



GUIDELINES | FC DESIGN

UNDERSTANDING OPERATIONAL WORKFLOWS AND ASSET REQUIREMENTS

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3.

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1. INTRODUCTION

1.1 Operational Departments

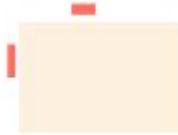
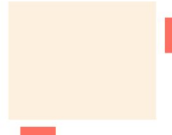
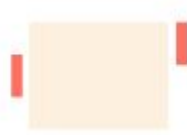
TATA IMG fulfilment center has **4 operational departments** to manage all the goods movement, from receiving to dispatch. They are as mentioned below:

Note : 08% to 10% remaining area is utilised for miscellaneous usage, i.e. Office, pantry, toilets, server and electrical room, etc.



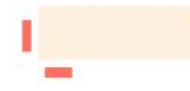
1.3 Layout Types and Flows (Typology A)

Rectangular Layout with the ratio of L:B at approx. 3:4

	RECTANGLE TYPOLOGY IN THE RATIO 3:4 (Length : Width)				
SITE TYPOLOGY	Property Shape	Square or Rectangle with length:width ratio of 3:4	Square or Rectangle with length:width ratio of 3:4	Square or Rectangle with length:width ratio of 3:4	Square or Rectangle with length:width ratio of 3:4
	Dock Location	Same face, difference > 30'	Adjacent face, close ends	Adjacent face, extreme ends	Opposite ends
	Representation				
	Possible Flow Expected	 U- Flow layout	 U- Flow layout	 L- Flow layout	 Through Flow
EXPECTED AREA CONTRIBUTION FACTOR	Inwarding	15.39%	19.61%	16.22%	18.43%
	Inventory	48.19%	47.21%	57.99%	42.62%
	Quality Check and Packaging	11.79%	16.74%	8.54%	15.86%
	Logistics	7.75%	9.35%	7.32%	9.51%
	Extra for electrical, server, pantry, office, toilets, etc.	16.89%	7.09%	9.94%	13.59%
	Total efficiency	100.00%	100.00%	100.00%	100.00%

1.3 Layout Types and Flows (Typology B)

Linear Layout with the ratio of L:B at approx. 1:3 or higher

	LINEAR TYPOLOGY IN THE RATIO 1:3 (Length : Width) OR HIGHER					
SITE TYPOLOGY	Property Shape	Linear with length:width ratio of 1:3 or higher	Linear with length:width ratio of 1:3 or higher	Linear with length:width ratio of 1:3 or higher	Linear with length:width ratio of 1:3 or higher	Linear with length:width ratio of 1:3 or higher
	Dock Location	Same face, longer face, difference > 30'	Same face, longer face, difference < 10'	Same face, shorter face, difference < 10'	Adjacent face, close ends	Opposite ends
	Representation					
	Possible Flow Expected					
		U- Flow layout	U- Flow layout	U- Flow layout	U- Flow layout	Through Flow
EXPECTED AREA CONTRIBUTION FACTOR	Inwarding	17.26%	15.05%	21.85%	16.46%	18.43%
	Inventory	41.97%	51.05%	49.30%	47.08%	42.62%
	Quality Check and Packaging	12.55%	10.10%	8.40%	11.46%	15.86%
	Logistics	8.24%	9.21%	9.24%	9.58%	9.51%
	Extra for electrical, server, pantry, office, toilets, etc.	19.99%	14.60%	11.20%	15.42%	13.59%
	Total efficiency	100.00%	100.00%	100.00%	100.00%	100.00%

1.4 Throughput Calculations (under process**)

Order processing and furniture requirements.**

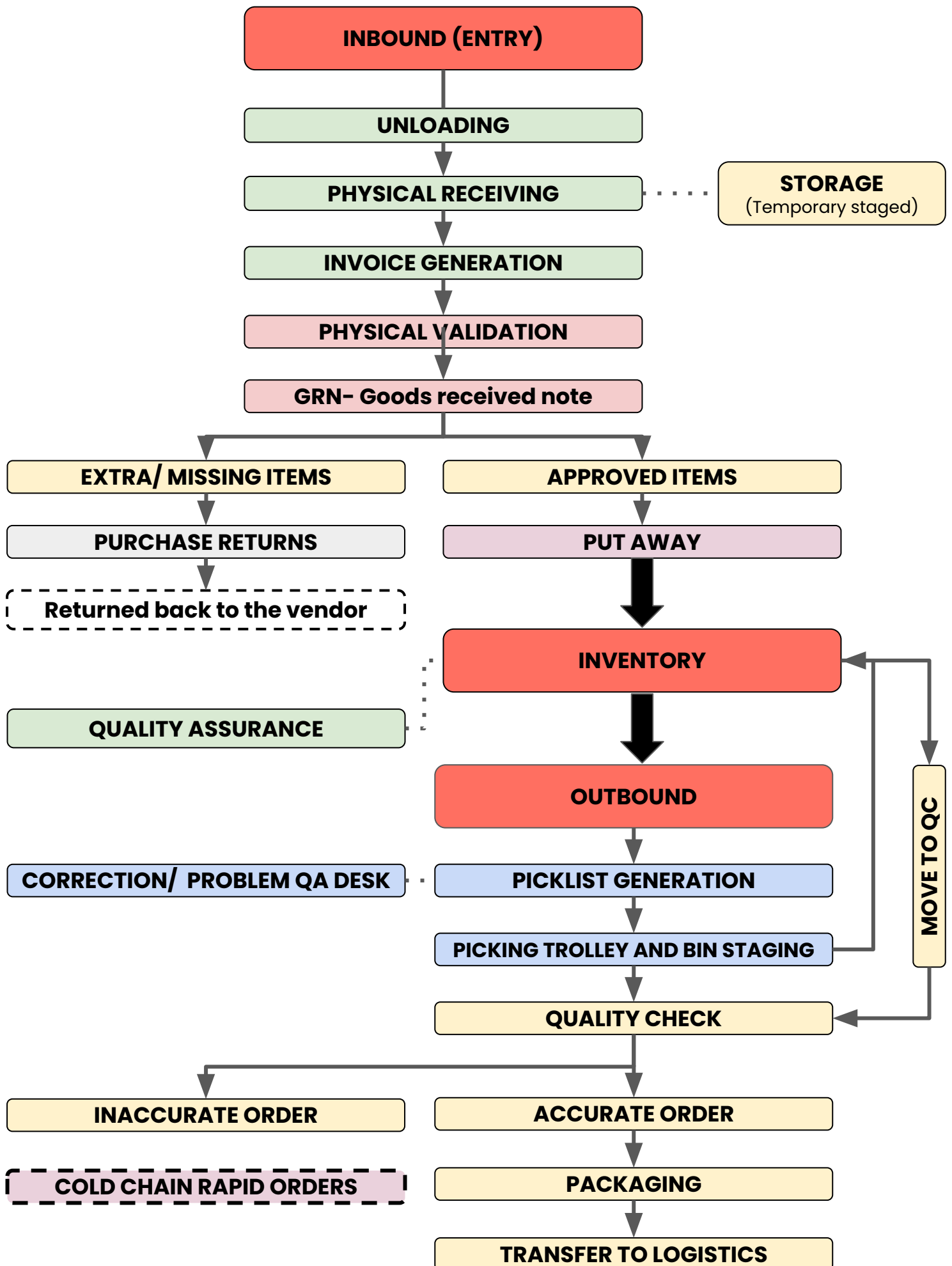
Order processing value (per shift/ day)of different departments					
Processing	PV Table	GRN Table	Put-Away Table	QC Table	Packing Table
Orders per shift	320	360	320	280	296
Orders per day (2 shifts)	640	720	640	560	592

Note : Order processing of a FC happens in 2 shifts, for all locations.

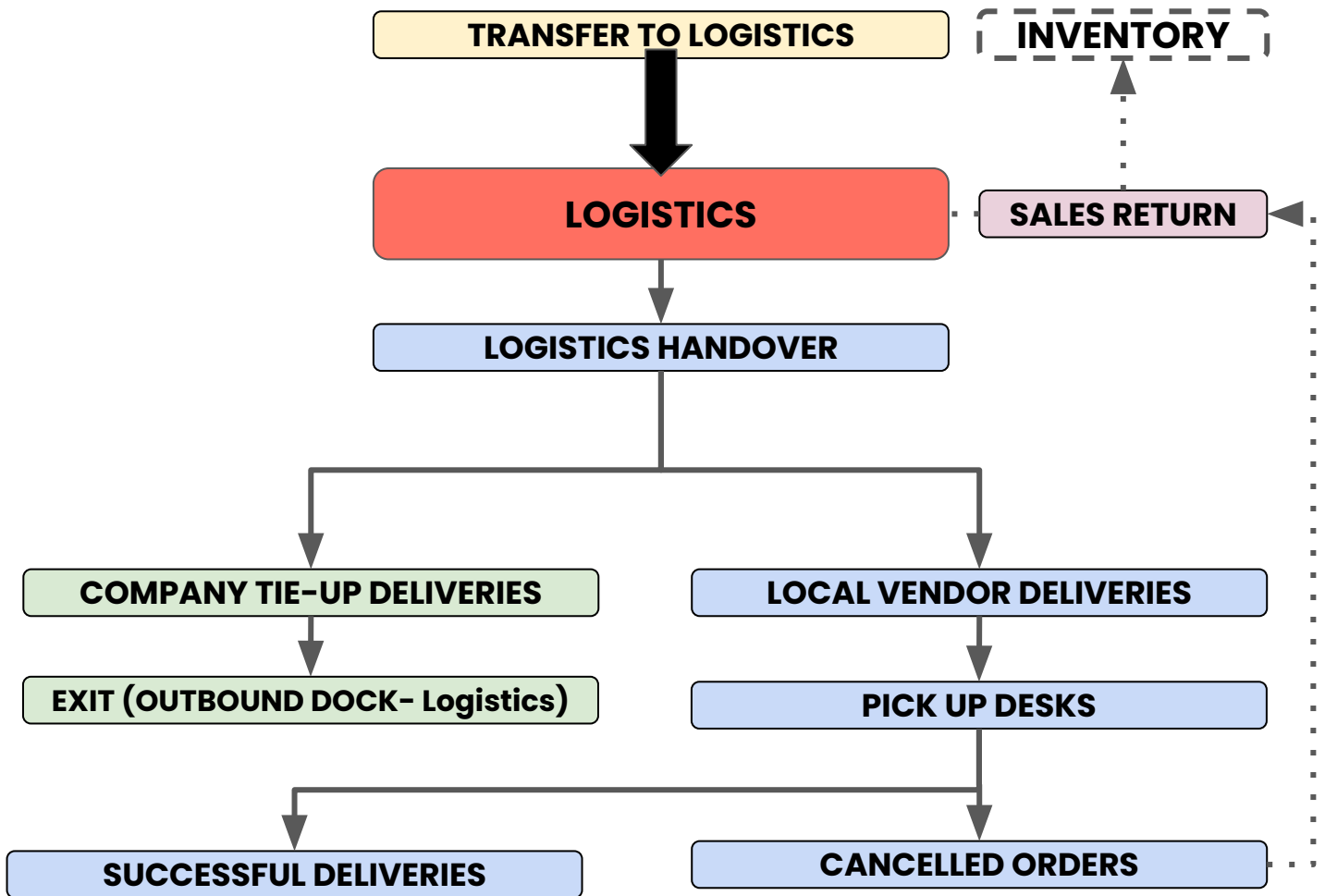
Furniture requirements based on carpet areas				
Carpet Area	Assumed Order	PV table	GRN table	QCP table
< 5,000	< 2000			
> 5,000	< 2000			
> 10,000	< 2000			
> 15,000	< 2000			
>20,000	< 2000			

