



Er. H.P. Singh
Executive Engineer

ਪੰਜਾਬ ਟੈਕਨੋਲੋਜੀਜ਼ ਯੂਨੀਵਰਸਿਟੀ

PTU PUNJAB
TECHNICAL
UNIVERSITY

Estd. Under Punjab Technical University Act, 1996
(Punjab Act No. 1 of 1997)

Ref. No. PTU/CC/496

Dated 06/07/11

Sh. Chander Mohan,
House No. 202, Sector 36-A, Chandigarh.

Sh. S.L. Kaushal,
Chief Architect/Punjab (Retd),
2865, Sector 42-C, Chandigarh.

The Director,
Department of Technical Education and Industrial Training, Punjab,
Plot No. 1, Sector-36A, Chandigarh.

Dr. Nachattar Singh,
Advisor to VC and Dean (P&D),
Punjab Technical University, Jalandhar.

Sh. H.S. Bains,
Registrar, Punjab Technical University, Jalandhar.

Dr. Buta Singh (Special Invitee),
Dean (Academics), Punjab Technical University, Jalandhar.

**Sub : Construction of new campus of Punjab Technical University – 27th meeting of the
Standing Building Construction Committee.**

Dear Sir,

27th meeting of the Standing Building Construction Committee shall be held under the Chairmanship of Dr. R. S. Khandpur, Director General, PGSC at 11.30 hours on 13.07.2011 in his office at SCO 60-61, Sector 34-A, Chandigarh. Agenda and Agenda note for the meeting are enclosed.

You are requested to make it convenient to attend the meeting.

Thanking you

Yours Sincerely,

06/07/11

(H. P. Singh)

Executive Engineer

Copy to : i. Dr. R. S. Khandpur, DG, PGSC, SCO 60-61, Sector 34-A, Chandigarh.
ii. Sh. Rajiv Aggarwal, M/s Archigroup Architects, A-14, Sector-15,
Noida -201301.

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Punjab Technical University Jalandhar

Kapurthala Campus : Jalandhar-Kapurthala Highway, Post Bag No. 01, Kapurthala.
Mobile : 9501109042 www.ptu.ac.in E-Mail : exopl@ptu.ac.in

PUNJAB TECHNICAL UNIVERSITY, JALANDHAR

Sub : Agenda for the 27th meeting of the Standing Building Construction Committee.

- Item No. 27.1 : To confirm the Minutes of 26th meeting of Standing Building Construction Committee held on 26.05.2011.
- Item No. 27.2 : Action taken on various items discussed during previous meetings of Standing Building Construction Committee.
- Item No. 27.3 : To finalize the appointment of Architect for Architectural services for establishment of new Punjab Institute of Technology at Mansa, Ludhiana & Barnala, PTU's Regional campus at Mohali and other future works.
- Item No. 27.4 : To discuss and approve the rough cost estimate (based upon plinth area rates of CPWD) submitted by the Architect for two towers, one library and seminar hall of the proposed Punjab Institute of Technology (PIT) at PTU's main campus at Jalandhar-Kapurthala Road.
- Item No. 27.5 : To discuss and finalize the methodology/procedure to be adopted for invitation & finalization tenders, project management including supervision of works in respect of PIT Kapurthala works.
- Item No. 27.6 : To discuss and approve the 'Finishing Schedule' submitted by the Architect for two towers, one library and seminar hall of the proposed Punjab Institute of Technology (PIT) at PTU's main campus at Jalandhar-Kapurthala Road.
- Item No. 27.7 : Any other point with the permission of the Chair.

PUNJAB TECHNICAL UNIVERSITY, JALANDHAR

Sub : Agenda Note for the 27th meeting of the Standing Building Construction Committee.

Item No. 27.1 : To confirm the Minutes of 26th meeting of Standing Building Construction Committee held on 26.05.2011.

The minutes of 26th meeting of Standing Building Construction Committee held on 26.05.2011 were circulated on 01.06.2011. Following comments have been received against item No. 26.3 (Para 3) of the minutes of the meeting from Sh. S. R. Aggarwal, Chief Engineer (Retd), special invitee in 26th meeting:

- 1) To ensure supply of potable/ quality water, it involves two activities i.e.
 - i) Treatment of the water if so required. Decision to be taken after testing of the available underground water (recorded in the Minutes)
 - ii) Disinfection of treated water. Herein it was pointed out that disinfection with UV Sterilizer is not suitable for piped water supply. Therefore, PTU should adopt any other process of disinfection which has residual effect to guard against any bacterial contamination of water during transmission through pipe line network. It was suggested that gaseous chlorine shall be most effective and economical mode of disinfection.
- 2) For a public building it is always preferred to use GI pipe in wall chases to the various fixtures. Proposed use of CPVC pipes need to be further evaluated.
- 3) **Technology of STP:** As the treated effluent is proposed to be recycled for use in horticulture/ flushing, therefore, technology for treatment of the sewage effluent should be such which is capable of providing requisite quality of treated effluent (BOD < 5). Accordingly it was suggested that either of the technologies i.e. MBR or SBR should be adopted after working out its economic viability. (Technology mention in the Minutes as MRB need to be corrected).

The above is to be discussed and minutes are to be confirmed.

Item No. 27.2 : Action taken on various items discussed during previous meetings of Standing Building Construction Committee.

Action taken on various items discussed during previous meeting of Standing Building Construction Committee is as under:

- Three stage evaluation in respect of appointment of Architect for Architectural services for establishment of new Punjab Institute of Technology at Mansa, Ludhiana & Barnala, PTU's Regional campus at Mohali and other future works have been completed and the same is being discussed in the present meeting.

[Signature]

- The Architect has started detailed designing for structure, HVAC, Electrical, Plumbing and Fire Fighting systems of two towers, one library and one seminar hall of proposed PIT at main campus, Kapurthala. The Architect is presenting a schedule for completion of these activities in the present meeting.

Item No. 27.3 : **To finalize the appointment of Architect for Architectural services for establishment of new Punjab Institute of Technology at Mansa, Ludhiana & Barnala, PTU's Regional campus at Mohali and other future works.**

Based upon the procedure and tender documents discussed/approved in 23rd, 24th and 25th meeting, open bids in two packets system through press advertisement were invited by PTU for this work. As per bid conditions, the distribution of scores for evaluation and finalization of bids are as under:

1. Technical Bid 60 marks
2. Presentation 20 marks
3. Financial Bid 20 marks

Fifteen bids were received and technical bids were opened on 19.05.2011.

