



**Er. H.P. Singh**  
Executive Engineer

ਪੰਜਾਬ ਟੈਕਨੀਕਲ ਯੂਨੀਵਰਸਿਟੀ ਜਲੰਧਰ  
**PTU** PUNJAB  
TECHNICAL  
UNIVERSITY

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

Ref. No. PTU/CC/266

Dated 30.03.2015

**Sh. D.L. Sharma**, President,  
Vardhman Spg. & Gen. Mills Ltd.,  
Chandigarh Road, Ludhiana.

**The Director**,  
Department of Technical Education, Pb,  
Plot No. 1, Sector-36A, Chandigarh.

**Er. A. K. Prabhakar**,  
OSD to Vice Chancellor,  
Punjab Technical University, Jalandhar.

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

**Dr. Prabhjot Kaur (Special Invitee)**,  
Officiating Director Mohali Campus,  
C102B, Phase-7 Industrial Area, Mohali.

**Er. Kamaljit Chopra (Sp. Invitee)**,  
(Electrical Expert)  
13, Jyoti Nagar, Jalandhar.

**Er. P. S. Snini**,  
Superintending Engineer,  
PGL, Chandigarh.

**Sh. Rajiv Aggarwal, Architect**  
M/s Archigroup Architects,  
A-14, Sector-15, Noida -201301.

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

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

**Er. A. N. Chowdhry (Special Invitee)**,  
3-B, Jyoti Nagar,  
Jalandhar.

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

**The Registrar**,  
Punjab Technical University,  
Jalandhar.

**Er. Ashok Goyal**,  
CE/N-II, PWD, SCO 61-62, Phase-II,  
SAS Nagar, Mohali.

**Sh. Inderjit Kumar (Special Invitee)**,  
(PH Experts) House No. 116, Phase 3B/I,  
S.A.S. Nagar, Mohali.

**Er. Varinder Kumar**,  
Executive Engineer, Const. Div-II,  
PWD, Kapurthala.

**Sub : Construction of new campuses of Punjab Technical University - 46<sup>th</sup> meeting of the Standing Building Construction Committee.**

Dear Sir/Madam,

46<sup>th</sup> meeting of the Standing Building Construction Committee shall be held under the Chairmanship of Dr. R. S. Khandpur, Director General, PGSC (Retd) at 1130 hours on 09.04.2015 at PTU's Mohali campus at C-102/B, Industrial Area, Phase VII, (Sector-119), Mohali - 160 059 (Punjab). Agenda and Agenda note for the meeting are enclosed.

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

Thanking you

Yours Sincerely,

*H.P. Singh*  
(H. P. Singh)

Executive Engineer

Copy to : Dr. R. S. Khandpur, DG, PGSC (Retd), Science House, H. No. 2901, Phase 7,  
(Sector 61), Mohali.

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**Punjab Technical University Jalandhar**  
Kapurthala Campus : Jalandhar-Kapurthala Highway, Kapurthala-144601  
Mobile : 9478098017 www.ptu.ac.in E-Mail : xen@ptu.ac.in

# PUNJAB TECHNICAL UNIVERSITY, JALANDHAR

Sub : Agenda for the 46<sup>th</sup> meeting of the Standing Building Construction Committee.

- Item No. 46.1 : To confirm the Minutes of 45<sup>th</sup> meeting of Standing Building Construction Committee held on 22.01.2015.
- Item No. 46.2 : Action taken on various items discussed during previous meeting of Standing Building Construction Committee.
- Item No. 46.3 : To discuss and finalize the provision of projector or LED screen for the proposed auditorium at main campus, Kapurthala.
- Item No. 46.4 : To discuss and approve the estimate for speakers, amplifiers and microphones for the proposed auditorium at main campus, Kapurthala.
- Item No. 46.5 : To discuss and finalize the provision of LED lights in place of CFL lights in college buildings and library building (under construction) of Punjab Institute of Technology, main campus, Kapurthala.
- Item No. 46.6 : To discuss and approve the revised layout plan of proposed buildings for Punjab Institute of Technical Teachers Training and Research (PITTTR) at Ladowali Road, Jalandhar.
- Item No. 46.7 : To discuss and finalize the fee payable to the Architect for preparation of building plans of auditorium and hostels proposed at main campus, Kapurthala.
- Item No. 46.8 : To discuss and approve the start of construction works of proposed college buildings at Punjab Institute of Technology at Arniwala and Sikhwala.
- Item No. 46.9 : To discuss and approve the estimate for painting of boundary walls Punjab Institute of Technology, Mansa.
- Item No. 46.10 : To discuss and approve authorization to PWD for taking Environmental Clearance for construction of proposed auditorium and hostels buildings at main campus, Kapurthala.
- Item No. 46.11 : Any other point with the permission of the Chair.





## PUNJAB TECHNICAL UNIVERSITY, JALANDHAR

**Agenda Note for the 46<sup>th</sup> meeting of the Standing Building Construction Committee.**

**Item No. 46.1 : To confirm the Minutes of 45<sup>th</sup> meeting of Standing Building Construction Committee held on 22.01.2015.**

The minutes of 45<sup>th</sup> meeting of Standing Building Construction Committee held on 22.01.2015 were circulated on 10.02.2015. The minutes circulated are to be confirmed.

**Item No. 46.2 : Action taken on various items discussed during previous meeting of Standing Building Construction Committee.**

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

- Based upon the concept plans approved by the building committee in respect of the proposed auditorium and hostels at main campus, Kapurthala, the municipal drawings have been approved by Chief Town Planner, Punjab.
- The Architect will be making a presentation in the present meeting on cost comparison of projector and LED screen to be provided for the proposed auditorium at main campus, Kapurthala.
- The detailed estimate for provision of speakers, amplifiers and microphones to be provided for the proposed auditorium at main campus, Kapurthala will be presented by the Architect in the present meeting for discussions and approval.
- The issue pertaining to payment to the Architect against preparation of building plans for the proposed auditorium and hostels at main campus, Kapurthala is to be discussed in the present meeting.

**Item No. 46.3: To discuss and finalize the provision of projector or LED screen for the proposed auditorium at main campus, Kapurthala.**

In 45<sup>th</sup> meeting of the committee (agenda item No. 45.3), Architect was advised to explore the possibility of provision of LED screen in place of projector for the proposed auditorium at main campus, Kapurthala. Accordingly, the Architect has forwarded an offer for provision of LED screen for an amount of Rs. 330.75 lacs. (placed at Annexure-A). The Architect will be making a presentation of the comparison of cost of projector and LED screen.

The matter is placed before the Committee for discussions and decision please.



- Item No. 46.4:** To discuss and approve the estimate for speakers, amplifiers and microphones for the proposed auditorium at main campus, Kapurthala.

In 45<sup>th</sup> meeting of the committee (agenda item No. 45.3), it was advised by committee that estimates for speakers, amplifiers and microphones for the proposed auditorium at main campus, Kapurthala should be re-examined. The Architect will be making a presentation of the estimates of these items.

The matter is placed before the Committee for discussions and decision please.

- Item No. 46.5 :** To discuss and finalize the provision of LED lights in place of CFL lights in college buildings and library building (under construction) of Punjab Institute of Technology, main campus, Kapurthla.

In 45<sup>th</sup> meeting of the committee (agenda item No. 45.5), while discussing the energy audit report of PTU's main administrative building, it was suggested by committee that possibility of providing LED lights in college buildings and library building (under construction) of Punjab Institute of Technology, main campus, Kapurthla may be explored.

In this regard, it is submitted that in the approved estimates and works awarded to the contractors by PWD, there is provision of CFL lights. The extra financial implication for replacing the CFL lights with LED lights has been worked out by PWD and the Architect separately, which are as under. The payback period worked out by the Architect is also shown:

S. No.	Building	Amount as per approved estimate	Additional Financial Implication worked out by		Payback Period
			PWD	Architect	
1	College Building-I and Seminar Hall.	Rs. 63.31 lacs	Rs. 70.81 lacs	Rs. 78.02 lacs	25 years
2	College Building-II and Library	Rs. 104.53 lacs	Rs. 101.46 lacs	Rs. 113.76 lacs	22 years
3	College Building-III, Hostels & Director Office	Rs. 36.23 lacs	Rs. 58.58 lacs		
<b>Total</b>		<b>Rs. 204.07 lacs</b>	<b>Rs. 230.85 lacs</b>		

(Details are placed at Annexure-B)

The matter is placed before the Committee for discussions and decision please.

- Item No. 46.6 :** To discuss and approve the revised layout plan of proposed buildings for Punjab Institute of Technical Teachers Training and Research (PITTTR) at Ladowali Road, Jalandhar.

Two acres of land was transferred by Punjab Govt. to PTU at Ladowali road, Jalandhar for establishment of Punjab Institute of Technical Teachers Training and Research (PITTTR). The concept plans for this proposed institute were approved in 37<sup>th</sup> meeting (Agenda item No. 37.3) of the building committee.

*Handwritten signature/initials*



Earlier, it was planned that entrance for this institute will be kept from Master Tara Singh Nagar, which is a residential area. During one of the discussions held with Municipal Corporation, Jalandhar, it was informed by them that building plans will not be approved if entrance of the institute will be from Master Tara Singh Nagar, being residential area and having road width less than the required width. Whereas, on other side of this institute, there exists Guru Nanak Dev University's campus. To have access of proposed PITTR from GNDU side, a meeting was held under the chairmanship of Principal Secretary, Technical Education, Punjab, wherein it was decided that the entrance road from GNDU campus side will be shared between PTU and GNDU but land equivalent to the 50% of the area of the road being shared will be transferred by PTU from its allotted land to GNDU. On the basis of this decision, land area of about 612 Sqm. will be shifted from PTU area to GNDU for sharing of access road. Based upon the revised area available, the Architect has revised the site plan and being presented in the meeting. However, the building plans shall be got approved from Municipal Corporation, Jalandhar with allotted land area of two acres only.

The matter is placed before the Committee for discussions and approval of the revised site plan please.

**Item No. 46.7 :** To discuss and finalize the fee payable to the Architect for preparation of building plans of auditorium and hostels proposed at main campus, Kapurthala.

In 45<sup>th</sup> meeting of the committee (agenda item No. 45.8), it was advised by the committee that details and basis of payments made earlier for preparation of building plans (similar cases) is put up in the next meeting. In this regard, it is informed that following payments have been made to the Architect against preparation of building plans of various buildings of main campus, Kapurthala:-

S. No.	Description	Covered Area of buildings approved	Amount Paid	Reference approval of Building committee
1	Housing Project (Phase-II)	17428.0 Sqm.	Rs. 6.0 lacs + S. Tax	20.7
2	College buildings-3Nos, Library, seminar hall and hostels.	31928.0 Sqm.	Rs. 10.99 lacs + S. Tax	27.7

Copies of the minutes of the building committees and agreement signed between PTU and the Architect are placed below at Annexure-C.

On the above basis (area of the buildings), the Architect has requested for release of payment of Rs. 10.03 lacs (including service tax) against preparation of building plans of auditorium and hostels (covered area : 25936 Sqm.).

The matter is placed before the Committee for discussions and decision please.

**Item No. 46.8 :** To discuss and approve the start of construction works of proposed college buildings at Punjab Institute of Technology at Arniwala and Sikhwala.

In 42<sup>nd</sup> meeting of the building committee (agenda item No. 42.4 and 42.5), committee noted that Punjab Cabinet have approved constitution of new technical university at Bathinda and district Fazilka (Arniwala) and Muktsar Sahib (Sikhwala) will fall under the jurisdiction of the new university. It was opined by the committee that new university may have different requirements for these campuses and thus it was decided to defer the approval of design basis reports of these campuses for the time being.

In this regard, it is brought to the kind notice of the committee that management of Punjab Technical University has decided to go ahead with construction of proposed buildings (Phase-I) and external development works for these campuses.

**Item No. 46.9 :** To discuss and approve the estimate for painting of boundary walls Punjab Institute of Technology, Mansa.