2. Operational Workflows

PROCESS FLOW



PROCESS FLOW

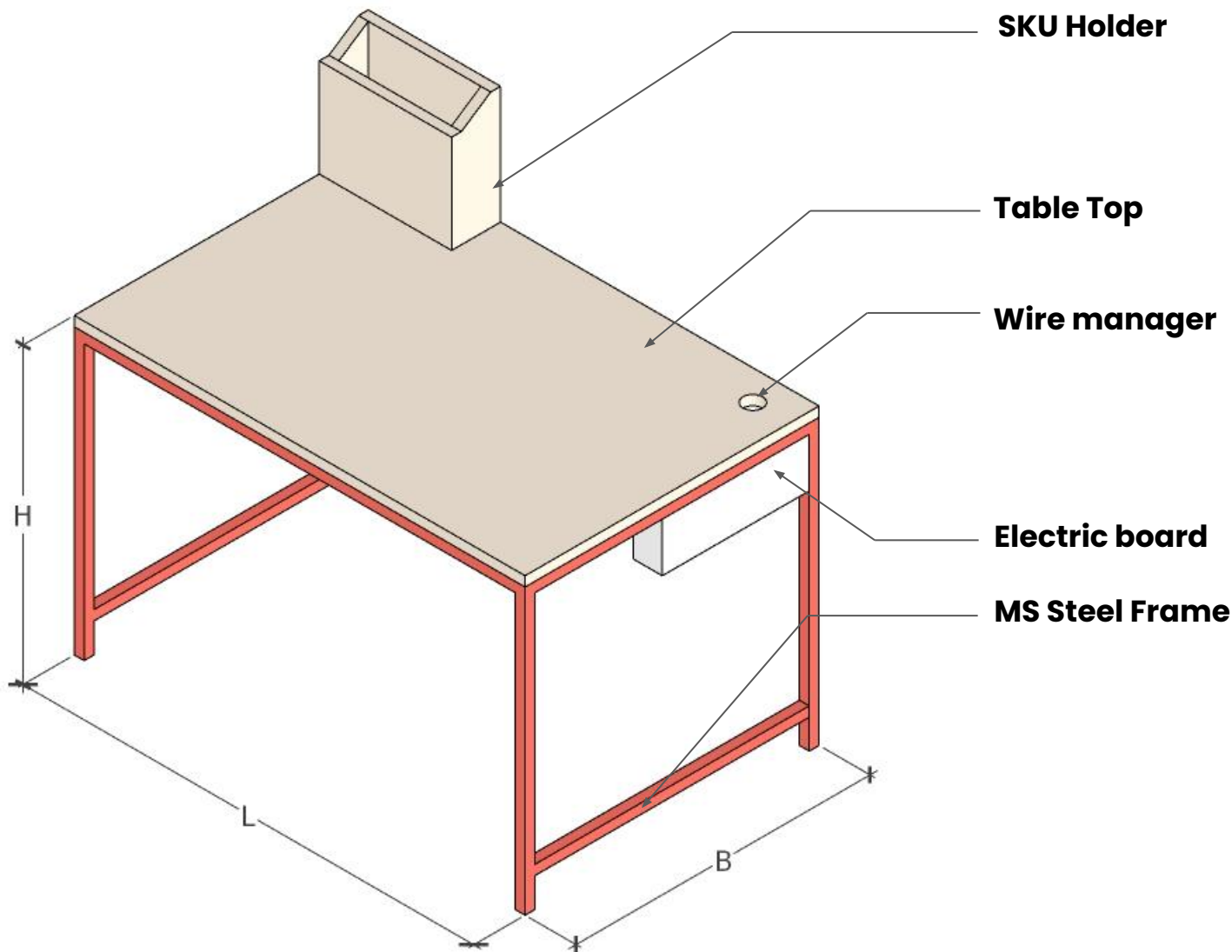


4. Furniture Designs

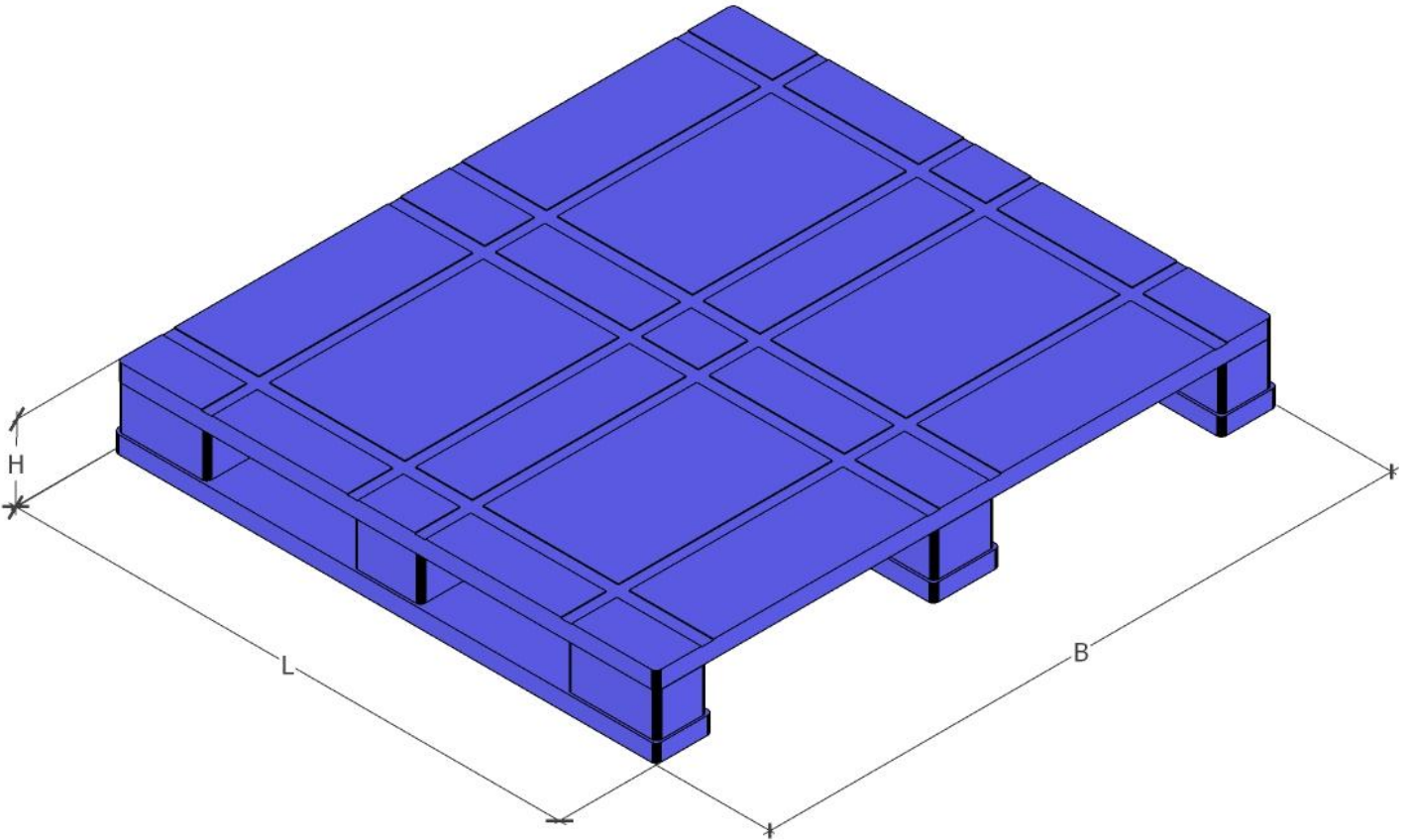
(under process**)

4.2 Furniture Design and Details

1. Physical Receiving Table			
Location	Zone 1 : Inwarding		
Size (Length x Breadth x Height)	3' 10" x 2' 6" x 2' 6"		
Additional requirements	Storage	Printer	Desktop
	SKU holder	NA	NA
Electrical points	6A Raw	6A UPS	LAN
	01	01	NA
Finishes	MS sections	Table top	Beading
	Powder coat	Laminate	PVC
	Living coral	Royal Ivory (3515 SUD) - New Mika	Ivory

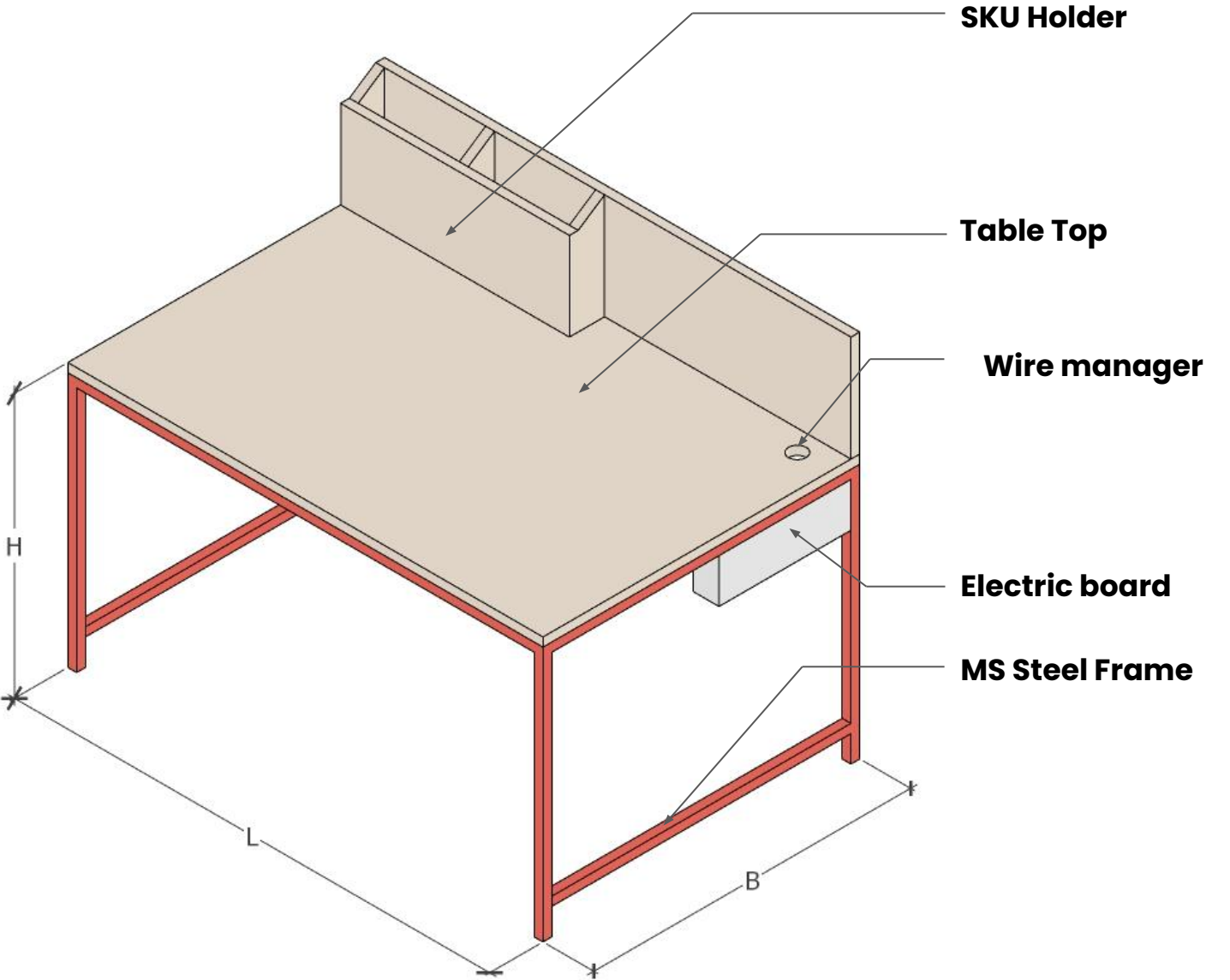


2. Pallets	
Location	Zone 1 : Inwarding
Size (Length x Breadth x Height)	3' 6" x 4' 0" x 0' 6"

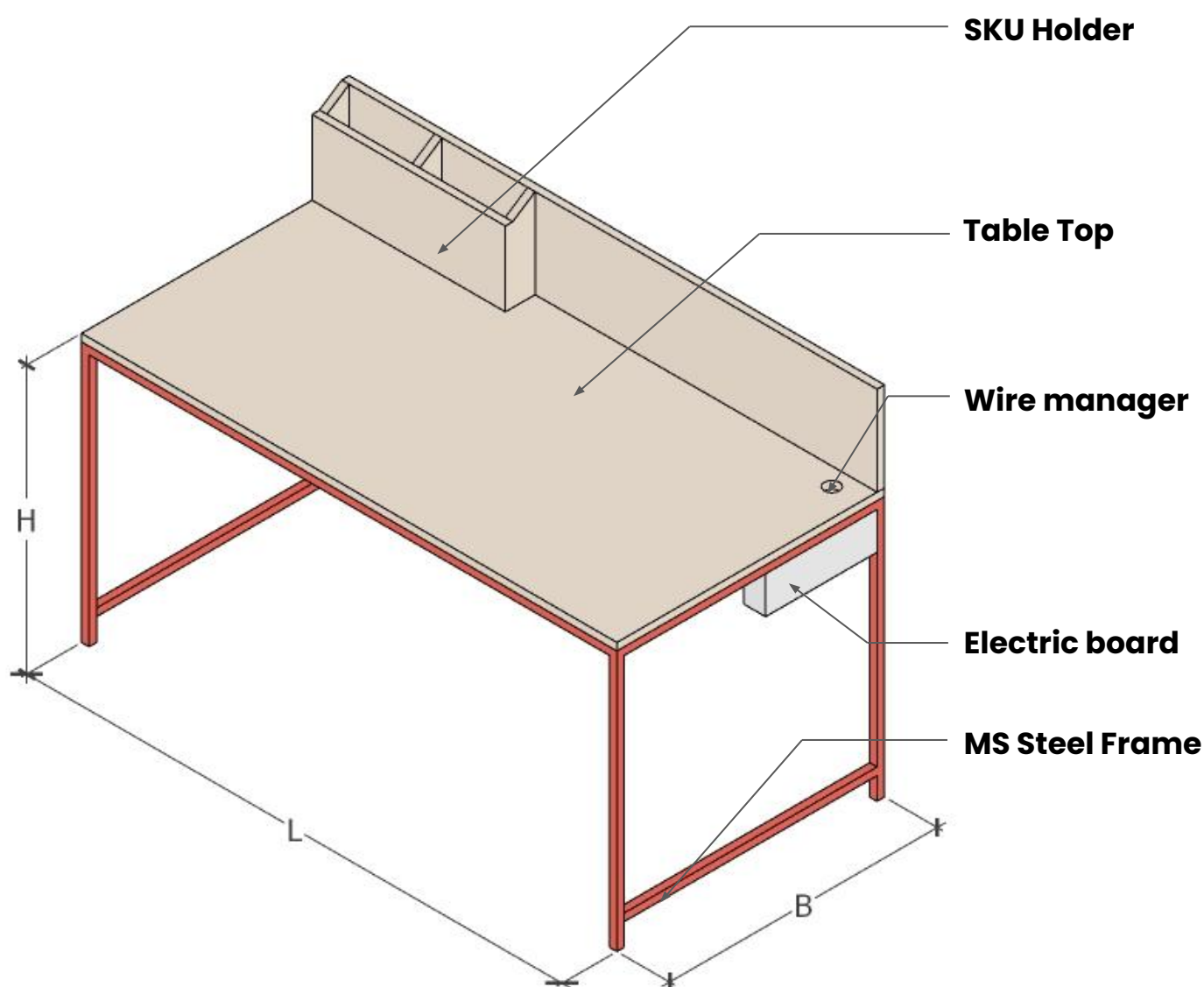


2. Physical Validation Table (B2C)

Location	Zone 1 : Inwarding		
Size (Length x Breadth x Height)	4' 6" x 3' 0" x 2' 6"		
Additional requirements	Storage	Printer	Desktop
	SKU holder	NA	NA
Electrical points	6A Raw	6A UPS	LAN
	01	02	01
Finishes	MS sections	Table top	Beading
	Powder coat	Laminate	PVC
	Living coral	Royal Ivory (3515 SUD) - New Mika	Ivory