In terms of 'Procedure for evaluation of bids' forming part of bid document, based upon the scores (out of 60 marks) obtained by various bidders in technical evaluation, top five bidders, as listed below, were invited to make presentation in front of 'Board of Assessors':

1. M/s Archigroup Architects, Noida
2. Suresh Goel & Associates, N. Delhi
3. Morphogenesis, New Delhi
4. Architects Atelier, Chandigarh
5. Design Associates Inc., Noida

The presentations were made by all the five bidders on 27.06.2011 in the office of Director General, PGSC at Chandigarh. Further, as per bid conditions, the scores obtained by the bidders in technical evaluation (out of 60 marks) and in the presentation (out of 20 marks) have been added and financial bids of top three bidders (as per merit list prepared based upon total scores obtained by the bidders out of 80 marks) have been opened on 01.07.2011.

The rates quoted by these three bidders are as under:

S. No.	Agency	Rates quoted
1.	M/s Archigroup Architects, Noida	2.05%
2.	Suresh Goel & Associates, N. Delhi	1.90%
3.	Morphogenesis, New Delhi	2.00%

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The details of the scores obtained by top three bidders after complete evaluation in three stages (i.e. Technical, Presentation and Financial) is as under:

S. No.	Agency	Scores obtained in			
		Technical Evaluation	Presen- tation	Financial evaluation	Total
1.	M/s Archigroup Architects, Noida	60	19	18.54	97.54
2.	Suresh Goel & Associates, N. Delhi	59	13	20.0	92.00
3.	Morphogenesis, New Delhi	54	18	19.0	91.00

Thus, M/s Archigroup Architects, Noida have scored the highest overall scores and is eligible for award of work/negotiations in terms of bid conditions.

Committee is requested to discuss and finalize its recommendations for appointment of the Architect.

Item No. 27.4 : **To discuss and approve the rough cost estimate (based upon plinth area rates of CPWD) submitted by the Architect for two towers, one library and seminar hall of the proposed Punjab Institute of Technology (PIT) at PTU's main campus at Jalandhar-Kapurthala Road.**

Based upon the plans approved in 23rd meeting, the Architect has submitted the rough cost estimates based upon plinth area rate of CPWD for two towers, one library and seminar hall of the proposed Punjab Institute of Technology (PIT) at PTU's main campus at Jalandhar-Kapurthala Road. The total estimated cost for these works is Rs. 97.71 Crores. The details and copy of the estimate submitted by the Architect is also placed at Annexure-A.

Item No. 27.5 : **To discuss and finalize the methodology/procedure to be adopted for invitation & finalization tenders, project management including supervision of works in respect of PIT Kapurthala works.**

The Architect has submitted the estimates for Punjab Institute of Technology Kapurthala works for an amount of Rs. 97.71 crores. Committee is requested to discuss the following issues pertaining to these works and approve the methodology/procedure to be adopted for invitation & finalization tenders, project management including supervision of works in respect of these works. :

1. Packages (Splitting of works for invitation and finalization of contractors/ agencies for execution of works)
2. Mode of invitation of tenders – Open tenders under two packet system or short-listing/pre-qualification of bidders at first stage.
3. Project Management including supervision of works.

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Item No. 27.6 : To discuss and approve the 'Finishing Schedule' submitted by the Architect for two towers, one library and seminar hall of the proposed Punjab Institute of Technology (PIT) at PTU's main campus at Jalandhar-Kapurthala Road.

The Architect has submitted the 'Finishing Schedule' for two towers, one library and seminar hall of the proposed Punjab Institute of Technology (PIT) at PTU's main campus at Jalandhar-Kapurthala Road. The same is placed at Annexure-B. Committee is requested to discuss and consider approval of the same.

Item No. 27.7 : Any other point with the permission of the Chair.

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ANNEXURE – A

PUNJAB TECHNICAL UNIVERSITY
**ABSTRACT OF ESTIMATES FOR COLLEGE BUILDINGS, LIBRARY AND SEMINAR
 HALL AT PTU'S MAIN CAMPUS AT JAL-KPT ROAD**

S. No.	Description	Area (In Sqm)	Total Cost (In Lacs of Rs)	Cost (In Rs)	
				per Sqm	per Sft
1	College Building - 1	12962.42			
	Civil works		2,754.54	21,250.20	1,974.93
	Public Health		204.79	1,579.87	146.83
	Electrical Works		747.03	5,763.04	535.60
	Fire Fighting		60.18	464.27	43.15
	Passenger Lifts		75.60	583.22	54.20
	Total		3,842.14	29,640.60	2,755.00

S. No.	Description	Area (In Sqm)	Total Cost (In Lacs of Rs)	Cost (In Rs)	
				per Sqm	per Sft
2	College Building - 2	12857.29			
	Civil works		2,725.98	21,201.82	1,970.43
	Public Health		203.13	1,579.88	146.83
	Electrical Works		740.96	5,762.96	535.59
	Fire Fighting		59.55	463.16	43.04
	Passenger Lifts		75.60	587.99	54.65
	Total		3,805.22	29,595.81	2,751.00

S. No.	Description	Area (In Sqm)	Total Cost (In Lacs of Rs)	Cost (In Rs)	
				per Sqm	per Sft
3	Central Library & Canteen	5516.71			
	Civil works		1,280.62	23,213.47	2,157.39
	Public Health		87.97	1,594.61	148.20
	Electrical Works		175.94	3,189.22	296.40
	Fire Fighting		62.23	1,128.03	104.84
	Passenger Lifts		18.00	326.28	30.32
	Total		1,624.76	29,451.61	2,737.00

S

S. No.	Description	Area (In Sqm)	Total Cost (In lacs of Rs)	Cost (In Rs)	
				per Sqm	per Sft
4	Seminar Hall	302.55			
	Civil works		93.06	30,758.55	2,858.60
	Public Health		5.09	1,682.37	156.35
	Electrical Works		10.20	3,371.34	313.32
	Fire Fighting		2.38	786.65	73.11
	Passenger Lifts		-	-	-
Total			110.73	36,598.91	3,401.00

