



Er. H.P. Singh
Executive Engineer

ਪੰਜਾਬ ਟੈਕਨੀਕਲ ਯੂਨੀਵਰਸਿਟੀ ਜਲੰਧਰ

PTU PUNJAB
TECHNICAL
UNIVERSITY

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

Ref. No. PTU/CC/614

Dated 28.05.12

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

Sh. Amrit Sagar Mittal
CMD,
Sonalika Tractors Ltd, Hoshiarpur.

Dr. Nachhattar Singh,
Dean (P&D),
Punjab Technical University, Jalandhar.

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

Sh. S. K. Mishra,
Director/Finance,
Punjab Technical University, Jalandhar.

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

Sh. Deepak Mittal, Chairman, CIL,
Managing Director,
Sonalika Tractors Ltd, Hoshiarpur.

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

Dr. Prabhjot Kaur (Special Invitee),
Associate Professor, Architectural Department,
Giani Zail Singh College of Engineering and
Technology, Bathinda.

**Sub : Construction of new campuses of Punjab Technical University – 34th meeting of
the Standing Building Construction Committee.**

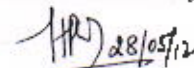
Dear Sir/Madam,

34th meeting of the Standing Building Construction Committee shall be held under the
Chairmanship of Dr. R. S. Khandpur, Director General, PGSC at 1430 hours on 05.06.2012
in his office at SCO 60-61 (3rd floor), 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,

 28/05/12

(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.

eINDIA 2010

AWARDS
Recognising excellence in ICT

Award of the Year

ICT Enabled
University of the Year

Open & Distance Learning
Initiative of the Year

Punjab Technical University Jalandhar

Kapurthala Campus : Jalandhar-Kapurthala Highway, Post Bag No. 01, Kapurthala.

Mobile : 9501109042 www.ptu.ac.in E-Mail : exeptu@gmail.com

PUNJAB TECHNICAL UNIVERSITY, JALANDHAR

Sub : Agenda for the 34th meeting of the Standing Building Construction Committee.

- Item No. 34.1 : To confirm the Minutes of 33rd meeting of Standing Building Construction Committee held on 07.05.2012.
- Item No. 34.2 : Action taken on various items discussed during previous meetings of Standing Building Construction Committee.
- Item No. 34.3 : To discuss and finalize the appointment of Consultant for Project Management Consultancy Services for construction of proposed new buildings at University's main campus at Jalandhar-Kapurthala Road, Kapurthala.
- Item No. 34.4 : To discuss and approve the priority of various works proposed to be executed at Punjab Institute of Technology at Mansa.
- Item No. 34.5 : Status of application submitted by PTU for 'Change of Land Use' in respect of land allotted for establishment of Punjab Institute of Technology, Mansa.
- Item No. 34.6 : Any other point with the permission of the Chair.



PUNJAB TECHNICAL UNIVERSITY, JALANDHAR

Agenda Note for the 34th meeting of the Standing Building Construction Committee.

Item No. 34.1 : To confirm the Minutes of 33rd meeting of Standing Building Construction Committee held on 07.05.2012.

The minutes of 33rd meeting of Standing Building Construction Committee held on 07.05.2012 were circulated on 10.05.2012. The minutes circulated are to be confirmed.

Item No. 34.2 : 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:

- The scrutiny of the applications received against one post of Assistant Executive Engineer and two posts of Assistant Engineer for Construction cell has been completed. Interview for the post of Assistant Executive Engineer has been held on 30.03.2012 and whereas, applications for the post of Assistant Engineer are being re-invited as there was some ambiguity in the pay scale of this post.
- Bids for appointment of 'Project Management Consultant' have been received. After evaluation of technical bids, financial bids of pre-qualified bidders have been opened and this is being discussed in the present meeting as an agenda item.
- Based upon the decisions taken in 33rd meeting of the Building Committee regarding master plan of PIT Mansa, the Architect has made the suggested modifications and the revised the master plan and is being presented in this meeting.

Item No. 34.3 : To discuss and finalize the appointment of Consultant for Project Management Consultancy Services for construction of proposed new buildings at University's main campus at Jalandhar-Kapurthala Road, Kapurthala.

The Technical Bids submitted by the following agencies for appointment of 'Project Management Consultant' were opened on 20.04.2012:

- i) M/s Rites Ltd., Gurgaon.
- ii) M/s Hindustan Steel Works Construction Ltd, New Delhi.
- iii) M/s HLL Life care Ltd., Noida.
- iv) M/s Telecommunication Consultants India Ltd, New Delhi.
- v) M/s Life Insurance Corporation of India Ltd, Lucknow.
- vi) M/s National Buildings Construction Corporation Ltd, New Delhi.



After evaluation of technical bids, financial bids of three pre-qualified bidders have been opened and the rates quoted by these three agencies are as under:

1. M/s HLL Life care Ltd., Noida. 3.89% of cost of works
2. M/s Hindustan Steel Works Construction Ltd, New Delhi. 4.49% of cost of works
3. M/s National Buildings Construction Corporation Ltd, New Delhi. 4.99% of cost of works

The matter is placed before the Committee for taking appropriate decision for award of the work.

Item No. 34.4 : To discuss and approve the priority of various works proposed to be executed at Punjab Institute of Technology at Mansa.

The Architect has submitted preliminary estimated cost based upon the Plinth Area Rates of CPWD for the proposed buildings (as approved in Master Plan) to be constructed at Punjab Institute of Technology at Mansa, as under:

S. No.	Building	Plinth Area (Sq.m.)	Estimated Cost (In Crores of Rs)	Remraks
1	Science Block	18996	55.31	
2	Technology Block	18745	54.59	
3	Library and Central Research Facilities	3471	11.31	
4	Student Facilitation Centre	2150	5.84	
5	Administration	2348	6.76	
6	Workshop	2376	7.11	
7	Girls Hostel	5989	10.66	
8	Boys Hostel	5989	10.66	
9	Sub-Total for Buildings	60,064	162.24	
10	External Development @15%		24.34	
11	Grand Total		186.58	

The matter is placed before the Standing Building Construction Committee to prioritise the various buildings/infrastructure. The rough cost estimate for the buildings/ infrastructure to be taken up in 1st phase may kindly be approved.



Item No. 34.5 : Status of application submitted by PTU for 'Change of Land Use' in respect of land allotted for establishment of Punjab Institute of Technology, Mansa.