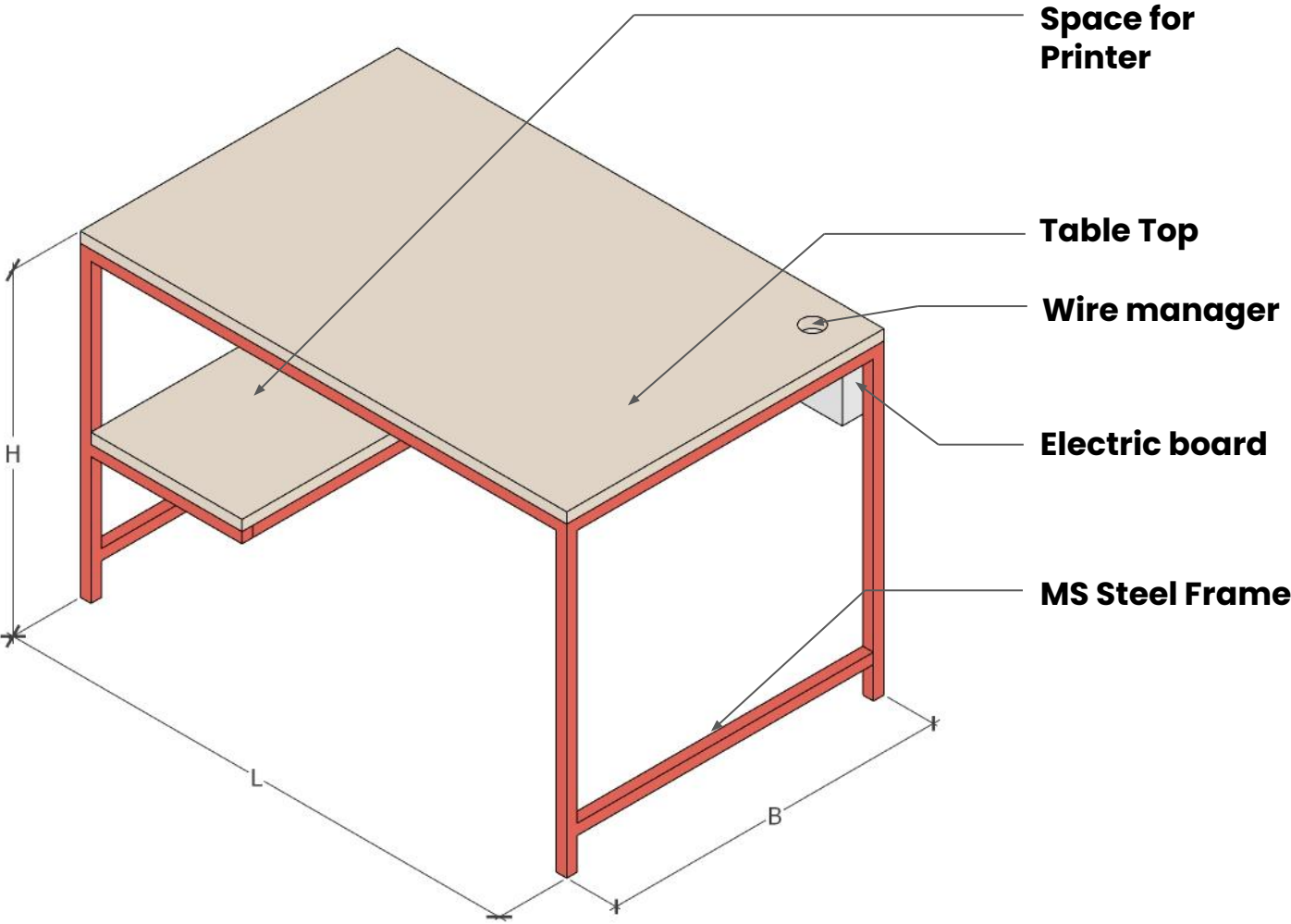


3.1 Physical Validation Table (B2B)			
Location	Zone 1 : Inwarding		
Size (Length x Breadth x Height)	6' 0" x 3' 0" x 3' 0"		
Additional requirements	Storage	Printer	Desktop
	SKU holder	NA	NA
Electrical points	6A Raw	6A UPS	LAN
	01	02	01
Finishes	MS sections	Table top	Beading
	Powder coat	Laminate	PVC
	Living coral	Royal Ivory (3515 SUD) - New Mika	Ivory

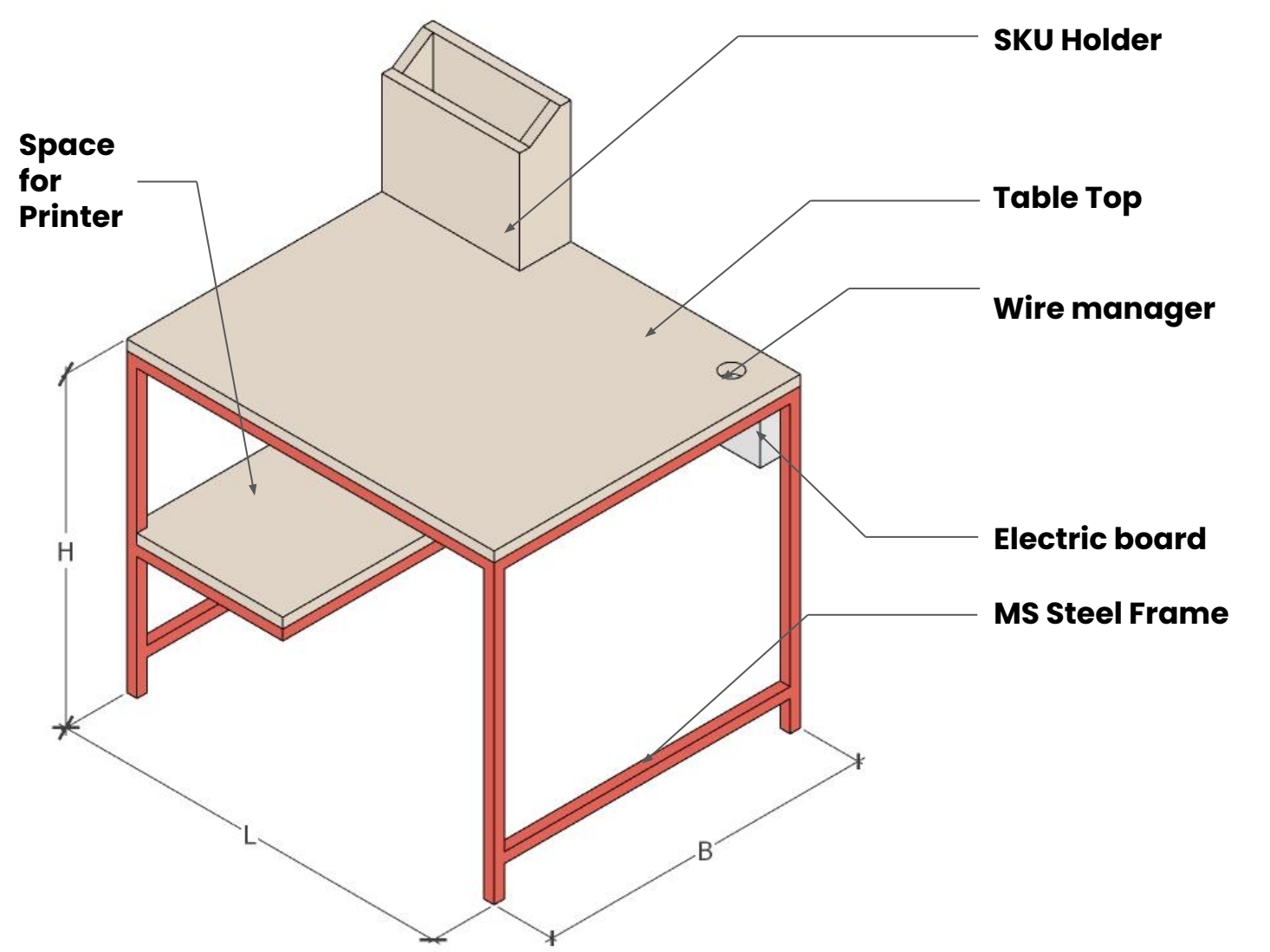


4. Purchase Returns Table (B2B)

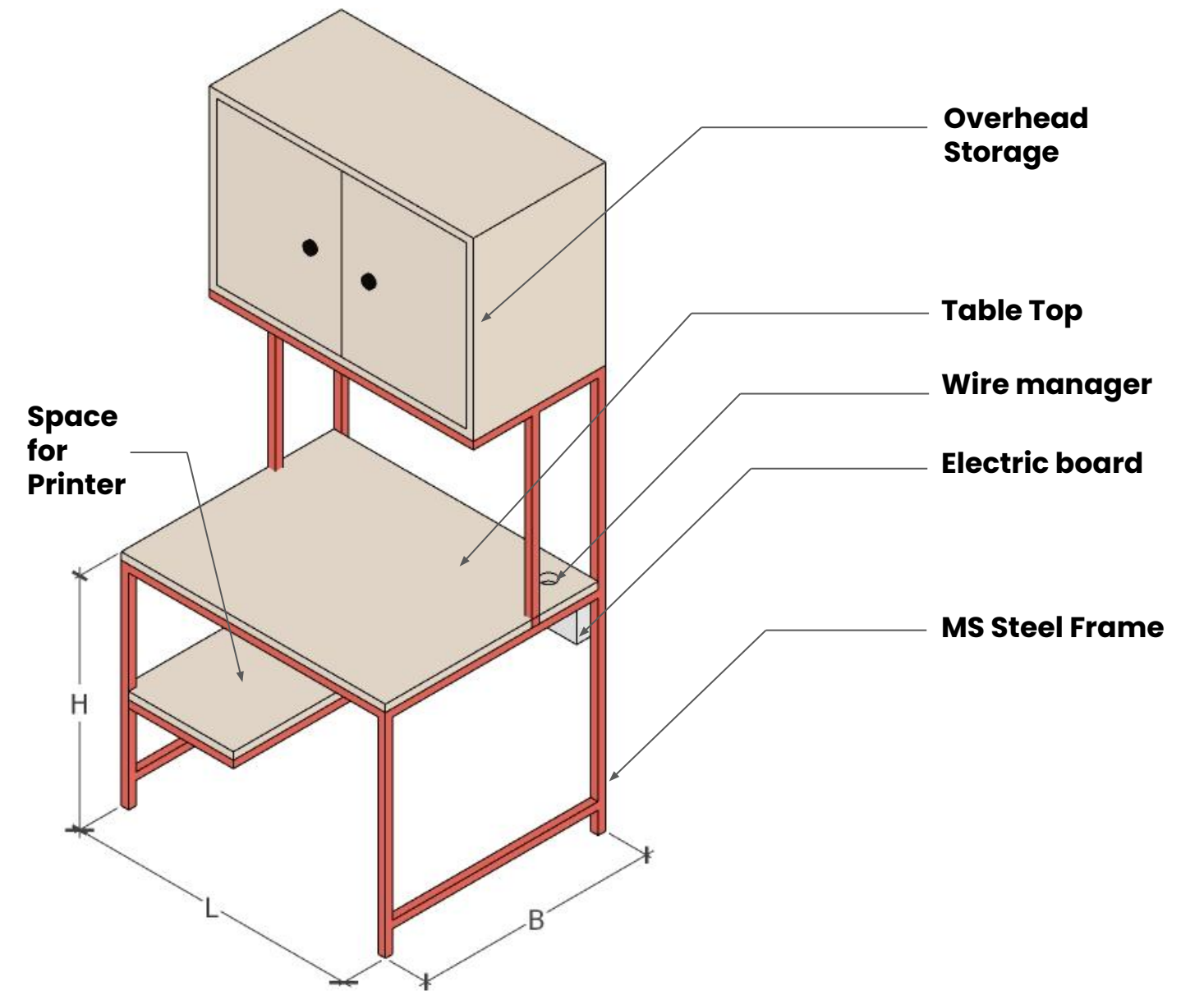
Location	Zone 1 : Inwarding		
Size (Length x Breadth x Height)	3' 10" x 2' 6" x 2' 6"		
Additional requirements	Storage	Printer	Desktop
	NA	Yes	Yes
Electrical points	6A Raw	6A UPS	LAN
	01	02	01
Finishes	MS sections	Table top	Beading
	Powder coat	Laminate	PVC
	Living coral	Royal Ivory (3515 SUD) - New Mika	Ivory