S. No.	Description	Area (In Sqm)	Total Cost (In lacs of Rs)	Cost (In Rs)	
				per Sqm	per Sft
5	Open Air Theatre	234.64			
	Civil works		14.47	6,166.89	573.13
	Public Health		-	-	-
	Electrical Works		-	-	-
	Fire Fighting		-	-	-
	Passenger Lifts		-	-	-
Total			14.47	6,166.89	573.00

S. No.	Description	Area (In Sqm)	Total Cost (In lacs of Rs)	Cost (In Rs)	
				per Sqm	per Sft
Overall (Without AC)			31873.61		
	Civil works		6,868.67	21,549.71	2,002.76
	Public Health		500.98	1,571.77	146.08
	Electrical Works		1,674.13	5,252.40	488.14
	Fire Fighting		184.34	578.35	53.75
	Passenger Lifts		169.20	530.85	49.34
Grand Total for all works except AC			9,397.32	29,483.08	2,740.00

8

S. No.	Description	Area (In Sqm)	Total Cost (In Lacs of Rs)	Cost (In Rs)	
				per Sqm	per Sft
Air-Conditioning					
1	College Building 1	6232.06	139.29	2,235.00	207.71
2	College Building 2	6090.22	136.12	2,235.00	207.71
3	Library	4218.33	94.28	2,235.00	207.71
4	Seminar Hall	157.72	3.53	2,235.00	207.71
Total		16698.33	373.21	8,940.00	831.00

GRAN. GRAND TOTAL INCLUDING AC WORKS

OR

9,770.53 LACS

97.71 CRORES

8

PUNJAB TECHNICAL UNIVERSITY, PHASE II A
PRELIMINARY COST ESTIMATE

AREA DETAILS

SUMMARY- PRELIMINARY ESTIMATE

S. No.	Builing / Component	Plinth Area (Sqm)	Cost in Rs	Reference
1	2	3	4	5
1	College Building 1	12,962.42	37,62,93,466.25	Ref. Annexure 1
2	College Building 2	12,857.29	37,25,15,280.34	Ref. Annexure 2
3	Central Library including cafeteria	5,516.71	16,04,76,115.06	Ref. Annexure 3
4	Seminar Hall	302.55	96,56,338.88	Ref. Annexure 4
5	O.A.T.	234.64	14,46,717.97	Ref. Annexure 5
6	Sub Total for Buildings	31,873.61	92,03,87,918.50	
7	Other Building Expenses (Richer Specifications, Air conditioning)		5,86,72,280.83	Ref. Annexure 6
8	Total including other building expenses (6 + 7)		97,70,60,199	

PUNJAB TECHNICAL UNIVERSITY, PHASE II A
PRELIMINARY COST ESTIMATE

ARE College Building 1

A

Annexure 1

Type of Building -	College	Refer Org No. PTU-II A/PRE/AC/CB1-01 TO 06				
Total Plinth Area -	12,962.42 sq.m					
Plinth Area On G. Floor -	2,352.37 sq.m					
Total covered area-	12,144.76 sq.m					
Plinth area of laboratories	527.74 sq.m					
No. of storeys-	G + 5					
Floor height-	3.75 m					

Sr.No.	Description	Unit	Qty	Nos	Rate	Amt	Explanation
1	2	3	4	5	6	7 = (4*5*6)	8
	1 R.C.C. FRAMED STRUCTURE						
1.1	RCC framed structure upto six storeys						
1.1.1	Floor height 3.35m						
a.	Floors	sqm	12,962.42	1.0	13,200.00	17,11,03,944.00	
1.2	Extra for						
1.2.1	Every 0.3m additional height of floor above normal floor height of 3.35m.	sqm	12,962.42	1.33	150.00	25,92,484.00	
1.2.2	Every 0.3m deeper foundation over normal depth of 1.20m (on G.F. area only)	sqm	2,352.37	2.00	150.00	7,05,711.00	
1.2.3	Resisting Earthquake forces	sqm	12,962.42	1.0	630.00	81,66,324.60	
1.2.4	RCC Raft foundation	sqm	2,352.37	1.0	3,560.00	83,74,437.20	
1.2.5	Stronger structural members to take heavy loads above 500 kg/sq.m upto 1000 kg/sq.m	sqm	527.74	1.0	850.00	4,48,579.00	
1.2.6	Larger Module over 35 sqm	sqm	12,962.42	1.0	990.00	1,28,32,795.80	
1.2.7	Fire fighting						
	With wet riser system	sqm	12,962.42	1.0	300.00	38,88,726.00	
1.2.8	Fire Alarm						
	Automatic fire alarm system	sqm	2,352.37	1.0	300.00	7,05,711.00	
	Total A (1.1.1.a + 1.2.1) =					17,36,96,428.00	
	Total B (1.2.2 to 1.2.8) =					3,51,22,284.60	
	2 SERVICES						
2.1	Internal water supply & sanitary installations	% of A			@ 4%	69,47,857.12	
2.2	External service connections	% of A			@ 5%	86,84,821.40	
2.3	Internal Electrical installations	% of A			@ 12.5%	2,17,12,053.50	
2.4	Internal Electrical installations for laboratories	% of A			@ 15%	2,60,54,464.20	
2.5	Extra for						
2.5.1	Power wiring & plugs	% of A			@ 4%	69,47,857.12	
2.5.2	Lightning conductors						
a.	5 to 8 storeyed buildings	% of A			@ 0.33%	5,73,198.21	
2.5.3	Telephone conduits	% of A			@ 0.5%	8,68,482.14	
2.5.4	Data network conduits	% of A			@ 0.5%	8,68,482.14	
	Total C =	% of A			@ 29.33%	7,26,57,215.83	
	Sub Total D = A+B+C					28,14,75,928.43	
	Add Cost Index (E) =				@ 31%	8,72,57,537.81	
	3 Passenger lifts						
3.1	Passenger lift 8 passenger 1.5 m/s G+4	nos.	1.00	4.00	18,00,000.00	72,00,000.00	
3.2	Extra for additional floor	floors	1.00	4.00	90,000.00	3,60,000.00	
3.3	Sub Total					75,60,000.00	
3.4	Add cost index					0.00	
	Total F =					75,60,000.00	
	Grand Total (D+E+F) =					37,62,93,466.25	

PUNJAB TECHNICAL UNIVERSITY, PHASE II A
PRELIMINARY COST ESTIMATE

ARE College Building 2

A

Type of Building -
Total Plinth Area -
Plinth Area On G. Floor -
Total covered area-
No. of storey-
Floor height-

