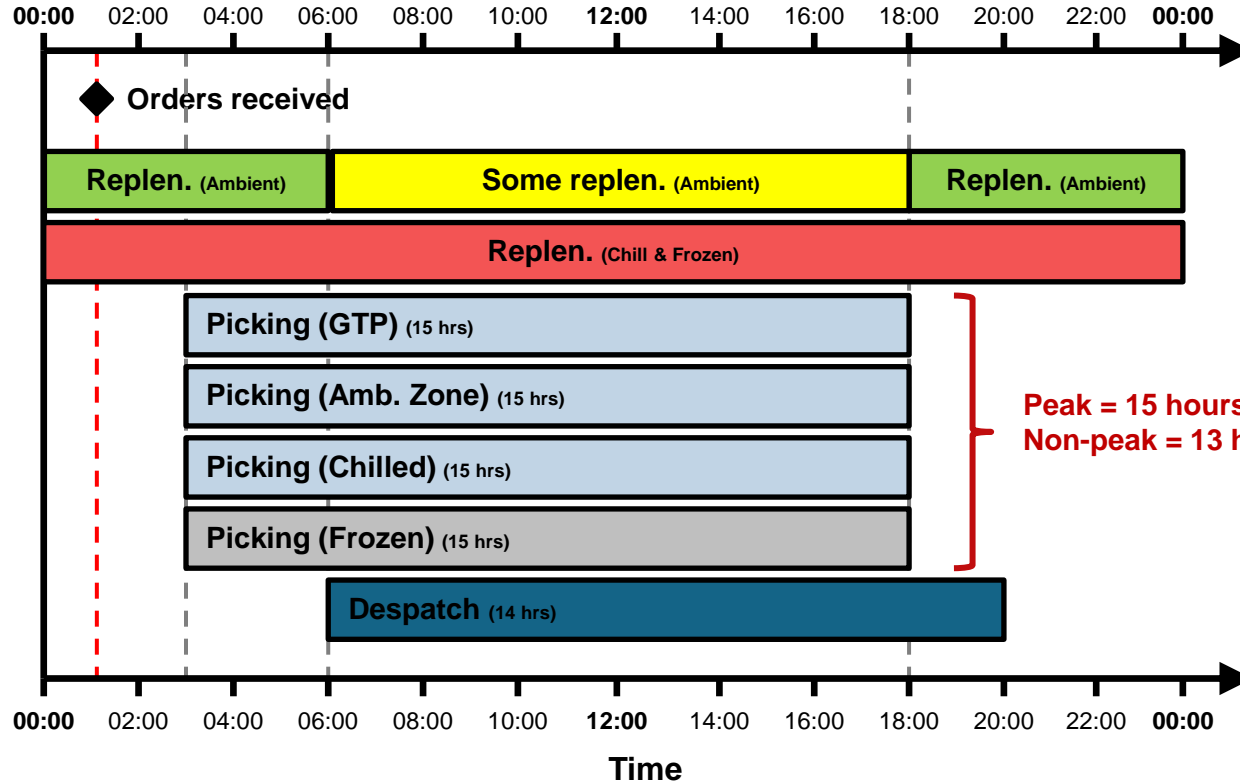| Shops (Retail / Wholesale)	End-Customers (Home Deliveries)	Shops (Retail / Wholesale)	End-Customers (Home Deliveries)	Shops (Retail)	End-Customers (Home Deliveries)