Punjab Technical University submitted application for change of land use in respect of land allotted to the University for establishment of Punjab Institute of Technology at Mansa in the month of May 2011. In response to the application submitted by PTU, Chief Town Planner, Punjab advised to submit an undertaking that PTU will leave about 12'-6" land (along the front boundary wall) out of PTU's land for widening of existing road to 40'-0" in August 2011 as the width of existing roads in front of the land allotted to PTU is 27'-6". Punjab Technical University submitted this undertaking in September 2011.

Further, Chief Town Planner, Punjab advised that there are plans to increase the width of all link roads to 60'-0". Thus, a revised undertaking is furnished by the University indicating that PTU will leave 16'-3" land out of their land for widening of road to 60'-0". PTU has submitted the revised undertaking in the month of May 2012.

The above is brought to the kind notice of Building Committee that PTU will be leaving 16'-3" land (in width) for widening of roads in front of the campus.

Item No. 34.6 : Any other point with the permission of the Chair.



Punjab Institute of Management, Mansa
PRELIMINARY COST ESTIMATE

SUMMARY - PRELIMINARY ESTIMATE

S. No.	Building / Component	Plinth Area* (Sq.m)	Cost in Rs	Air conditioning Cost (Refer Annexure 7)	Total Cost of building (4+5)	Reference
1	2	3	4	5	6	7
1	Junior wing & Engg College Block	18,996.24	54,35,70,686.37	94,88,684.48	55,30,59,370.85	Ref. Annexure 1
2	Engineering College Block	18,744.60	53,63,70,096.80	94,88,684.48	54,58,58,781.28	Based on Unit Cost of annexure 1
3	Library & Central Research Facilities	3,471.22	10,19,49,437.55	1,11,31,004.80	11,30,80,442.35	Ref. Annexure 2
4	Student Facilitation Centre	2,149.95	5,83,69,328.97		5,83,69,328.97	Ref. Annexure 3
5	Administration	2,347.62	6,25,14,160.18	50,99,637.44	6,76,13,797.62	Ref. Annexure 4
6	Workshop	2,376.21	7,10,66,352.06		7,10,66,352.06	Ref. Annexure 5
7	Girls Hostel	5,989.14	10,65,94,430.03		10,65,94,430.03	Ref. Annexure 6
8	Boys Hostel	5,989.14	10,65,94,430.03		10,65,94,430.03	Ref. Annexure 6
9	Sub Total for Buildings (Sum-1:8)	60,064.32	1,58,70,28,922.00	3,52,08,011.20	1,62,22,36,933.20	
10	External roads, water tanks, Electrical Sub station and other works @ 15% of 9				24,33,35,539.98	
11	Total estimated cost				1,86,55,72,473.18	

* For areas refer area statement- Annexure 8

Junior wing & Engineering
College Block

Type of Building -	College
Total Plinth Area -	18,996.24 sq.m
Plinth Area On G. Floor -	3,532.74 sq.m
Total covered area-	17,363.51 sq.m
Double height area	768.33 sq.m
No. of storey-	G + 5
Floor height-	3.75 m

Refer Drg No. _____

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	18,996.24	1.0	13,200.00	25,07,50,368.00	
1.2	Extra for						
1.2.1	Every 0.3m additional height of floor above normal floor height of 3.35m.	sqm	18,996.24	1.00	150.00	28,49,436.00	
1.2.2	Every 0.3m additional height of floor above normal floor height of 3.35m.	sqm	768.33	1.33	150.00	1,53,281.84	for double height areas
1.2.3	Every 0.3m deeper foundation over normal depth of 1.20m (on G.F. area only)	sqm	3,532.74	2.00	150.00	10,59,822.00	
1.2.4	Resisting Earthquake forces	sqm	18,996.24	1.0	630.00	1,19,67,631.20	
1.2.5	Larger Module over 35 sqm	sqm	18,996.24	1.0	980.00	1,88,06,277.60	
1.2.6	Fire fighting						
	With wet riser system	sqm	18,996.24	1.0	300.00	56,98,872.00	
1.2.7	Fire Alarm						
	Automatic fire alarm system	sqm	3,532.74	1.0	300.00	10,59,822.00	
1.2.8	RCC Cost of Lab area	sqm	3,567.66	1.0	13,200.00	4,70,93,112.00	
1.2.9	Every 0.3m additional height of floor above normal floor height of 3.35m.	sqm	3,567.66	1.00	150.00	5,35,149.00	
	Total A (1.1.1.a + 1.2.1) =					25,35,99,804.00	
	Total B (1.2.2 to 1.2.7) =					3,87,45,708.84	
	Total C (1.2.8+1.2.9)=					4,76,28,261.00	
2	SERVICES						
2.1	Internal water supply & sanitary installations	% of A			@ 4%	1,01,43,992.16	
2.2	Internal Electrical installations	% of A			@ 12.5%	3,16,99,975.50	
2.3	Internal Electrical installations for laboratories	% of C			@ 15%	71,44,239.15	15% of civil cost of lab area
2.4	Extra for						
2.4.1	Power wiring & plugs	% of A			@ 4%	1,01,43,992.16	
2.4.2	Lightning conductors						
a.	5 to 8 storeyed buildings	% of A			@ 0.33%	8,36,879.35	
2.4.3	Telephone conduits	% of A			@ 0.5%	12,67,999.02	
2.4.4	Data network conduits	% of A			@ 0.5%	12,67,999.02	
	Total C =	% of A				6,25,05,076.36	
	Sub Total D = A+B+C					35,48,50,587.00	
	Add Cost Index (E =)				@ 51%	18,09,73,799.37	

Junior wing & Engineering
College Block

Annexure 1

Type of Building -	College
Total Plinth Area -	18,996.24 sq.m
Plinth Area On G. Floor -	3,532.74 sq.m
Total covered area-	17,363.51 sq.m
Double height area	768.33 sq.m
No. of storey-	G + 5
Floor height-	3.75 m

Refer Drg No. _____

Sr.No.	Description	Unit	Qty	Nos	Rate	Amt	Explanation
1	2	3	4	5	6	7 = (4*5*6)	8
3	Passenger lifts						
3.1	Passenger lift 8 passenger 1 m/s G+4	nos.	1.00	1.00	13,50,000.00	13,50,000.00	
3.2	Extra for additional floor	floors	1.00	1.00	90,000.00	90,000.00	
3.3	Passenger lift 13 passenger 1m/s G+4	nos.	1.00	2.00	18,00,000.00	36,00,000.00	
3.4	Extra for additional floor	floors	1.00	1.00	90,000.00	90,000.00	
3.5	Sub Total					51,30,000.00	
3	Add cost index				@ 51%	26,16,300.00	
	Total F =					77,46,300.00	
4	Grand Total (D+E+F) =					54,35,70,886.37	