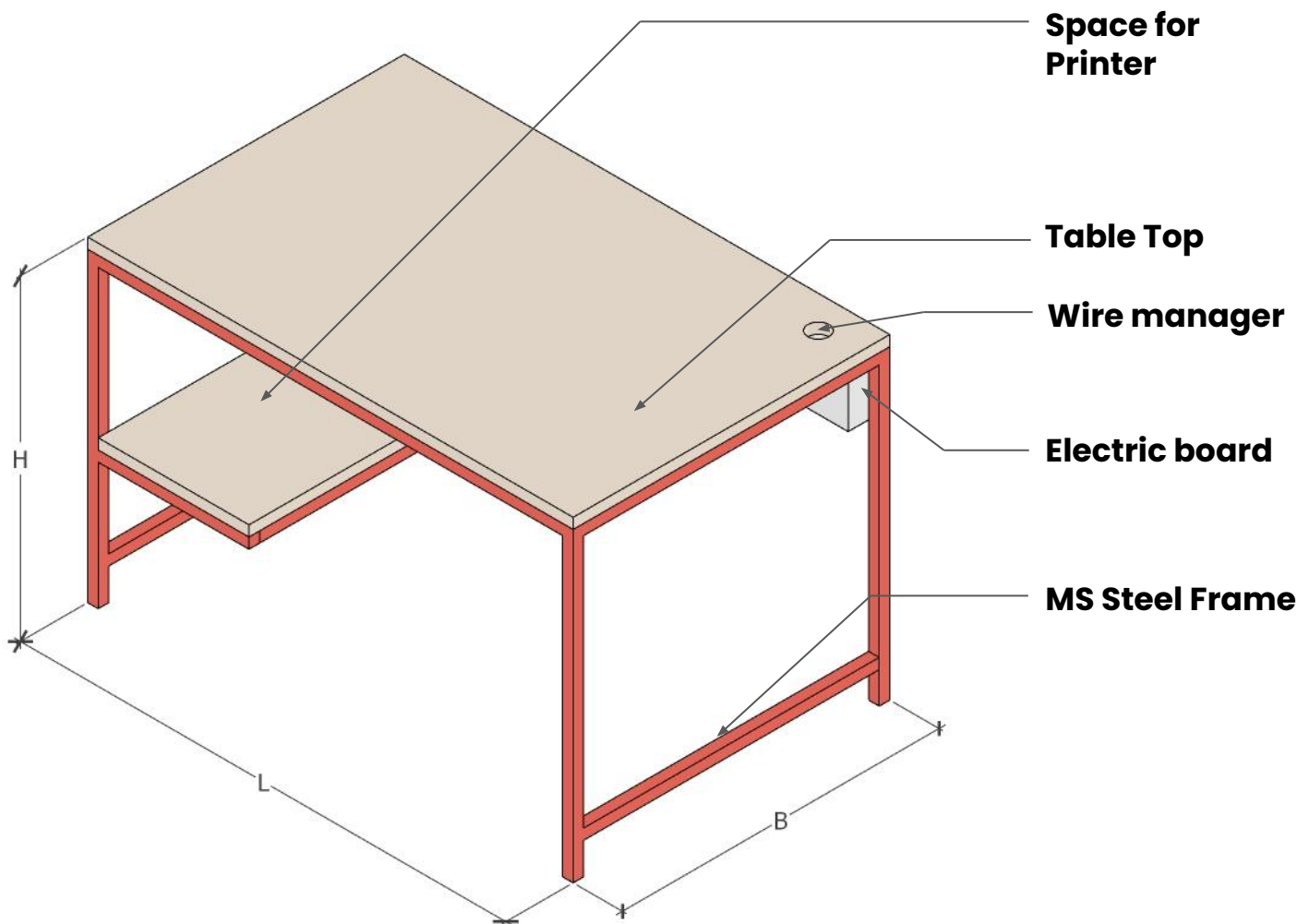
5. GRN Table			
Location	Zone 1 : Inwarding		
Size (Length x Breadth x Height)	3' 0" x 2' 6" x 2' 6"		
Additional requirements	Storage	Printer	Desktop
	SKU holder	Yes	Yes
Electrical points	6A Raw	6A UPS	LAN
	01	02	01
Finishes	MS sections	Table top	Beading
	Powder coat	Laminate	PVC
	Living coral	Royal Ivory (3515 SUD) - New Mika	Ivory



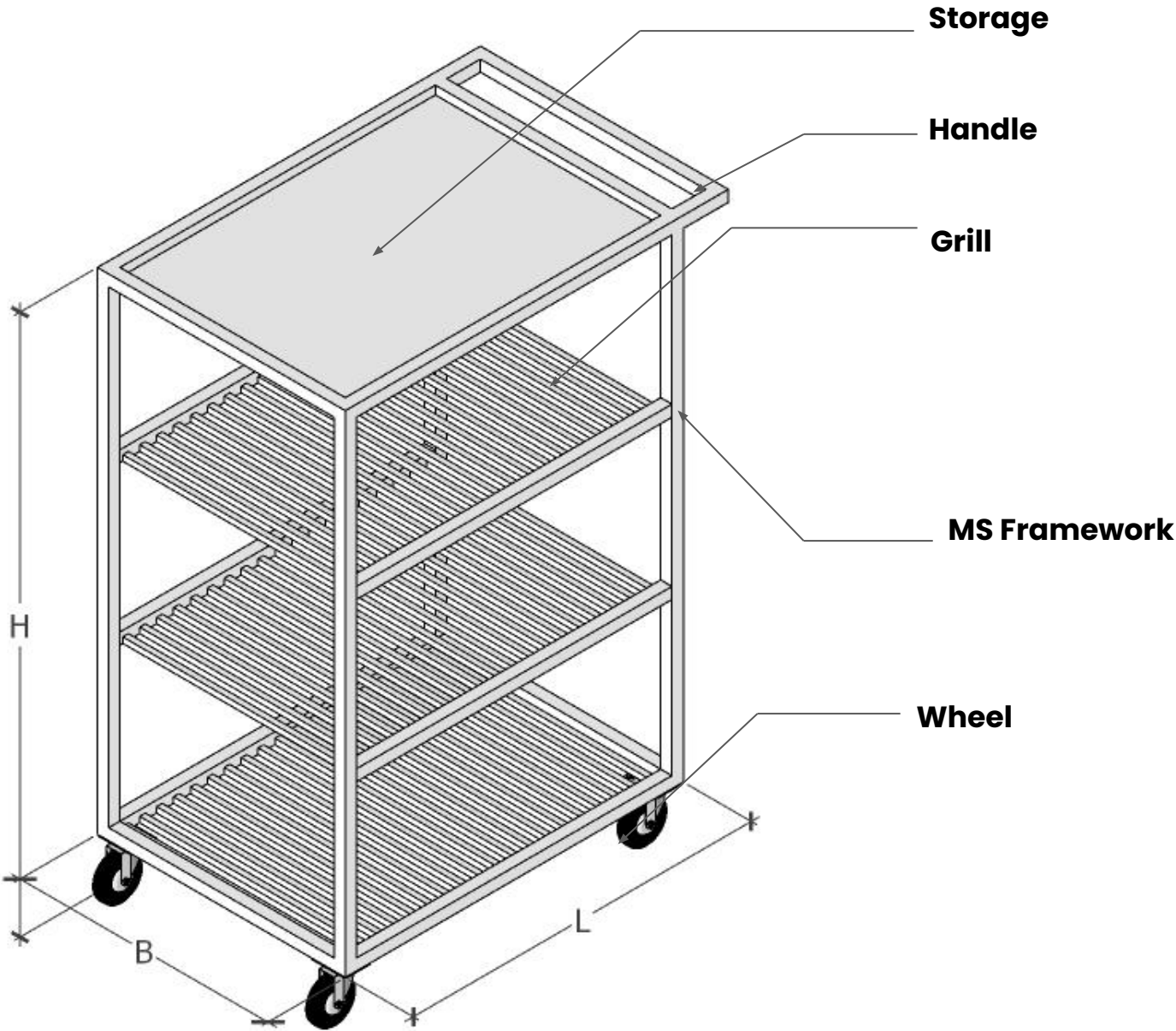
6. QA Table			
Location	Zone 1 : Inwarding		
Size (Length x Breadth x Height)	3' 0" x 2' 6" x 2' 6"		
Additional requirements	Storage	Printer	Desktop
	Overhead Close Shelf	Yes	Yes
Electrical points	6A Raw	6A UPS	LAN
	01	02	01
Finishes	MS sections	Table top	Beading
	Powder coat	Laminate	PVC
	Living coral	Royal Ivory (3515 SUD) - New Mika	Ivory



7. Put-away Table			
Location	Zone 1 : Inwarding		
Size (Length x Breadth x Height)	3' 10" x 2' 6" x 2' 6"		
Additional requirements	Storage	Printer	Desktop
	NA	Yes	Yes
Electrical points	6A Raw	6A UPS	LAN
	01	02	01
Finishes	MS sections	Table top	Beading
	Powder coat	Laminate	PVC
	Living coral	Royal Ivory (3515 SUD) - New Mika	Ivory

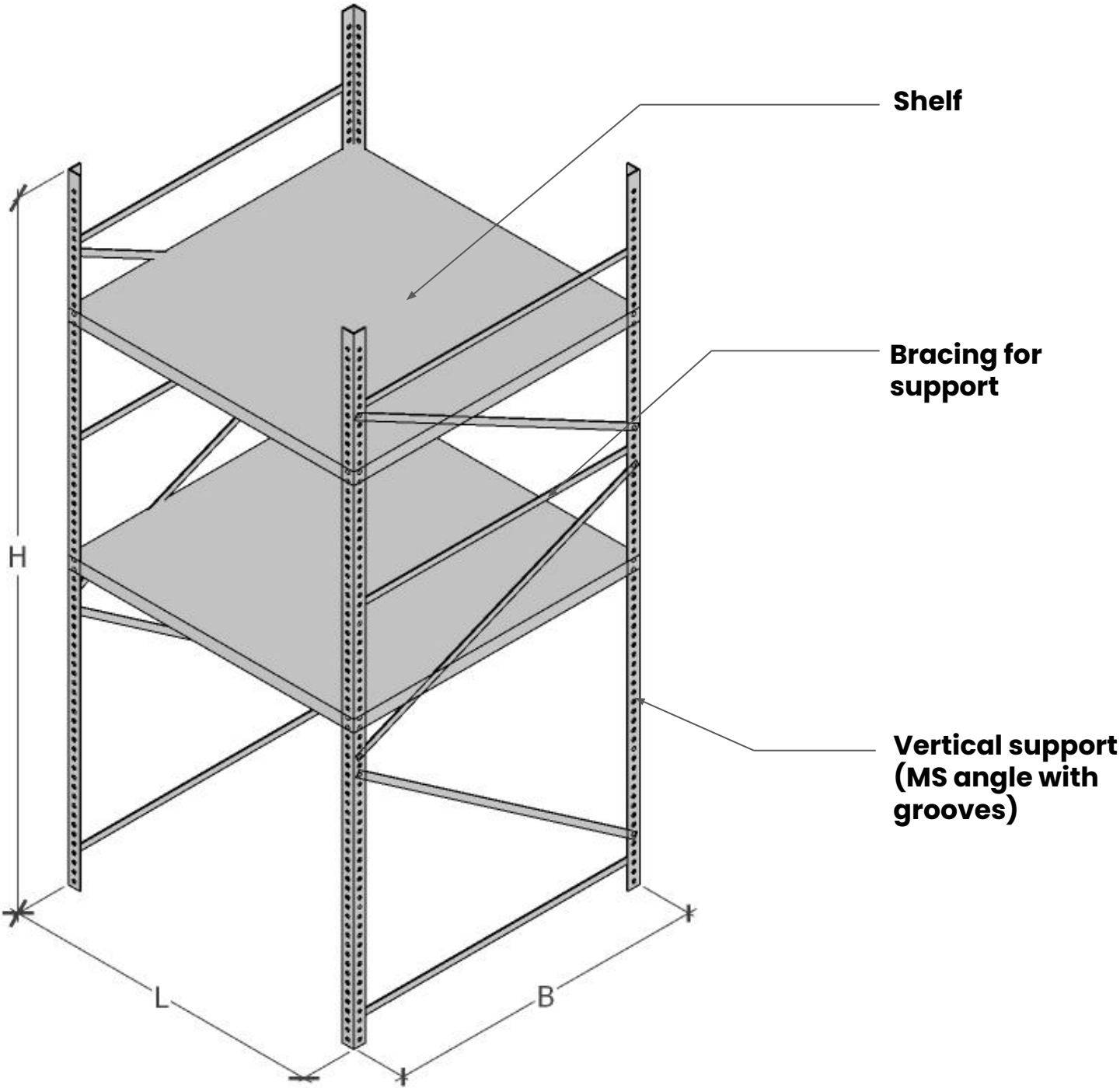


8. Put-away Trolley		
Location	Zone 1 : Inwarding	
Size (Length x Breadth x Height)	2' 6" x 1' 10" x 4' 0"	
Finishes	MS Framework	Trolley top
	Powder coat	MS Sheet
	-	