BESTSELLER®

ZARA

DECATHLON

GAP

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Typical Design Requirements

Essential input for food e-commerce

- Temperature zones
- Order structure / consumption in volume / order lines per SKU
- Order intake profile (availability of orders)
- Order preparation time and leadtimes (same day / next day)
- Working shift model
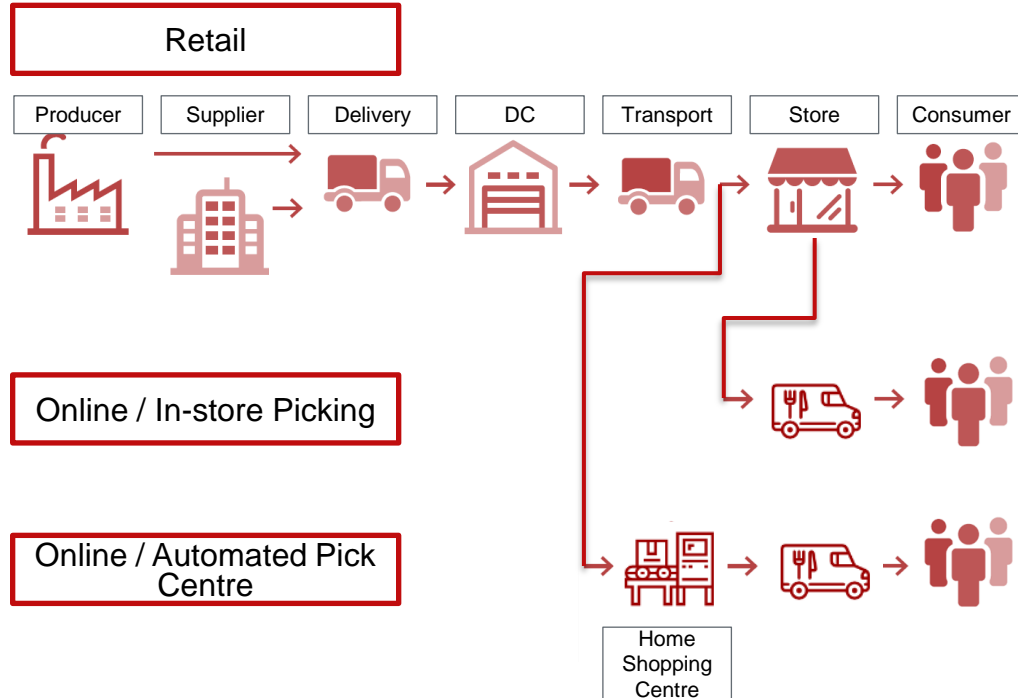- Shipping time profile
- Delivery vehicle/method
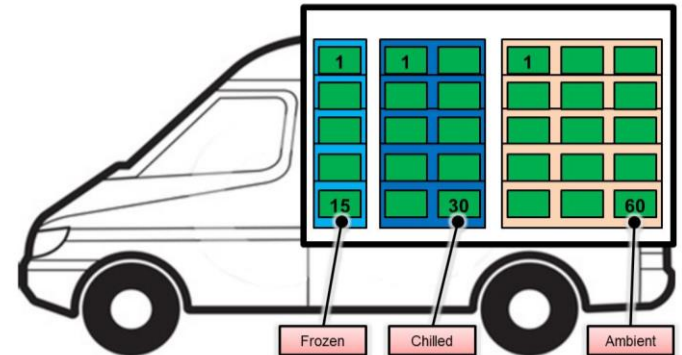
Important Design Requirements

UK HSC Heartbeat

Decentral fulfilment

Brick and Mortar retailer

Retail

| Producer | Supplier | Delivery | DC | Transport | Store | Consumer |

Online / In-store Picking

Online / Automated Pick Centre

Home Shopping Centre

○ National and Regional DCs (NDCs/RDCs)