The estimate for construction of boundary wall of Punjab Institute of Technology, Mansa was approved in 30<sup>th</sup> meeting of the building committee (agenda item No. 30.7) for an amount of Rs. 300.0 lacs. Further, the revised estimate for an amount of Rs. 409.27 lacs for this work was approved in 44<sup>th</sup> meeting of the building committee (Agenda item No. 44.6). In these estimates, there was a provision of RCC precast panel for three side walls and CC blocks wall with grills for front wall. There was also a provision of painting of the front wall only (other walls being RCC precast panels) in the initial estimate but the same was not included in the revised estimate. Thus, there is no provision of painting of walls in the approved estimate.

During one of the visit of the Architects to site, they were of the opinion that finish of the precast panels is not up to the level as it was envisaged at the time of preparation of design/estimate. The Architect suggested that complete wall (all the four sides) should be got painted to have better appearance, finish and durability. The Architect has submitted an estimate for an amount of Rs. 36.35 lacs for painting of all the walls of the institute (placed at Annexure-D).

The matter is placed before the Committee for discussions and decision please.

**Item No. 46.10 :** To discuss and approve authorization to PWD for taking Environmental Clearance for construction of proposed auditorium and hostels buildings at main campus, Kapurthala.

On the basis of conceptual plans approved by building committee for the proposed auditorium and hostels proposed at main campus, Kapurthala, the building plans for these buildings have been approved by Chief Town Planner, Punjab. Before taking up the construction for these buildings, Environmental clearance (EC) from Ministry of Environment and Forest is to be taken. It is to inform that while submitting application for EC, an undertaking, wherein some commitments towards safety measures during execution, control of pollution, facilities & amenities to workers, social responsibility towards workers engaged etc. is submitted and most of these are

to be made during execution only. Since, the execution of these works is to be done by PWD, it is proposed that EC for these buildings is taken by PWD so that they are aware of the commitments and are followed during execution.

The matter is placed before the Committee for discussions and decision please.

**Item No. 46.11: Any other point with the permission of the Chair.**





# **ANNEXURE-A**





Ref. No. DIN/VS/LED/1458

Dated: 29.1.2015

Archie Group Architects  
A-14, Sector-15,  
Noida - 201301

Kind Attn: Mr. Rajiv Aggarwal

Subject: Offer for LED Video Wall for Auditorium

Dear Sir,

It is a pleasure for us to provide you with this proposal, addressing your interest in Indoor True Color LED Walls for Auditorium use.

You will find below a detailed response to your requirements.

Delta expertise and history in large volume ODM, design and manufacturing for the most renowned brands in consumer and professional electronic industries, is bringing the supply of LED display into a new area of industrialized solutions for the Industrial Indoor/outdoor display industry.

Delta is very excited about this project and greatly appreciates the opportunity to provide you with a proposal. Please do not hesitate to contact me directly should you have any further questions.

Best regards

For Delta India Electronics Pvt Ltd.

VIKRAM SABHARWAL  
National Sales Manager  
Display Solution Business Unit  
(M) +91-9910048925

Delta India Electronics Pvt. Limited, Plot No. 43, Sector - 35,  
Gurgaon - 122 001, Haryana, India. Phone: + 91 124 4169040



Sl. No.	Description	Make	Qty	Unit	Unit Price in INR	Amount in INR
1	Design, supply, Installation, testing and commissioning of LED Video Wall of size 8.64 m X 5.28 m consisting of 6mm LED pixel pitch modules, 3 in 1 SMD having pixel density 6755 pixels per metre; viewing angle of 140 degree horizontal, 110 degree vertical; Contrast: 1000:1; Native brightness: 1500 nits including required mounting structure.	Delta	1	Set	28,500,000.00	28,500,000.00
2	Supply, Installation, testing and commissioning of LED Display controller with 1 x DVI Input: Resolution 1280 x 1024, 1024 x 1200, 1600 x 848, 1920 x 720, 2048 x 668 & other user define resolution; Signal Output: RJ45; Maximum Width Output: 2048 pixels; Maximum Height Output: 1200 pixels; Control Port: USB	Delta	1	Nos.	400,000.00	400,000.00
3	Supply, Installation, testing and commissioning of Power distributor with LED display power management; RS-485 remote control; Lightning Current surge protection; Weekly timer on/off function; Emergency stop button; Power Capacity: 28KVA.	Delta	1	Nos.	500,000.00	500,000.00
<b>Total Amount</b>						<b>29,400,000.00</b>
<b>VAT @ 12.5%</b>						<b>3,675,000.00</b>
<b>Grand Total</b>						<b>33,075,000.00</b>

Delta India Electronics Pvt. Limited, Plot No. 43, Sector - 35,  
Gurgaon - 122 001, Haryana, India. Phone: + 91 124 4169040





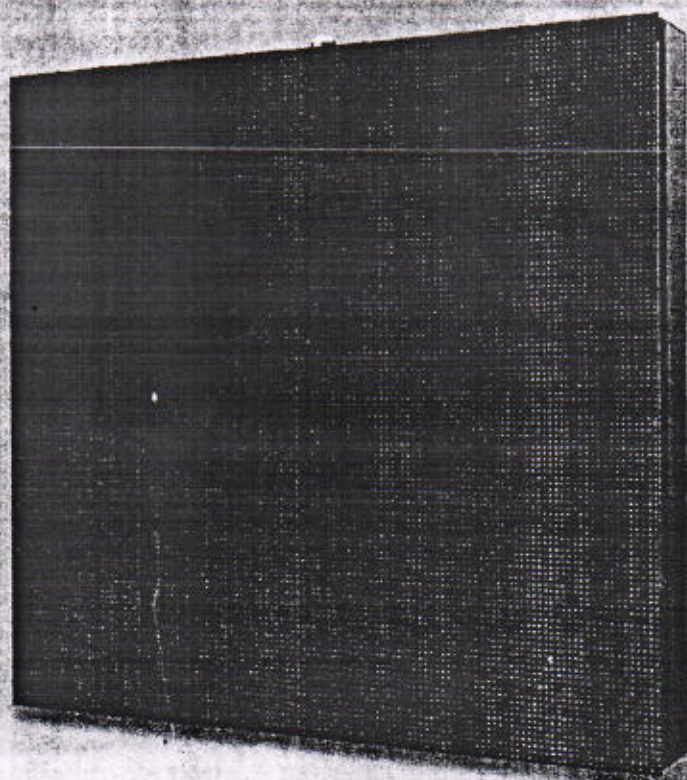
**Commercial Terms & Conditions:**

Prices :	:	The above quoted prices are SITC in INR.
Freight Charges	:	Would be Charged Extra as Applicable.
Payment Terms	:	100% advance along with PO.
Shipment delivery	:	Within 8 Weeks from the date of PO. We can try to ship earlier than promised.
Warranty	:	Our equipments are warranted against manufacturing defects for a period of 12 months from the date of shipment.
Transportation	:	Any transportation forms required shall be provided by you.

Delta India Electronics Pvt. Limited, Plot No. 43, Sector - 35,  
Gurgaon - 122 001, Haryana, India. Phone: + 91 124 4169040





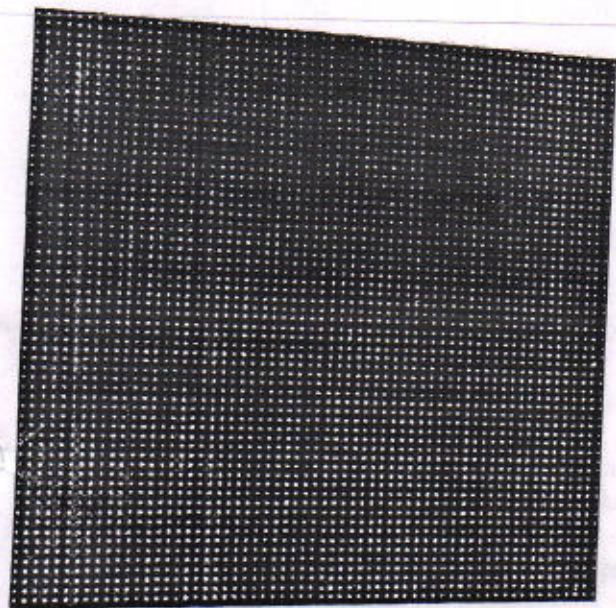
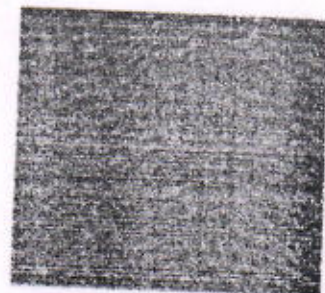
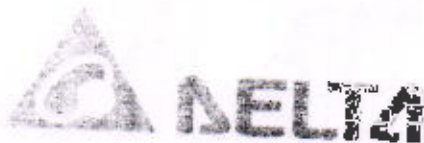


## IX-6 Indoor LED Tile : 6mm

### Product Features

- High reliability ensures 24/7 operation
- Short viewing distances & wide viewing angles
- Easy service (front and rear access)





The 3-in-1 SMD technology used in Delta's indoor LED displays makes them ideal for indoor applications where viewing distances are typically short. Delta's indoor LED modules deliver sharp, vibrant and full-color content with exceptional color depth and uniformity.

Product website:  
[www.deltadisplays.com](http://www.deltadisplays.com)  
Global E-mail:  
[LED.Sales@deltadisplays.com](mailto:LED.Sales@deltadisplays.com)

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Pyrénées, Lisses, 91056 Evry  
Cedex, France  
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**USA / PORTLAND**  
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Suite 100, Hillsboro OR 97006,  
U.S.A.

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Taipei 11491, Taiwan  
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gu, Seoul, Korea 153-704

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Code: 201209

**SINGAPORE**  
Delta Electronics Int'l (S) Pte.  
Ltd. 4 Kallang Road, #05-05  
Singapore 417903

## Specifications

Product Name		IX-6
Pixel Pitch		6 mm
Pixel Configuration		R/G/B 3 in 1 SMD
Pixel Density		27,558 pixel/m <sup>2</sup>
Native Brightness		1,500 nits
Contrast Ratio		1000 : 1
Refresh Rate		400 Hz
Viewing Angle	Horizontal	140° (+/- 70°)
	Vertical	110° (+/- 55°)
Dimming Capability		64 levels
Lifetime		50,000 Hrs
Power Input		100 - 240 VAC, 50/60 Hz
Power Consumption	Maximum	800 watts/m <sup>2</sup>
	Average	267 watts/m <sup>2</sup>
Temperature	Operating	0 to 40°C
	Storage	-20 to 60°C
Humidity	Operating	10 % - 90%
	Storage	10 % - 90%
Service Access		Front & Rear



# **ANNEXURE-B**



**ABSTRACT OF COST**

No.	Name of Building	Amount as per Estimate	Amount as per LED rates Phillips make	Difference
1	C.B-1 & Seminar Hall Building	6331479.60	13412464.00	7080984.40
2	C.B-2 & Library Hall	10453248.00	20599691.00	10146443.00
3	C.B-3, Girls Hostel, Boys Hostel & Director Office	3623399.49	9481105.00	5857705.51
			<b>Total Difference (+)</b>	<b>23085132.91</b>
			<b>Say Rs.</b>	<b>23085133.00</b>