**Library & Central Research
Facilities**

Annexure 2

Type of Building -	College	Refer Drg No.
Total Plinth Area -	3,471.22 sq.m	
Plinth Area On G. Floor -	2,003.55 sq.m	
Plinth area on first floor-	1,467.67 sq.m	
Total covered area-	3,289.55 sq.m	
Double height area	410.00 sq.m	
No. of storey-	G +1	
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	3,471.22	1.0	13,200.00	4,58,20,038.00	
1.2	Extra for						
1.2.1	Every 0.3m additional height of floor above normal floor height of 3.35m.	sqm	3,471.22	2.17	150.00	11,28,144.88	
1.2.2	Every 0.3m additional height of floor above normal floor height of 3.35m. (Double height areas)	sqm	410.00	2.17	150.00	1,33,250.00	Double Height areas
1.2.3	Every 0.3m deeper foundation over normal depth of 1.20m (on G.F. area only)	sqm	2,003.55	1.00	150.00	3,00,531.90	
1.2.4	Resisting Earthquake forces	sqm	3,471.22	1.00	630.00	21,86,865.45	
1.2.5	Stronger structural members to take heavy loads above 500 kg/sq.m upto 1000 kg/sq.m	sqm	2,754.76	1.00	850.00	23,41,545.15	Plinth area excluding Central Research and podium
1.2.6	Larger Module over 35 sqm	sqm	3,471.22	1.00	990.00	34,36,502.85	
1.2.7	Fire fighting						
1.2.7.2	With sprinkler system	sqm	2,754.76	1.00	450.00	12,39,641.55	Plinth area excluding Central Research and podium
1.2.8	Fire Alarm						
1.2.8.1	Automatic Fire alarm system	sqm	2,003.55	1.00	300.00	6,01,063.80	
	Total A (1.1.1.a + 1.2.1) =					4,69,48,182.88	
	Total B (1.2.2 to 1.2.8) =					1,02,39,400.70	
2	SERVICES						
2.1	Internal water supply & sanitary installations	% of A			@ 4%	18,77,927.32	
2.3	Internal Electrical Installation	% of A			@ 12.5%	58,68,522.86	
2.4	Extra for						
2.4.1	Power wiring & plugs	% of A			@ 4%	18,77,927.32	
2.4.2	Lightning conductors						
a.	upto 4 storeyed buildings	% of A			@ 0.5%	2,34,740.91	
2.4.3	Telephone conduits	% of A			@ 0.5%	2,34,740.91	
2.4.4	Data network conduits	% of A			@ 0.5%	2,34,740.91	
	Total C =	% of A				1,03,28,600.23	
	Sub Total D = A+B+C					6,75,16,183.81	
	Add Cost Index (E =)				@ 51%	3,44,33,253.74	
	Grand Total (D+E+F) =					10,19,49,437.55	

Student Facilitation centre

Annexure 3

Type of Building -	College	Refer Drg No.
Total Plinth Area -	2,149.95 sq.m	
Plinth Area On G. Floor -	1,518.03 sq.m	
Plinth area on first floor-	631.93 sq.m	
Total covered area-	1,779.73 sq.m	
Double height area-	256.28 sq.m	
No. of storey-	G +1	
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	2,149.95	1.0		13,200.00	2,83,79,340.00	
1.2 Extra for							
1.2.1 Every 0.3m additional height of floor above normal floor height of 3.35m.	sqm	2,149.95	1.33		150.00	4,29,990.00	
1.2.2 Every 0.3m additional height of floor above normal floor height of 3.35m. (Double height areas)	sqm	256.28	1.33		150.00	51,255.40	Double height areas
1.2.3 Every 0.3m deeper foundation over normal depth of 1.20m (on G.F. area only)	sqm	1,518.03	1.00		150.00	2,27,703.75	
1.2.5 Larger Module over 35 sqm	sqm	2,149.95	1.00		990.00	21,28,450.50	
1.2.6 Fire lighting							
1.2.6.1 With wet riser system	sqm	2,149.95	1.00		300.00	6,44,985.00	
1.2.7 Fire Alarm							
1.2.7.1 Automatic Fire alarm system	sqm	1,518.03	1.00		300.00	4,55,407.50	
Total A (1.1.1.a + 1.2.1) =						2,88,09,330.00	
Total B (1.2.2 to 1.2.7) =						35,07,802.15	
2 SERVICES							
2.1 Internal water supply & sanitary installations	% of A				@ 4%	11,52,373.20	
2.2 Internal Electrical Installation	% of A				@ 12.5%	36,01,166.25	
2.3 Extra for							
2.3.1 Power wiring & plugs	% of A				@ 4%	11,52,373.20	
2.3.2 Lightning conductors							
a. upto 4 storeyed buildings	% of A				@ 0.5%	1,44,046.65	
2.3.3 Telephone conduits	% of A				@ 0.5%	1,44,046.65	
2.3.4 Data network conduits	% of A				@ 0.5%	1,44,046.65	
Total C =	% of A					63,38,052.60	
Sub Total D = A+B+C						3,86,55,184.75	
Add Cost Index (E =)					@ 51%	1,97,14,144.22	
Grand Total (D+E+F) =						5,83,69,328.97	

Administration

Annexure 4

Type of Building -	Office			Refer Drg No.
Total Plinth Area -	2,347.82	sq.m		
Plinth Area On G. Floor -	1,114.14	sq.m		
Plinth area on first floor-	1,233.68	sq.m		
Total covered area-	2,144.41	sq.m		
Double height area	31.16	sq.m		
No. of storey-	G +1			
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	2,347.82	1.0	13,200.00	3,09,91,224.00	
1.2	Extra for						
2.1	Every 0.3m additional height of floor above normal floor height of 3.35m. (Double height areas)	sqm	31.16	13.00	150.00	60,762.00	Double Height areas
1.2.2	Every 0.3m deeper foundation over normal depth of 1.20m (on G.F. area only)	sqm	1,114.14	1.00	150.00	1,67,121.00	
1.2.3	Larger Module over 35 sqm	sqm	2,347.82	1.00	990.00	23,24,341.80	
1.2.4	Fire fighting						
1.2.4.1	With wet riser system	sqm	2,347.82	1.00	300.00	7,04,346.00	
1.2.5	Fire Alarm						
1.2.5.1	Automatic Fire alarm system	sqm	1,114.14	1.00	300.00	3,34,242.00	
	Total A (1.1.1.a + 1.2.1) =					3,09,91,224.00	
	Total B (1.2.2 to 1.2.5) =					35,90,812.80	
2	SERVICES						
2.1	Internal water supply & sanitary installations	% of A			@ 4%	12,39,648.96	
2.2	Internal Electrical Installation	% of A			@ 12.5%	38,73,903.00	
2.3	Extra for						
2.3.1	Power wiring & plugs	% of A			@ 4%	12,39,648.96	
2.3.2	Lightning conductors						
a.	upto 4 storeyed buildings	% of A			@ 0.5%	1,54,956.12	
2.3.3	Telephone conduits	% of A			@ 0.5%	1,54,956.12	
2.3.4	Data network conduits	% of A			@ 0.5%	1,54,956.12	
	Total C =	% of A				68,18,069.28	
	Sub Total D = A+B+C					4,14,00,106.08	
	Add Cost Index (E =)				@ 51%	2,11,14,054.10	
	Grand Total (D+E+F) =					6,25,14,160.18	

