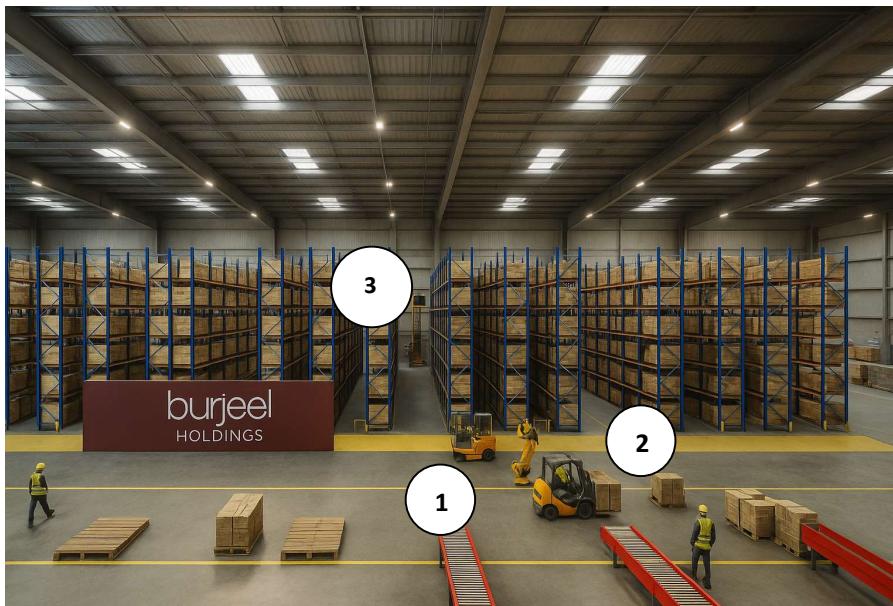


9. Proposed System Description

9.1. Process flow of the System

The purpose of this proposal is to present the design, manufacturing, installation, commissioning, testing, and acceptance testing of the fulfilment centre automation for handling Pharma and Non-pharma products, as per Burjeel Holding's requirements.

