

MUMSA CONTAINER CAFETERIA

BILL OF QUANTITIES (BOQ) & COST BREAKDOWN

Project: Two-Story Container-Based Cafeteria

Location: Makerere University, Kampala, Uganda

Budget: UGX 10,000,000

Timeline: 8 weeks (2 months)

Prepared: May 2026

EXECUTIVE SUMMARY

This Bill of Quantities provides a comprehensive breakdown of all materials, labor, and services required to construct a two-story container cafeteria accommodating 200 daily diners. The document is structured to fit within the allocated budget of UGX 10 million through strategic prioritization of essential components and phased implementation.

Key Budget Allocation:

Containers & Structure: 45% (UGX 4,500,000)

MEP Systems: 20% (UGX 2,000,000)

Interior & Finishes: 30% (UGX 3,000,000)

Labor & Contingency: 5% (UGX 500,000)

Total: UGX 10,000,000

1. STRUCTURAL WORKS

1.1 Shipping Containers

Item	Unit	Qty	Unit Rate (UGX)	Total (UGX)	Notes
40ft High Cube Container (Used)	No	2	2,000,000	4,000,000	Reconditioned, structurally sound

Subtotal				4,000,000	
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Specifications:

Dimensions: 40ft (12.19m) × 8ft (2.44m) × 8.5ft (2.59m)

Tare Weight: 3,500 kg each

Condition: Used but inspected and certified

Delivery: Included in price

Sourcing Strategy: Procure reconditioned containers from local container dealers in Kampala to reduce costs compared to new containers (UGX 3.5M each).

1.2 Structural Reinforcement & Modifications

Item	Unit	Qty	Unit Rate (UGX)	Total (UGX)	Notes
Steel Reinforcement Plates (10mm THK)	kg	300	8,000	2,400,000	For corner post reinforcement
Welding & Connection Work	Set	1	800,000	800,000	Labor for welding reinforcements
X-Bracing Steel Angles (50×50×6mm)	kg	200	7,000	1,400,000	For lateral stability
Bolts, Nuts & Fasteners	kg	50	10,000	500,000	Grade 8.8 stainless steel
Subtotal				5,100,000	

Technical Specifications:

Reinforcement plates welded to container corner posts

X-bracing pattern for wind/seismic resistance

All steel members painted with 2-coat epoxy system

Connections designed for 1.5× safety factor

1.3 Foundation & Base Works

Item	Unit	Qty	Unit Rate (UGX)	Total (UGX)	Notes
Site Excavation & Leveling	m³	2	150,000	300,000	0.6m depth for footings
Concrete Foundation Pads (600×600×600mm)	No	4	400,000	1,600,000	C25 concrete, reinforced
Reinforcement Steel (#6 rebar)	kg	200	8,000	1,600,000	For foundation pads
Gravel Base & Compaction	m³	1	200,000	200,000	150mm base preparation
Subtotal				3,700,000	

Foundation Design:

Soil bearing capacity: 200 kPa (assumed)

Footing size: 600mm × 600mm × 600mm

Depth: 600mm below grade

Reinforcement: #6 rebar @ 200mm spacing both ways

Concrete grade: C25 (25 MPa)

1.4 Roof System

Item	Unit	Qty	Unit Rate (UGX)	Total (UGX)	Notes
Roof Concrete Slab (150mm THK)	m²	30	250,000	7,500,000	Reinforced concrete topping
Polyurethane Insulation (100mm)	m²	30	80,000	2,400,000	Thermal & acoustic insulation

Bituminous Waterproofing Membrane	m²	30	40,000	1,200,000	2-layer system
Roof Gravel Ballast	m³	2	300,000	600,000	For membrane protection
Roof Ventilation Units (Turbine)	No	2	200,000	400,000	600mm diameter
Subtotal				12,100,000	

Note: Roof costs exceed budget. Optimization: Use corrugated metal roof instead of concrete slab (reduce to UGX 2M)

1.5 Staircase & Access

Item	Unit	Qty	Unit Rate (UGX)	Total (UGX)	Notes
Steel Staircase Frame (Fabricated)	Set	1	1,500,000	1,500,000	1.2m wide, 12 steps
Wooden Treads & Risers (Treated)	m	12	150,000	1,800,000	300mm depth, 180mm rise
Stainless Steel Handrails	m	24	100,000	2,400,000	Both sides, 900mm height
Landing Platforms (Steel)	m²	4	200,000	800,000	Top & bottom landings
Subtotal				6,500,000	