Sub Divisional Engineer  
Electrical S/D  
S.W.D. Karmathala

CB-1

Sr. No.	Existing Fitting	As Per Estimate					LED Replacement	As Per Phillips LED Rates				
		Wantage Per Fitting	Qty.	Total Power Consumption	Cost Per Unit	Total Cost		Wantage Per Fitting	Qty.	Total Power Consumption	Cost Per Unit	Total Cost
i	Bulk Head (Similar to Philips FXC101 1xPL-S / 2P 9W AC GR or equivalent Schneider)	9	52	468	851.00	44252.00	WT201W LED6S CW PSU 51 PC	6	52	312	1829.00	95108.00
ii	Fluorescent fixture 1x36 watts FTL (Philips Cat. No. TCS306 1xTL-D36W IC or equivalent Schneider)(Wall Mounted)	44	462	20328	1973.00	911526.00	RC869B LED 30S-6500 PSE W30L120 D8 GR	30	462	13860	7071.00	3266802.00
iii	Supplying, installation, testing and commissioning of tube fittings philips Make Cat No. TCS 306 1xTL-D36W 1x36w suspended mirror optic liminaire with dimmable ballast Schneider as approved by the Engineer incharge of the work.	-					RC869B LED 30S-6500 PSE W30L120 D8 GR	30	66	1980	7071.00	466846.00
iv	Supplying, installation, testing and commissioning of tube fittings philips Make Cat No. TCS 398 2xTL-D36W EBT with D6 reflector and HF 2x36w, Schneider Make as approved by the Engineer incharge of the work.	36	66	2376	3038.00	200508.00	RC869B LED 30S-6500 PSE W30L120 D8 GR	30	462	13860	7071.00	1266802.00
v	Supplying, installation, testing and commissioning of tube fittings philips Make Cat No. TMC 501/ 1xTL-D36W EBT 1x36w Schneider Make as approved by the Engineer incharge of the work.	76	462	35112	4185.00	1924230.00	BN150W LED20S-6500 PSE OD GR	150	166	24900	3048.00	505968.00
vi	Supplying, installation, testing and commissioning of tube fittings philips Make Cat No. FBH 145/M 2xPL-C/4P 13W HFM 2x13w Schneider Make as approved by the Engineer incharge of the work.	38	166	6308	985.00	163510.00	DN192B LED9S-6500 PSU WM	9	139	1251	1585.00	220315.00



CB-1

		As Per Estimate					As Per Philips LED Rates					
Sr. No.	Existing Fitting	Wattage Per Fitting	Qty.	Total Power Consumption	Cost Per Unit	Total Cost	LED Replacement	Wattage Per Fitting	Qty.	Total Power Consumption	Cost Per Unit	Total Cost
vii	Supplying, installation, testing and commissioning of tube fittings philips Make Cat No. FBH 145/M 1xPL-C/4P 13W HFM 1x13w Schneider Make as approved by the Engineer incharge of the work.	14	6	84	1580.00	9880.00	DN192B LED95-6500 PSU WH	9	6	54	1585.00	9510.00
viii	Supplying, installation, testing and commissioning of tube fittings philips Make Cat No. HCS 370 1xPL118 18W Schneider Make as approved by the Engineer incharge of the work	22	14	308	5645.00	79030.00	BCP150 LED150/NW PSU 220-240V 70M3	150	14	2100	10885.00	146790.00
ix	Supplying, installation, testing and commissioning of tube fittings philips Make Cat No. Megapolis DCP711 1x70W CDMT Schneider Make as approved by the Engineer incharge of the work	-	4	356	12510.00	50040.00	BGP150 LED2000/NW PSU 220-240V 70M3	150	4	600	36570.00	146280.00
x	Supplying, installation, testing and commissioning of tube fittings philips Make Cat No. RVP 1x70W CDMTD as approved by the Engineer incharge of the work or its equivalent Make Schneider	89	2	178	3965.00	7930.00	8VP120 LED 3S CW FG S1 PSU GR	35	2	70	7315.00	14630.00
xi	Supplying, installation, testing and commissioning of tube fittings THORN Make Cat No. COR5 218E 2x18w HF Ballast philips/ Schneider Make as approved by the Engineer incharge of the work.	40	456	19840	2275.00	1128400.00	DN192B LED95-6500 PSU WH	9	456	2464	1585.00	786160.00
xii	Supplying, installation, testing and commissioning of tube fittings THORN Make Cat No. COR5118E 1x18W CDMT philips/ Schneider Make as approved by the Engineer incharge of the work.	20	395	7900	1946.00	768670.00	DN192B LED95-6500 PSU WH	9	395	3555	1585.00	626075.00

CB-1

Sr. No.	Existing Fitting	As Per Estimate				As Per Philips LED Rates			
		Qty.	Wattage Per Fitting	Total Power Consumption	Cost Per Unit	Total Cost	LED Replacement	Qty.	Total Power Consumption
xiii	Supplying, installation, testing and commissioning of tube fittings MDS LEGRAND Make Cat No. "G5" self contained emergency light 8W philips /Schneider Make as approved by the Engineer incharge of the work.	49	8	392	6035.00	295715.00	MDS LEGRAND cat no. G5 self contained emergency light 8W	49	392
xiv	Supplying, installation, testing and commissioning of tube fittings THORN Make Cat No. LINE XS WALL 2G11 1x36W philips / Schneider Make as approved by the Engineer incharge of the work.	12	30	455	1070.00	12840.00	THORN- line XS Wall 2G11 1x36W	12	455
xv	Supplying, installation, testing and commissioning of tube fittings PHILIPS Make Cat No.HWS 370 1XPL-C 1x18W Schneider Make as approved by the Engineer incharge of the work.	5	22	110	2080.00	10400.00	BWS150 LED200/NW PSU 220-240V 7043	5	750
xvi	Supplying, installation, testing and commissioning of tube fittings PHILIPS Make Cat No. TBS 369 2xTL-tube fittings PHILIPS Make Cat No. TBS 369 2xTL-D36W EBT with D6 reflector and dimmable ballast 2x36W Schneider Make as approved by the Engineer incharge of the work.	18	76	1368	5245.00	94410.00	RC600B LED315/840 PSU W30L120	18	540
xvii	Supplying, installation, testing and commissioning of tube fittings PHILIPS Make Cat No. Energy Line T5 28w EBT Schneider Make as approved by the Engineer incharge of the work.	5	32	160	474.72	2373.60	Energy line T5 28w EBT	5	160
	Total			99914		599559.60			69304

1454397.00

Val 14.30 % on Rs. 10380401/-

= 332920.00

Add 5.55 % on Rs. 599559.60/-

1454397.00

207608.00

Income Tax 2 % on Rs. 10380401/-

6331479.60

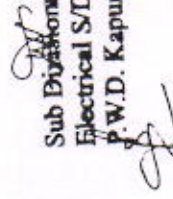
207608.00



**CB-1**

Labour Cess 1 % on Rs. 10380401/-	=	103804.00
Contractor Profit 10 % on Rs. 10380401/-	=	1038040.00
		13214250.00
Office Contingency 1.50 % on Rs. 13214250/-	=	198214.00
		13412464.00

	Rate (As Per Estimate)	Rate (As Per LED Rates Of Philips)	Difference
	6331479.60	13412464.00	7080984.40
Total Amount			

  
 Sub Divisional Engineer  
 Electrical S/D  
 P.W.D. Kapurthala

CB-2

CB-2

Sr. No	Existing Fitting	As Per Estimate				LED Replacement	As Per Philips LED Rates					
		Wattage Per fitting	Qty.	Total Power Consumption	Cost Per Unit		Total Cost	Wattage Per Fitting	Qty.	Total Power Consumption	Cost Per Unit	Total Cost
(i)	Supplying, installation, testing and commissioning of tube fittings philips Make Cat No. TCS 398 2xTL-D36W EBT with D6 reflector and HF 2x36w, Schneider Make as approved by the Engineer incharge of the work.	76	476	36176	4165.00	1982540.00	RCB69B LED 305-6500 PSE W30L120 D8 GR	30	476	14280	7071.00	3365796.00
(ii)	Supplying, installation, testing and commissioning of tube fittings philips Make Cat No. TCS 306 1xTL-D36W EBE 1x36w Schneider Make as approved by the Engineer incharge of the work.	38	586	22268	1930.00	1130980.00	RCB69B LED 305-6500 PSE W30L120 D8 GR	30	586	17580	7071.00	4143606.00
(iii)	Supplying, installation, testing and commissioning of tube fittings philips Make Cat No. TCS 306 1xTL-D36W 1x36w suspended mirror optic luminaire with dimmable ballast Schneider Make as approved by the Engineer incharge of the work.	36	71	2556	3080.00	218680.00	RCB69B LED 305-6500 PSE W30L120 D8 GR	30	71	2130	7071.00	502041.00
(iv)	Supplying, installation, testing and commissioning of tube fittings philips Make Cat No. TMC 501/ 1xTL-D36W EBT 1x36w Schneider Make as approved by the Engineer incharge of the work.	38	221	8398	985.00	217685.00	BN150W LED205-6500 PSE OD GR	150	221	33150	3048.00	673608.00
(v)	Supplying, installation, testing and commissioning of tube fittings philips Make Cat No. FBH 145/M 2xPL-C/4P 13W HFM 2x13w Schneider Make as approved by the Engineer incharge of the work.	30	111	3330	2055.00	228105.00	Philips cat no. FBH 145/M 2xPL-C/4P 13 W HFM 2x13w	30	111	3330	3286.00	364746.00
(vi)	Supplying, installation, testing and commissioning of tube fittings philips Make Cat No. FBH 145/M 1xPL-C/4P 13W HFM 1x13w Schneider Make as approved by the Engineer incharge of the work.	15	419	6285	1580.00	662020.00	DN192B LED95-6500 PSU WH	9	419	3771	1585.00	664115.00
(vii)	Supplying, installation, testing and commissioning of tube fittings philips Make Cat No. HCS 370 1xPL11B 18W Schneider Make as approved by the Engineer incharge of the work.	22	14	308	5645.00	79030.00	BCP150 LED150/NW PSU 220-240V 7043	150	14	2100	10485.00	146790.00



CB-2

Sr. No	Existing Fitting	As Per Estimate				LED Replacement	As Per Philips LED Rates					
		Wattage Per fitting	Qty.	Total Power Consumption	Cost Per Unit		Total Cost	Wattage Per Fitting	Qty.	Total Power Consumption	Cost Per Unit	Total Cost
(viii)	Supplying, installation, testing and commissioning of tube fittings philips Make Cat No. FXC 101. 1xPL9 9W Schneider Make as approved by the Engineer incharge of the work.	9	67	603	830.00	55610.00	WT202W LEDS CW PSU 51 PC	6	67	403	1829.00	122543.00
(ix)	Supplying, installation, testing and commissioning of tube fittings philips Make Cat No. Megapolls DCP731 1x70W CDMT Schneider Make as approved by the Engineer incharge of the work.	89	4	356	12510.00	50040.00	BGP150 LEO2000/NW PSU 220-240V 7043	150	4	600	36570.00	146280.00
(x)	Supplying, installation, testing and commissioning of tube fittings philips Make Cat No. RVP 1x70W CDMTD Schneider Make as approved by the Engineer incharge of the work.	89	2	178	3965.00	7930.00	BVP120 LED 35 CW FG S1 PSU GN	35	2	70	7315.00	14630.00
(xi)	Supplying, installation, testing and commissioning of tube fittings THORN Make Cat No. COR5 2x18W HF Ballast philips/ Schneider Make as approved by the Engineer incharge of the work.	40	645	25000	2275.00	1467375.00	DM192B LED9S-6500 PSU WH	9	645	5805	1585.00	1022325.00
(xii)	Supplying, installation, testing and commissioning of tube fittings THORN Make Cat No. COR5118E 1x18W CDMT philips/ Schneider Make as approved by the Engineer incharge of the work.	20	466	9320	1946.00	906836.00	DM192B LED9S-6500 PSU WH	9	466	4194	1595.00	738610.00
(xiii)	Supplying, installation, testing and commissioning of tube fittings MDS LEGRAND Make Cat No. "GS" self contained emergency light 8W philips /Schneider Make as approved by the Engineer incharge of the work.	8	63	504	6035.00	380205.00	MDS legrand cat no. GS self contained emergency light 8w	8	63	504	5035.00	317205.00
(xiv)	Supplying, installation, testing and commissioning of tube fittings THORN Make Cat No. UNE XS WALL 2G11 1x36W philips /Schneider Make as approved by the Engineer incharge of the work.	40	6	240	1870.00	11220.00	Thorn-Lux XS Wall 2G11 1x36w	40	6	240	9365.00	56316.00