Workshop

Refer Drg No.

Type of Building - College
Total Plinth Area - 2,376.21 sq.m
Plinth Area On G. Floor - 2,376.21 sq.m
Total covered area - 2,213.47 sq.m
No. of storey - G
Floor height - 4.20 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	sqm	2,376.21	1.0	13,200.00	3,13,65,972.00	
a.	Floors						
1.2	Extra for	sqm	2,376.21	2.83	150.00	10,09,889.25	
1.2.1	Every 0.3m additional height of floor above normal floor height of 3.35m.	sqm	2,376.21	1.00	150.00	3,56,431.50	
1.2.2	Every 0.3m deeper foundation over normal depth of 1.20m (on G.F. area only)	sqm	2,376.21	1.00	990.00	23,52,447.90	
1.2.3	Larger Module over 35 sqm					3,21,75,861.25	
	Total A (1.1.1.a + 1.2.1) =					27,08,879.40	
	Total B (1.2.2 to 1.2.3) =						
2	SERVICES				@ 4%	12,95,034.45	
2.1	Internal water supply & sanitary installations	% of A			@ 12.5%	40,46,982.66	
2.2	Internal Electrical Installation	% of A			@ 15%	48,56,379.19	
2.3	Internal Electrical installations for laboratories	% of A					
2.4	Extra for	% of A			@ 4%	12,95,034.45	
2.4.1	Power wiring & plugs	% of A			@ 0.5%	1,61,879.31	
2.4.2	Lightning conductors	% of A			@ 0.5%	1,61,879.31	
a	upto 4 storeyed buildings	% of A			@ 0.5%	1,61,879.31	
2.4.3	Telephone conduits	% of A				1,15,79,068.66	
2.4.4	Data network conduits	% of A				4,70,63,809.31	
	Total C =				@ 51%	2,40,02,542.75	
	Sub Total D = A+B+C						
	Add Cost Index (E =)						
	Grand Total (D+E+F) =					7,10,66,352.06	

Hostels

Type of Building -	Hostel	
Total Plinth Area -	5,989.14	sq.m
Plinth Area On G. Floor -	1,922.49	sq.m
Total covered area-	5,697.89	sq.m
Double height area-	533.75	sq.m
No. of storey-	G +3	
Floor height- ground floor	4.00	m
Floor height	3.15	m

Refer Drg No.

Sr.No.	Description	Unit	Qty	Nos	Rate	Amt	Explanallon
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	sqm	5,989.14	1.0	9,100.00	5,45,01,174.00	
a.	Floors						
1.2	Extra for	sqm	533.75	11.17	150.00	8,94,031.25	Double height areas
1.2.1	Every 0.3m additional height of floor above normal floor height of 3.35m. (Double height areas)	sqm	533.75	11.17	150.00	8,94,031.25	
1.2.3	Every 0.3m deeper foundation over normal depth of 1.20m (on G.F. area only)	sqm	1,922.49	1.00	150.00	2,88,373.50	
1.2.4	Fire fighting						
1.2.4.1	With wet riser system	sqm	5,989.14	1.00	300.00	17,96,742.00	
1.2.5	Fire Alarm						
1.2.5.1	Automatic Fire alarm system	sqm	1,922.49	1.00	300.00	5,76,747.00	
	Total A (1.1.1.a + 1.2.1) =					5,45,01,174.00	
	Total B (1.2.2 to 1.2.6) =					35,55,893.75	
2	SERVICES						
2.1	Internal water supply & sanitary installations	% of A			@ 10%	54,50,117.40	
2.2	Internal Electrical Installation	% of A			@ 12.5%	68,12,646.75	
3	Extra for						
2.3.1	Lightning conductors upto 4 storeyed buildings	% of A			@ 0.5%	2,72,505.87	
	Total C =	% of A				1,25,35,270.02	
	Sub Total D = A+B+C				@ 51%	7,05,92,337.77	
	Add Cost Index (E =)					3,60,02,092.26	
	Grand Total (D+E+F) =					10,65,94,430.03	

Cost of Airconditioning

Annexure 7

S.No.	Building	Unit	Area	Refrigeration Provided @ 1 TR/100sq.ft	Cost @ 40,000/ TR	Explanation
1	2	3	4			5
	A C Areas					
1	Junior Wing & Engineering College Block	Sqm.	2,204.62	237.22	94,88,684.48	
2	Engineering College Block	Sqm.	2,204.62	237.22	94,88,684.48	
3	Library & Central Research Facilities	Sqm.	2,586.20	278.28	1,11,31,004.80	
4	Administration	Sqm.	1,184.86	127.49	50,99,637.44	
5	Total		8,180.30	880.20	3,52,08,011.20	