A. Inbound Receiving and Put away

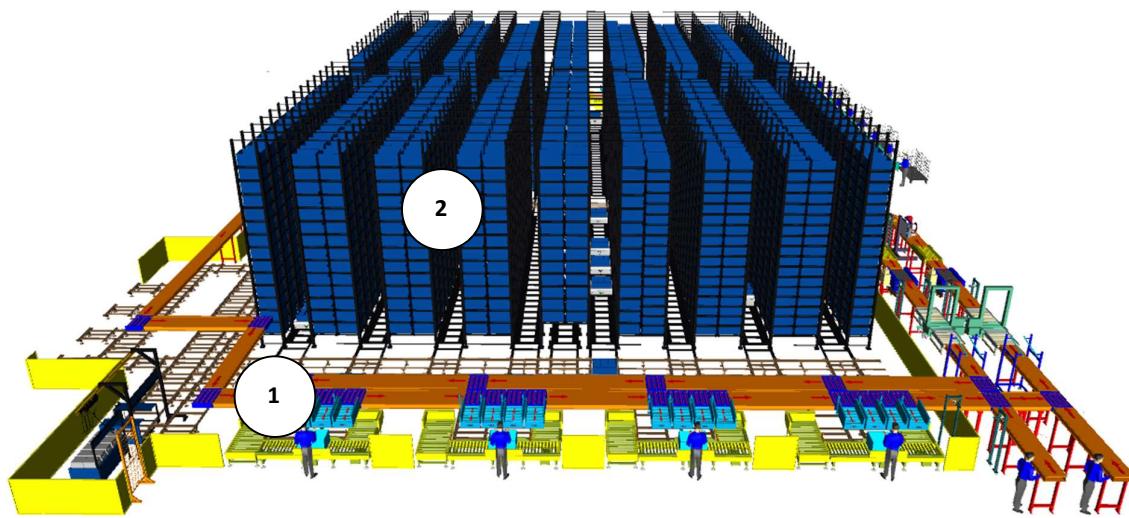
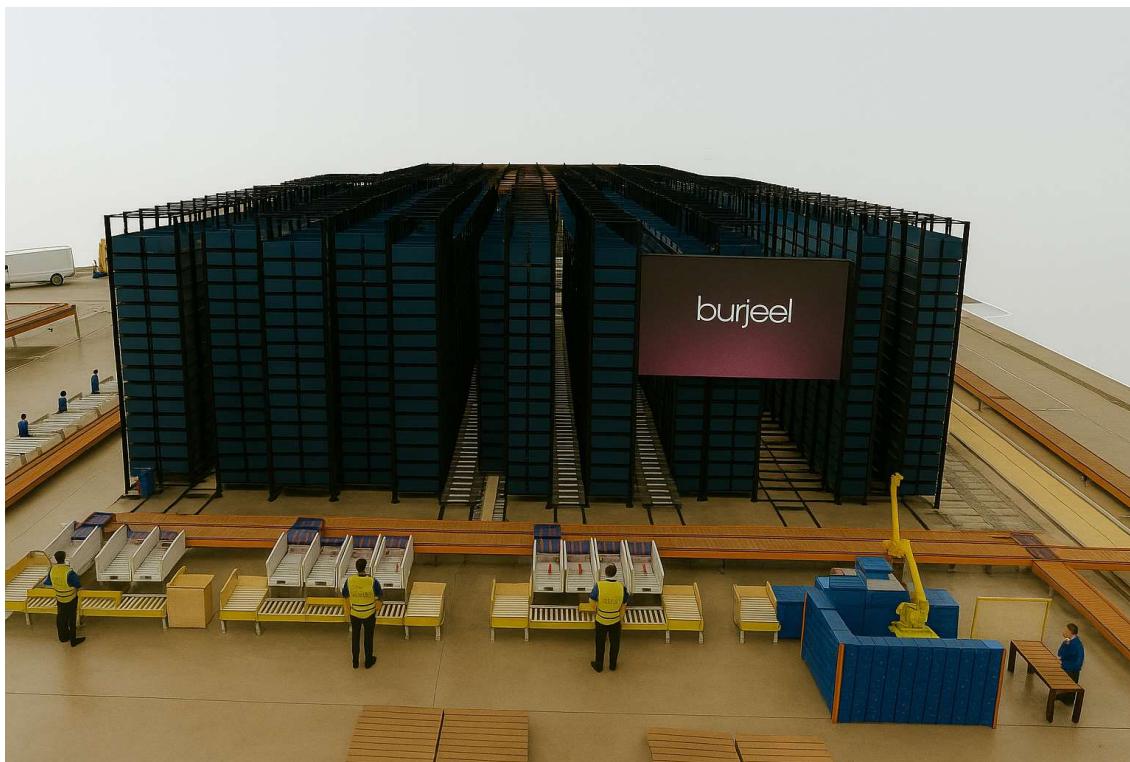


LEGEND:

1. Inbound Telescopic Belt Conveyor
2. Forklift (not in Falcon's Scope)
3. Pallet Racking (Not in Falcon's Scope)

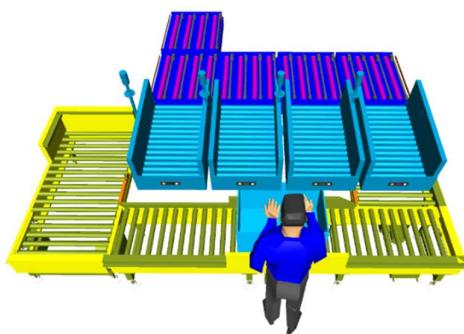
- *The pharmaceutical and non-pharmaceutical products are received from various Burjeel Holdings suppliers.*
- *These items are unloaded efficiently using telescopic belt conveyors.*
- *The items are transported out of the truck via the conveyors and are then stacked onto pallets.*
- *Following unloading, the goods undergo the necessary quality inspection procedures to ensure compliance with predefined standards.*
- *Post-verification, the items are systematically transported through forklifts and stored in the Pallet Racking System.*
- *NEO ASRS system used for loose items picking can be replenished either from Bulk Pallet storage or directly from Inbound.*