CB-2

Sr. No.	Existing Fitting	As Per Estimate				As Per Philips LED Rates						
		Wattage Per fitting	Qty.	Total Power Consumption	Cost Per Unit	Total Cost	LFD Replacements	Wattage Per Fitting	Qty.	Total Power Consumption	Cost Per Unit	Total Cost
(xv)	Supplying, installation, testing and commissioning of tube fittings PHILIPS Make Cat No.HWS 370 1XPL-C 1x18W Schneider Make as approved by the Engineer incharge of the work.	22	5	110	2080.00	10400.00	BWS150 LED200/NIW PSU 220-240V 70A3	150	5	750	9510.00	47550.00
(xvi)	Supplying, installation, testing and commissioning of tube fittings PHILIPS Make Cat No. T85 M 369 M4xTL-D 18W EBS D6 4x18W Schneider Make as approved by the Engineer incharge of the work.	80	549	43920	4220.00	2316780.00	AC300B LED30-6500 PSE-OD WH	30	549	16470	5851.00	3212199.00
(xvii)	Supplying, installation, testing and commissioning of tube fittings PHILIPS Make Cat No. RSC 201 1xPL-C/2F 18W Schneider Make as approved by the Engineer incharge of the work.	18	23	414	2365.00	54395.00	BQ150 LED150/NIW PSU 220-240V 70A3	150	23	3450	10488.00	241355.00
(xviii)	Supplying, installation, testing and commissioning of tube fittings THORN Make Cat No. CIAR 118E 1x18W philips /Schneider Make as approved by the Engineer incharge of the work.	20	30	600	4770.00	143100.00	Thorn-CIAR 118E 1x18W	20	30	600	2438.00	73140.00
(ix)	Supplying, installation, testing and commissioning of tube fittings THORN Make Cat No. CVIR 118 S2 E 1x18W philips /Schneider Make as approved by the Engineer incharge of the work.	20	37	740	3400.00	84800.00	Thorn-CVIR 118 S2 E 1x18W	20	37	740	2438.00	90206.00
	Total			162106		10011731.00						15942861.00

Add 4.81 % on Rs. 10011731/-

= 441517.00

Vat 14.30 % on Rs. 15942861/-

=

2379829.00

10453248.00

Income Tax 2 % on Rs. 15942861/-

=

318857.00

Labour Cess 1 % on Rs. 15942861/-

=

159429.00



CB-2

Contractor Profit 10 % on Rs. 1994286.00 = 199428.60

20295262.00

Office Contingency 1.50 % on Rs. 20295262/- = 304429.00

22594551.00

Total Amount	Rate (As Per Estimate)	Rate (As Per LED Rates Of Phillips)	Difference
	10453248.00	20599691.00	10146443.00

Sub Divisional Engineer  
Electrical S/D  
P. W. D. Kapurthala

CB-3

Sr. No.	Existing Fitting	As Per Estimate				As Per Philips LED Rates						
		Wattage Per fitting	Qty.	Total Power Consumption	Cost Per Unit	Total Cost	LED Replacement	Wattage Per Fitting	Qty.	Total Power Consumption	Cost Per Unit	Total Cost
i	Recessed mounted 4 x 14 W light fixture complete with CFL lamps and all accessories(Similar to Philips TBS088 4xTL5-14W E80 M2 or equivalent Schneider)	64	112	7168	2874.87	321985.44	RC3808 LED30-6500 PSE-OD WH	30	112	3360	5851.00	655312.00
ii	Bulk Head(Similar to Philips FXC101 1xPL-S / 2P 9W AC GR or equivalent Schneider	9	36	324	799.51	28782.36	WT2021W LED85 CW PSU S1 PC	6	36	216	1830.00	65880.00
iii	Ceiling light/compact fluorescent (2 x 11watts) CFL Philips /Schneider	24	245	5880	1060.70	259871.50	Ceiling light/compact fluorescent (2x11W)	24	245	5880	2438.00	597310.00
iv	Fluorescent fixture 1x36 watts FTL (Philips Cat. No. TCS306 1xTL-D36W IC or equivalent Schneider)(Wall Mounted)	44	170	7480	1852.63	315117.10	RC8698 LED 305-6500 PSE W30L120 DB GR	30	170	5100	7071.00	1202070.00
v	Fluorescent fixture 1x36 watts FTL (Philips Cat. No. TCS019 1xTL-D36W IC O or equivalent Schneider)(Ceiling Mounted)						RC8698 LED 305-6500 PSE W30L120 DB GR					
vi	Fluorescent fixture 2x36 watts FTL (Philips Cat. No. TCS608 2xTL-D36W IC M1 or equivalent Schneider)	44	120	5280	1168.86	140023.20		30	120	3600	7071.00	848520.00
vii	Ceiling light/compact fluorescent (1x18watts) CFL Make Philips/Schneider	88	250	22000	2338.42	584605.00	RC8698 LED 305-6500 PSE W30L120 DB GR	30	250	7500	7071.00	1767750.00
viii	Ceiling light/compact fluorescent (2x18watts) CFL Make Philips/Schneider	18	42	756	2065.02	86730.84	DN1928 LED95-6500 PSU WH	9	42	378	1585.00	66570.00
		40	380	15200	2486.86	945006.80	DN1928 LED95-6500 PSU WH	9	380	3420	1585.00	602300.00



Sr. No.	Existing Fitting	As Per Estimate				As Per Philips LED Rates						
		Wattage Per fitting	Qty.	Total Power Consumption	Cost Per Unit	Total Cost	LED Replacement	Wattage Per Fitting	Qty.	Total Power Consumption	Cost Per Unit	Total Cost
i	Compact fluorescent Mirror light (1x11watts) CFL (Philips Cat.No.FMS 200/111 or equivalent Schneider)	12	75	900	617.25	46293.75	8W150W LED135-6500 PSE OD GR	150	75	11250	1830.00	137250.00
x	Bracket Light		210		2561.08	537826.80	Bracket Light		210		4876.00	1021960.00
ii	Supply and erection of Bracket light wall mounted fixture cat.no. BULF1 15 W.RF Make Crompton and Havells make and including the cost of CFL 15 watts etc. complete In all respect as desired by the engineer Incharge of the work at site.	16	3	48	559.00	1677.00	BWS150 LED200/NW PSU 220-240V 70w3	150	3	450	9510.00	28530.00
iii	Supply and erection 2x36 watts mirror optics false Ceiling fitting of Crompton make Cat.No. CRFQ 11236 P.5 / Philips make Energy saving C.F.L tube rod lux 6500K Decorative mirror optics recessed false Ceiling mounted luminaire bright anodized aluminium reflector low glare P-5 Parallel louvre suitable for 600mm x 600mm modular / PCR/ GYPSUM Ceiling mounted etc complete with Electronics choke (Low losses) and improved power factor and tube holder etc. along with erection of the same with connections, testing etc. Complete in all respect as approved and desired by the Engineer Incharge at site.	80	10	800	3335.22	33352.20	RCB69 LED 305-6500 PSE W30L120 OD GR	30	10	300	7071.00	70710.00
iii	Supply and erection of surface mounted (Box type 1x36watt T-8 lamp Channal luminaries, make Crompton, Greaves Cat. no. D481214EB/Make Philips Cat no. TMS021 1x11036W EBT or its equivalent Make :- Schlerder, suitable for 1x36 watt tube lamp make Havells complete with box type fixtures including lamp copper choke and lamp holders etc. along with erection of the same with connections, testing etc.complete in all respects as approved and desired by the Engineer Incharge at site.	38	6	228	826.76	4960.56	8W150W LED205-6500 PSE OD GR	150	6	900	3048.00	18288.00

CB-3

Sr. No.	Existing Fitting	As Per Estimate					As Per Philips LED Rates			
		Wattage Per Fitting	Qty.	Total Power Consumption	Cost Per Unit	Total Cost	LED Replacement	Wattage Per Fitting	Qty.	Total Power Consumption
xiv	Supply and erection of 3x14 recessed type ceiling light fixture cat No. BTMRA equivalent make 314 M.S / Crompton Make / Havells with 3 Nos T-8 14 watt C.F.L tube lamp. Fitting size 600mm x 600mm. recessed mounted functional decorative mirror optics with aqua louvers and suitable size etc. complete in all respect. The fitting to be installed in Existing ceiling erection connection testing etc as desired by the engineer-in-charge of work at site.									
		40	22	1056	2517.66	55392.92	RC3808 LED30-6500 PSE-OD WH	30	22	660
										5851.00
										128722.00
xv	Supply and erection of Down light 2 x 18 watts CFL fitting cat no. BJDR HWW2 EB Bajaj make / Crompton / Havells make with CFL lamp 18 watt die cast aluminium reflector housing epoxy gray powder coating electronic choke fixed in slab outer and inner surface and including cost of 2 Nos CFL 18 watt lamp and including connection testing etc. complete in all respect as desired by the engineer incharge of the work at site.						DN192B LED95-6500 PSU WH			
		40	62	2480	714.02	44269.24		9	62	558
										1585.00
										98270.00
xvi	Supply and erection of 1 x 18 watts CFL fixture Cat no. BJDR 18 WEB / VI / Crompton / Havells equivalent make down light recessed in the slab outer and inner site with lamp. Holder and 18 watt CFL lamp with gray powder coating etc. complete in all respect as desired by the engineer incharge of the work at site.						DN192B LED95-6500 PSU WH			
		22	12	264	648.25	7779.00		9	12	108
										1585.00
										19070.00



C8-3

Sr. No.	Existing Fitting	As Per Estimate					As Per Philips LED Rates					
		Wattage Per fitting	Qty.	Total Power Consumption	Cost Per Unit	Total Cost	LED Replacement	Wattage Per Fitting	Qty.	Total Power Consumption	Cost Per Unit	Total Cost
xvii	Supply and erection of 1x11 watts CFL mirror light cat no. BJC 111 Bajaj Make / Crompton / Havells surface mounted fitting complete with Accessories including the cost of CFL lamp 11 watt lamp etc. complete in all respect and including connection testing etc as desired by the engineer incharge of work at site.	12	6	72	502.63	3615.78	Bajaj BJC111	12	6	72	1219.00	7314.00
	Total			69936		3416689.49				43752		7337776.00

Add 6.05 % on Rs. 3416689.49/-

= 206710.00

Vat 14.30 % on Rs. 7337776/-

= 1049302.00

3623399.49

Income Tax 2 % on Rs. 7337776/-

= 146756.00

Labour Cost 1 % on Rs. 7337776/-

= 73378.00

Contractor Profit 10 % on Rs. 7337776/-

= 733778.00

9340990.00

Office Contingency 1.50 % on Rs. 9340990/-

= 140115.00

9481105.00

Rate (As Per Estimate)	Rate (As Per LED Rates Of Philips)	Difference
3623399.49	9481105.00	5857705.51
Total Amount		

Sub Divisional Engineer  
Electrical S/D  
P.W.D. Kapatthala

COLLEGE BUILDING - I : ADDITIONAL COST FOR PROVIDING LED LIGHTS IN PLACE OF CFL LIGHTS (AS CALCULATED BY MR. ARCH GROUP, Noida)