AREA CALCULATION

Annexure B

Building block Function: Academic Campus

Building block Function: Girls Boys Hostel

Building block/ Function- ACADEMIC CAMPUS																											
1							2							3			4			5			6			7	
Junior & Engineering College Block							Engineering College Block							Library & Central Research Facilities			Student Activity centre			Administration			Workshop			Hostel	
S.NO		Covered Area (sqm)	Additional Area (sqm)	Plinth area (1(a)- 1(b) (sqm)	Covered Area (sqm)	Additional Area (sqm)	Plinth area (1(a)- 1(b) (sqm)	Covered Area (sqm)	Additional Area (sqm)	Plinth area (1(a)- 1(b) (sqm)	Covered Area (sqm)	Additional Area (sqm)	Plinth area (1(a)- 1(b) (sqm)	Covered Area (sqm)	Additional Area (sqm)	Plinth area (1(a)- 1(b) (sqm)	Covered Area (sqm)	Additional Area (sqm)	Plinth area (1(a)- 1(b) (sqm)	Covered Area (sqm)	Additional Area (sqm)	Plinth area (1(a)- 1(b) (sqm)	Covered Area (sqm)	Additional Area (sqm)	Plinth area (1(a)- 1(b) (sqm)		
1	Ground Floor	3,332.67	200.07	3,532.74	3,034.39	200.07	3,234.46	1,859.78	143.77	2,003.55	1,155.96	362.07	1,518.03	1,114.14	-	1,114.14	2,203.47	102.74	2,306.21	1,750.36	165.14	1,915.50	1,412.38	124.72	1,537.10		
2	First floor	2,630.14	913.95	3,544.09	2,744.73	253.76	2,998.49	1,429.77	37.90	1,467.67	623.77	8.15	631.93	1,030.27	203.41	1,233.68	-	-	-	1,303.91	18.24	1,322.15	1,225.19	13.50	1,238.69		
3	Second Floor	2,034.60	414.16	2,448.76	2,934.60	414.16	3,348.76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
4	Third Floor	2,746.00	194.64	2,940.63	2,748.09	152.54	2,900.63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
5	Fourth Floor	2,727.91	398.37	3,126.27	2,924.10	398.37	3,322.47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
6	Plinth Floor	2,727.91	212.23	2,940.14	2,727.91	212.23	2,940.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
7	Total Area block	47,553.61	1,932.73	49,486.34	47,111.87	1,632.73	48,744.60	3,289.55	181.67	3,471.22	1,779.73	370.22	2,149.95	2,144.51	203.41	2,347.92	2,213.47	102.74	2,316.21	5,587.88	201.26	5,789.14	1,841.24	sqm			
8	Total Ground Coverage block	3,403.17	sqm		12,711.87	1,632.73	18,744.60	1,859.78	sqm		1,455.96	sqm		1,114.14	sqm		2,213.47	sqm		1,841.24	sqm						