B. NEO Storage and Put Away



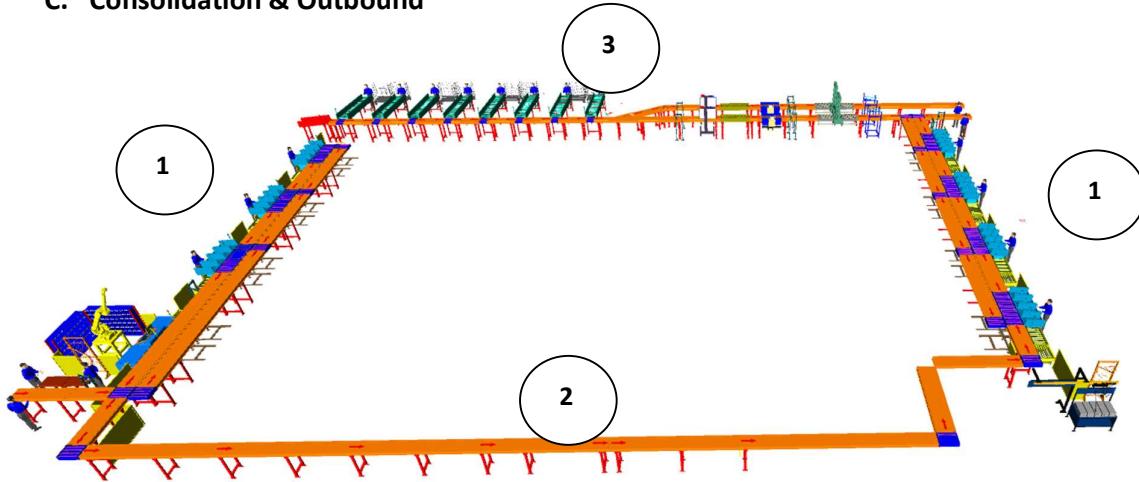
LEGEND:

1. Goods to Conveyor station
2. NEO Grid with Bins



- Pharmaceutical and non-pharmaceutical products are stored in NEO bins. Fast-moving or high-consumption SKUs can be allocated per bin. Alternatively for other items, each bin, which is designed with four partitions, can accommodate up to four different SKUs.
- During replenishment, the put wave will be pushed into Falcon's WCS (NEO-IT) and NEO bots will bring bins for replenishment at NEO GTC stations.
- The operators will break open the boxes and place the loose pharma and non-pharma products into NEO bins as per the defined put wave.
- NEO GTC stations can handle cartons with single and mixed SKUs during put away.
- The NEO bots will then transport and store the consolidated bins at their designated storage locations.

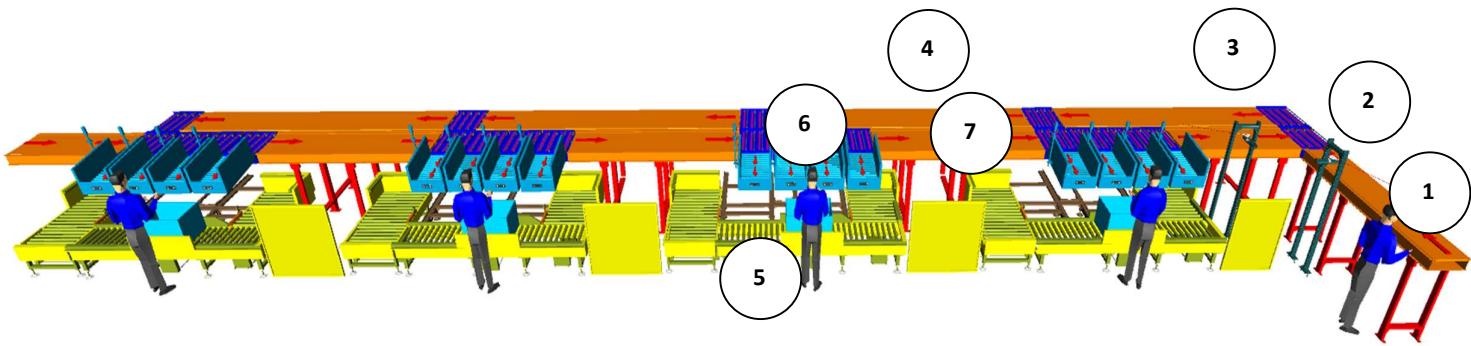
C. Consolidation & Outbound



LEGEND:

1. GTC Stations
2. Order Tote takeaway conveyor
3. Outbound Sorter

D. B2B Consolidation

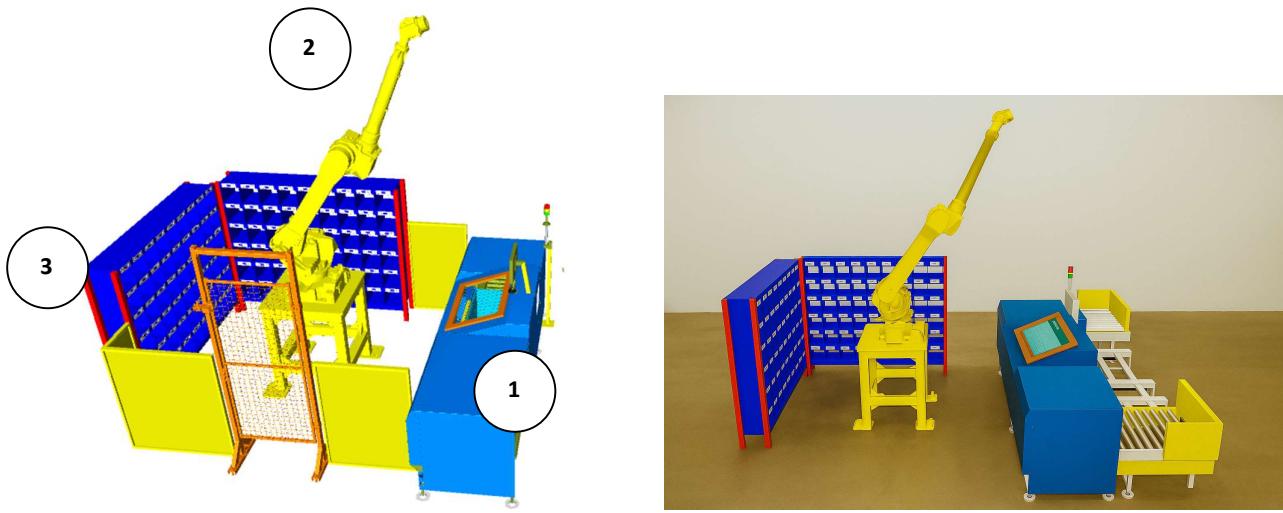


LEGEND:

1. Empty tote Feeding Conveyor
2. Side Barcode Scanner
4. Pop-Up diverts
5. Empty tote Carrying Loop Conveyor
6. Goods to Conveyor Station
7. Bi-direction Conveyors
8. Order Tote takeaway conveyor

- *Order received from Burjeel's network of hospitals and medical centres are processed in three distinct batches on a given day.*
- *For bulk items, picking is executed directly from the pallet racking in the form of full pallets or cartons. Meanwhile, picking of loose items/ mono-cartons is handled via the NEO system, using totes.*
- *Order data is pushed to NEO system from Burjeel's WMS and Falcon's WCS will analyse the data and allocate orders to different GTC stations.*
- *The NEO bots will be activated and bring the bins with SKUs required to fulfill the orders and drop them on the GTC conveyor.*
- *NEO Bots will bring bins containing Pharma and Non-Pharma products to the goods-to-conveyor stations, where operators will consolidate the products into Order totes buffering on the conveyor running over the station. Empty order totes will be automatically supplied to this conveyor.*
- *Barcodes of empty totes will be scanned using side barcode scanners, after which they will be merged into a loop via a pop-up divert unit. These empty totes will keep circulating in the loop.*
- *Once the order is filled or order is complete, operator will notify the system and totes on the bi-directional conveyor, will merge to the order tote takeaway conveyor line.*
- *B2B stations of both the zones are connected through order tote takeaway conveyor, which eventually takes the totes to outbound sorter after automatic strapping and labelling.*