S.No.	Existing Wiring	Wiring per fitting	Qty	Total Power	Cost per Unit	Total Cost	LED MODEL	Wattage LED	Qty	Total Power Consumption	LIST PRICE	On Price	Cost	Diff. Wiring	Factor Power Diff	Diff Price	Diff Cost	Diff Cost/Diff Wattage
0	Diff. Head (Service to Poles) TBC 100 L.P. 1 / 2P SW AC OR equivalent Schedule as	9	32	468	851	44852	BAJAJ - BWP 10	10	52	520	4800	2610	139720	-1	-32	-1759	-91468	1759.00
4)	Supplying, installation, testing and commissioning of tube fittings phillips make cat No. TBC 200 L.P. 100W LED with standard outdoor type luminaire with aluminum body. Schedule as approved by the Engineer incharge of the work.	28	462	17556	1979	911506	BAJAJ - BWT 20W	20	462	32936	12700	7468	3403092	10	4620	-5388	-2491566	559.30
5)	Supplying, installation, testing and commissioning of tube fittings phillips make cat No. TBC 300 L.P. 100W LED with standard outdoor type luminaire with aluminum body. Schedule as approved by the Engineer incharge of the work.	36	66	2376	2038	200508	BAJAJ - BWT 10W LED with aluminum body	20	66	1848	17700	10286	677356	8	528	-7378	-477048	-803.40
6)	Supplying, installation, testing and commissioning of tube fittings phillips make cat No. TBC 300 L.P. 100W LED with standard outdoor type luminaire with aluminum body. Schedule as approved by the Engineer incharge of the work.	76	462	35112	4165	1984230	GE - GCP 60W SA CO	36	462	16632	11000	6380	2947960	80	18480	-2215	-1023390	-66.88
7)	Supplying, installation, testing and commissioning of tube fittings phillips make cat No. TBC 300 L.P. 100W LED with standard outdoor type luminaire with aluminum body. Schedule as approved by the Engineer incharge of the work.	18	166	6308	985	163510	GE - BWT 10 W LED	18	166	3288	4000	2320	385120	20	3360	-2335	-221610	-68.79
8)	Supplying, installation, testing and commissioning of tube fittings phillips make cat No. TBC 300 L.P. 100W LED with standard outdoor type luminaire with aluminum body. Schedule as approved by the Engineer incharge of the work.	10	199	4170	2095	289645	GE - Hemisphere 12 W	12	199	1668	4200	2436	116608	18	2502	-381	-11959	-21.17
9)	Supplying, installation, testing and commissioning of tube fittings phillips make cat No. TBC 300 L.P. 100W LED with standard outdoor type luminaire with aluminum body. Schedule as approved by the Engineer incharge of the work.	14	6	84	1500	9480	GE - Hemisphere 10 W	30	6	60	3800	2204	1824	8	24	-434	-3744	-134.00
10)	Supplying, installation, testing and commissioning of tube fittings phillips make cat No. TBC 300 L.P. 100W LED with standard outdoor type luminaire with aluminum body. Schedule as approved by the Engineer incharge of the work.	22	14	208	1645	79030	GE - Hemisphere 10 W (Orange SW LED Bulbs)	5	14	70	7100	4118	57652	17	218	1527	11378	89.82
11)	Supplying, installation, testing and commissioning of tube fittings phillips make cat No. TBC 300 L.P. 100W LED with standard outdoor type luminaire with aluminum body. Schedule as approved by the Engineer incharge of the work.	89	4	356	12510	50040	BAJAJ - BWT 20W	45	4	180	28500	16330	66120	48	176	-4000	-14080	-91.36
12)	Supplying, installation, testing and commissioning of tube fittings phillips make cat No. TBC 300 L.P. 100W LED with standard outdoor type luminaire with aluminum body. Schedule as approved by the Engineer incharge of the work.	39	2	378	3985	7980	BAJAJ - BWT 10W	20	8	80	14500	8430	14820	88	118	-4485	-4480	-71.84
13)	Supplying, installation, testing and commissioning of tube fittings phillips make cat No. TBC 300 L.P. 100W LED with standard outdoor type luminaire with aluminum body. Schedule as approved by the Engineer incharge of the work.	40	496	19840	2275	1128400	GE - Hemisphere 18 W	18	496	8928	5180	2958	1487168	72	10912	-800	-318768	-31.05
14)	Supplying, installation, testing and commissioning of tube fittings phillips make cat No. TBC 300 L.P. 100W LED with standard outdoor type luminaire with aluminum body. Schedule as approved by the Engineer incharge of the work.	20	395	7900	1944	768570	GE - Hemisphere 12 W	12	395	4740	4200	2436	852280	8	3160	-490	-199360	-61.15
15)	Supplying, installation, testing and commissioning of tube fittings phillips make cat No. TBC 300 L.P. 100W LED with standard outdoor type luminaire with aluminum body. Schedule as approved by the Engineer incharge of the work.	8	66	392	6038	295715	BAJAJ - BWT 10W	1	66	48	6800	3422	167678	7	348	2618	128087	173.18
16)	Supplying, installation, testing and commissioning of tube fittings phillips make cat No. TBC 300 L.P. 100W LED with standard outdoor type luminaire with aluminum body. Schedule as approved by the Engineer incharge of the work.	88	12	456	1870	82480	BAJAJ - BWT 20W W	25	12	300	11000	6380	70560	18	186	-4310	-54120	-548.81
17)	Supplying, installation, testing and commissioning of tube fittings phillips make cat No. TBC 300 L.P. 100W LED with standard outdoor type luminaire with aluminum body. Schedule as approved by the Engineer incharge of the work.	22	5	110	2080	10800	BAJAJ - BWT 40W LED with aluminum body	4	5	20	8400	3054	18278	18	90	-1574	-7970	-87.44
18)	Supplying, installation, testing and commissioning of tube fittings phillips make cat No. TBC 300 L.P. 100W LED with standard outdoor type luminaire with aluminum body. Schedule as approved by the Engineer incharge of the work.	76	18	1368	5845	94410	BAJAJ - BWT 40W LED with aluminum body	40	18	720	18700	10846	195228	36	648	-5601	-100818	-155.58



32	5	160	474.72	2373.6	BAIAJ - BCLSB 10WH	10	5	50	2600	1508	7540	22	110	-1033.28	-5166.4	-66.97
							</									



COLLEGE BUILDING - II : ADDITIONAL COST FOR PROVIDING LED LIGHTS IN PLACE OF CFL LIGHTS (AS CALCULATED BY M/S ARCH GROUP, NODIA)

S.No.	Existing Fitting	Wattage per fitting	Qty	Total Power	Cost Per Unit	Total Cost	LED MODEL	Watt age LED	Qty	Total Power Consumption	EST PRICE	Dis. Price	Cost	Diff Wattage	Total Power Diff	Diff Price	Diff Cost	Diff Cost/Wattage	Remarks
i)	commissioning of tube fittings philips Make cat no. TC 250 2X75-08mm	76	476	36176	4165	1982540	GE - GCR 036 56 CO	36	476	17136	11000	6380	3036880	40	19040	-2215	-1054340	-55.38	
ii)	(Philips Cat. No TC5306 (T/L-035W IC or equivalent Schneider)(Wal Mounted)	38	586	22268	1973	1156178	BAIAJ - BRIZ 28W	28	586	16408	12700	7366	4316476	10	5860	-5393	-3160238	-539.30	
iii)	Supplying, installation, testing and commissioning of tube fittings philips Make cat no. TC 250 2X75-08mm with integrated mirror angle reflective in the classroom before Schneider as approved by the Engineer incharge of the work.	36	71	2556	3038	215698	BAIAJ - BRIZ 28W LED with Dimming Ballast	28	71	1988	17700	10266	728886	8	568	-7228	-513188	-903.50	No benefit to Change
iv)	Supplying, installation, testing and commissioning of tube fittings philips Make Cat No. TMC 502/ 18W 085W DIT 085W Schneider Make as approved by the Engineer incharge of the work.	38	221	8398	985	217685	GE - BRIT 8 18 DL P EN	18	221	3978	4000	2320	512720	20	4420	-1335	-295085	-66.75	
v)	commissioning of tube fittings philips Make Cat. No. PMS 545/M 18W 085W 18W 085W Schneider Make as approved by the Engineer incharge of the work.	30	111	3330	2055	228105	GE - Hemisphere 12 W	12	111	1332	4200	2436	270396	18	1998	-381	-42291	-21.17	
vi)	supplying, installation, testing and commissioning of tube fittings philips Make cat. No. PMS 545/M 18W 085W 18W 085W Schneider Make as approved by the Engineer incharge of the work.	15	419	6285	1580	662020	GE - Hemisphere 10 W	10	419	4190	3800	2204	923476	5	2095	-624	-261456	-124.80	
vii)	Supplying, installation, testing and commissioning of tube fittings philips Make Cat No. HCS 370 1xPL18 18W 085W Schneider Make as approved by the Engineer incharge of the work.	22	14	308	5645	79030	GE 0005 5608B (Orane SW LED Ballast)	5	14	70	7100	4118	57652	17	238	1527	21378	89.82	
viii)	Supplying, installation, testing and commissioning of tube fittings philips Make Cat No. HCS 370 1xPL18 18W 085W Schneider Make as approved by the Engineer incharge of the work.	9	67	603	830	55610	BAIAJ - BRIZ 10	10	67	670	4500	2610	174870	-1	-67	-1780	-119260	1780.00	No Benefit to Change as future wattage is higher
ix)	Supplying, installation, testing and commissioning of tube fittings philips Make Cat No. HCS 370 1xPL18 18W 085W Schneider Make as approved by the Engineer incharge of the work.	89	4	356	12510	50040	BAIAJ - BRIZ 45W	45	4	180	28500	16530	66120	44	176	-4030	-16080	-91.36	
x)	Supplying, installation, testing and commissioning of tube fittings philips Make Cat No. HCS 370 1xPL18 18W 085W Schneider Make as approved by the Engineer incharge of the work.	89	2	178	3965	7930	BAIAJ - BRIZ 30W	30	2	60	14500	8410	16820	59	118	-4445	-8890	-75.34	
xi)	Supplying, installation, testing and commissioning of tube fittings THORN Make Cat No. COR5 218 2x18W HF Ballast philips/ Schneider Make as approved by the Engineer incharge of the work.	40	645	25800	2275	1467375	GE - Hemisphere 18 W	18	645	11610	5100	2958	1907910	22	34190	-683	-440535	-31.05	
xii)	Supplying, installation, testing and commissioning of tube fittings THORN Make Cat No. COR5 218 2x18W HF Ballast philips/ Schneider Make as approved by the Engineer incharge of the work.	20	466	9320	1946	906836	GE - Hemisphere 12 W	12	466	5592	4200	2436	1135176	8	3728	-490	-228340	-61.25	
xiii)	Supplying, installation, testing and commissioning of tube fittings THORN Make Cat No. COR5 218 2x18W HF Ballast philips/ Schneider Make as approved by the Engineer incharge of the work.	8	63	504	6035	380205	BAIAJ - BHEM 10W	1	63	63	5900	3422	215586	7	441	2613	164619	373.29	
xiv)	Supplying, installation, testing and commissioning of tube fittings THORN Make Cat No. COR5 218 2x18W HF Ballast philips/ Schneider Make as approved by the Engineer incharge of the work.	38	6	228	1870	11220	BAIAJ - BLWSP 25W	25	6	150	11000	6380	38280	13	78	-4510	-27060	-346.92	No benefit to Change
xv)	Supplying, installation, testing and commissioning of tube fittings PHILIPS Make Cat No. T55 AC80 84 x TLD 18W E25 D6 4 x 18W Schneider Make as approved by the Engineer incharge of the work.	22	5	110	2080	10400	GEOW 004 5608B (Orane 4W LED with dimming)	4	5	20	6300	3654	18270	18	90	-1574	-7870	-87.44	
xvi)	Supplying, installation, testing and commissioning of tube fittings PHILIPS Make Cat No. T55 AC80 84 x TLD 18W E25 D6 4 x 18W Schneider Make as approved by the Engineer incharge of the work.	80	549	43920	4220	2316780	GE Cat No. Full 18 12W 35W, Greater than 3200 lumens)	35	549	19215	10500	6090	3343410	45	24705	-1870	-1026630	-41.56	
xvii)	Supplying, installation, testing and commissioning of tube fittings PHILIPS Make Cat No. T55 AC80 84 x TLD 18W E25 D6 4 x 18W Schneider Make as approved by the Engineer incharge of the work.	18	23	414	2365	54395	GE - Hemisphere 12 W	12	23	276	4200	2436	56028	6	138	-71	-1633	-11.83	
xviii)	Supplying, installation, testing and commissioning of tube fittings THORN Make Cat No. COR5 218 2x18W HF Ballast philips/ Schneider Make as approved by the Engineer incharge of the work.	20	30	600	4770	143100	BAIAJ - BCLSB 10	10	30	300	2600	1508	45240	10	300	3262	97860	326.20	
xix)	Supplying, installation, testing and commissioning of tube fittings THORN Make Cat No. COR5 218 2x18W HF Ballast philips/ Schneider Make as approved by the Engineer incharge of the work.	20	37	740	2400	88800	BAIAJ - BCLSB 10	10	37	370	2600	1508	55796	10	370	892	93004	89.20	







# **ANNEXURE-C**





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## AGREEMENT

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The agreement made this day 1st day of September 2005 at Jalandhar between the Punjab Technical University, Jalandhar, hereinafter referred to as 'the University' through its Registrar, of the one part and the firm M/s Archigroup Architects (Regd.) registered with the registrar of firms, Government of NCT of Delhi and having their registered office at 5/304, Sikka Complex, Preet Vihar Community Centre, Delhi-110092 hereinafter referred to as 'the Architects'.