9	Total Covered Area (1(a)-2(a)+3(a)+4(a)+5(a)+6(a)+7(a)+8(a)+9(a)+10(a)+11(a)+12(a)+13(a)+14(a)+15(a)+16(a)+17(a)+18(a)+19(a)+20(a)+21(a)+22(a)+23(a)+24(a)+25(a)+26(a)+27(a)+28(a)+29(a)+30(a)+31(a)+32(a)+33(a)+34(a)+35(a)+36(a)+37(a)+38(a)+39(a)+40(a)+41(a)+42(a)+43(a)+44(a)+45(a)+46(a)+47(a)+48(a)+49(a)+50(a)+51(a)+52(a)+53(a)+54(a)+55(a)+56(a)+57(a)+58(a)+59(a)+60(a)+61(a)+62(a)+63(a)+64(a)+65(a)+66(a)+67(a)+68(a)+69(a)+70(a)+71(a)+72(a)+73(a)+74(a)+75(a)+76(a)+77(a)+78(a)+79(a)+80(a)+81(a)+82(a)+83(a)+84(a)+85(a)+86(a)+87(a)+88(a)+89(a)+90(a)+91(a)+92(a)+93(a)+94(a)+95(a)+96(a)+97(a)+98(a)+99(a)+100(a)+101(a)+102(a)+103(a)+104(a)+105(a)+106(a)+107(a)+108(a)+109(a)+110(a)+111(a)+112(a)+113(a)+114(a)+115(a)+116(a)+117(a)+118(a)+119(a)+120(a)+121(a)+122(a)+123(a)+124(a)+125(a)+126(a)+127(a)+128(a)+129(a)+130(a)+131(a)+132(a)+133(a)+134(a)+135(a)+136(a)+137(a)+138(a)+139(a)+140(a)+141(a)+142(a)+143(a)+144(a)+145(a)+146(a)+147(a)+148(a)+149(a)+150(a)+151(a)+152(a)+153(a)+154(a)+155(a)+156(a)+157(a)+158(a)+159(a)+160(a)+161(a)+162(a)+163(a)+164(a)+165(a)+166(a)+167(a)+168(a)+169(a)+170(a)+171(a)+172(a)+173(a)+174(a)+175(a)+176(a)+177(a)+178(a)+179(a)+180(a)+181(a)+182(a)+183(a)+184(a)+185(a)+186(a)+187(a)+188(a)+189(a)+190(a)+191(a)+192(a)+193(a)+194(a)+195(a)+196(a)+197(a)+198(a)+199(a)+200(a)+201(a)+202(a)+203(a)+204(a)+205(a)+206(a)+207(a)+208(a)+209(a)+210(a)+211(a)+212(a)+213(a)+214(a)+215(a)+216(a)+217(a)+218(a)+219(a)+220(a)+221(a)+222(a)+223(a)+224(a)+225(a)+226(a)+227(a)+228(a)+229(a)+230(a)+231(a)+232(a)+233(a)+234(a)+235(a)+236(a)+237(a)+238(a)+239(a)+240(a)+241(a)+242(a)+243(a)+244(a)+245(a)+246(a)+247(a)+248(a)+249(a)+250(a)+251(a)+252(a)+253(a)+254(a)+255(a)+256(a)+257(a)+258(a)+259(a)+260(a)+261(a)+262(a)+263(a)+264(a)+265(a)+266(a)+267(a)+268(a)+269(a)+270(a)+271(a)+272(a)+273(a)+274(a)+275(a)+276(a)+277(a)+278(a)+279(a)+280(a)+281(a)+282(a)+283(a)+284(a)+285(a)+286(a)+287(a)+288(a)+289(a)+290(a)+291(a)+292(a)+293(a)+294(a)+295(a)+296(a)+297(a)+298(a)+299(a)+300(a)+301(a)+302(a)+303(a)+304(a)+305(a)+306(a)+307(a)+308(a)+309(a)+310(a)+311(a)+312(a)+313(a)+314(a)+315(a)+316(a)+317(a)+318(a)+319(a)+320(a)+321(a)+322(a)+323(a)+324(a)+325(a)+326(a)+327(a)+328(a)+329(a)+330(a)+331(a)+332(a)+333(a)+334(a)+335(a)+336(a)+337(a)+338(a)+339(a)+340(a)+341(a)+342(a)+343(a)+344(a)+345(a)+346(a)+347(a)+348(a)+349(a)+350(a)+351(a)+352(a)+353(a)+354(a)+355(a)+356(a)+357(a)+358(a)+359(a)+360(a)+361(a)+362(a)+363(a)+364(a)+365(a)+366(a)+367(a)+368(a)+369(a)+370(a)+371(a)+372(a)+373(a)+374(a)+375(a)+376(a)+377(a)+378(a)+379(a)+380(a)+381(a)+382(a)+383(a)+384(a)+385(a)+386(a)+387(a)+388(a)+389(a)+390(a)+391(a)+392(a)+393(a)+394(a)+395(a)+396(a)+397(a)+398(a)+399(a)+400(a)+401(a)+402(a)+403(a)+404(a)+405(a)+406(a)+407(a)+408(a)+409(a)+410(a)+411(a)+412(a)+413(a)+414(a)+415(a)+416(a)+417(a)+418(a)+419(a)+420(a)+421(a)+422(a)+423(a)+424(a)+425(a)+426(a)+427(a)+428(a)+429(a)+430(a)+431(a)+432(a)+433(a)+434(a)+435(a)+436(a)+437(a)+438(a)+439(a)+440(a)+441(a)+442(a)+443(a)+444(a)+445(a)+446(a)+447(a)+448(a)+449(a)+450(a)+451(a)+452(a)+453(a)+454(a)+455(a)+456(a)+457(a)+458(a)+459(a)+460(a)+461(a)+462(a)+463(a)+464(a)+465(a)+466(a)+467(a)+468(a)+469(a)+470(a)+471(a)+472(a)+473(a)+474(a)+475(a)+476(a)+477(a)+478(a)+479(a)+480(a)+481(a)+482(a)+483(a)+484(a)+485(a)+486(a)+487(a)+488(a)+489(a)+490(a)+491(a)+492(a)+493(a)+494(a)+495(a)+496(a)+497(a)+498(a)+499(a)+500(a)+501(a)+502(a)+503(a)+504(a)+505(a)+506(a)+507(a)+508(a)+509(a)+510(a)+511(a)+512(a)+513(a)+514(a)+515(a)+516(a)+517(a)+518(a)+519(a)+520(a)+521(a)+522(a)+523(a)+524(a)+525(a)+526(a)+527(a)+528(a)+529(a)+530(a)+531(a)+532(a)+533(a)+534(a)+535(a)+536(a)+537(a)+538(a)+539(a)+540(a)+541(a)+542(a)+543(a)+544(a)+545(a)+546(a)+547(a)+548(a)+549(a)+550(a)+551(a)+552(a)+553(a)+554(a)+555(a)+556(a)+557(a)+558(a)+559(a)+560(a)+561(a)+562(a)+563(a)+564(a)+565(a)+566(a)+567(a)+568(a)+569(a)+570(a)+571(a)+572(a)+573(a)+574(a)+575(a)+576(a)+577(a)+578(a)+579(a)+580(a)+581(a)+582(a)+583(a)+584(a)+585(a)+586(a)+587(a)+588(a)+589(a)+590(a)+591(a)+592(a)+593(a)+594(a)+595(a)+596(a)+597(a)+598(a)+599(a)+600(a)+601(a)+602(a)+603(a)+604(a)+605(a)+606(a)+607(a)+608(a)+609(a)+610(a)+611(a)+612(a)+613(a)+614(a)+615(a)+616(a)+617(a)+618(a)+619(a)+620(a)+621(a)+622(a)+623(a)+624(a)+625(a)+626(a)+627(a)+628(a)+629(a)+630(a)+631(a)+632(a)+633(a)+634(a)+635(a)+636(a)+637(