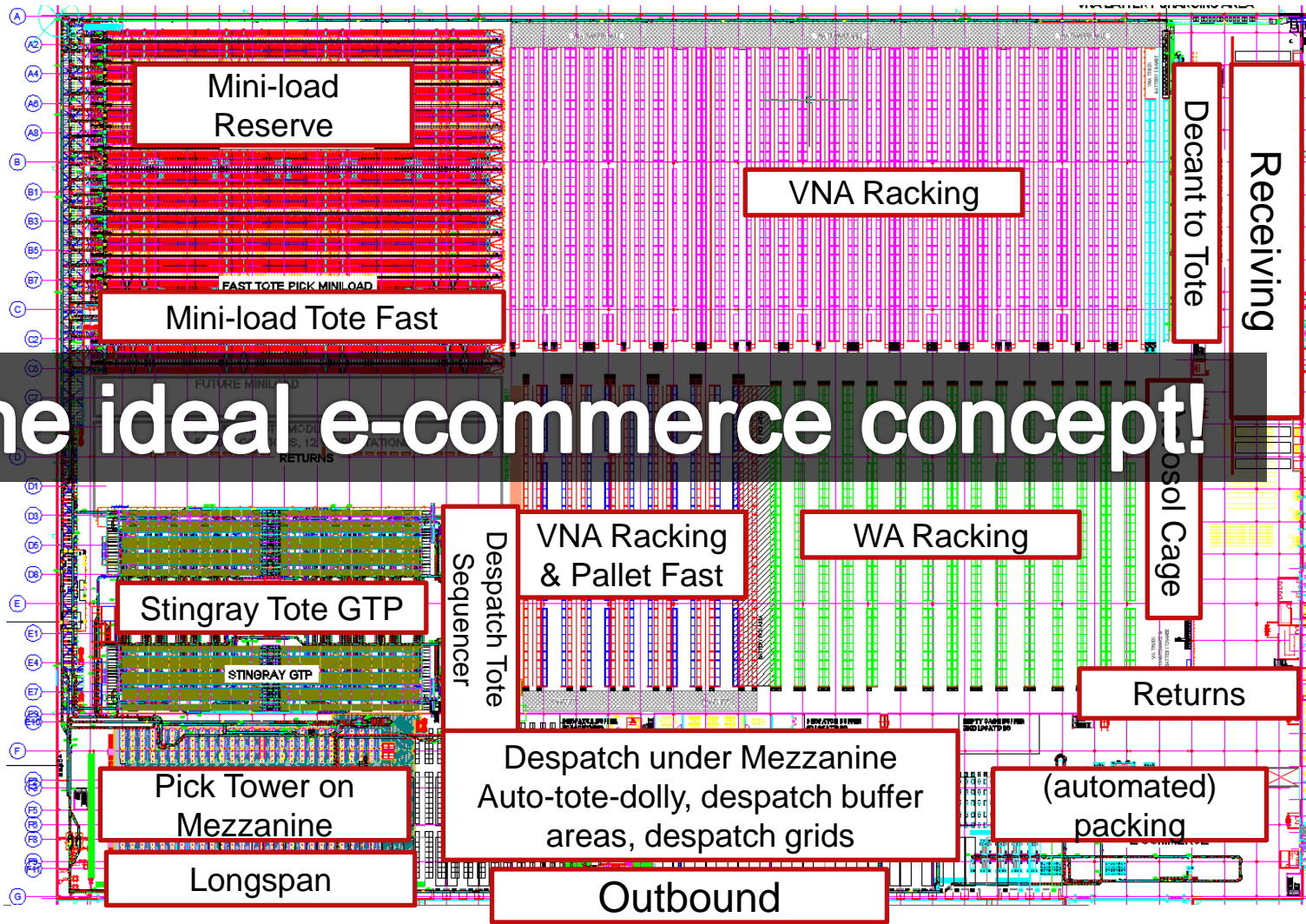# Content

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The ideal e-commerce concept!

Mini-load Reserve

Mini-load Tote Fast

VNA Racking

Decant to Tote

Receiving

Stingray Tote GTP

Despatch Tote Sequencer

VNA Racking & Pallet Fast

WA Racking

Returns

Pick Tower on Mezzanine

Despatch under Mezzanine Auto-tote-dolly, despatch buffer areas, despatch grids

(automated) packing

Longspan

Outbound

Where does your operation fit in?

Batch pick vs.
Order pick

G2P vs P2G

Manual vs. automated packaging

1:n vs. 1:1

TGW Innovation

FlashPick® = Smart Piece Picking System
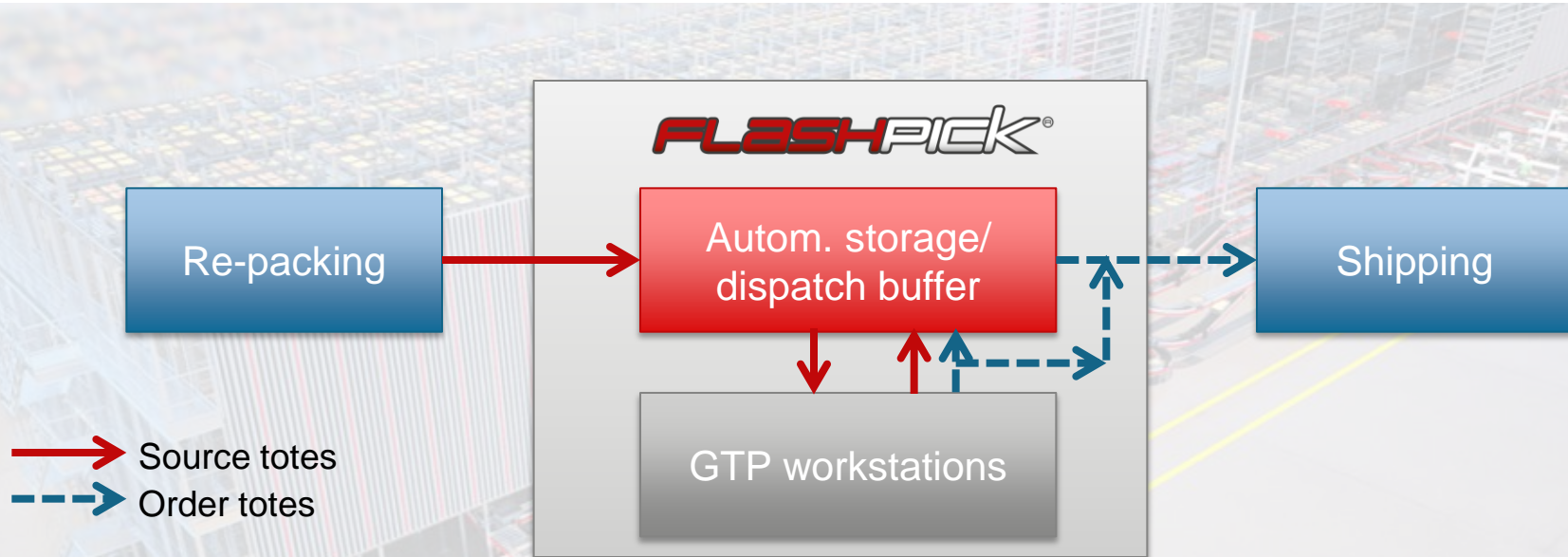
4x Smart TGW modules in interaction