College
12,857.29 sq.m
2,295.72 sq.m
12,053.05 sq.m
G + 5
3.75 m

Refer Drg No. PTU-II A/PRE/AC/CB2- 01 TO 06

Annexure 2

Sr.No.	Description	Unit	Qty	Nos	Rate	Amt	Explanation
1	2	3	4	5	6	7 = (4*5*6)	8
1 R.C.C. FRAMED STRUCTURE							
1.1 RCC framed structure upto six storeys							
1.1.1	Floor height 3.35m						
a.	Floors	sqm	12,857.29	1.0	13,200.00	16,97,16,228.00	
1.2	Extra for						
1.2.1	Every 0.3m additional height of floor above normal floor height of 3.35m.	sqm	12,857.29	1.33	150.00	25,71,458.00	
1.2.2	Every 0.3m deeper foundation over normal depth of 1.20m (on G.F. area only)	sqm	2,295.72	2.00	150.00	6,88,716.00	
1.2.3	Resisting Earthquake forces	sqm	12,857.29	1.0	630.00	81,00,092.70	
1.2.4	RCC Raft foundation	sqm	2,295.72	1.0	3,560.00	81,72,763.20	
1.2.5	Larger Module over 35 sqm	sqm	12,857.29	1.0	990.00	1,27,28,717.10	
1.2.6	Fire fighting						
1.2.6.1	With wet riser system	sqm	12,857.29	1.0	300.00	38,57,187.00	
1.2.7	Fire Alarm						
1.2.7.1	Automatic fire alarm system	sqm	2,295.72	1.0	300.00	6,88,716.00	
Total A (1.1.1.a + 1.2.1) =						17,22,87,686.00	
Total B (1.2.2 to 1.2.7) =						3,42,36,192.00	
2 SERVICES							
2.1	Internal water supply & sanitary installations	% of A			@ 4%	68,91,507.44	
2.2	External service connections	% of A					
2.3	Internal Electrical installation	% of A			@ 5%	86,14,384.30	
2.4	Internal Electrical installations for laboratories	% of A			@ 12.5%	2,15,35,960.75	
2.5	Extra for				@ 15%	2,58,43,152.90	
2.5.1	Power wiring & plugs	% of A					
2.5.2	Lightning conductors				@ 4%	68,91,507.44	
a	5 to 8 storied buildings	% of A			@ 0.33%	5,68,549.36	
2.5.3	Telephone conduits	% of A			@ 0.5%	8,61,438.43	
2.5.4	Data network conduits	% of A			@ 0.5%	8,61,438.43	
Total C =		% of A			@ 29.33%	7,20,67,939.05	
Sub Total D = A+B+C						27,85,91,817.05	
Add Cost Index (E =)					@ 31%	8,63,63,483.29	
3 Passenger lift							
3.1	Passenger lift 8 passenger 1.5 m/s G+4	nos.	1.00	4.00	18,00,000.00	72,00,000.00	
3.2	Extra for additional floor	floors	1.00	4.00	90,000.00	3,60,000.00	
3.3	Sub Total					75,60,000.00	
3.4	Add cost index					0.00	
Total F =						75,60,000.00	
Grand Total (D+E+F) =						37,28,15,260.34	

PUNJAB TECHNICAL UNIVERSITY, PHASE II A
PRELIMINARY COST ESTIMATE

ARE Central Library & Canteen
A

Annexure 3

Type of Building -	Library	Refer Org No: PTU-II A/PRE/ACLIB-01 TO 06				
Total Plinth Area .	5,516.71	sq.m				
Plinth Area On G. Floor -	2,043.87	sq.m				
Total covered area-	5,290.42	sq.m				
No. of storey-	G + 2					
Floor height-	4.00	m				

Sr.No.	Description	Unit	Qty	Nos	Rate	Amt	Explanation
1	2	3	4	5	6	7 = (4*5*6)	8
1 R.C.C. FRAMED STRUCTURE							
1.1 RCC framed structure upto six storeys							
1.1.1	Floor height 3.35m						
a	Floors	sqm	5,516.71	1.0	13,200.00	72,620,572.00	
1.2	Extra for						
1.2.1	Every 0.3m additional height of floor above normal floor height of 3.35m,	sqm	6,516.71	2.17	150.00	17,92,930.75	
1.2.2	Every 0.3m deeper foundation over normal depth of 1.20m (on G.F. area only)	sqm	2,043.87	1.33	150.00	4,08,734.00	
1.2.3	Every 0.3 m higher plinth over normal plinth height of 0.6 m (on G.F. area only)	sqm	2,043.87	1.00	150.00	3,06,550.50	
1.2.4	Reassessing Earthquake forces	sqm	6,516.71	1.00	830.00	34,75,527.30	
1.2.5	RCC Raft foundation	sqm	2,043.87	1.00	3,560.00	72,75,465.20	
1.2.6	Stronger structural members to take heavy loads above 500 kg/sq.m upto 1000 kg/sq.m	sqm	6,516.71	1.00	850.00	56,89,200.50	
1.2.7	Larger Module over 35 sqm	sqm	6,516.71	1.00	900.00	54,61,542.90	
1.2.7.1	With wet riser system	sqm	5,516.71	1.00	300.00	16,55,013.00	
1.2.7.2	With sprinkler system	sqm	5,516.71	1.00	450.00	24,62,513.50	
1.2.8	Fire Alarm						
1.2.8.1	Automatic Fire alarm system	aqm	2,043.87	1.00	300.00	6,13,101.00	
Total A (1.1.1.a + 1.2.1) =						7,46,13,502.75	
Total B (1.2.2 to 1.2.8) =						2,63,67,656.90	
2 SERVICES							
2.1	Internal water supply & sanitary installations	% of A			@ 4%	29,84,540.11	
2.2	External service connections	% of A			@ 5%	37,30,875.14	
2.3	Internal Electrical Installation	% of A			@ 12.5%	93,26,687.64	
2.4	Extra for						
2.4.1	Power wiring & plugs	% of A			@ 4%	29,84,540.11	
2.4.2	Lightning conductors						
a	upto 4 storeyed buildings	% of A			@ 0.5%	3,73,067.51	
2.4.3	Telephone conduits	% of A			@ 0.5%	3,73,067.51	
2.4.4	Data network conduits	% of A			@ 0.5%	3,73,067.51	
Total C =		% of A			@14.5%	1,01,45,645.74	
Sub Total D = A+B+C						13,11,26,805.39	
Add Cost Index (E =)					@ 31%	3,75,49,309.67	
3 Passenger lifts							
3.1	Passenger lift 8 passenger 1.5 m/s G+2	nos.	1.00	1.00	18,00,000.00	18,00,000.00	
3.3	Add cost index					0.00	
Total F =						18,00,000.00	
Grand Total (D+E+F) =						18,04,75,115.00	