WHEREAS THE UNIVERSITY represented by its Registrar is desirous of getting prepared, in conformity with the prescribed standards, Architectural Design including Master Plan design of the entire University campus at Jalandhar-Kapurthala Highway showing the various buildings and activities to be put up as per the programme given by the University, structural details and all the schemes to be executed therein (hereinafter referred to as "Project" defined in clause 1)

AND WHEREAS the University has decided to appoint M/s. Archigroup Architects (Regd.) as Architects for the Master Plan and Architectural Services of the entire

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AND WHEREAS the Architects are willing to undertake Master Plan and Architectural Design consultancy services of the entire project, in consideration of the professional fees to be paid to the Architects, as hereinafter provided on the terms and conditions as set forth hereinafter, and taking into account all activities specified under the scope and elaborated under the clause 2.0 and 3.0 of this agreement.

#### 1.0 DEFINITIONS:

Unless Context or consistency demands otherwise the following terms shall have meaning assigned to them as stated below:

- 1.1 "Architects" shall mean M/S Archigroup Architects (Regd.) which expression shall unless repugnant to the context or meaning thereof includes the Partners of the said firm, or the survivors of them.
- 1.2 "Statutory Authority" shall mean any competent authority established by or under Indian Law and having jurisdiction over any aspect(s) of the project.
- 1.3 "Consultant" shall mean an individual, firm, or company retained or employed by the Architect to perform services.
- 1.4 "Project" shall mean the various buildings as per the program to be given by the University.
- 1.5 "Project Phases" shall mean various phases of the planning and construction as per the requirements of the University.
- 1.6 "Stage(s)" shall mean the division into parts of services to be performed by the Architects in all Project Phases.
- 1.7 "University" shall mean the Punjab Technical University, Jalandhar represented by its Registrar or its authorized officer(s).
- 1.8 "Completion" shall mean that the work on any Project Phase or portion thereof is complete.

#### 2.0 SCOPE OF WORK:

The Architects will be required to provide services in respect of the following:

- 2.1 Taking University's instructions and preparation of design brief.

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- 2.2 Architectural design including structural design for the building blocks.
- 2.3 Sanitary, plumbing, drainage, water supply and sewerage designs.
- 2.4 Electrical, electronic, communication systems and design.
- 2.5 Heating, ventilation and air conditioning design (HVAC) and other mechanical systems.
- 2.6 Elevators, escalators, etc.
- 2.7 Fire detection, Fire protection and Security systems, etc.
- 2.8 Periodic Inspection and evaluation of Construction works.
- 2.9 Use of Non conventional sources of energy.
- 2.10 Innovative latest technologies with cost optimization.
- 2.11 Rain water harvesting.
- 2.12 Recycling of wastewater.
- 2.13 Solid waste Management.
- 2.14 Tender for construction.
- 2.15 Roads and landscaping Architecture.

### 3.0 SCHEDULE OF SERVICES:

The Architects shall, after taking instructions from the University, render the following services:

#### 3.1 Master Plan Stage ( Stage 1):

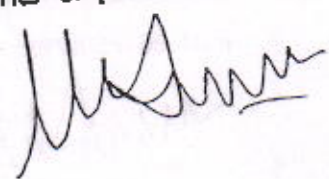
- 3.1.1 Preparation of concept design showing circulation parking open spaces and external architectural form in plan.

#### 3.2 Master Plan Stage ( Stage 2):

- 3.2.1 Obtain approval of all the designs and drawings detailed above from the University after incorporating university's suggestions and modifications.

#### 3.3 Architectural Design Services - Preliminary Design and Drawings [Stage 1]:

- 3.3.1 Ascertain Client's requirements, examine site constraints & potential ; and prepare a design brief for Client's approval.





3.3.2 Prepare report on site evaluation, state of existing buildings, if any, and analysis and impact of existing and /or proposed development on its immediate environs.

3.3.3 Prepare conceptual design with reference to requirements given and prepare rough estimate of cost on area basis.

3.3.4 Prepare drawings showing all floor plans, sections and elevations for all buildings in each phase to sufficiently explain the Design.

3.3.5 Prepare drawings and documents to enable the University to get the site surveyed and conduct soil investigation at the site of the project.

3.3.6 Obtain approval of all the designs and drawings detailed above from the University after incorporating university's suggestions and modifications.

3.3.7 Prepare estimates of all works on the basis of Plinth Area Rates of C.P.W.D. adjusted with relevant factors as defined by CPWD for Punjab. Estimate for the components not covered in the CPWD Plinth Area Rates may be prepared on the basis of the latest DSR (Delhi Schedule of Rates) while for components not covered in neither CPWD nor Delhi schedules, the prevailing market rates may be adopted.

### 3.4 Architectural Design Services - Working Drawings [Stage 2]:

3.4.1 Prepare detailed working drawings relating to construction of each building, which includes complete architectural, structural and services drawings covering electrical installations, HVAC, fire detection and fire fighting, internal water supply and sanitary installations, communications, details of soil, waste and rain water pipes, man holes, schedule and details of doors and windows, staircases and railings, etc. as per the requirement.

3.4.2 Prepare detailed working drawings of all services including water supply, water tanks, drainage, sewerage, electrical, communication, HVAC, fire detection and fire protection, fire tank, solid waste management, rain water harvesting, recycling of waste water, irrigation system, use of solar energy, landscape, surface drainage, water management, open space, roads, parking, hard and soft areas, walls, gates and fences, landscape structure and features, garden furniture, illumination design and other services as may be indicated by the University.



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3.4.3 Prepare detailed working drawings, specifications and schedule of quantities in respect of all the components mentioned above sufficient to prepare detailed estimates of cost and tender documents and covering aspects like mode of measurement, method of payments, quality control procedures on materials and works and other conditions of contract.

3.4.4 Submit supporting design calculations of the structural design / drawings for approval of the University and also assist the University in getting the same vetted from proof consultants, appointed by the University. Fees of the proof consultant shall be borne by the University.

3.4.5 Prepare detailed specifications and analysis of rates for all non Delhi Schedule of Rates schedule items of work proposed in the drawings and their estimates.

3.4.6 Prepare schedule of quantities, supported with measurement sheets for all the works and give specifications and other relevant details sufficient to prepare the tender documents. The tenders will be invited by the University.

3.4.7 Prepare detailed cost estimates.

3.4.8 Analyze and evaluate the tenders and make recommendations in respect of selection of Contractor as and when required.

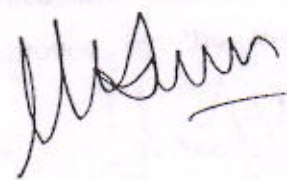
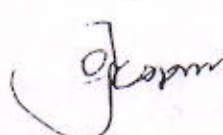
### **3.5 Architectural Design Services - Construction Drawings [Stage 3]:**

3.5.1 Prepare and issue working drawings and details for proper execution of works during construction as required or asked for by the University.

3.5.2 Check and approve shop drawings submitted by the contractor / vendors.

3.5.3 Render advice on the suitability of various samples of materials and components if asked for by the University.

3.5.4 In order to ensure that the work at site proceeds in accordance with the contract documents / drawings and to exercise time and quality controls, the day to day supervision will be carried out by a team headed by a construction manager, who shall work under the guidance and direction of the Architect and shall be appointed and paid by the university. This team will also be responsible to verify construction with drawing dimension, check JMB ( to be prepared jointly by the contractor and the team) and send a checked bill to the Architect for their certification and release of payment to the contractor.



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- 3.5.5 Visit the site of work, at intervals to be decided by the University from time to time, to clarify any decision, offer interpretation of the drawings/specifications, attend conferences, meetings to ensure that the project proceeds in accordance with the approved drawings/specifications and keep the University informed and render advice on any issue related with construction of project, wherever necessary or asked for by the University.
- 3.5.6 Certification of bills by the architect before making any payment to the contractor as per the actual work done as mentioned in clause 3.5.4 above.
- 3.5.7 Issue Certificate of Virtual Completion of works.

### **3.6 Architectural Design Services - Completion [Stage 4]:**

- 3.6.1 Prepare and submit completion reports and drawings for the project.
- 3.6.2 The Architect shall issue two sets of "As Built" drawings including services and structures and one CD as per the data provided by the Team / University.
- 3.6.3 As required and assist the university in obtaining "completion /occupancy certificate" from the statutory authority, wherever required.
- 3.6.4 The Architect shall also prepare an integrated layout plan of the University campus showing all the services as finally laid as per the data provided by the Project Management Team / University.
- 3.6.5 The Architect shall provide technical data for obtaining all service connections from various civic authorities.

### **4.0 PROFESSIONAL FEE:**

In consideration of the professional services rendered by the Architect in accordance with the scope of work and schedule of services given in Clause 2.0 and 3.0 of this agreement, they shall be paid total professional fee of lump-sum Rs. 15 lakhs (lump-sum Rupees fifteen lakhs) for the Master Plan and for Architectural Design Services @1.94% (one point ninety four percent) of the actual cost of civil works on completion in accordance with the schedule of payment mentioned in clause 5.0 of this agreement.

- 4.1 Whereas the complete design of the master plan (including making of model) is required to be completed in one stage, the university may undertake the construction work in phases. Each phase approved by the competent



authority of the university shall be conveyed to the Architects by the University.

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## 5.0 SCHEDULE OF PAYMENT:

### 5.1 Master Plan Design

The Architect shall be paid professional fee for Designing the Master Plan in the following stages plus other charges and reimbursable expenses as agreed upon:

<b>Stage 1</b>	
On submitting concept design showing circulation, parking, open spaces and external Architectural form in plan	50% of total fees payable.
<b>Stage 2</b>	
On submitting the final master plan after incorporating modification suggested by University's, <u>model</u> and preliminary project cost on plinth area basis and approval thereof from the University	100% of total fees payable less payment already made at Stage 1.

### 5.2 Architectural Design Services:

The Architect shall be paid professional fee for Comprehensive Architectural Design in the following stages plus other charges and reimbursable expenses as agreed upon:

<b>Stage 1 (Preliminary Drawings)</b>	
On completing of preliminary designs duly Incorporating University's brief along with the preliminary estimates thereof stage 1 clause 3.3.	15% of total fees payable. ✓
On incorporating University's suggestions in preliminary designs and drawings and submitting final design and approval thereof from the University	30% of total fees payable less payment already made.
<b>Stage 2 (Working Drawings)</b>	
Upon submission of <u>working drawings</u> , specifications and schedule of quantities and <u>documents and drawings</u>	45% of the total fees payable less payment

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sufficient for the University to invite tenders as given in Stage 2 clause 3.4.	already made.
Upon award of contract to the successful bidder as given in Stage 2 clause 3.4.	60% of the total fees payable less payment already made.
Stage 3 (Construction Drawings)	
a) On submitting working drawings and details required for commencement of work at site as per Stage 3 clause 3.5.	75% of the total fees payable less payment already made.
b) (i) On completion of 25% of the work.	80% of the total fees payable less payment already made.
(ii) On completion of 50% of the work.	85% of the total fees payable less payment already made.
(iii) On completion of 75% of the work.	90% of the total fees payable less payment already made.
(iv) On Virtual Completion of work.	95% of the total fees payable less payment already made.
Stage 4	
On submitting completion Report and drawings for issuance of completion/occupancy certificate. Issue of "As Built" drawings.	100% of the fees payable less payment already made.