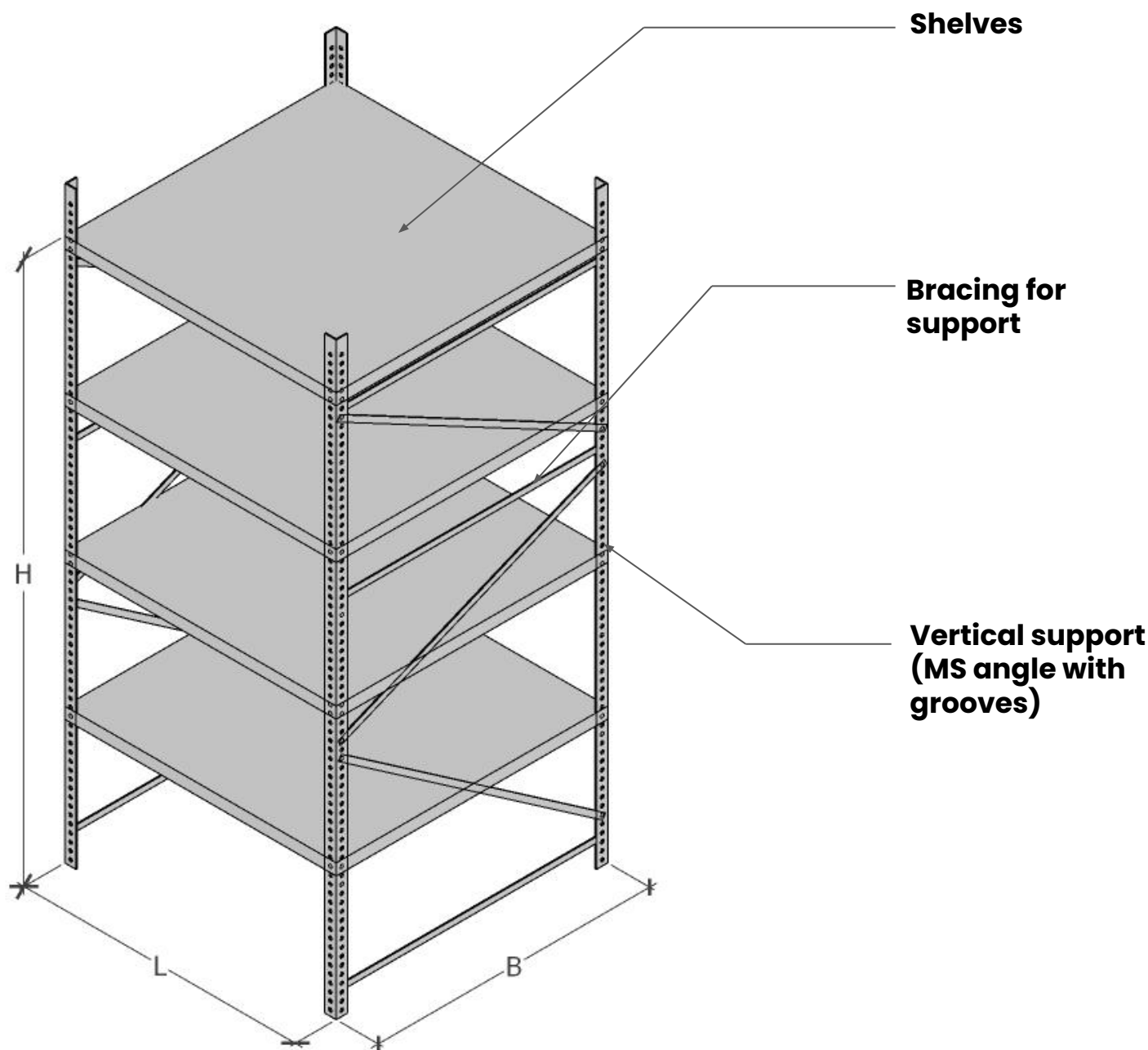
1. Large Span Shelving (LSS)

Location	Zone 2 : Inventory	
Size (Length x Breadth x Height)	4' 0" x 4' 0" x 8' 0"	
Finishes	MS Vertical Support & Bracing	Shelves (MS Sheet)
	Powder coat	MS Sheet
	Grey	

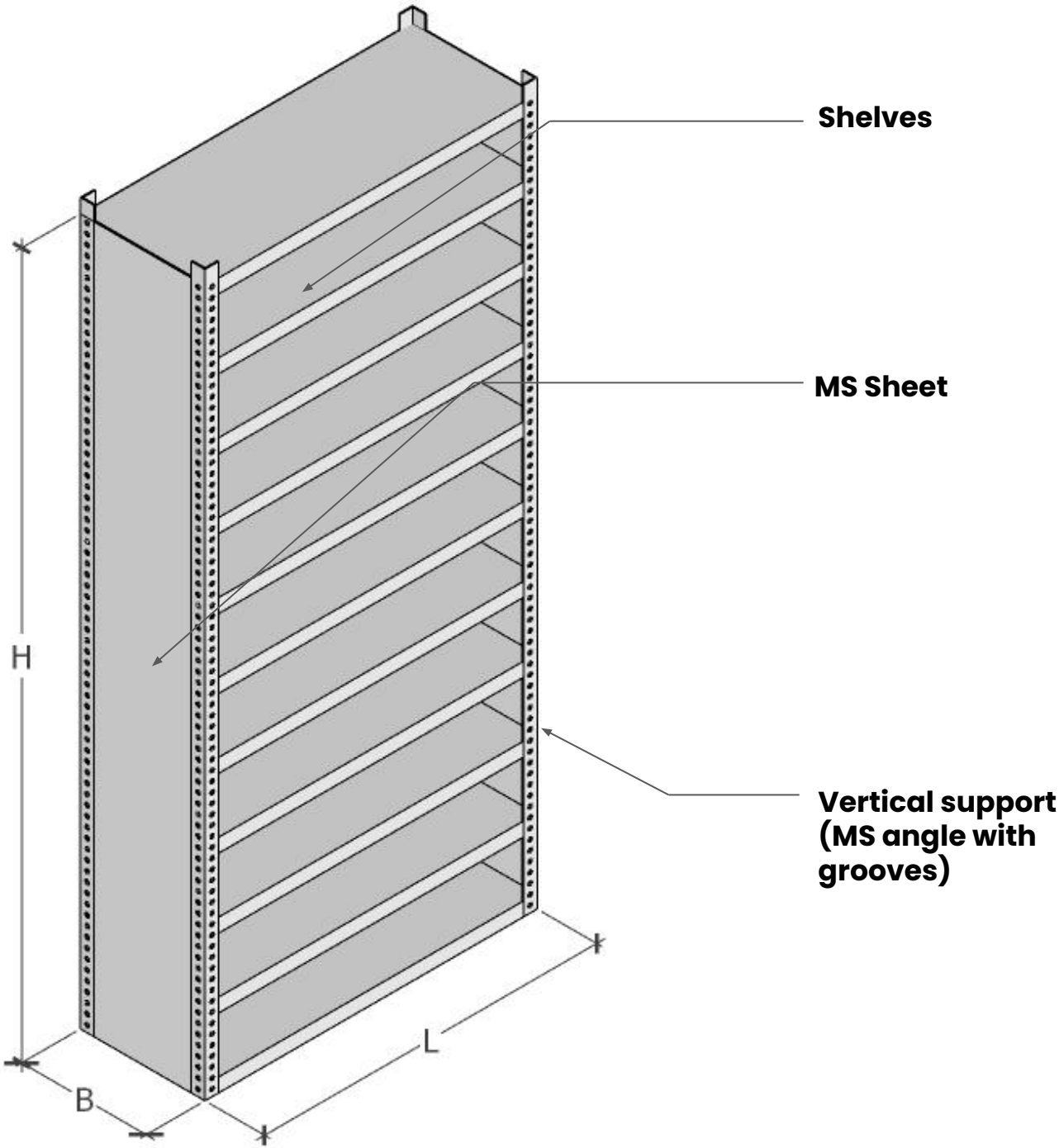


2. Medium Span Shelving (MSS)

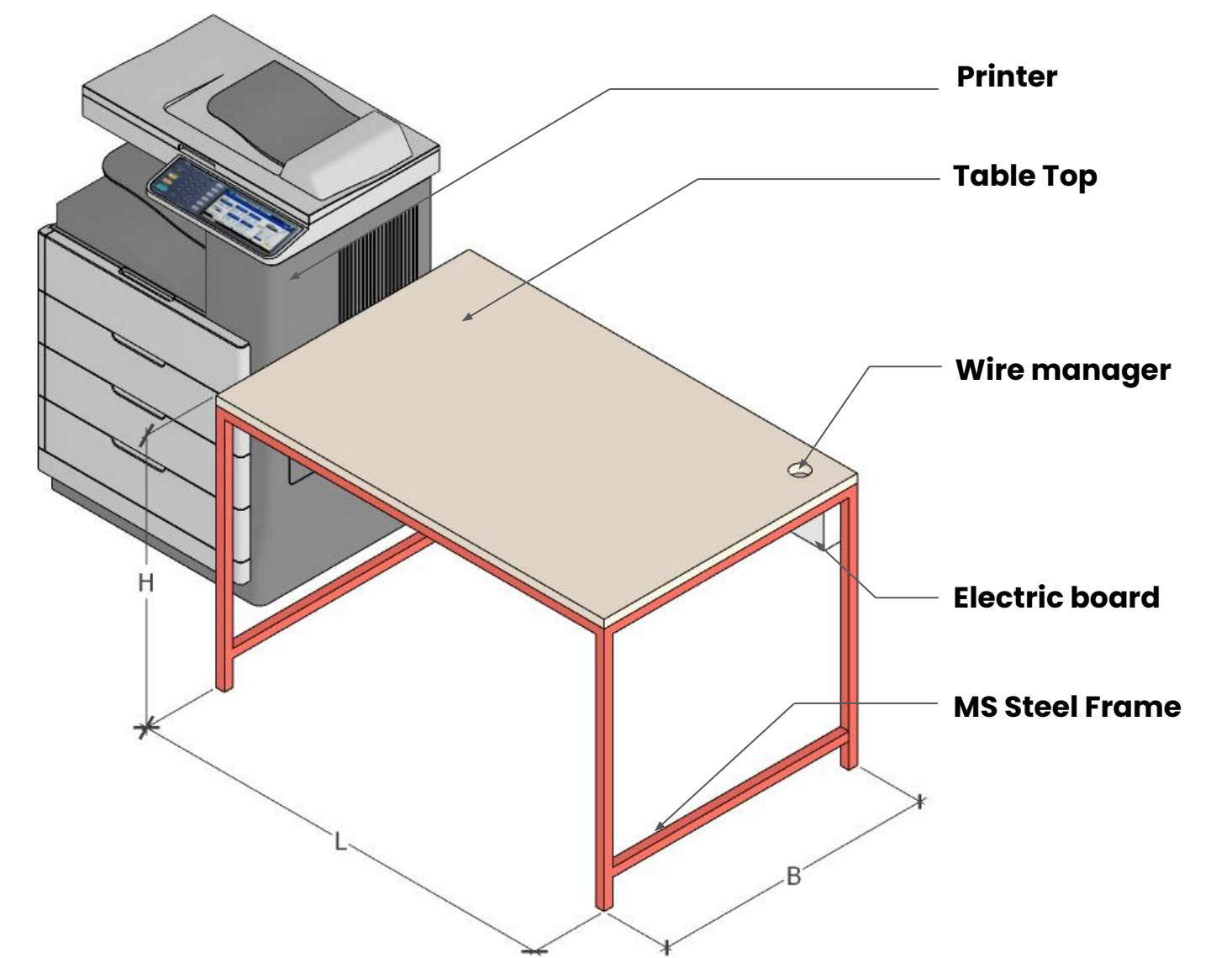
Location	Zone 2 : Inventory	
Size (Length x Breadth x Height)	4' 0" x 4' 0" x 8' 0"	
Finishes	MS vertical Support	Shelves (MS Sheet)
	Powder coat	Powder Coat
	Living coral	Royal Ivory (3515 SUD) - New Mika