a)+638(a)+639(a)+640(a)+641(a)+642(a)+643(a)+644(a)+645(a)+646(a)+647(a)+648(a)+649(a)+650(a)+651(a)+652(a)+653(a)+654(a)+655(a)+656(a)+657(a)+658(a)+659(a)+660(a)+661(a)+662(a)+663(a)+664(a)+665(a)+666(a)+667(a)+668(a)+669(a)+670(a)+671(a)+672(a)+673(a)+674(a)+675(a)+676(a)+677(a)+678(a)+679(a)+680(a)+681(a)+682(a)+683(a)+684(a)+685(a)+686(a)+687(a)+688(a)+689(a)+690(a)+691(a)+692(a)+693(a)+694(a)+695(a)+696(a)+697(a)+698(a)+699(a)+700(a)+701(a)+702(a)+703(a)+704(a)+705(a)+706(a)+707(a)+708(a)+709(a)+710(a)+711(a)+712(a)+713(a)+714(a)+715(a)+716(a)+717(a)+718(a)+719(a)+720(a)+721(a)+722(a)+723(a)+724(a)+725(a)+726(a)+727(a)+728(a)+729(a)+730(a)+731(a)+732(a)+733(a)+734(a)+735(a)+736(a)+737(a)+738(a)+739(a)+740(a)+741(a)+742(a)+743(a)+744(a)+745(a)+746(a)+747(a)+748(a)+749(a)+750(a)+751(a)+752(a)+753(a)+754(a)+755(a)+756(a)+757(a)+758(a)+759(a)+760(a)+761(a)+762(a)+763(a)+764(a)+765(a)+766(a)+767(a)+768(a)+769(a)+770(a)+771(a)+772(a)+773(a)+774(a)+775(a)+776(a)+777(a)+778(a)+779(a)+780(a)+781(a)+782(a)+783(a)+784(a)+785(a)+786(a)+787(a)+788(a)+789(a)+790(a)+791(a)+792(a)+793(a)+794(a)+795(a)+796(a)+797(a)+798(a)+799(a)+800(a)+801(a)+802(a)+803(a)+804(a)+805(a)+806(a)+807(a)+808(a)+809(a)+810(a)+811(a)+812(a)+813(a)+814(a)+815(a)+816(a)+817(a)+818(a)+819(a)+820(a)+821(a)+822(a)+823(a)+824(a)+825(a)+826(a)+827(a)+828(a)+829(a)+830(a)+831(a)+832(a)+833(a)+834(a)+835(a)+836(a)+837(a)+838(a)+839(a)+840(a)+841(a)+842(a)+843(a)+844(a)+845(a)+846(a)+847(a)+848(a)+849(a)+850(a)+851(a)+852(a)+853(a)+854(a)+855(a)+856(a)+857(a)+858(a)+859(a)+860(a)+861(a)+862(a)+863(a)+864(a)+865(a)+866(a)+867(a)+868(a)+869(a)+870(a)+871(a)+872(a)+873(a)+874(a)+875(a)+876(a)+877(a)+878(a)+879(a)+880(a)+881(a)+882(a)+883(a)+884(a)+885(a)+886(a)+887(a)+888(a)+889(a)+890(a)+891(a)+892(a)+893(a)+894(a)+895(a)+896(a)+897(a)+898(a)+899(a)+900(a)+901(a)+902(a)+903(a)+904(a)+905(a)+906(a)+907(a)+908(a)+909(a)+910(a)+911(a)+912(a)+913(a)+914(a)+915(a)+916(a)+917(a)+918(a)+919(a)+920(a)+921(a)+922(a)+923(a)+924(a)+925(a)+926(a)+927(a)+928(a)+929(a)+930(a)+931(a)+932(a)+933(a)+934(a)+935(a)+936(a)+937(a)+938(a)+939(a)+940(a)+941(a)+942(a)+943(a)+944(a)+945(a)+946(a)+947(a)+948(a)+949(a)+950(a)+951(a)+952(a)+953(a)+954(a)+955(a)+956(a)+957(a)+958(a)+959(a)+960(a)+961(a)+962(a)+963(a)+964(a)+965(a)+966(a)+967(a)+968(a)+969(a)+970(a)+971(a)+972(a)+973(a)+974(a)+975(a)+976(a)+977(a)+978(a)+979(a)+980(a)+981(a)+982(a)+983(a)+984(a)+985(a)+986(a)+987(a)+988(a)+989(a)+990(a)+991(a)+992(a)+993(a)+994(a)+995(a)+996(a)+997(a)+998(a)+999(a)+1000(a)+1001(a)+1002(a)+1003(a)+1004(a)+1005(a)+1006(a)+1007(a)+1008(a)+1009(a)+1010(a)+1011(a)+1012(a)+1013(a)+1014(a)+1015(a)+1016(a)+1017(a)+1018(a)+1019(a)+1020(a)+1021(a)+1022(a)+1023(a)+1024(a)+1025(a)+1026(a)+1027(a)+1028(a)+1029(a)+1030(a)+1031(a)+1032(a)+1033(a)+1034(a)+1035(a)+1036(a)+1037(a)+1038(a)+1039(a)+1040(a)+1041(a)+1042(a)+1043(a)+1044(a)+1045(a)+1046(a)+1047(a)+1048(a)+1049(a)+1050(a)+1051(a)+1052(a)+1053(a)+1054(a)+1055(a)+1056(a)+1057(a)+1058(a)+1059(a)+1060(a)+1061(a)+1062(a)+1063(a)+1064(a)+1065(a)+1066(a)+1067(a)+1068(a)+1069(a)+1070(a)+1071(a)+1072(a)+1073(a)+1074(a)+1075(a)+1076(a)+1077(a)+1078(a)+1079(a)+1080(a)+1081(a)+1082(a)+1083(a)+1084(a)+1085(a)+1086(a)+1087(a)+1088(a)+1089(a)+1090(a)+1091(a)+1092(a)+1093(a)+1094(a)+1095(a)+1096(a)+1097(a)+1098(a)+1099(a)+1100(a)+1101(a)+1102(a)+1103(a)+1104(a)+1105(a)+1106(a)+1107(a)+1108(a)+1109(a)+1110(a)+1111(a)+1112(a)+1113(a)+1114(a)+1115(a)+1116(a)+1117(a)+1118(a)+1119(a)+1120(a)+1121(a)+1122(a)+1123(a)+1124(a)+1125(a)+1126(a)+1127(a)+1128(a)+1129(a)+1130(a)+1131(a)+1132(a)+1133(a)+1134(a)+1135(a)+1136(a)+1137(a)+1138(a)+1139(a)+1140(a)+1141(a)+1142(a)+1143(a)+1144(a)+1145(a)+1146(a)+1147(a)+1148(a)+1149(a)+1150(a)+1151(a)+1152(a)+1153(a)+1154(a)+1155(a)+1156(a)+1157(a)+1158(a)+1159(a)+1160(a)+1161(a)+1162(a)+1163(a)+1164(a)+1165(a)+1166(a)+1167(a)+1168(a)+1169(a)+1170(a)+1171(a)+1172(a)+1173(a)+1174(a)+1175(a)+1176(a)+1177(a)+1178(a)+1179(a)+1180(a)+1181(a)+1182(a)+1183(a)+1184(a)+1185(a)+1186(a)+1187(a)+1188(a)+1189(a)+1190(a)+1191(a)+1192(a)+1193(a)+1194(a)+1195(a)+1196(a)+1197(a)+1198(a)+1199(a)+1200(a)+1201(a)+1202(a)+1203(a)+1204(a)+1205(a)+1206(a)+1207(a)+1208(a)+1209(a)+1210(a)+1211(a)+1212(a)+1213(a)+1214(a)+1215(a)+1216(a)+1217(a)+1218(a)+1219(a)+1220(a)+1221(a)+1222(a)+1223(a)+1224(a)+1225(a)+1226(a)+1227(a)+1228(a)+1229