PUNJAB TECHNICAL UNIVERSITY, PHASE II A
PRELIMINARY COST ESTIMATE

ARE Seminar Hall

A

Type of Building -	Seminar	Refer Drg No. PTU-II A/PRE/AC/SEM- 01
Total Plinth Area -	302.55 sq.m	
Plinth Area On G. Floor -	302.55 sq.m	
Total covered area-	265.20 sq.m	
No. of storey-	G	
Floor height-	5.55 m	

Annexure 4

Sr.No.	Description	Unit	Qty	Nos	Rate	Amt	Explanation
1	2	3	4	5	6	7 = (4*5*6)	8
1 R.C.C. FRAMED STRUCTURE							
1.1	RCC framed structure upto six storeys						
1.1.1	Floor height 3.35m						
a	Floors	sqm	302.55	1.0	13,200.00	39,93,660.00	
1.2	Extra for						
1.2.1	Every 0.3m additional height of floor above normal floor height of 3.35m.	sqm	302.55	7.33	150.00	3,32,805.00	
1.2.2	Every 0.3m deeper foundation over normal depth of 1.20m (on G.F. area only)	sqm	302.55	2.00	150.00	90,765.00	
1.2.3	Resisting Earthquake forces .	sqm	302.55	1.0	630.00	1,90,606.50	
1.2.4	RCC Raft foundation	sqm	302.55	1.0	3,560.00	10,77,078.00	
1.2.5	Stronger structural members to take heavy loads above 500 kg/sq.m upto 1000 kg/sq.m	sqm	43.69	1.0	850.00	37,136.50	
1.2.4	Larger Module over 35 sqm	sqm	302.55	1.0	990.00	2,99,524.50	
1.2.5	Fire fighting						
1.2.5.1	With wet riser system	sqm	302.55	1.0	300.00	90,765.00	
1.2.6	Fire alarm system						
1.2.6.1	Automatic fire alarm system	sqm	302.55	1.0	300.00	90,765.00	
Total A (1.1.1.a + 1.2.1) =						43,28,465.00	
Total B (1.2.2 to 1.2.6) =						18,76,640.50	
2 SERVICES							
2.1	Internal water supply & sanitary installations	% of A			@ 4%	1,73,058.60	
2.2	External service connections	% of A			@ 5%	2,16,323.25	
2.3	Internal Electrical Installation	% of A			@ 12.5%	5,40,808.13	
2.4	Extra for						
2.4.1	Power wiring & plugs	% of A			@ 4%	1,73,058.60	
2.4.2	Lightning conductors						
a	upto 4 storeyed buildings	% of A			@ 0.5%	21,632.33	
2.4.3	Telephone conduits	% of A			@ 0.5%	21,632.33	
2.4.4	Data network conduits	% of A			@ 0.5%	21,632.33	
Total C =		% of A			@14.5%	11,68,145.55	
Sub Total D = A+B+C						73,71,261.05	
Add Cost Index (E =)					@ 31%	22,85,087.83	
Grand Total (D+E) =						98,56,338.88	

PUNJAB TECHNICAL UNIVERSITY, PHASE II A
PRELIMINARY COST ESTIMATE

ARE O.A.T.

A

Type of Building - OAT
 Total Plinth Area - 234.64 sq.m
 Plinth Area On G. Floor - 234.64 sq.m
 Total covered area - - sq.m
 No. of storey - G
 Floor height - 3.30 m

Refer Drg No. PTU-IIA/PRE/AC/LIB-01

Annexure 5

Sr.No.	Description	Unit	Qty	Noe	Rate	Amt	Explanation
1	2	3	4	5	6	7 = (4*5*6)	8
1	R.C.C. FRAMED STRUCTURE						
1.1	RCC framed structure upto six storeys						
1.1.1	Floor height 3.35m						
a.	Floors	sqm	234.64	1.0	9,150.00	21,46,956.00	
1.2	Deduction (per sq.m)						
1.2.1	RCC	cum	0.17	1.00	4,147.40	705.06	DSR- 5.33
1.2.2.	Centering & Shuttering	sq.m	1.00	1.00	187.35	187.35	DSR- 5.9.4
1.2.3.	Reinforcement	kg	200.00	0.17	42.70	1,451.80	DSR- 5.22.6
1.2.4.	Brick coba	sq.m	1.00	1.00	536.40	536.40	DSR- 22.7
1.2.5.	Ceiling Plaster	sq.m	1.00	1.00	62.15	62.15	DSR- 13.16
1.2.6.	Oil Bound Distemper	sqm	1.00	1.00	41.55	41.55	DSR- 13.45.1
1.2.7	Total Deduction (per sq.m)					2,984.31	
1.2.8	Total Deduction Amount					7,00,238.03	
	Grand total (1.1.1.a + 1.2.8.)					14,46,717.97	

PUNJAB TECHNICAL UNIVERSITY, PHASE II A
PRELIMINARY COST ESTIMATE

AREA DETAILS

Annexure 6

S. No.	Description	Unit	Quantity	Rate	Amount (INR)	Explanation
1	2	3	4	5	6 = (4*5)	7
A	Richer Specification					
1	Aluminium Louvers	sqm	270.36	1,500.00	4,05,571.95	
2	Tile Cladding for corridor walls	sqm	3,769.53	1,092.75	41,19,158.28	
3	Acoustic treatment	sqm	4,047.80	2,500.00	1,01,19,500.00	
4	Pergolas	sqm	267.68	1,720.00	4,60,414.76	
5	False Ceiling	sqm	9,229.66	460.55	42,50,721.76	
	Sub Total = A				1,83,55,366.74	
B	Air Conditioning					
1	Refrigeration Load	TR	1,382.11	27,000.00	3,73,16,914.09	
	Sub Total = B				3,73,16,914.09	
C	Grand Total (A+B) =				5,66,72,280.83	

