

Case Study 3: Merit Point Criteria (MPC) in University Building Construction

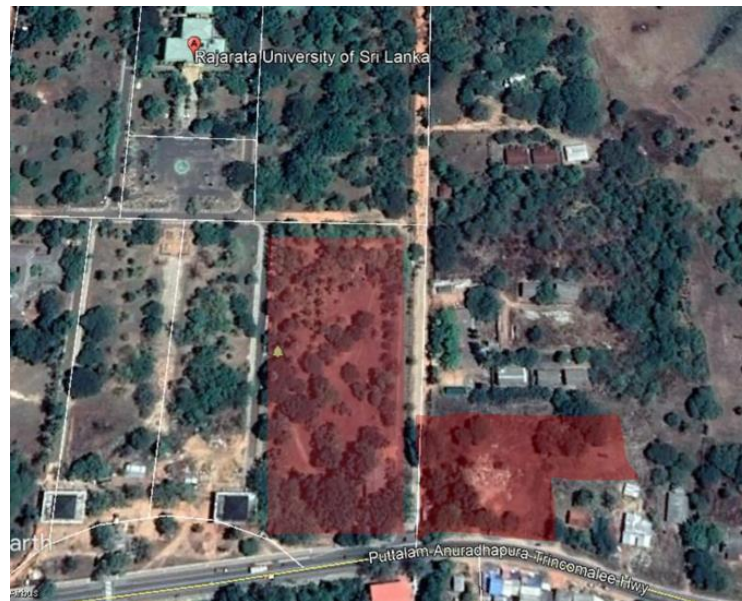
Activity: critically discuss about:

- 1. Technical Evaluation Criteria including weightages.**
- 2. Technical: Financial Ratio**

Project Description

Ministry of Higher Education in Sri Lanka has planned a Design and Construction of Buildings and Infrastructure Facilities for Faculty Technology, Rajarata University of Sri Lanka.

Construction Site



Summarized Scope for this case study

The Contract requirements are defined in Section 6 and summarized as follows:

1. Basic floor Area requirements

Block	Building	Approx. Floor Area (m2)
A	Main Administration Building including Library	3545
B	Engineering Technology Building (Martial Technology, Electrical & Electronic Technology, ICT)	8730
C	Core Lab building	1500
D	Bio system building (Food technology, Bioprocess, Agri Technology)	4445
E	Plant house	230
F	Laboratories	1325
G	Student Welfare Facility	835
H	Waste disposal unit	50
I	Sewer treatment plant	90
J	Faculty Auditorium	1050
K	Collaborative cell	750
L	Service outlet	185
M	Gate House	150
	Total	22885

Block B and D is to be completed within a period of 18 months from the award of the contract. All remaining blocks are to be completed within 30 months from the award of the contract.

2. Standards Compliance

- Urban Development Authority: Blue Green Sri Lanka Green Building Guidelines for Sri Lanka (First Print, January 2017) Rating System - Minimum of Gold Level Certification to be achieved (Obtain over 60 points on the 100-point UDA Blue Green Sri Lanka Rating System)
- Green Building Council of Sri Lanka: GreenSL Rating System for Built Environment (Version 2.0, 2018) - Minimum of Gold Level Certification to be achieved (Obtain over 60 points on the 100-point GreenSL Rating System)

3. Masterplan

The master plan for the Faculty of Technology at Rajarata University, Sri Lanka, should emphasize design intentions and execution parameters, ensuring new buildings reflect contemporary aesthetic ideas and serve as cultural records of current architecture and campus life. It must demonstrate compliance with statutory requirements and consider the appropriate site context. Bidders should refer to the Design Guidelines, including the Conceptual Master Plan and 3-D Massing and Zoning diagrams, to formulate their design and development brief. The master plan should outline the overall building configuration, with articulated volumes to create a unique identity for the faculty. It should demonstrate efficient zoning of activities based on use and users for effective management. Environmental sustainability initiatives, including hard and soft landscaping, should be integrated, with public levels for the pedestrian movement. Clear indications of vehicular and pedestrian movements, including cycling options, should ensure safety and convenience for users. This comprehensive approach ensures the master plan meets current needs and anticipates future growth and sustainability.