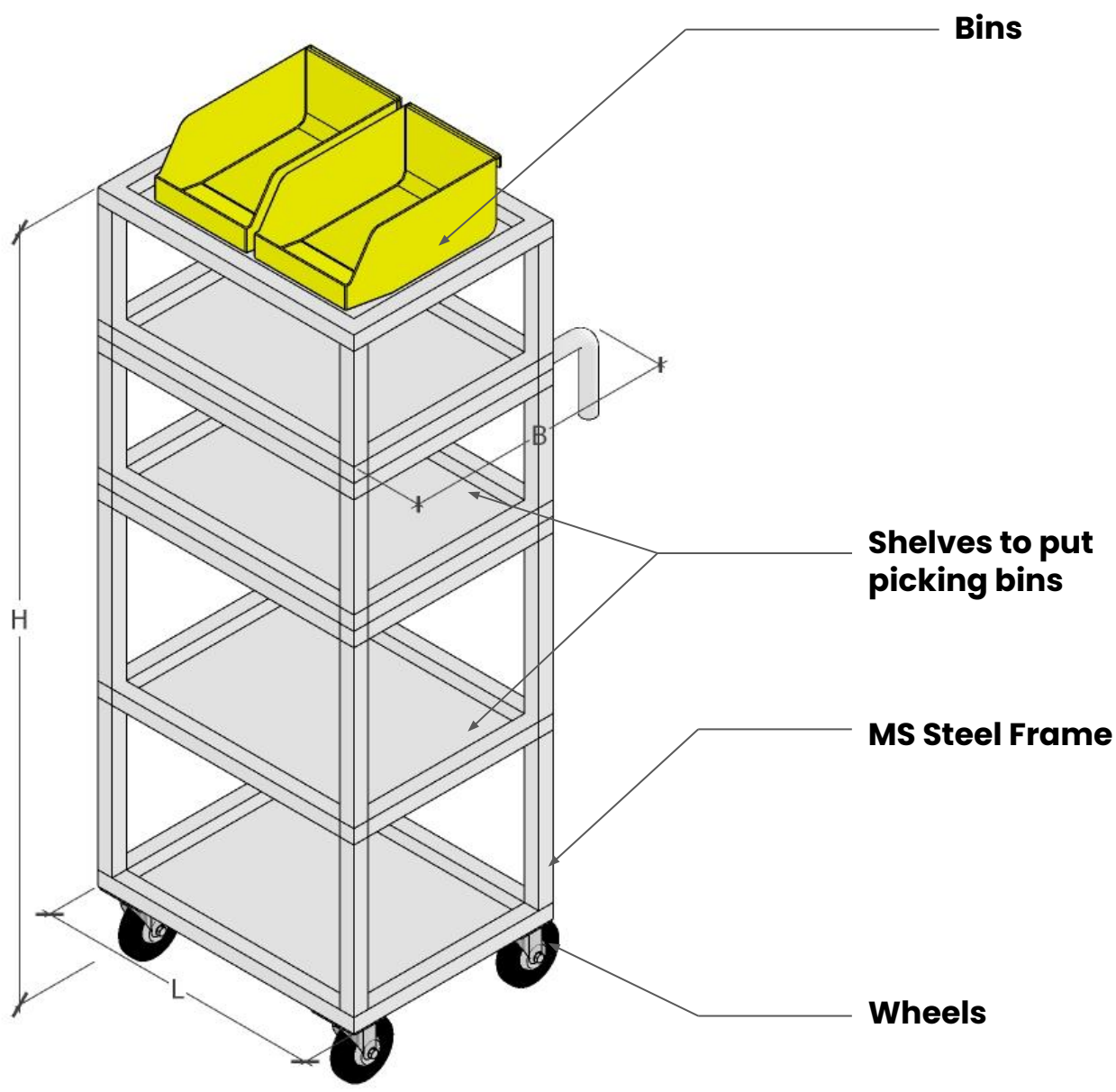
3. Normal Racks		
Location	Zone 2 : Inventory	
Size (Length x Breadth x Height)	4' 0" x 4' 0" x 8' 0"	
Finishes	MS vertical Support	Shelves (MS Sheet)
	Powder coat	Powder coat
	Living coral	Royal Ivory (3515 SUD) - New Mika



1. Picklist Generation Table			
Location	Zone 3 : Quality Check & Packaging		
Size (Length x Breadth x Height)	3' 10" x 2' 6" x 2' 6"		
Additional requirements	Storage	Printer	Desktop
	NA	Big Size	Yes
Electrical points	6A Raw	6A UPS	LAN
	01	02	01
Finishes	MS sections	Table top	Beading
	Powder coat	Laminate	PVC
	Living coral	Royal Ivory (3515 SUD) - New Mika	Ivory

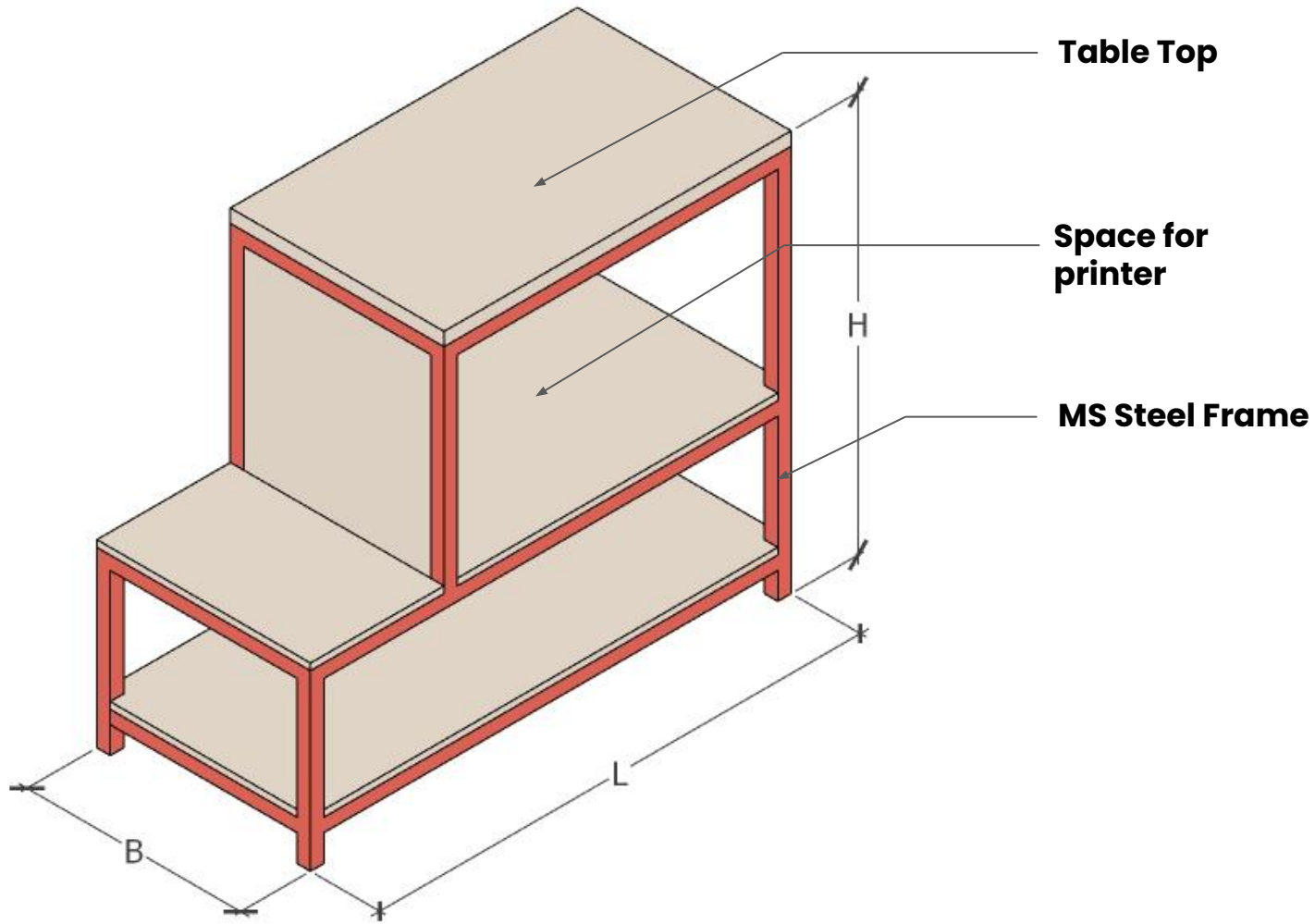


2. Picking Trolley			
Location	Zone 3 : Quality Check & Packaging		
Size (Length x Breadth x Height)	1' 6" x 1' 5" x 4' 0"		
Finishes	MS sections	Table top	Beading
	Powder coat	Laminate	PVC
	Living coral	Royal Ivory (3515 SUD) - New Mika	Ivory