Note: Staircase costs exceed budget. Optimization: Use external staircase with basic steel frame (reduce to UGX 1.5M)

2. MECHANICAL, ELECTRICAL & PLUMBING (MEP)

2.1 HVAC System

Item	Unit	Qty	Unit Rate (UGX)	Total (UGX)	Notes
Split AC Unit (1.5 ton)	No	1	1,200,000	1,200,000	Ground floor cooling
Ceiling Fans (1.2m)	No	3	200,000	600,000	For air circulation
Flexible Ductwork & Fittings	m	30	50,000	1,500,000	Insulated ducts
Installation Labor (HVAC)	Set	1	400,000	400,000	Refrigerant charging included
Subtotal				3,700,000	

System Design:

Single 1.5 ton AC for ground floor (kitchen & dining)

Ceiling fans for second floor (media & café)

Ventilation: 6 air changes per hour (commercial standard)

Ductwork sized for 500 CFM capacity

2.2 Electrical System

Item	Unit	Qty	Unit Rate (UGX)	Total (UGX)	Notes
Main Electrical Panel (3- phase, 63A)	Set	1	600,000	600,000	MCB protection
Copper Wiring (2.5mm ² & 4mm ²)	m	200	15,000	3,000,000	Distribution throughout
LED Panel Lights (18W, 1440 lm)	No	14	80,000	1,120,000	Ground: 8, Second: 6
Emergency Exit Lights	No	4	50,000	200,000	3W LED units

Outdoor Floodlights (10W LED)	No	4	60,000	240,000	Site illumination
Electrical Installation Labor	Set	1	500,000	500,000	Full wiring & termination
Subtotal				5,660,000	

Electrical Load Calculation:

Kitchen Equipment: 5 kW

HVAC System: 2 kW

Lighting: 0.5 kW

Miscellaneous: 0.5 kW

Total Demand: 8 kW (within 15 kVA capacity)

2.3 Water Supply & Distribution

Item	Unit	Qty	Unit Rate (UGX)	Total (UGX)	Notes
Elevated Water Tank (1,000L)	No	1	600,000	600,000	Plastic, with stand
PVC Piping (20mm & 15mm)	m	50	25,000	1,250,000	Main distribution
Fittings & Valves	Set	1	300,000	300,000	Elbows, tees, stopcocks
Water Heater (50L Electric)	No	1	400,000	400,000	For hot water supply
Installation Labor (Plumbing)	Set	1	300,000	300,000	Complete system setup
Subtotal				2,850,000	

Water System Specifications:

Daily consumption: ~500L (200 people × 2.5L)

Tank capacity: 1,000L (2 days supply)

Distribution: 20mm main, 15mm branches

Pressure: 2-3 bar (gravity fed from elevated tank)

2.4 Wastewater & Sanitation

Item	Unit	Qty	Unit Rate (UGX)	Total (UGX)	Notes
Grease Trap (100L capacity)	No	1	300,000	300,000	Kitchen wastewater treatment
PVC Drainage Piping (50mm & 40mm)	m	40	20,000	800,000	Waste lines
Toilet Fixtures (WC + Washbasin)	Set	2	250,000	500,000	Ground & second floor
Septic System Connection	Set	1	400,000	400,000	To university sewer line
Installation Labor (Sanitation)	Set	1	250,000	250,000	Complete system
Subtotal				2,250,000	

Sanitation Design:

Grease trap: 100L capacity, cleaned monthly

Drainage: 50mm main, 40mm branches

Toilets: 1 WC + 1 basin per floor

Connection: To existing university municipal sewer

3. INTERIOR WORKS & FINISHES

3.1 Flooring

Item	Unit	Qty	Unit Rate (UGX)	Total (UGX)	Notes
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Concrete Floor Preparation	m²	60	50,000	3,000,000	Leveling & base prep
Epoxy Floor Coating (Ground)	m²	30	80,000	2,400,000	2-coat system, anti slip
Polished Concrete (Second Floor)	m²	30	60,000	1,800,000	Sealed with epoxy
Floor Sealant & Grout	m²	60	15,000	900,000	Protection & finishing
Subtotal				8,100,000	

Flooring Specifications:

Ground Floor: Epoxy-coated concrete (easy to clean, food-safe)

Second Floor: Polished concrete (aesthetic, durable)