E. B2C Consolidation

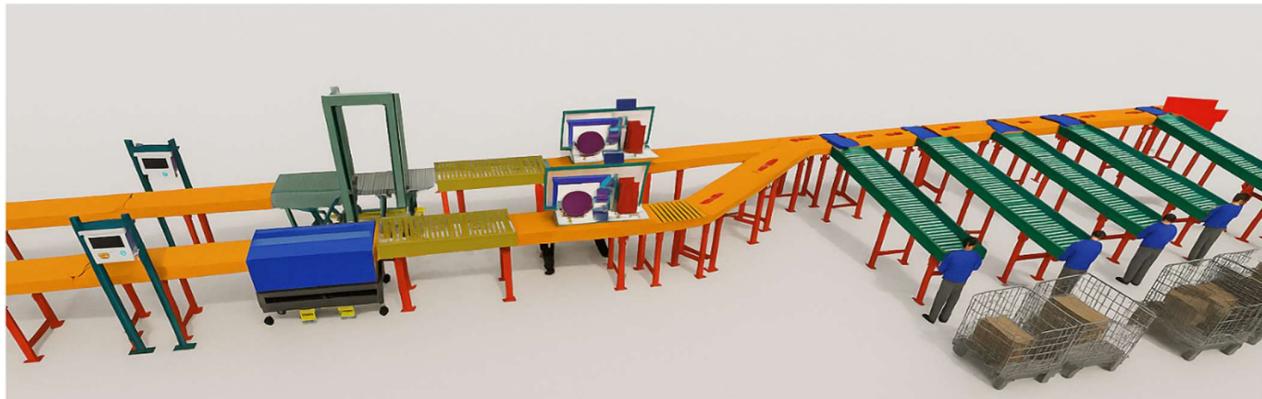
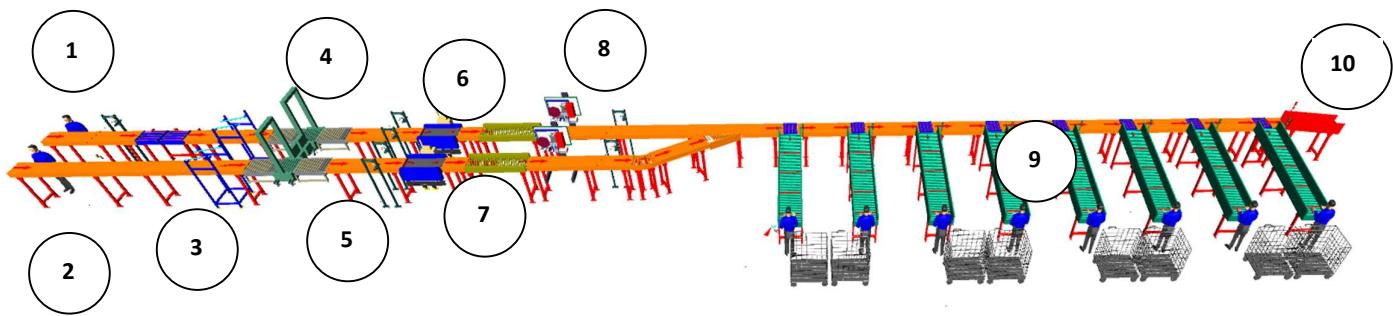


LEGEND:

1. B2C Outbound Station
2. Robotic Arm (Optional)
3. Put to Light with Pigeonholes

- Dedicated station is provided to cater B2C orders.
- B2C orders pick wave will be pushed to Falcon's WCS and orders will be mapped on the pigeonholes of the put to light racks.
- NEO bots fetch the Bins with required SKUs and deliver them to the dedicated B2C picking station.
- At the station, the Robotic Arm automatically picks products from the bins and scans their barcodes.
- Based on the scanned barcode, the corresponding Put-to-Light (PTL) location illuminates, indicating the correct bin for item placement. Each PTL is linked with their respective order ID.
- The Robotic Arm places the item into the PTL location, enabling efficient and accurate sorting.
- The PTL rack is designed such that operators can pick items from the rear side. Once the order items are picked, operators consolidate them into a tote and place the tote onto the takeaway conveyor.
- The barcode on the tote is scanned, and the tote is diverted via pop-up diverters onto the order tote takeout conveyor, which routes it to the outbound sorter.
- Robotic Arm is provided as an option, and this station can be handled by operator by default.

F. Outbound Process



LEGEND:

1. Bulk Load Takeaway Conveyor
2. Order Tote Takeaway Conveyor
3. Automatic Tote Closure system
4. Automatic Strapping Machine
5. Side Barcode Scanner
6. Weighing Conveyor
7. Aligning Conveyor
8. Automatic Print and Apply System
9. Outbound Sorter
10. Rejection Gravity Chute

- Cartons retrieved from the Pallet Racking storage, required for order fulfilment, will be placed onto the Bulk Load Takeaway Conveyor.
- Parallelly running Tote Takeaway Line, will carry consolidated B2C/B2B order totes for downstream processing.

- These totes will undergo a sequence of automated operations including lid closure, parallel strapping, barcode scanning, weighing and automatic Label application.
- Cartons will follow the same process, excluding the lid closure step.
- After labelling, the barcodes on both totes and cartons will be re-scanned for label verification and sorted route-wise using Swivel Wheel Diverters.
- Totes and cartons belonging to the same order will be consolidated manually onto pallets/collection trolleys through scanning.
- The system is equipped with a rejection chute to divert any totes or cartons with barcode mismatches or other sorting issues.
- In the event of a failure on the Tote Takeaway Line, the Bulk Load Takeaway Conveyor can function as a contingency line to process totes.

G. Outbound Staging and Dispatch



LEGEND:

1. Staging Area
2. Telescopic Belt Conveyor

- Consolidated pallets/ collection trolleys will be transferred to the designated outbound staging area for dispatch preparation.
- In case a truck is positioned at the loading dock, totes or boxes will be directly loaded into the vehicle using a telescopic belt conveyor system to facilitate efficient and ergonomic material handling.