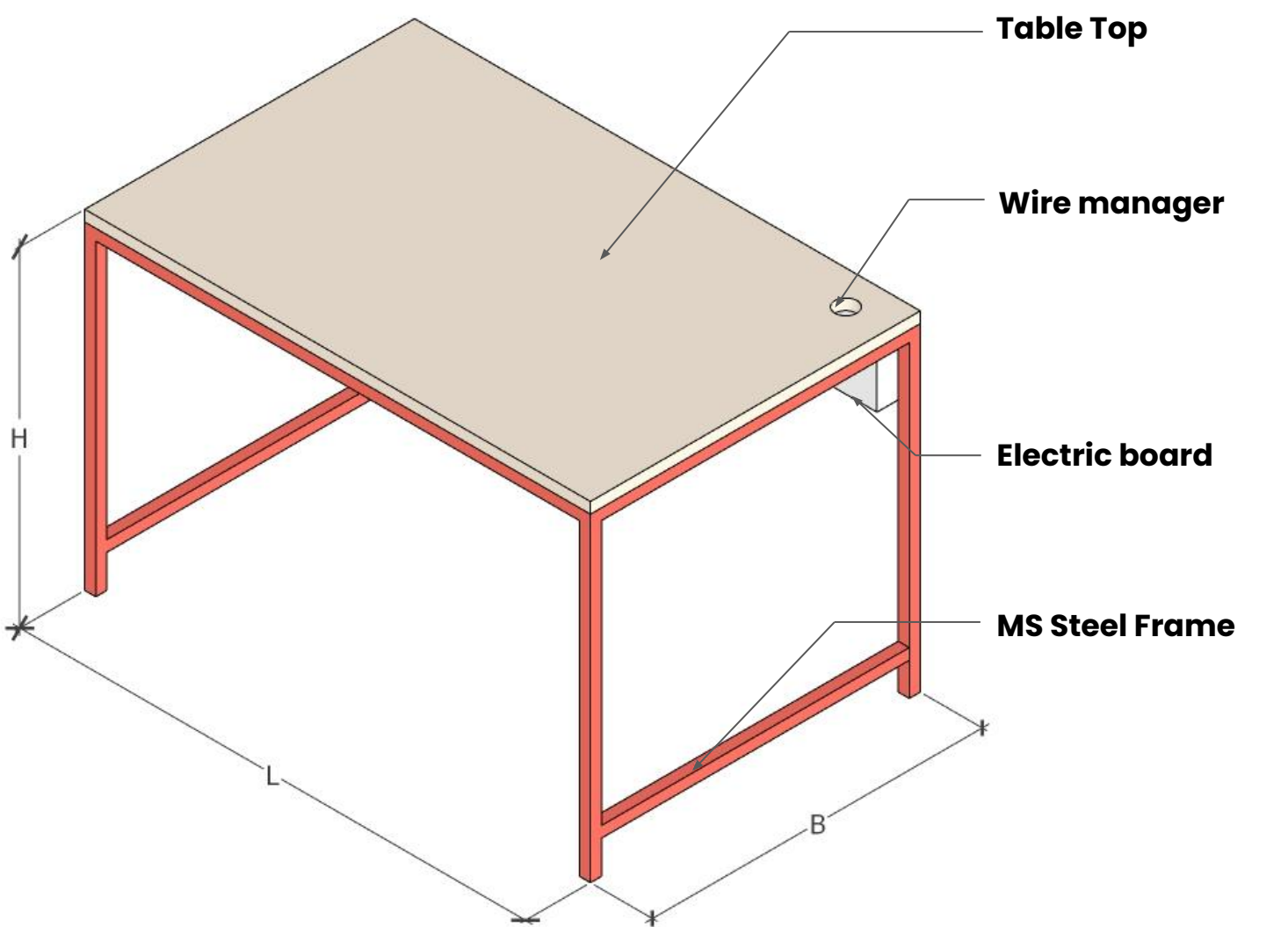


3. QC Staging Table

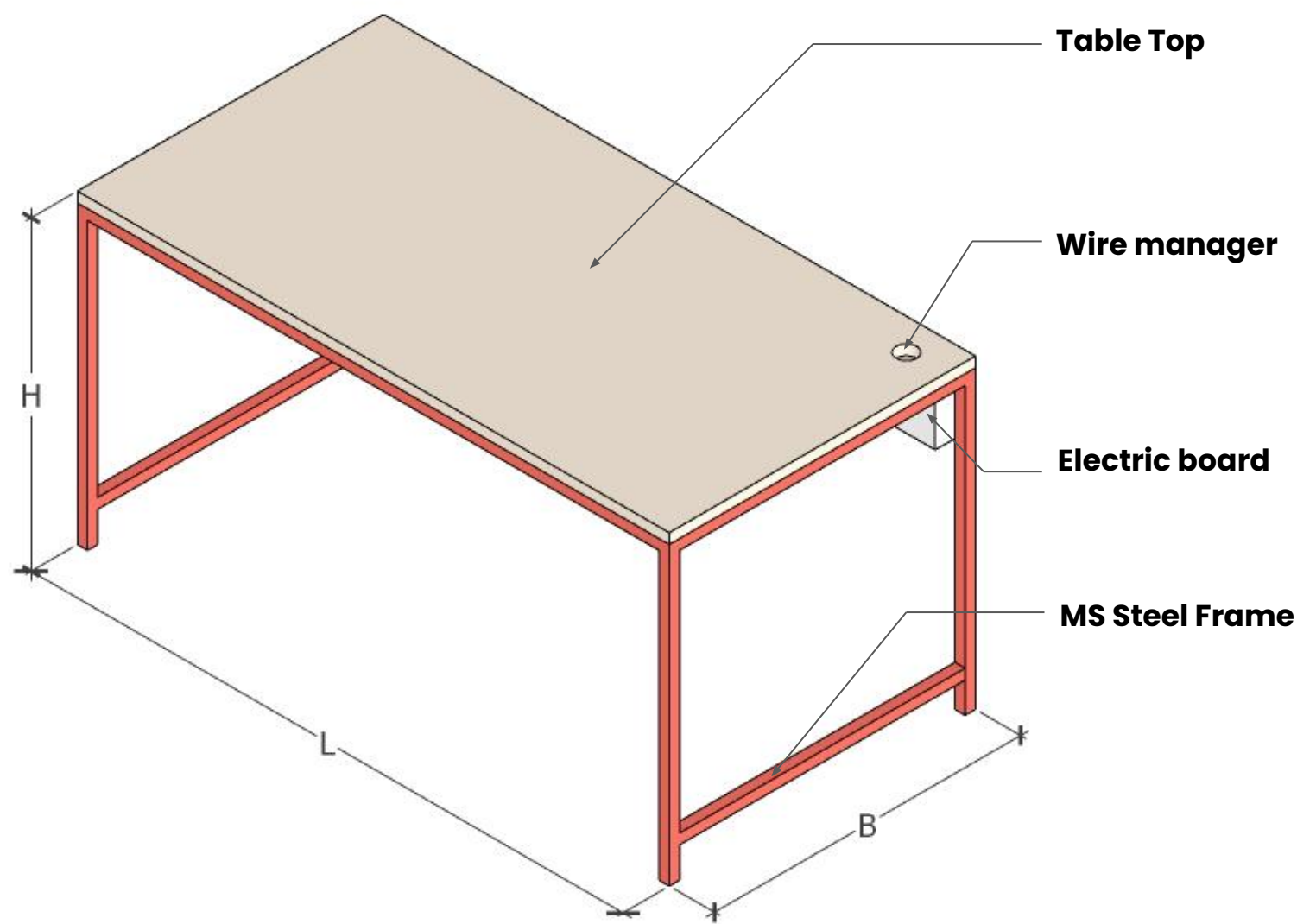
Location	Zone 3 : Quality Check & Packaging		
Size (Length x Breadth x Height)	3' 0" x 1' 4" x 2' 6"		
Additional requirements	Storage	Printer	Desktop
	NA	Yes	NA
Electrical points	6A Raw	6A UPS	LAN
	01	02	01
Finishes	MS sections	Table top	Beading
	Powder coat	Laminate	PVC
	Living coral	Royal Ivory (3515 SUD) - New Mika	Ivory



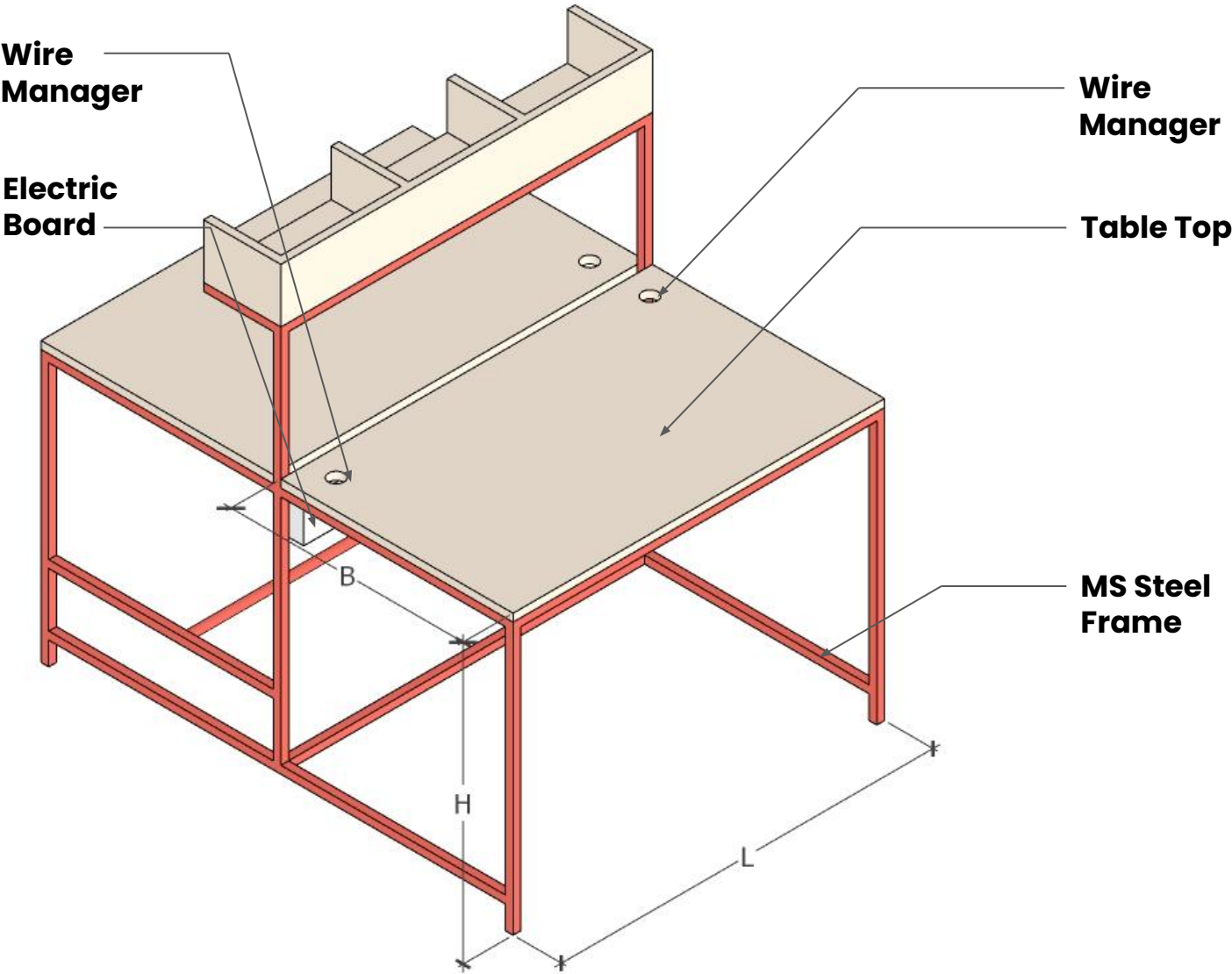
4. Correction Table			
Location	Zone 3 : Quality Check & Packaging		
Size (Length x Breadth x Height)	3' 10" x 2' 6" x 2' 6"		
Additional requirements	Storage	Printer	Desktop
	NA	NA	Yes
Electrical points	6A Raw	6A UPS	LAN
	01	02	01
Finishes	MS sections	Table top	Beading
	Powder coat	Laminate	PVC
	Living coral	Royal Ivory (3515 SUD) - New Mika	Ivory



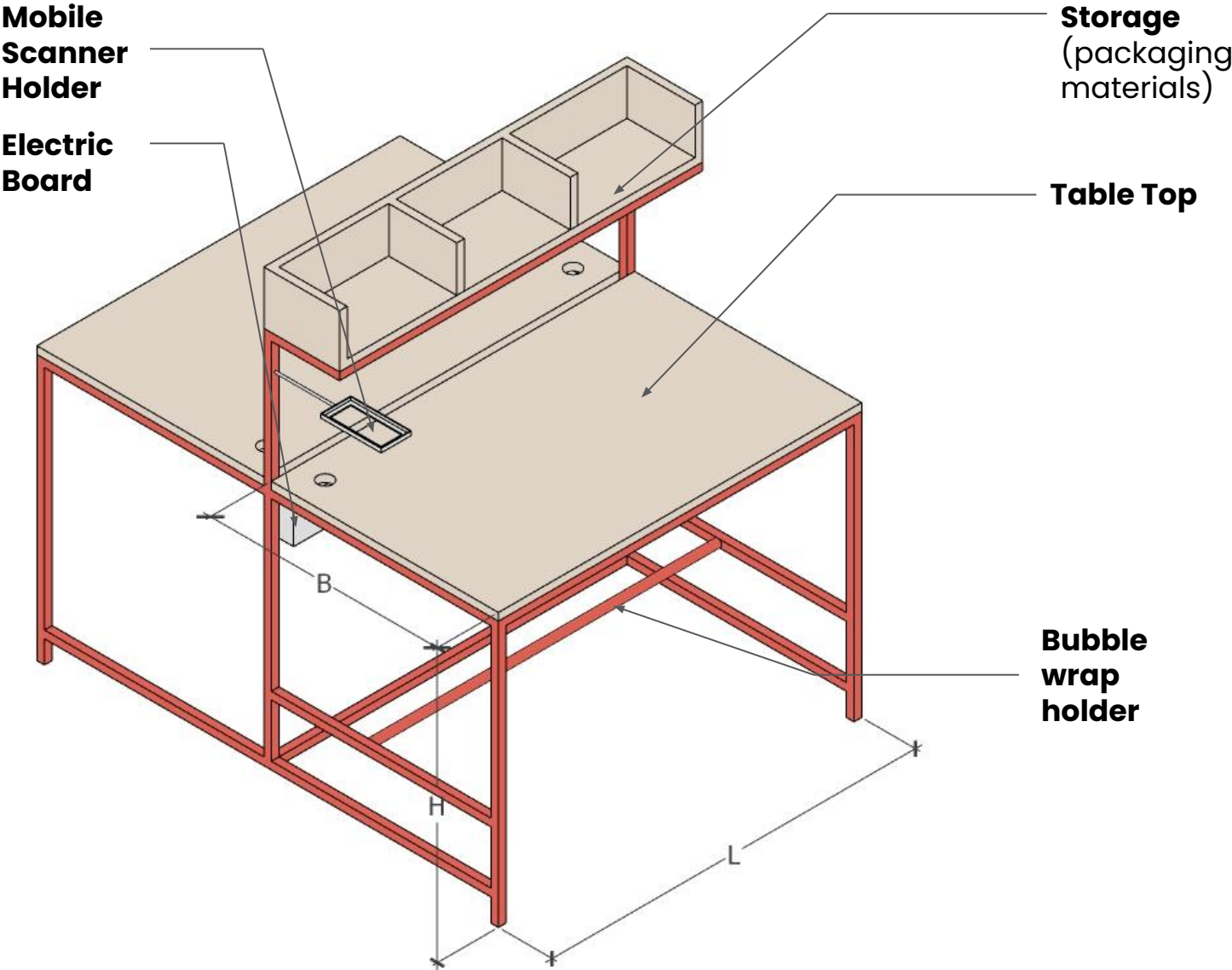
5. Handover Table (FC side, Logistics Side & Sales Return)			
Location	Zone 3 / Zone 4 : Quality Check & Packaging / Logistics		
Size (Length x Breadth x Height)	4' 10" x 2' 6" x 2' 6"		
Additional requirements	Storage	Printer	Desktop
	NA	Yes	Yes
Electrical points	6A Raw	6A UPS	LAN
	01	02	01
Finishes	MS sections	Table top	Beading
	Powder coat	Laminate	PVC
	Living coral	Royal Ivory (3515 SUD) - New Mika	Ivory