#### 6.0 EFFECTING PAYMENT TO THE ARCHITECT:

6.1 The fee payable to the Architect shall be computed on the actual cost of works on completion. The payment due to the Architect at different stages be computed on the following basis:

- 6.1.1 At Stage 1 : preliminary Cost Estimates
- 6.1.2 At Stage 2 : Detailed Cost Estimates
- 6.1.3 At Stage 3 : Accepted Tender Cost

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- 6.1.4 At Stage 4 : Actual completion Cost
- 6.2 Progressive, on account payment shall be made by the University to the Architect against any of the above stages based on the quantum of work done during that stage as may be mutually agreed between the Architect and the University.
- 6.3 No deductions shall be made from the fee of the Architect on account of penalty, liquidated damages, part rates or other sums withheld from the payment of the contractors.
- 6.4 When the work is executed wholly or in part with old materials or labour or carriage is provided by the University, the % fee shall be calculated as if the work had been executed wholly by the contractor supplying all labour and new materials.
- 6.5 The actual cost of the completed work shall include cost of execution of assigned works, referred to in Scope of Work and also cost of equipment and machinery such as transformers, diesel generating sets, sub-station, lifts, a/c machines, pumps and motors, water / sewage plants, etc., but excluding the cost of land.
- 6.6 Any tax levied by law from time to time during the life of this contract, such as service tax, etc., contingent to professional services rendered by the Architect, shall be payable by the University, over and above the gross fees charged by the Architects in relation to the services provided.

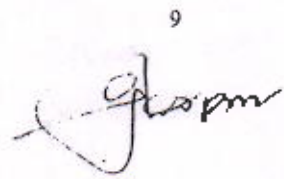
**7.0 REIMBURSABLE EXPENSES:**

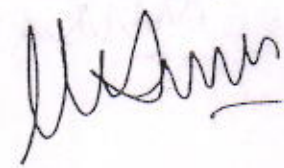
In addition to the fee payable under the preceding clauses, the University will reimburse the Architects towards actual expenses of the following:

- 7.1 cost of presentation models , computer simulation , presentation drawings , etc , prepared at the instance of the university for purposes other than the design and execution of the project.
- 7.2 For travel to be undertaken beyond 5 free visits, architects, his staff & consultants shall be paid as follows:

- a. I Class AC fare from city of Architects and their Consultants office to Jalandhar/Chandigarh/as case may be or as per actual if traveling by taxi.



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- b. Free boarding and lodging equivalent to 3 star hotel.
  - c. Local transport both in the city of Architects/ Consultants, Jalandhar/Chandigarh/as case may be.
- 7.3 Per diem per person will be paid @ Rs. 750/- per day for senior staff and @ Rs. 500/- per day for the remaining staff.

- 7.4 Cost of tender documents / drawings if prepared in the Architects office shall be paid extra.

#### 8.0 UNIVERSITY'S ROLE AND RESPONSIBILITIES:

The University shall discharge all its obligations connected with the project and engagement of the Architect as follows:

- 8.1 To provide detailed requirements of the project.
- 8.2 To provide a site plan, to a suitable scale, showing boundaries, contours at suitable intervals, existing physical features including any existing roads, paths, trees, existing structures, existing service and utility lines and such lines to which the proposed services can be connected.
- 8.3 To furnish reports on soil conditions and water tests reports etc. as required from time to time by the Architect.
- 8.4 To pay all the fees, levies, security deposits in respect of statutory sanctions if any.
- 8.5 To honour Architect's bill within twenty-one days of its submission.
- 8.6 To appoint a Team headed by a construction manager, (clerk of works / site supervisor or construction management agency) as per the architect advise.

#### 9.0 EXECUTION OF THE ASSIGNMENT:

- 9.1 The architect shall keep the university informed about the progress of the work in his office.
- 9.2 The Architects shall appoint specialized consultants for the execution of the project.
- 9.3 The architect shall, if requested make available the design calculations.

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- 9.4 All the stages of work shall be completed by the Architects and the necessary approvals shall be given by the University.
- 9.5 The Architects shall supply to the University, free of cost, upto six sets of drawings at different stages. Any additional sets required by the University shall be paid for on actual cost of reproduction basis.
- 9.6 The Architects shall not make any deviations, alterations or omissions from the approved drawings, involving financial implications without prior consent of the University
- 9.7 The Architect shall exercise all reasonable skill, care and diligence in the discharge of his duties and shall exercise such general superintendence and inspection as may be necessary to ensure that works are structurally sound and are being executed in accordance with the approved drawings/specification.
- 9.8 If at any time after the execution of this agreement, and commencement of work, the University for any reasons whatsoever, does not require the whole or part of the scheme as specified in this agreement to be performed by the Architects, the University shall give one month's notice in writing to this effect to the Architects, who shall thereupon have no claim to any payment or compensation whatsoever, on account of any profit or advantage which he would have derived had the work not been so curtailed. However the Architects shall be entitled to payment on a pro-rata basis, for the work done, submitted and got approved by them upto the time of such notice.

#### **10.0 TIME SCHEDULE:**

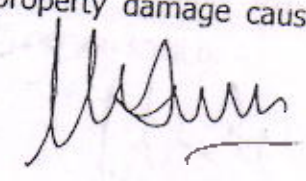
- 10.1 The architect shall, in consultation with the University, prepare a Time Schedule in respect of various services (given in this agreement) to be rendered. These are placed at appendix -A.

#### **11.0 LIABILITY OF THE ARCHITECT:**

- 11.1 The Architect's liability shall be limited to a maximum period of two years after the issue of completion/occupancy certificate.

#### **12.0 INDEMINIFICATION:**

- 12.1 In the event that a claim or suit is brought against the Architects by any third party for damages arising from personal injury or property damage caused





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wholly by the University, then the University shall indemnify the Architects fully and vice versa in the event that a claim or suit is brought against the University by any third party for damages arising from personal injury or property damage caused wholly by the Architects, or a consultant appointed by the architect, then the Architects shall indemnify the University fully.

### **13.0 OWNERSHIP OF COPYRIGHT:**

13.1 Architectural design is an intellectual property of the Architects. The drawings, specifications, documents and models as instruments of service are the property of the Architects whether the project, for which they are made, is executed or not. The University shall retain copies of the Architects' drawings, specifications and other documents for its information and use in connection with the project. These shall not be used for any other project by the University or the Architects or any other person, excepting for a repetition on the same site as required by the University and agreed to by the Architects.

### **14.0 TERMINATION OF AGREEMENT:**

- 14.1 Agreement between the Architect and the University may be terminated by either one giving the other a written notice of not less than 30 (thirty) days, should either fail substantially to perform his part of responsibilities/ duties, so long as the failure is not caused by the one initiating the termination.
- 14.2 When termination of this Agreement is not related or attributable, directly to any act, omission, neglect or default on the part of the Architect, the Architect shall be entitled to Professional fees.
- 14.3 In the event of University having terminated the agreement, the University shall have right to employ another architect to complete the work, after making payment.

### **15.0 ARBITRATION:**

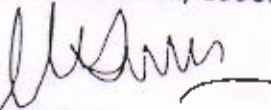
All disputes and differences, arising out of or relating to this agreement and/or incidental there-to will be referred for adjudication through arbitration by a sole arbitrator to be nominated or appointed with mutual consent of the Architect and University. If the arbitrator so appointed is unable or unwilling to act or resigns his appointment due to any reason whatsoever another sole arbitrator shall be appointed in the manner aforesaid. Such person shall be

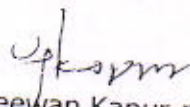


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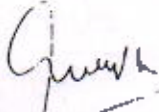
entitled to proceed with the reference from the stage at which it was left by his predecessor.

The arbitration shall be conducted as per the provisions of the Arbitration and Conciliation Act, 1996.

  
Dr. M.S Grewal  
Registrar, PTU

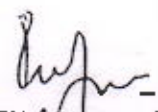
  
Mr. Jeewan Kapur-partner  
M/s Archigroup Architects

Witness

  
1 Dr. V.K. Arora  
Dean Academics, PTU

2.

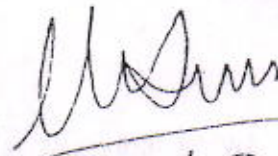
Witness

  
1 Mr. Rajeev Aggarwal  
M/s Archigroup, Architect,  
Delhi

2.

## Appendix-A

The architect is to provide drawings containing the terms and conditions, construction drawings, bill of quantities	15 Oct 2005
Drawings to be handed over to the shortlisted companies for submitting their financial bids.	18 October 2005
Last date of receipt of financial bids from the shortlisted companies	8 November 2005
Finalisation of bids	22 November, 2005
Award of contract	25 November, 2005

  
01/9/05





**A. N. Chowdhry**  
Chief Engineer (Construction)

**PTU** PUNJAB  
TECHNICAL  
UNIVERSITY  
ਪੰਜਾਬ ਟੈਕਨੀਕਲ ਯੂਨੀਵਰਸਿਟੀ ਜਲੰਧਰ

Ref No. PTU/CONV-1/SBCC-2/131-588/8913

Date 30-06-2009

1. Sh.N.S.Kalsi Joint Director (CS)  
Room No.193-AZ,North Block,  
Ministry of Home Affair-Govt.of India, New Delhi-1
2. Dr.R.S.Khandpur,Member BOG,  
Director General,Pushpa Gujral Science City,  
SCO 60-61,3<sup>rd</sup> Floor, Sector 34-Chandigarh.
3. Sh.Chandra Mohan, Member BOG,  
H.No.202,Sector 36-A Chandigarh.
4. Sh.S.L.Kaushal,  
Advisor (Architecture),PTU  
2865,Sector 42-C Chandigarh.
5. Smt.Sarojini Gautam Sharda PCS,  
Registrar-PTU.

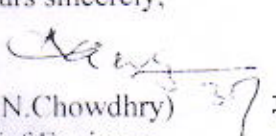
**Subject:** Minutes of the 20<sup>th</sup> Meeting of the Standing Building Construction Committee held on 22/6/2009 under the Chair personship of Ms.Tejinder Kaur,IAS, Principal Secretary, Technical Education,Govt.of Punjab in her office at Chandigarh.

Dear Sir,

Please find enclosed herewith minutes of the above said meeting for your kind information and further necessary action, please.

Thanking you,

Yours sincerely,

  
(A.N.Chowdhry)  
Chief Engineer.

Incl.As above.  
C.C.

1. Sh.N.S.Bhatti Advisor (Electrical) H.No.3040 Sector 19-D Chandigarh.
2. Sh.V.D.Sharma,Executive Engineer-PTU.
3. C.O.F-Jalandhar alongwith copy of the Agenda.

PUNJAB TECHNICAL UNIVERSITY

**Subject:-** Minutes of the 20<sup>th</sup> Meeting of the Standing Building Construction Committee held on 22/06/2009 under the Chairmanship of Ms. Tejinder Kaur, IAS, Principal Secretary, Technical Education, Govt of Punjab in her office at Chandigarh.

**Present:**

1. Dr. R. S. Khandpur, DG, PGSC, Member BOG.
2. Sh. Chandra Mohan, Member BOG.
3. Sh. S. L. Kaushal, Advisor (Architecture) PTU.
4. Ms. Sarojini Gautam Sharda PCS, Registrar, PTU.
5. Sh. A. N. Chowdhry, Chief Engineer, PTU.
6. Sh. Sh. N. S. Banti, Advisor (Electrical), PTU.
7. Sh. V. D. Sharma, Executive Engineer, PTU.

**Item No. 20.1 Extension of Time period of Contract of M/S IVRCL, Civil Contractor.**

In view of the explanation provided by the Agency, the Committee granted time extension for the completion of the work upto 31/03/2009.