PUNJAB TECHNICAL UNIVERSITY, PHASE II A
PRELIMINARY COST ESTIMATE

AREA DETAILS

S.no.	DSR/Ram no.	Item/ Specification	Building	Unit	Rate (INR)	Quantity	No.	Total Quantity	Amount (INR)	Remarks
A		Aluminium Louvers								
A.1.	NS	3.15 mm thick in aluminium window frame as per architectural specs.	College Building 1	sq.m	24.64	6 floors	149.04			Refer drawing no. PTU-II A/PRE/AC/CB 1-10-12 PTU-II A/PRE/AC/CB 2-10-12 PTU-II A/PRE/AC/LIB-07-09
A.2.			College Building 2			6 floors	78.34			
A.3.a			Library			3 floors	16.00			
A.3.b						3 floors	27.00			
A.4		TOTAL			1,600.00			230.38	4,05,571.95	
B		Tile Cladding for corridor walls								
B.1.	8.9.1.2 (-)11.22.1	Tile cladding of 6mm granite cladding of desired shade	College building 1	sq.m	1,684.77	1.00	1684.77			Refer drawing no. PTU-II A/PRE/AC/CB 1-10-13 PTU-II A/PRE/AC/CB 2-10-12
B.2.			College building 2			1.00	1684.77			
B.3.		TOTAL			1,684.75			3,769.53	41,10,151.25	
C		Acoustic treatment								
C.1.	NS	Acoustic panelling for walls & ceiling	College Building 1- lecture hall	sq.m	294.64	6.00	1,767.84			Refer drawing no. PTU-II A/PRE/AC/CB 1-10-12 PTU-II A/PRE/AC/CB 2-10-12 PTU-II A/PRE/AC/SEM-02
C.2.			College Building 2- lecture hall			6.00	1,848.12			
C.3.			Seminar Hall			1.00	431.84			
C.4.			TOTAL				2,047.80	4,047.80	1,01,19,500.00	
D		Pergolas								
D.1.	DSR	AA	College Building 1	sq.m	58.71	1.00	58.71			Refer Appendix 3 Refer drawing no. PTU-II A/PRE/AC/CB 1-10-12 PTU-II A/PRE/AC/CB 2-10-12 PTU-II A/PRE/AC/SEM-02
D.2.			College Building 2			1.00	54.74			
D.3.			Seminar Hall			1.00	154.23			
D.4		TOTAL			1,720.00			267.68	4,60,414.76	
E		False Ceiling								
E.1.	12.45.1 (-)13.41.1	False Ceiling with gypsum board	College Building 1	sq.m	2,425.22	1.00	2,425.22			Refer drawing no. PTU-II A/PRE/AC/CB 1-10-12 PTU-II A/PRE/AC/CB 2-10-12 PTU-II A/PRE/AC/LIB-07-09 PTU-II A/PRE/AC/SEM-02
E.2.			College Building 2			1.00	2,428.89			
E.3.			Library			1.00	4,218.33			
E.4.			Seminar			1.00	157.22			
		TOTAL			4,901.83			9,229.65	42,50,721.78	

PUNJAB TECHNICAL UNIVERSITY, PHASE II A
PRELIMINARY COST ESTIMATE

AREA DETAILS

Cost of Airconditioning

S.No.	Building	Unit	Area/ Cost	Explanation
1	2	3	4	5
A C Areas				
1	College Building 1	Sqm.	<u>6,232.06</u>	
2	College Building 2	Sqm.	<u>6,090.22</u>	
3	Library	Sqm.	4,218.33	Refer Dwg nos. PTU-II A/PRE/AC/CB1-07-09
4	Seminar Hall	Sqm.	157.72	PTU-II A/PRE/AC/CB2-07-09 PTU-II A/PRE/AC/LIB-07-09
5	Total AC Areas		16,698.33	PTU-II A/PRE/AC/SEM-02
6	Refrigeration required @ 1TR / 130sqft.	TR	1,382.11	
7	Refrigeration Provided	TR	1,382.11	
8	Cost of refrigeration per TR	Rs	27,000.00	
9	Total Cost = (5X8)	Rs	3,73,16,914.09	

AREA DETAILS

9	Total Covered Area 1(a)+2(a)+3(a)+4(a)	29,753.43
10	Total Additional Area 1(b)+2(b)+3(b)+4(b)	2,120.18
11	Total Plinth Area 1(c)+2(c)+3(c)+4(c)	31,873.61
12	Total Ground Coverage	7,216.69

PLINTH AREA RATES AS ON 01-10-2007

ANNEXURE - 1

S. No.	Description	Office/College/Hospital	Schools	Hostels	Residential
1	2	3	4	5	6
1.0	R.C.C. FRAMED STRUCTURE	Rates in Rs. per Sq. metre			
1.1	R.C.C. frames structure upto six storeys				
1.1.1	Floor height 3.35 mt.	13,200 ✓	9,150		
1.1.2	Floor height 2.90 mt.			9,100	9,000
1.2	EXTRAS FOR				
1.2.1	Every additional storey over six storeys upto nine storeys	310	310	310	310
1.2.2	Every additional storey over nine storeys upto twelve storeys	320	320	320	320
1.2.3	Every 0.3 mt. additional height of floor above normal floor height of 3.35 mt./ 2.90 mts.	150 ✓	150	150	150
1.2.4	Every 0.3 mt. higher plinth over normal plinth height of 0.6 mt. (on G.F. area only)	150	150	150	150
1.2.5	Every 0.30 mt. deeper foundations over normal depth of 1.20 metre (on G.F. area only)	150 ✓	150	150	150
1.2.6	Making stronger foundations to take load of one additional floor at a later date (on area of additional floor only)	1250	1250	1250	1250
1.2.7	Strip foundations in poor soil having bearing capacity less than 10 tonnes/ sqmt.	286	286	286	286
1.2.8	Resisting Earthquake forces	630 ✓	630	630	630
1.2.9	R.C.C. Raft foundations (ground floor only)	3560 ✓	3560	3560	3560
1.2.10	Pile foundations upto a depth of 15 mts. <i>(on G.F. area only)</i>	6470	6470	6470	6470
1.2.11	Stronger structural members to take heavy load above 500 Kgs./sqm. upto 1000 Kgs./sqm.	850 ✓	850	850	850
1.2.12	Larger modules over 35 sqm.	990	990	990	990
1.3	BASEMENT FLOOR				
1.3.1	Floor Height 3.35 mt. with normal water proofing treatment with bituminous felt	18035	-	-	-