(a)+1230(a)+1231(a)+1232(a)+1233(a)+1234(a)+1235(a)+1236(a)+1237(a)+1238(a)+1239(a)+1240(a)+1241(a)+1242(a)+1243(a)+1244(a)+1245(a)+1246(a)+1247(a)+1248(a)+1249(a)+1250(a)+1251(a)+1252(a)+1253(a)+1254(a)+1255(a)+1256(a)+1257(a)+1258(a)+1259(a)+1260(a)+1261(a)+1262(a)+1263(a)+1264(a)+1265(a)+1266(a)+1267(a)+1268(a)+1269(a)+1270(a)+1271(a)+1272(a)+1273(a)+1274(a)+1275(a)+1276(a)+1277(a)+1278(a)+1279(a)+1280(a)+1281(a)+1282(a)+1283(a)+1284(a)+1285(a)+1286(a)+1287(a)+1288(a)+1289(a)+1290(a)+1291(a)+1292(a)+1293(a)+1294(a)+1295(a)+1296(a)+1297(a)+1298(a)+1299(a)+1300(a)+1301(a)+1302(a)+1303(a)+1304(a)+1305(a)+1306(a)+1307(a)+1308(a)+1309(a)+1310(a)+1311(a)+1312(a)+1313(a)+1314(a)+1315(a)+1316(a)+1317(a)+1318(a)+1319(a)+1320(a)+1321(a)+1322(a)+1323(a)+1324(a)+1325(a)+1326(a)+1327(a)+1328(a)+1329(a)+1330(a)+1331(a)+1332(a)+1333(a)+1334(a)+1335(a)+1336(a)+1337(a)+1338(a)+1339(a)+1340(a)+1341(a)+1342(a)+1343(a)+1344(a)+1345(a)+1346(a)+1347(a)+1348(a)+1349(a)+1350(a)+1351(a)+1352(a)+1353(a)+1354(a)+1355(a)+1356(a)+1357(a)+1358(a)+1359(a)+1360(a)+1361(a)+1362(a)+1363(a)+1364(a)+1365(a)+1366(a)+1367(a)+1368(a)+1369(a)+1370(a)+1371(a)+1372(a)+1373(a)+1374(a)+1375(a)+1376(a)+1377(a)+1378(a)+1379(a)+1380(a)+1381(a)+1382(a)+1383(a)+1384(a)+1385(a)+1386(a)+1387(a)+1388(a)+1389(a)+1390(a)+1391(a)+1392(a)+1393(a)+1394(a)+1395(a)+1396(a)+1397(a)+1398(a)+1399(a)+1400(a)+1401(a)+1402(a)+1403(a)+1404(a)+1405(a)+1406(a)+1407(a)+1408(a)+1409(a)+1410(a)+1411(a)+1412(a)+1413(a)+1414(a)+1415(a)+1416(a)+1417(a)+1418(a)+1419(a)+1420(a)+1421(a)+1422(a)+1423(a)+1424(a)+1425(a)+1426(a)+1427(a)+1428(a)+1429(a)+1430(a)+1431(a)+1432(a)+1433(a)+1434(a)+1435(a)+1436(a)+1437(a)+1438(a)+1439(a)+1440(a)+1441(a)+1442(a)+1443(a)+1444(a)+1445(a)+1446(a)+1447(a)+1448(a)+1449(a)+1450(a)+1451(a)+1452(a)+1453(a)+1454(a)+1455(a)+1456(a)+1457(a)+1458(a)+1459(a)+1460(a)+1461(a)+1462(a)+1463(a)+1464(a)+1465(a)+1466(a)+1467(a)+1468(a)+1469(a)+1470(a)+1471(a)+1472(a)+1473(a)+1474(a)+1475(a)+1476(a)+1477(a)+1478(a)+1479(a)+1480(a)+1481(a)+1482(a)+1483(a)+1484(a)+1485(a)+1486(a)+1487(a)+1488(a)+1489(a)+1490(a)+1491(a)+1492(a)+1493(a)+1494(a)+1495(a)+1496(a)+1497(a)+1498(a)+1499(a)+1500(a)+1501(a)+1502(a)+1503(a)+1504(a)+1505(a)+1506(a)+1507(a)+1508(a)+1509(a)+1510(a)+1511(a)+1512(a)+1513(a)+1514(a)+1515(a)+1516(a)+1517(a)+1518(a)+1519(a)+1520(a)+1521(a)+1522(a)+1523(a)+1524(a)+1525(a)+1526(a)+1527(a)+1528(a)+1529(a)+1530(a)+1531(a)+1532(a)+1533(a)+1534(a)+1535(a)+1536(a)+1537(a)+1538(a)+1539(a)+1540(a)+1541(a)+1542(a)+1543(a)+1544(a)+1545(a)+1546(a)+1547(a)+1548(a)+1549(a)+1550(a)+1551(a)+1552(a)+1553(a)+1554(a)+1555(a)+1556(a)+1557(a)+1558(a)+1559(a)+1560(a)+1561(a)+1562(a)+1563(a)+1564(a)+1565(a)+1566(a)+1567(a)+1568(a)+1569(a)+1570(a)+1571(a)+1572(a)+1573(a)+1574(a)+1575(a)+1576(a)+1577(a)+1578(a)+1579(a)+1580(a)+1581(a)+1582(a)+1583(a)+1584(a)+1585(a)+1586(a)+1587(a)+1588(a)+1589(a)+1590(a)+1591(a)+1592(a)+1593(a)+1594(a)+1595(a)+1596(a)+1597(a)+1598(a)+1599(a)+1600(a)+1601(a)+1602(a)+1603(a)+1604(a)+1605(a)+1606(a)+1607(a)+1608(a)+1609(a)+1610(a)+1611(a)+1612(a)+1613(a)+1614(a)+1615(a)+1616(a)+1617(a)+1618(a)+1619(a)+1620(a)+1621(a)+1622(a)+1623(a)+1624(a)+1625(a)+1626(a)+1627(a)+1628(a)+1629(a)+1630(a)+1631(a)+1632(a)+1633(a)+1634(a)+1635(a)+1636(a)+1637(a)+1638(a)+1639(a)+1640(a)+1641(a)+1642(a)+1643(a)+1644(a)+1645(a)+1646(a)+1647(a)+1648(a)+1649(a)+1650(a)+1651(a)+1652(a)+1653(a)+1654(a)+1655(a)+1656(a)+1657(a)+1658(a)+1659(a)+1660(a)+1661(a)+1662(a)+1663(a)+1664(a)+1665(a)+1666(a)+1667(a)+1668(a)+1669(a)+1670(a)+1671(a)+1672(a)+1673(a)+1674(a)+1675(a)+1676(a)+1677(a)+1678(a)+1679(a)+1680(a)+1681(a)+1682(a)+1683(a)+1684(a)+1685(a)+1686(a)+1687(a)+1688(a)+1689(a)+1690(a)+1691(a)+1692(a)+1693(a)+1694(a)+1695(a)+1696(a)+1697(a)+1698(a)+1699(a)+1700(a)+1701(a)+1702(a)+1703(a)+1704(a)+1705(a)+1706(a)+1707(a)+1708(a)+1709(a)+1710(a)+1711(a)+1712(a)+1713(a)+1714(a)+1715(a)+1716(a)+1717(a)+1718(a)+1719(a)+1720(a)+1721(a)+1722(a)+1723(a)+1724(a)+1725(a)+1726(a)+1727(a)+1728(a)+1729(a)+1730(a)+1731(a)+1732(a)+1733(a)+1734(a)+1735(a)+1736(a)+1737(a)+1738(a)+1739(a)+1740(a)+1741(a)+1742(a)+1743(a)+1744(a)+1745(a)+1746(a)+1747(a)+1748(a)+1749(a)+1750(a)+1751(a)+1752(a)+1753(a)+1754(a)+1755(a)+1756(a)+1757(a)+1758(a)+1759(a)+1760(a)+1761(a)+1762(a)+1763(a)+1764(a)+1765(a)+1766(a)+1767(a)+1768(a)+1769(a)+1770(a)+1771(a)+1772(a)+1773(a)+1774
---	---