**Item No. 20.2 Approval of Tender of Bituminous Road Work at the Gate- Rs. 1,91,585/-**

- (a) Approval of the tender granted.
- (b) The Committee however, felt that for small works, the University may grant approval of estimates and tenders at its own level rather than approaching this Committee. It was decided to delegate the power of the Committee to approve expenditure upto Rs. 50.00 Lacs in this regard to the V.C.

**Item No. 20.3 Approval of Detailed Estimate of Landscaping Work of Additional Area around Administration Building in New Campus of PTU.**

Approved.

**Item No. 20.4 Status of Phase II of Construction.**

Noted. Architectural Sub Committee meeting on 26/06/2009 may review the Architecture of Residential Units of type IV to keep these as G+2 instead of G+3.



**Item No. 20.5 Extension of Services of Staff of Construction Cell.**

- a) The Committee approved extension of the staff upto dates indicated against each as under:-

Sr. No.	Name	Designation	Date
1	Sh. A. N. Chowdhry	Chief Engineer	31-03-2010
2	Sh. N. S. Bhatti	Advisor (Electrical)	31-03-2010
3	Sh. Amarjeet Singh Soni	AEE (Electrical)	31-08-2009
4	Sh. R. S. Ball	AEE (Civil)	31-08-2009
5	Sh. V. D. Sharma	AEE (Civil)	31-03-2010
6	Sh. Resham Chand	AE (AC)	31-08-2009
7	Sh. Shingara Singh Safri	AE(Electrical)	31-03-2009
8	Sh. Sunil Bhasin	AE (Civil)	31-03-2010
9	Sh. Remesh Chander Sharma	AE (PH)	31-08-2009
10	Sh. Baldev Singh	Quantity Surveyor	31-03-2010
11	Sh. Ram Parkash	Sr. Auditor	31-03-2010
12	Sh. Dilbag Singh	Quantity Surveyor	31-03-2010
13	Sh. Surinder Pal	Pvt. Secretary	31-03-2010

- b) The Committee feels that there is an urgent need to set up a Building Maintenance Cell in the University to look after the sophisticated and latest Electrical and Air-conditioning equipments etc. installed in the University and qualified and experienced staff be recruited immediately.
- c) Sh.A.N.Chowdhry Chief Engineer pointed out that increments/pay raise to the construction staff has not been granted though recommended twice by the Committee. Registrar,PTU promised to look into it.

**Item No.20.6 Recasting of Committees regarding Design/Construction Procedures.**

Proposal approved. The Committee appreciates and brings on record the commendable work done by Dr.R.S.Khandpur for Phase-I.

**Item No. 20.7 Lumpsum Payment of Rs.6.00 lacs to M/S Archigroup, Delhi for extra work for submission of drawings of Phase-II for approval from JDA,PPCB and Environment Clearance.**

Approved.

Chief Engineer-PTU

3/3/6



Er. H.P. Singh  
Executive Engineer

ਪੰਜਾਬ ਟੈਕਨੀਕਲ ਯੂਨੀਵਰਸਿਟੀ ਜਲੰਧਰ

**PTU** PUNJAB  
TECHNICAL  
UNIVERSITY

Est'd Under Punjab Technical University Act, 1996  
(Punjab Act No. 1 of 1997)

Ref No PTU/CC/524/28948

Dated 19-07-2011

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

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

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

**Dr. Buta Singh,**  
Dean/Academics, Punjab Technical University, Jalandhar.

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

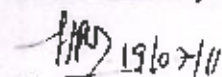
**Sub : Construction of new campus of Punjab Technical University - 27<sup>th</sup> meeting of the  
Standing Building Construction Committee.**

Dear Sir,

Please find enclosed herewith minutes of the above said meeting for kind information and further necessary action please. Comments, if any, may please be forwarded within 10 days of issue of this letter.

Thanking you

Yours Sincerely,

  
19/07/11

(H. P. Singh)  
Executive Engineer

Copy to :

- i. Dr. R. S. Khandpur, Director General, PGSC, SCO 60-61, Sector 34-A, Chandigarh for kind information please.
- ii. Sh. Rajiv Aggarwal, M/s Archigroup Architects, A-14, Sector-15, Noida -201301.  
(Minutes of agenda items No. 27.1, 27.2, 27.4 to 27.7)

**eINDIA 2010**

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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 : exeptu@gmail.com



## PUNJAB TECHNICAL UNIVERSITY, JALANDHAR

Minutes of the 27<sup>th</sup> Meeting of the Building Construction Committee held on 13.07.2011 under the Chairmanship of Dr. R. S. Khandpur, Director General, PGSC in his office at Chandigarh.

Present :

1. Sh. Chander Mohan, Member/BOG,
  2. Sh. S.L. Kaushal, Chief Architect (Retd.), Punjab
  3. Dr. Nachhattar Singh, Advisor to VC and Dean (P&D), PTU
  4. Dr. Buta Singh, Dean/Academics, PTU
  5. Sh. H.S. Bains, Registrar, PTU
  6. Sh. H. P. Singh, Executive Engineer, PTU
  7. Sh. Rajiv Aggarwal, Architect
  8. Ms. Mansi Bedi, Architect
- } From Archigroup  
} Architects, Noida.

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

The minutes of 26<sup>th</sup> meeting of Standing Building Construction Committee held on 26.05.2011 were confirmed by all the members except for some comments received against item No. 26.3 (Para 3) from Sh. S. R. Aggarwal, Chief Engineer (Retd), special invitee in 26<sup>th</sup> meeting. The comments/observations received from Sh. Aggarwal were discussed in detail and the following was decided:

- Para 1) i : Agreed
- Para 1) ii : Agreed
- Para 2) : CPVC will be used in chases as these pipes have longer life and other advantages over GI pipes.
- Para 3) : It was decided that STP with FAB Technology will be provided for APIT campus, Kapurthala as provision for double piping for flushing system has not been kept in the buildings already constructed and treated water from STP will only be used for horticultural purposes. However, UV treatment system will be provided as per the requirements of Ministry of Environment. Considering the running and maintenance issues, it was decided that all STPs of PTU will be constructed with FAB technology as the same persons will be able to run and maintain all the STPs.

**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 were completed and discussed in the present meeting.
- 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 the proposed PIT at main campus, Kapurthala. The Architect presented 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.**

In the bids invited for 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, M/s Archigroup Architects, Noida scored the highest overall score and is eligible for award of work/negotiations in terms of bid conditions. Committee negotiated the rates with the representative of M/s Archigroup Architects, Noida and after discussions, M/s Archigroup Architects, Noida reduced their rates from 2.04% to 2.00%.

Committee recommends award of this work to M/s Archigroup Architects, Noida at negotiated rates of 2.00% . All terms and conditions of tender will remain the same.

**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.**

The rough cost estimates 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 plinth area rate of CPWD amounting to Rs. 97.71 Crores were approved.

**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.**

After approval of the Estimates by the BoG, tender will be invited as per the following system:

1. Open tenders in two packet systems will be invited for engagement of contractors.
2. All civil, internal electrical, Fire detection, lifts, plumbing works of all the buildings will be included in one package.





3. Specialized agencies will be engaged for specialized works such as external electrical works, fire fighting works, external development, Pump houses, STP, Air-Conditioning etc.
4. PTU is not inclined to appoint engineering staff for continuous supervision of works as there may be utilization problems for this staff after completion of the works. So, it was decided to engage supervision consultant, preferably a central Govt. PSU, through invitation of tenders for which EE/PTU was advised to prepare the bid document and present the same in the next meeting for discussions and approval.

**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 presented the proposed '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. After lot of discussions/deliberation, following finishing schedule has been approved:

#### 1. COLLEGE BUILDINGS:

• KOTA STONE:	All areas except entrance cores, staircases, toilets & entrance courts (with 20% marble in Pattern)
• GRANITE:	Entrance cores & general staircase
• VITRIFIED TILES (NON SKID):	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	Corridor Walls
• BLACK GRANITE COUNTERTOP	Research Labs (Only on one side), Canteen, Pantries

#### 2. LIBRARY

• KOTA STONE:	Entrance Courts (Kota with 20% granite in Pattern), entrance steps, All areas except toilets and general Staircase(Kota with 20% marble in Pattern)
• VITRIFIED TILES:	Toilets
• GRANITE:	General Staircase

*h*

- IPS: AHU
- PLASTIC EMULSION WITH PUTTY: All areas except toilets, kitchen, AHU's and Utilities

- ACRYLIC WASHABLE DISTEMPER WITH PUTTY: Toilets, Kitchen, AHU
- DRY DISTEMPER: Utilities
- BLACK GRANITE COUNTERTOP: Kitchen, Serving (cafeteria), Issue Counter

### 3. SEMINAR HALL

- VITRIFIED TILES: Toilets
- KOTA STONE: Seminar hall (carpet optional), Stage, Entrance Foyer (with 20% marble in Pattern), Entrance Steps
- PLASTIC EMULSION WITH PUTTY: All areas except toilets
- ACRYLIC WASHABLE DISTEMPER WITH PUTTY: Toilets
- BLACK GRANITE COUNTERTOP: Toilets

### 4. EXTERNAL FINISH

- RED AND WHITE (very light biscuit color) SAND STONE: As per elevation

### 5. MISCELLANEOUS

- SOUND INSULATION: In seminar, AV room, meeting room and Lecture halls as required
- FALSE CEILING (Gypsum & Armstrong Boards): As required

### 6. DOORS AND WINDOWS

- WINDOWS: Anodized aluminum with reflective single glass
- STRUCTURAL GLAZING: Anodized aluminum with reflective glass (single/double as required)
- DOORS: Aluminum Frames with laminated Flush Door shutters


✓



Item No. 27.7 :

**Payment to the Architect for preparation of drawings and data to be submitted to Department of Town and Country Planning for approval of plans and to the Ministry of Environment and Forest for Environmental Clearance for APIT and PIT works at main campus.**

It was informed to the committee that PTU is to submit drawings and data to the Department of Town and Country Planning for approval of plans and to the Ministry of Environment and Forest for Environmental Clearance for APIT and PIT works at main campus. All these drawings and data are to be prepared by the Architect but the same is not included in his scope of work. For performing similar work in respect of Phase-II (A) works, a payment of Rs. 6.00 lacs has been approved in 20<sup>th</sup> meeting of the Building Construction Committee (Agenda Item No. 20.7). The Architect has requested for similar payment in respect of APIT and PIT, Kapurthala works. The Committee agreed and approved payment on proportionate basis of the covered area of the proposed buildings in Phase II (B).



# **ANNEXURE-D**



**The Executive Engineer,  
Punjab Technical University,  
Jalandhar**

C  
JD  
27/3/15

27.03.15

**Sub : PIT Mansa-Painting of Boundary Wall.**

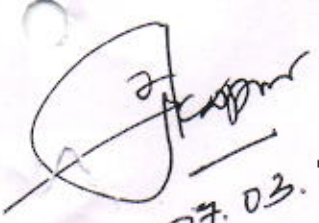
Dear Sir,

In our recent visit to PIT Mansa site, it has been noted that finish of the precast panels fixed for three sides of the boundary wall is not up to the level as it was envisaged at the time of preparation of design/estimate. It is suggested that all the sides of the boundary wall should be got painted to have better appearance, finish and durability. An estimate for an amount of Rs. 36,35,055/- for painting of all the walls of the campus is submitted alongwith for kind consideration and approval please.

Thanking you

  
**Jeewan Kapur  
Architect**

No.	Description of Item	Unit	Qty	Rate	Amount
1	Finishing walls with textured exterior paint of required shade New work (Two or more coats applied @ 3.28 ltr/10 sqm) over and including base coat of water proofing cement paint applied @ 2.20kg/ 10 sqm	Sqm	21500.25	154.20	33 15 339
2	Finishing walls with Rustick textured exterior paint of required shade New work (Two or more coats applied @ 3.28 ltr/10 sqm) over and including base coat of water proofing cement paint applied @ 2.20kg/ 10 sqm	Sqm	1034.68	309.00	3 19 716
<b>Total</b>					<b>36 35 055</b>

  
 27.03.2015