1.3.2	EXTRA FOR BASEMENT WITH				
1.3.2.1	Mastic Asphalt W.P.T.	1144	-	-	-
1.3.2.2	Every 0.3 mt. addl. Height (above 3.35 mt.)	1274	-	-	-
1.3.2.3	Reduction for very 0.5 m. less height of basement than normal height 3.35 mt.	(-) 728	-	-	-
1.4	FIRE FIGHTING				
1.4.1	With wet riser-system	300 ✓	300	300	300
1.4.2	With sprinkler system	450	450	450	-
1.5	FIRE ALARM SYSTEM				
1.5.1	Manual Fire Alarm System	-	-	-	155
1.5.2	Automatic Fire Alarm System	300 ✓	300	300	-
1.6	Operation Theatre (OPD) (Extra provision)	1235	-	-	-
1.7	Pressurized mechanical ventilation system in the basements (with supply of Exhaust blowers)	50	50	50	-

PLINTH AREA RATES

Sl. No.	Description	Non -Residential			Residential		
		Office/College /Hospitals	Schools	Hostel	Type-I, II, III & servant Qtrs.	Type -IV Qtrs.	Type -V VI and above
1	2	3	4	5	6	7	8
2.0	LOAD BEARING CONSTRUCTION						
2.1	Floor height 3.35 mt.						
2.1.1	Single storeyed	8250	7505	-	-	-	-
2.1.2	Doubled storeyed	7900	6740	-	-	-	-
2.1.3	Three storeyed	8250	7505	-	-	-	-
2.1.4	Four storeyed	8715	7555	-	-	-	-
2.2	Floor height 2.90 mt.						
2.2.1	Single storeyed	-	-	7315	6390	7030	7555
2.2.2	Double storeyed	-	-	6425	6200	6820	7205
2.2.3	Three storeyed	-	-	7315	6390	7030	7355
2.2.4	Four storeyed	-	-	7665	6740	7410	7900
2.3	Scooter & Cycles sheds						
2.4	Garrages				5805	5805	5805
2.5	Extra for				5455	5455	5455
2.5.1	Every 0.3 mt. additional height above normal height 3.35 mt./2.90 mt.	150	150	150	150	150	150
2.5.2	Every 0.3 mt. higher plinth over normal plinth height of 0.60 mt. (on Ground floor area only)	150	150	150	150	150	150
2.5.3	Every 0.3 mt. deeper foundations over normal depth of 1.20 mt. (on G.F. area only)	150	150	150	150	150	150
2.5.4	Making stronger foundations to take load of one additional floor at a later date (on area of additional floor only)	150	150	150	150	150	150
2.5.5	Foundations on poor soils having bearing capacity less than 10 T/sqmt.	430	430	430	430	430	430
2.5.6	Foundation on poor soils requiring under reamed pile 6 mt. long	286	286	286	286	286	286
2.5.7	R.C.C. Raft foundation (G.F. area only)	3085	3085	3085	3085	3085	3085
2.5.8	Pile foundation up to a depth of 15 mtr.	3560	3560	3560	3560	3560	3560
2.6	Extra for resisting Earth-quake Forces	6470	6470	6470	6470	6470	6470
2.6.1	In Zone V	588	588	588	588	588	588

Sl. No.	Description	Non -Residential			Residential		
		Office/College /Hospitals	Schools	Hostel	Type-I, II, III & servant Qtrs.	Type -IV Qtrs.	Type -V, VI and above
1	2	3	4	5	6	7	8
2.6.2	Buildings of two storeyes or more in Zone III & IV	286	286	286	286	286	286
2.6.3	Resisting earthquake forces in Zone II and single storey buildings in Zone III & IV	Nil	Nil	Nil	Nil	Nil	Nil
2.7	Stronger structural members to take heavy loads above 500 Kg /sqm. Up to 1000 Kg/sqmt.	850	850	850	850	850	850
2.8	Larger modules over 35 sqmt.	990	990	990	990	990	990
2.9	Fire-fighting						
2.9.1	With wet riser system	300	300	300	300	300	300
2.9.2	With sprinkler system	450	450	450	450	450	450
2.10	Fire Alarm System						
2.10.1	a) Manual Fire Alarm system	-	-	-	155	155	155
2.10.2	b) Automatic Fire Alarm System	300	300	300	-	-	-
2.11	O.P.D. Operation Theatre etc.	1235	-	-	-	-	-

Note : Rates for items are applicable on entire plinth area except for items 1.2.4, 1.2.5, 1.2.6, 1.2.9, 1.5, 2.5.2, 2.5.3, 2.5.4 and 2.5.7

Sl. No.	Type of lift	Capacity/ Persons	Weight	Speed in M/Sec.	Travel	Doors	Control	Price (Rs. In lacs)	Addl. Price for each additional floor (Rs.)
1	2	3	4	5	6	7	8	9	10
4.0	LIFTS								
4.1	Passenger lifts								
4.1.1	Passenger lift	8	544 Kg.	1.0	G+4	Power operated	ACWF VVVF	13.50	90,000.00
4.1.2	Passenger lift	8	544 Kg.	1.5	G+4	Power operated	ACWF VVVF	18.00	90,000.00
4.1.3	Passenger lift	13	884 Kg.	1.0	G+4	Power operated	ACWF VVVF	18.00	90,000.00
4.1.4	Passenger lift	13	884 Kg.	1.5	G+4	Power operated	ACWF VVVF	19.00	90,000.00
4.1.5	Passenger lift	16	1088 Kg.	1.0	G+4	Power operated	ACWF VVVF	17.00	1,10,000.00
4.1.6	Passenger lift	16	1088 Kg.	1.5	G+4	Power operated	ACWF VVVF	19.50	1,10,000.00
4.1.7	Passenger lift	16	1088 Kg.	2.5	G+4	Power operated	ACWF VVVF	57.00	1,10,000.00
4.1.8	Passenger lift (Bed lift)	20	1360 Kg.	0.75	G+4	Power operated	ACWF VVVF	21.50	90,000.00
4.1.9	Passenger lift	20	1360 Kg.	1.5	G+4	Power operated	ACWF VVVF	27.00	1,10,000.00
4.1.10	Passenger lift	20	1360 Kg.	2.5	G+4	Power operated	ACWF VVVF	59.00	1,30,000.00
4.2	Goods lifts (2 speed)								
4.2.1		1 Ton	-	0.5	G+4			14.75	50,000.00
4.2.2		2 Ton	-	0.5	G+4			19.00	50,000.00
4.2.3		3 Ton	-	0.25	G+4			23.25	60,000.00