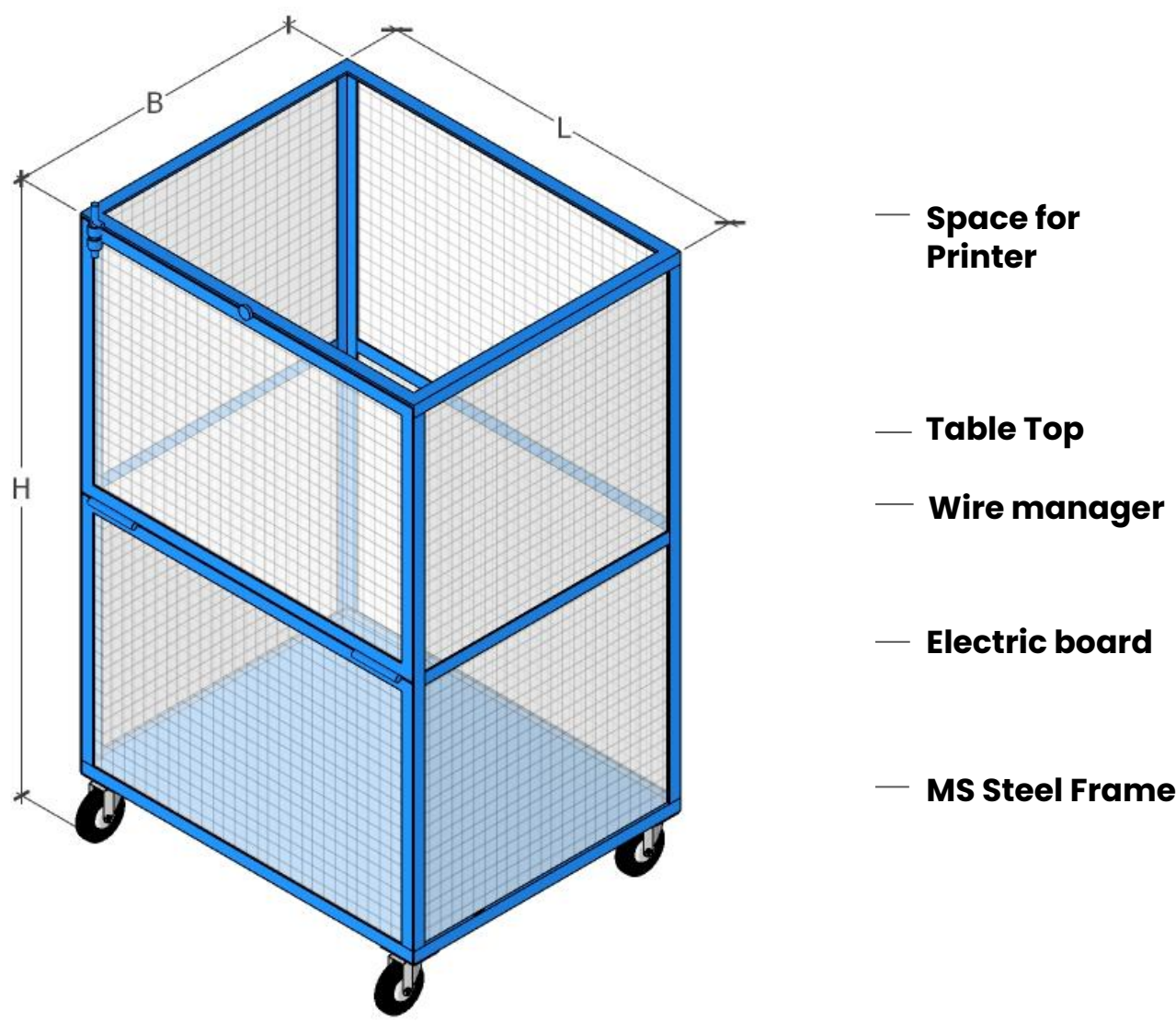
6. QCP Table (QC Side)			
Location	Zone 3 : Quality Check & Packaging		
Size (Length x Breadth x Height)	4' 10" x 2' 6" x 2'8"		
Additional requirements	Storage	Printer	Desktop
	NA	NA	Yes
Electrical points	6A Raw	6A UPS	LAN
	01	02	01
Finishes	MS sections	Table top	Beading
	Powder coat	Laminate	PVC
	Living coral	Royal Ivory (3515 SUD) - New Mika	Ivory



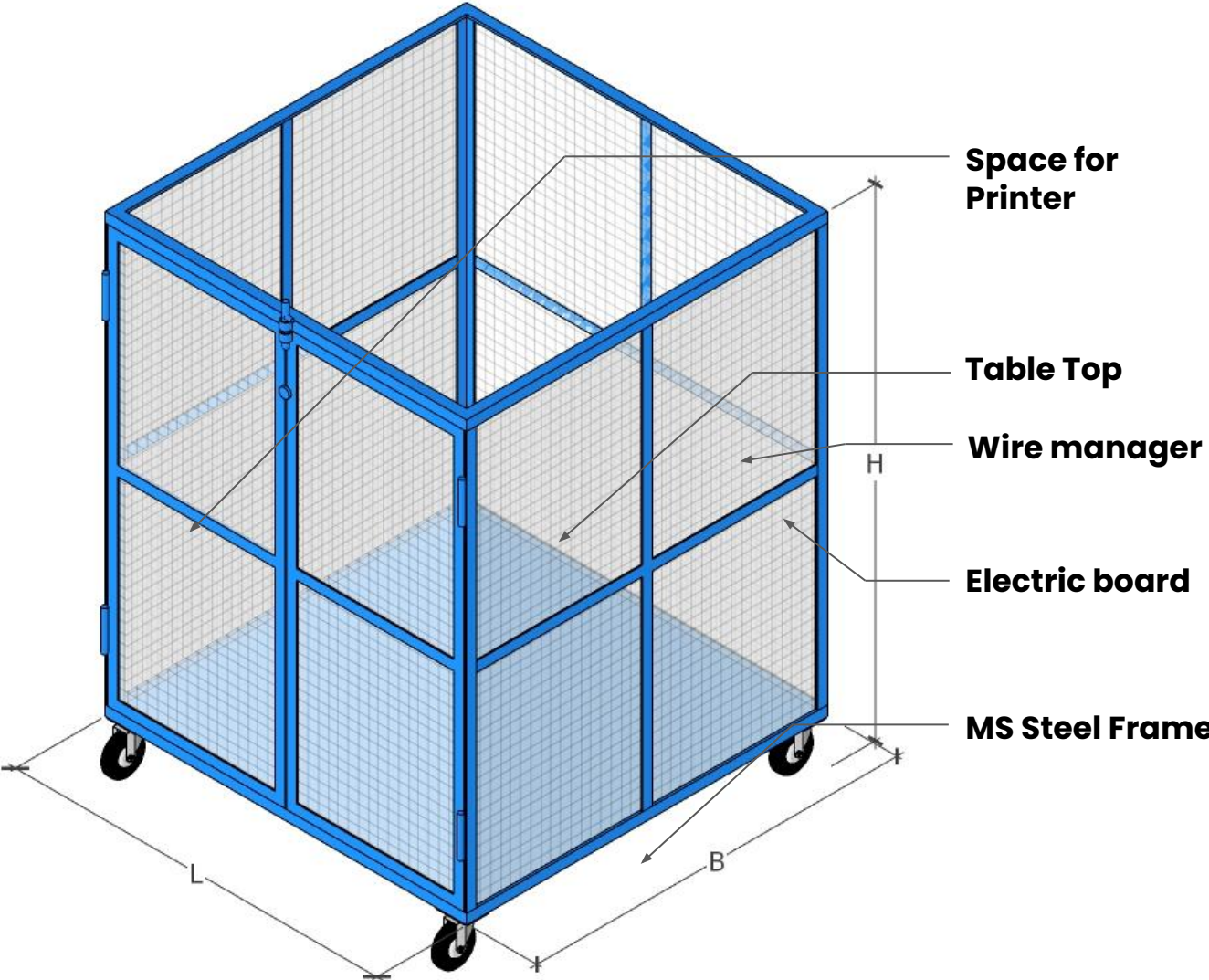
7. QCP Table (Pack Side)			
Location	Zone 3 : Quality Check & Packaging		
Size (Length x Breadth x Height)	4' 10" x 2' 6" x 2'8"		
Additional requirements	Storage	Printer	Desktop
	Bubble Wrap	NA	NA
Electrical points	6A Raw	6A UPS	LAN
	01	02	01
Finishes	MS sections	Table top	Beading
	Powder coat	Laminate	PVC
	Living coral	Royal Ivory (3515 SUD) - New Mika	Ivory



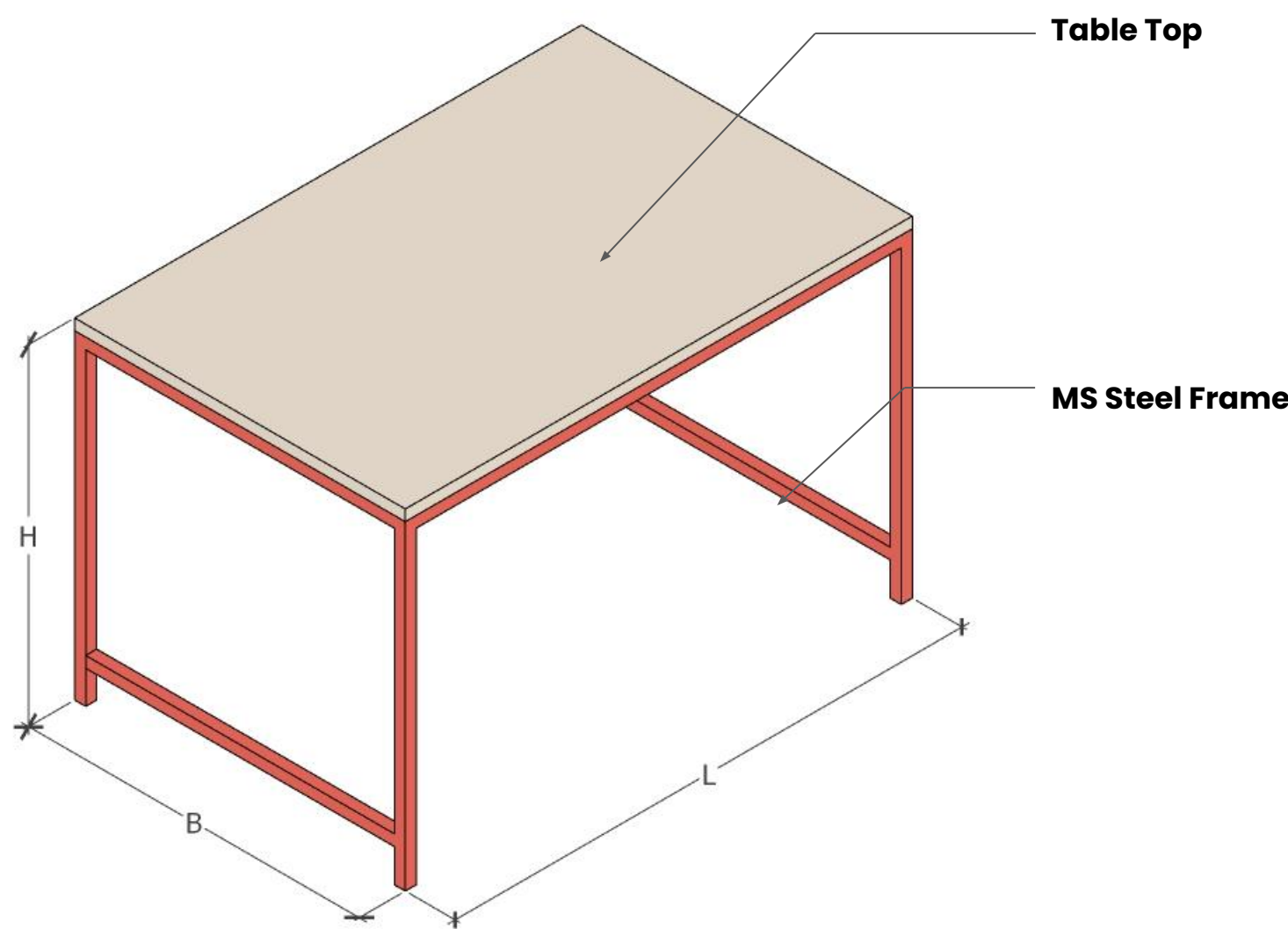
8. Packers Trolley			
Location	Zone 3 : Quality Check & Packaging		
Size (Length x Breadth x Height)	2' 6" x 1' 8" x 2' 10"		
Finishes	MS sections	Table top	Beading
	Powder coat	Laminate	PVC
	Living coral	Royal Ivory (3515 SUD) - New Mika	Ivory



2. Rolling Cage			
Location	Zone 3 : Quality Check & Packaging		
Size (Length x Breadth x Height)	2' 6" x 1' 8" x 2' 10"		
Finishes	MS sections	Table top	Beading
	Powder coat	Laminate	PVC
	Living coral	Royal Ivory (3515 SUD) - New Mika	Ivory



4. Pick-up Desk			
Location	Zone 4 : Logistics		
Size (Length x Breadth x Height)	3' 10" x 2' 6" x 2' 6"		
Additional requirements	Storage	Printer	Desktop
	NA	NA	NA
Electrical points	6A Raw	6A UPS	LAN
	NA	NA	NA
Finishes	MS sections	Table top	Beading
	Powder coat	Laminate	PVC
	Living coral	Royal Ivory (3515 SUD) - New Mika	Ivory



4. Security Desk			
Location	Zone 4 : Logistics/ Employees Entry		
Size (Length x Breadth x Height)	3' 10" x 2' 6" x 2' 6"		
Additional requirements	Storage	Printer	Desktop
	NA	NA	NA
Electrical points	6A Raw	6A UPS	LAN
	NA	NA	NA
Finishes	MS sections	Table top	Beading
	Powder coat	Laminate	PVC
	Living coral	Royal Ivory (3515 SUD) - New Mika	Ivory