TGW Stingray shuttle

TGW KingDrive®

TGW PickCenter
ONE or MULTI

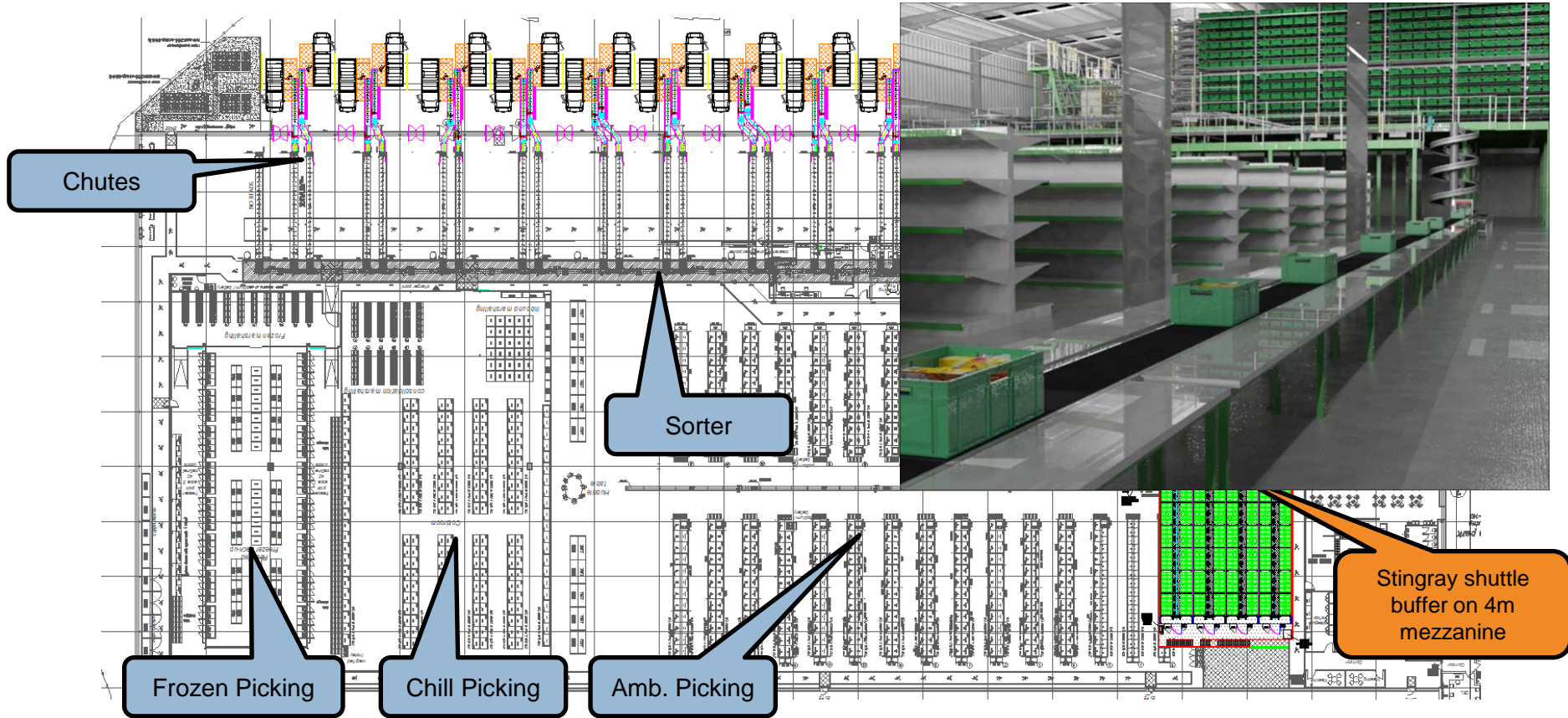TGW Software Suite

Content

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- Concept and Innovations

- **Proven e-commerce concepts**

Recent realizations

Realization: HSC + Despatch Buffer

Chutes

Sorter

Stingray shuttle buffer on 4m mezzanine

Frozen Picking

Chill Picking

Amb. Picking

Grocery e-commerce

Thank you for your time and attention !

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