C S No.1 Dt. 12.8.2008

PLINTH AREA RATES

9

SL. No.	Description	Rates in Rupees
5	WATER TANK (RCC ONLY)	
5.1	Overhead tank without independent staging	9.00/Litre.
5.2	Overhead tank upto staging height 20 metres	15.20/Litre.
5.3	Overhead tank with staging height between 20 metres and upto 30 metres	17.30/Litre.
5.4	Overhead tank with staging height between 30 metres and 40 metres	21.00/Litre.
5.5	Underground sump	9.00 / Litre
6	DEVELOPMENT OF SITE	
6.1	Levelling	55.00/ sqm.
6.2	Internal roads & paths	83.00/ sqm
6.3	Sewer	63.00/ sqm.
6.4	Filter Water Supply	
6.4.1	Distribution lines 100 mm dia and below	46.00/ sqm.
6.4.2	Peripheral grid 150 mm to 300 mm dia pipes	35.00/ sqm.
6.4.3	Unfiltered water supply distribution lines	27.00/ sqm.
6.5	Storm water drains	• 50.00/ sqm.
6.6	Horticulture Operations	47.00/ sqm.
6.7	Steel lighting	
6.7.1	With fluorescent lamps	55.00/ sqm.
6.7.2	With HPMV Lamps	75.00/ sqm.
6.7.3	With HPSV Lamps	95.00/ sqm.
6.7.4	Exit sign board i/c electric signage.	50.00/ sqm.

- Note : 1. The rates are per sqm. and are to be applied on the entire areas of the plot to be developed.
2. These rates will apply to normal conditions and normal layout plans. If any extras are required due to natural layout involving filling, cutting or bringing services from large distances, then additional provision should be made.
3. Cost of bulk services water supply, sewage disposal etc.
- 3.1 Tube wells, pumps, open wells, treatment plant, extension of lines from source of local bodies, head works at water source etc.
- 3.2 Sewage pumps, sewage treatment plants, septic tanks, extension of cut-fall sewer up to point of disposal etc. are not included in these rates. Extra provision depending upon site conditions may be made for these.
4. The cost of providing green building & Water harvesting are to be taken as per actual.
5. Cost of HT sub - station equipments, LT distribution system, DG sets, pumps, air-conditioning and other specialized works like aesthetic external lighting with metal halide lamp for façade lighting, addressable fire alarm system, rising mains, UPS, aviation obstruction lights, external service connections, storage water cooler, IBMS, CCTV, access control system for security, solar water heating system, solar lighting etc. are not included in above rates and the same are to be taken as per actual based on functional / utility of the proposed building.

(A.V.R. Bhar)
Executive Engineer (S&S)-II
CPWD, Nirman Bhawan,
New Delhi

(M.K. Tilak)
Superintending Engineer (TAS)
CPWD, Nirman Bhawan,
New Delhi

(SURESH KUMAR)
Chief Engineer (CSQ)
CPWD, New Delhi

ANNEXURE - B

PUNJAB TECHNICAL UNIVERSITY, PHASE -II A

SCHEDULE OF FINISHES

A	List of Tasks to be executed before Tender
S. No	Name of Task
1	Approval of Modified Service Reports, revised as per decisions taken in the Meeting of Standing Building Committee on 26.5.11
2	Approval of Finishing Schedule from Building Committee
3	Vetting of Structure Drawings from authority/institution as decided by the Building Committee.

1. COLLEGE BUILDINGS

- | | |
|---|---|
| • KOTA STONE: | Lecture Halls, Tutorials, Research Laboratories, Corridor (Kota with 15% marble In pattern) |
| • GRANITE: | Entrance Cores, Corridor (faculty area), Reception (faculty area) |
| • VITRIFIED TILES: | Faculty Rooms, Toilets |
| • INTERLOCKING
PAVERS: | Entrance Courts |
| • PLASTIC EMULSION
WITH PUTTY | All Areas except in toilets |
| • ACRYLIC WASHABLE
DISTEMPER WITH
PUTTY | Toilets, dry Canteen, Utility |
| • DRY DISTEMPER | Utilities |

- WHITE (VERY LIGHT BISCUIT COLOR) STONE
 - BLACK GRANITE COUNTERTOP
- Corridor Walls
Research Labs, Canteen, Pantries

2. LIBRARY

- KOTA STONE:
 - VITRIFIED TILES:
 - GRANITE:
 - IPS:
- Entrance Courts (Kota with 20% granite in Pattern), Archives, Stores, Kitchen, Cafeteria, Service yard/ Service entry, Shops, OAT Steps, Stage (Kota with pattern of udaipur green & white marble)
- Reading area, AV Room, Meeting Room, Toilets, server Room
- Balance Area, Entrance steps (sandblasted granite)
- AHU

- PLASTIC EMULSION WITH PUTTY:
 - ACRYLIC WASHABLE DISTEMPER WITH PUTTY
 - DRY DISTEMPER
 - BLACK GRANITE COUNTERTOP
- All areas except toilets, kitchen, AHU's and Utilities
- Toilets, Kitchen, AHU
- Utilities
- Kitchen, Serving (cafeteria), Issue Counter

3. SEMINAR

- VITRIFIED TILES:
 - GRANITE:
 - PLASTIC EMULSION WITH PUTTY:
- Toilets
- Seminar hall, Stage , Entrance Foyer, Entrance Steps
- All areas except toilets

- ACRYLIC WASHABLE DISTEMPER WITH PUTTY:
- BLACK GRANITE COUNTERTOP:

4. EXTERNAL FINISH

- RED AND WHITE (very light biscuit color) SAND STONE

5. MISCELLANEOUS

- SOUND INSULATION
- FALSE CEILING:

6. DOORS AND WINDOWS

- WINDOWS
- STRUCTRAL
• GLAZING
- DOORS

Anodized aluminum with reflective single glass

Anodized aluminum with reflective glass (single/double as required)

Aluminum Frames with laminated Flush Door shutters

In seminar, AV room, meeting room and Lecture halls as required

As required