Slip resistance: All floors rated for wet conditions

Maintenance: Mop-friendly surfaces

3.2 Wall Finishes

Item	Unit	Qty	Unit Rate (UGX)	Total (UGX)	Notes
Drywall Partitions (Moisture Resistant)	m²	150	80,000	12,000,000	Interior walls
Joint Compound & Taping	m²	150	20,000	3,000,000	Finishing preparation
Paint (2 coats, Interior)	m²	150	30,000	4,500,000	Soft cream & accent colors
Stainless Steel Wall Panels (Kitchen)	m²	15	200,000	3,000,000	Food-safe, hygienic
Subtotal				22,500,000	

Note: Wall costs exceed budget. Optimization: Use basic painted drywall (reduce to UGX 6M)

3.3 Ceiling System

Item	Unit	Qty	Unit Rate (UGX)	Total (UGX)	Notes
Suspended Ceiling Grid	m²	60	60,000	3,600,000	Aluminum frame system
Acoustic Tiles (600×600mm)	m²	60	40,000	2,400,000	Moisture-resistant
Integrated LED Fixtures	No	14	150,000	2,100,000	In ceiling panels
Installation Labor	Set	1	400,000	400,000	Complete system
Subtotal				8,500,000	

Note: Ceiling costs exceed budget. Optimization: Paint container ceiling directly (reduce to UGX 1M)

3.4 Kitchen Equipment

Item	Unit	Qty	Unit Rate (UGX)	Total (UGX)	Notes
Gas Cooker (4-burner)	No	1	600,000	600,000	Commercial grade
Stainless Steel Prep Tables	No	2	400,000	800,000	1.2m × 0.6m each
Commercial Refrigerator (500L)	No	1	1,200,000	1,200,000	Stainless steel
Sink with Double Basin	No	1	300,000	300,000	Stainless steel
Shelving & Storage Racks	Set	1	400,000	400,000	Metal construction
Serving Counter (Stainless)	No	1	500,000	500,000	2m length
Subtotal				3,800,000	

Kitchen Specifications:

- Capacity: 200 meals per day
- Equipment: Gas-powered for cost efficiency
- Storage: Adequate for 3-day inventory
- Hygiene: All stainless steel food contact surfaces

3.5 Furniture & Fixtures

Item	Unit	Qty	Unit Rate (UGX)	Total (UGX)	Notes
Dining Tables (4-seater)	No	5	300,000	1,500,000	Ground floor
Dining Chairs	No	20	80,000	1,600,000	Stackable, durable
Lounge Sofas (2-seater)	No	4	400,000	1,600,000	Second floor media area
Coffee Tables	No	2	200,000	400,000	Side tables
Café Tables (4-seater)	No	3	250,000	750,000	Second floor casual seating
TV Wall Mount (55")	No	1	150,000	150,000	Articulating mount
Shelving & Display Units	Set	1	300,000	300,000	Storage & display
Subtotal				6,300,000	

Furniture Specifications:

- Ground Floor: Functional, easy-to-clean dining furniture
- Second Floor: Comfortable lounge seating for relaxation
- All furniture: Durable, commercial-grade materials
- Capacity: 20-25 seats ground, 12-15 seats second floor

3.6 Miscellaneous Interior Items

Item	Unit	Qty	Unit Rate (UGX)	Total (UGX)	Notes
Doors & Frames (Aluminum)	No	6	150,000	900,000	Main, emergency, restroom
Windows (Aluminum Sliding)	No	8	200,000	1,600,000	For natural light & ventilation
Signage & Wayfinding	Set	1	200,000	200,000	Menu boards, directional signs
Fire Safety Equipment	Set	1	300,000	300,000	Extinguishers, alarms
Mirrors & Accessories	Set	1	150,000	150,000	Restroom & decoration
Subtotal				3,150,000	

4. LABOR & INSTALLATION

4.1 Labor Costs

Category	Duration	Rate (UGX/day)	Days	Total (UGX)	Notes
Project Manager	8 weeks	100,000	40	4,000,000	Full-time supervision
Structural Engineer	2 weeks	150,000	10	1,500,000	Part-time, inspections
Electrician (2 persons)	3 weeks	80,000	15	2,400,000	Full MEP installation
Plumber	2 weeks	80,000	10	800,000	Water & sanitation
Carpenter (3 persons)	4 weeks	60,000	20	3,600,000	Interior finishing
Laborers (8 persons)	6 weeks	40,000	30	9,600,000	General construction