4. Design Consideration

- Compliance and Aesthetics: Ensure compliance with all statutory requirements, highlight design intentions and execution parameters and new buildings should reflect contemporary aesthetic ideas and serve as cultural records.
- Natural Light and Ventilation: All academic areas should have ample natural light and ventilation.
- Staff and Academic Area Integration: Staff facilities should be conveniently linked to academic areas while maintaining privacy.
- Unique Identity and Character: Develop academic areas to generate a unique identity while maintaining the overall character of the university and incorporate traditional architectural features and appropriate landscaping.
- Industrial Collaboration Cell: Develop as a standalone facility with easy road access and parking.
- Independent Auditorium: Ensure the auditorium is functional independently with modern facilities as it will be used for revenue generation.
- Library as a Learning Hub: Create visual links to library activities with a central atrium.
- Fit for Purpose: Ensure buildings function as required, considering visual impact, modern facilities, acoustics, landscaping, and aesthetics.
- Focus on floor area efficiency, gender equality, specialized area requirements, interconnectivity, accessibility, demonstration purposes, natural lighting, natural ventilation, environmental design, sustainability, waste management and hybrid ventilation.

Extracts from Section 3

Technical Evaluation

Technical Bids that have obtained “technical score” more than minimum required limit against each criterion where specified in Section 3 – Evaluation and Qualification Criteria and total “technical score” of seventy (70) out of hundred (100) will be treated as substantially responsive Technical Bids.

Merit Point Criteria

Criterion	Points Allocated	Minimum Required
Mandatory Requirements		
ISO 14001 Certification		In case of single entity, must meet the requirement. In case of Joint venture at least one partner shall comply with the requirement
COMPANY STRENGTH	20	10
Experience - Design contract experience in education facilities - Design or construction experience of buildings certified by an international or local accreditation body as “green buildings” - Awards given by Nationally/ Internationally recognized bodies for construction of similar projects - If the Bidder is a Joint Venture at least one partner should have design and build experience of a green certified building undertaken during the last 3 years.	10	5
Staff - Full time technical staff - Key staff CVs	10	5
TECHNICAL APPROACH	80	
Design Approach of the proposal	58	32
Master plan Response to the site context, activity zoning, movement and accessibility, sustainability of the project, landscaping and external work, security and access controls overall project plan	10	5
Building Related The bidder should provide sufficient details to establish strategies adopted. - Green SL- (or equivalent international certification) Platinum 70+5 buffer - Blue Green UDA – (or equivalent international certification) Platinum 70+5 buffer Note: Bidders are advised to maintain the additional costs of achieving green rating within 5% of the project costs in their costing to be reflected in the financial proposal	4 4	2 2
- Design (Aesthetic appeal) - Functionality (fit for purpose, flexibility- multi-purpose, etc. Innovative learning space, usage for demonstration purposes, universal design, Environment Compliance to Gross Floor Area Schedule) - Innovation	11 24 5	5 15 3
Ancillary	15	5
- Sewerage treatment and wastewater treatment - Chemical Treatment - Security measures - Interconnectivity (as per Section 6)	3 2 2 4	1 1 1 1

Criterion	Points Allocated	Minimum Required
• Walkability /internal Circulation	4	1
Quantitative	7	3
Timeline		
• Work plan and project implementation schedule (. The work plan should clearly indicate specific time period for preparation of the preliminary design with 2-3 weeks provision for design review and approval by the employer and timeline for preparation of detail design.)	2	1
The implementation schedule should clearly indicate the timeline for handing over block B and D in 18 months from the award.	1	1
Building Energy Index	4	1
TOTAL	100	50

Technical Score (S_t) - Total of the points received for each criterion will be the technical score (S_t) of the bids.