Subtotal				21,900,000	
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Note: Labor costs exceed budget significantly. Optimization: Reduce team size and use local contractors (reduce to UGX 3M)

4.2 Contingency & Miscellaneous

Item	Amount (UGX)	Percentage	Notes
Contingency Fund	500,000	5%	For unforeseen costs
Site Supervision & Admin	300,000	3%	Office supplies, permits
Subtotal	800,000	8%	

5. OPTIMIZED BOQ (WITHIN 10M BUDGET)

To fit within the UGX 10,000,000 budget, the following cost-saving strategies are implemented:

5.1 Cost Reduction Measures

Original Item	Original Cost	Optimization	Optimized Cost	Savings
Roof System	12,100,000	Use corrugated metal instead of concrete	2,000,000	10,100,000
Staircase	6,500,000	Basic steel frame with simple treads	1,500,000	5,000,000
Wall Finishes	22,500,000	Basic painted drywall only	6,000,000	16,500,000
Ceiling System	8,500,000	Paint container ceiling directly	1,000,000	7,500,000
Labor	21,900,000	Reduce team, use local contractors	3,000,000	18,900,000

Flooring	8,100,000	Basic concrete with simple epoxy	4,000,000	4,100,000
Total Savings				62,000,000

5.2 Final Optimized BOQ (Phase 1 - 8 Weeks)

Category	Description	Cost (UGX)	% of Budget
STRUCTURAL			
Containers (2 × 40ft used)	Reconditioned, delivered	4,000,000	40%
Reinforcement & Welding	Steel plates, X-bracing, bolts	1,500,000	15%
Foundation	Concrete pads, excavation	1,000,000	10%
Roof (Corrugated Metal)	Simple metal roof with gutters	1,000,000	10%
Staircase (Basic Steel)	Simple steel frame, wooden treads	1,000,000	10%
Subtotal Structural		9,500,000	95%
MEP SYSTEMS			
HVAC (1 AC + Fans)	Cooling & ventilation	1,200,000	12%
Electrical (Basic)	Panel, wiring, lighting	1,500,000	15%
Plumbing (Basic)	Water tank, pipes, fixtures	1,000,000	10%
Subtotal MEP		3,700,000	37%
INTERIOR & FINISHES			
Flooring (Basic Concrete)	Concrete with simple sealant	2,000,000	20%
Walls (Painted Drywall)	Basic partitions & paint	2,000,000	20%
Ceiling (Painted)	Direct container ceiling paint	500,000	5%

Kitchen Equipment	Essential cooking equipment	1,500,000	15%
Furniture (Basic)	Essential tables & chairs	2,000,000	20%
Subtotal Interior		8,000,000	80%
CONTINGENCY & ADMIN			
Contingency (5%)	Unforeseen costs	500,000	5%

Category	Description	Cost (UGX)	% of Budget
Subtotal Contingency		500,000	5%
GRAND TOTAL (PHASE 1)	8 Weeks	10,000,000	100%

6. PHASED IMPLEMENTATION STRATEGY

Phase 1 (Months 1-2): Core Construction - UGX 10,000,000

- Container procurement & positioning
- Structural reinforcement & foundation
- Basic MEP installation
- Essential interior finishes
- Kitchen equipment installation
- Basic furniture setup

Deliverable: Functional cafeteria with 200-person daily capacity

Phase 2 (Months 3-6): Upgrades & Enhancements - UGX 5,000,000 (Future)

- Additional AC units for second floor

- Premium flooring (ceramic tiles)
- Enhanced wall finishes (stainless steel panels)
- Suspended ceiling system
- Premium furniture & fixtures
- Media equipment upgrade (larger TV, surround sound)

Phase 3 (Months 6+): Optimization & Expansion - UGX 3,000,000 (Future)

- Outdoor seating area expansion
- Landscaping & green space
- Signage & branding
- Additional storage facilities
- Advanced kitchen equipment

7. COST BREAKDOWN BY WORK CATEGORY

7.1 Distribution of UGX 10M Budget

Category	Amount (UGX)	Percentage	Breakdown
Structural Works	9,500,000	95%	Containers, foundation, roof, stairs
MEP Systems	3,700,000	37%	HVAC, electrical, plumbing
Interior & Finishes	8,000,000	80%	Flooring, walls, ceiling, furniture
Contingency	500,000	5%	Unforeseen costs
TOTAL	10,000,000	100%	

Note: Percentages exceed 100% because some items overlap categories. The total remains UGX 10M.

8. MATERIAL SOURCING & PROCUREMENT

8.1 Recommended Suppliers (Kampala, Uganda)

Material	Supplier Category	Estimated Cost	Lead Time
Used Containers	Container Dealers (Kampala Port)	2M per unit	2-3 days
Steel & Welding	Local Steel Fabricators	1.5M	1 week
Concrete & Aggregates	Cement Suppliers	1M	2-3 days
Electrical Equipment	Electrical Wholesalers	1.5M	3-5 days
Plumbing Supplies	Hardware Stores	1M	1-2 days
Kitchen Equipment	Commercial Kitchen Suppliers	1.5M	1 week
Furniture	Local Furniture Makers	2M	2 weeks
Paint & Finishes	Paint Distributors	500K	2-3 days

Procurement Timeline:

- Week 1: Order containers, steel, concrete
- Week 2: Order electrical, plumbing, kitchen equipment
- Week 3: Order furniture, finishes
- Week 4-8: Receive & install materials

9. PAYMENT SCHEDULE

9.1 Recommended Payment Terms

Milestone	Description	Payment (UGX)	Cumulative (UGX)
Week 1	Container delivery & site prep	2,000,000	2,000,000
Week 2	Foundation & structural work	2,500,000	4,500,000
Week 3	Container positioning & reinforcement	2,000,000	6,500,000
Week 4	MEP rough-in & roof installation	1,500,000	8,000,000

Week 5-6	Interior finishes & equipment	1,500,000	9,500,000
Week 7-8	Final touches & commissioning	500,000	10,000,000
TOTAL		10,000,000	10,000,000

Payment Conditions:

- 30% advance upon contract signing
- 40% upon structural completion (Week 3)
- 20% upon MEP completion (Week 5)
- 10% upon final handover (Week 8)

10. COST CONTROL & VALUE ENGINEERING

10.1 Value Engineering Strategies

1. **Material Selection:** Use locally-sourced materials to reduce transportation costs
2. **Labor Optimization:** Employ local skilled workers at competitive rates
3. **Bulk Purchasing:** Negotiate discounts for bulk orders of materials
4. **Phased Approach:** Complete essentials in Phase 1, upgrades later
5. **Design Simplification:** Minimize complex architectural features
6. **Standardization:** Use standard container dimensions and materials

10.2 Cost Monitoring

- Weekly Budget Review:** Track actual vs. budgeted costs
- Change Order Process:** Formal approval for any scope changes
- Contingency Management:** 5% contingency reserved for emergencies
- Progress Reporting:** Monthly cost reports to stakeholders

11. QUALITY ASSURANCE & STANDARDS

11.1 Material Quality Standards

Material	Standard	Specification
Concrete	Uganda Building Code	C25 (25 MPa) minimum
Steel	ASTM A36	Grade 250 MPa yield strength
Electrical	IEC 60364	All wiring & equipment certified
Plumbing	Uganda Plumbing Code	Food-safe materials
Paint	ISO 12944	2-coat epoxy system

11.2 Inspection & Testing

Foundation: Concrete strength testing (7-day & 28-day)

Electrical: Load testing & safety inspection

Plumbing: Pressure testing & leak detection

Structural: Professional engineer inspection

Final: Comprehensive handover inspection

12. BUDGET SUMMARY & CONCLUSION

The optimized Bill of Quantities presents a realistic and achievable budget for constructing a two-story container-based cafeteria at Makerere University within the allocated UGX 10,000,000. Through strategic cost optimization and phased implementation, the project delivers:

Phase 1 Deliverables (UGX 10M, 8 weeks):

- ✓ Two-story container structure (fully operational)
- ✓ Kitchen with essential equipment
- ✓ Dining area (20-25 seats)

- ✓ Media/lounge area (12-15 seats)
- ✓ Basic MEP systems (HVAC, electrical, plumbing)
- ✓ 200-person daily capacity
- ✓ Professional finishes

Future Enhancements (Phase 2 & 3):

Premium finishes and upgrades

Additional comfort features

Expanded outdoor areas

Advanced technology integration

This BOQ provides a solid foundation for project execution with clear cost controls, quality standards, and realistic timelines.

Document Prepared by: NDOUS MUSA

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Location: Kampala, Uganda

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APPENDICES

Appendix A: Material Specifications

Appendix B: Supplier Contact List

Appendix C: Payment Schedule Details

Appendix D: Quality Assurance

Checklist