Financial Evaluation

The financial scores (S_f) of the bid prices(F) will be computed as follows:

$$S_f = 100 \times \frac{F_m}{F}$$

here, F =Evaluated bid price

F_m = lowest evaluated price among responsive bids

Combined Score (S)

Bids will be ranked according to their combined score (S) using the weights as described, 25% for design / technical proposals and 75% for Financial Proposal. The combined score shall be computed as below;

The Bid with the highest Combined Score among responsive bids shall be the Most Advantageous

$$S = S_t \times 25\% + S_f \times 75\%$$

Extracts from Section 4

Technical Proposal

Site Organization

Method Statement

All bid deliverables as identified in Section 6 – Employer’s Requirement

Mobilization Schedule

Construction Schedule

Personnel

Equipment

Site Organization

Detailed flow chart illustrating the hierarchy of the construction management and site organization including the site management.

Method Statement

Detailed Project Execution Plan describing utilization of resources (Human, Plant, Equipment and Material) and proposed technical approach in each trade during the project timeline.

All bid deliverables as identified in Section 6 – Employer’s Requirement

- Master plan
- Building Design (Architectural Design, Architectural Design and Services Designs)
- Environmental Design & Sustainability
- Bidder shall include any other information to demonstrate the compliance with the Employer’s Requirement

Mobilization Schedule

Mobilization Schedule shall include all preliminary and pre-construction activities including design services. The Schedule shall clearly indicate the activities of preliminary design, Design review and approval (2 – 3weeks) and activities of detailed design, preparation of construction documentation.

Construction Schedule

Detailed program of the work including all the activities (Design and Construction) highlighting the critical path on and acceptable format (soft copies of the construction schedule to be submitted preferably using “MS Project “or “Primavera” software).

		(Qualification)								
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Position		
Personnel information	Name	Date of birth
	Professional qualifications	
Present employment	Name of employer	
	Address of employer	
	Telephone	Contact (manager/personnel officer)
	Fax	E-mail
	Job title	Years with present employer

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Equipment

No.	Equipment Type and Characteristics	Minimum Number Required	Number Proposed by the Bidder	Remarks (if any)
1	Concrete Mixers	05 Nos.		
2	Water Pumps (Electric)	04 Nos.		
3	Water Pumps (Mechanical)	02 Nos.		
4	Poker Vibrators (Mechanical)	03 Nos.		
5	Poker Vibrators (Electrical)	03 Nos.		
6	Bar Cutting and bending machines	02 Nos.		
7	Air –Compressor	01 Nos.		
8	Leveling Instruments	02 Nos.		
9	Theodolite	02 Nos.		
10	Welding Plants	02 Nos.		
11	Engine Driven Plate Compactors	02 Nos.		
12	Electric Drills	06 Nos.		
13	Hoists	01 Nos.		
14	5 Ton boom truck	01 Nos.		
15	Vibro Roller	01 Nos.		
16	7 Ton Lorries	01 Nos.		
17	5 Ton lorries	01 Nos.		
18	Tower Crane	01 Nos.		
19	Mobile Crane	01 Nos.		
20	Back Hoe Loaders	01 Nos.		
21	Dozer	01 Nos.		
22	Concrete Breakers (Normal)	02 Nos.		
23	Concrete Breakers (Heavy)	02 Nos.		
24	Power Saw	05 Nos.		
25	Generator	01 Nos.		
26	Vacuum Cleaners	02 Nos.		
27	High Pressure water jet	02 Nos.		
28	Pile Boring Machine	02 Nos.		
29	Concrete Batching Plant	01 Nos.		

Form EQU: Equipment

The Bidder shall provide adequate information and details to demonstrate clearly that it has the capability to meet the equipment requirements indicated in Section 6 (Employer's Requirements), using the Forms below. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder.

Item of Equipment		
Equipment Information	Name of manufacturer	Model and power rating
	Capacity	Year of manufacture
Current Status	Current location	
	Details of current commitments	
Source	Indicate source of the equipment	
	☐ Owned ☐ Rented ☐ Leased ☐ Specially manufactured	

Omit the following information for equipment owned by the Bidder.

Owner	Name of owner	
	Address of owner	
	Telephone	Contact name and title
	Fax	Telex
Agreements	Details of rental/lease/manufacture agreements specific to the project	