

BILL OF QUANTITIES						
RECARPETING, WIDENING & DEVELOPMENT OF FOOTPATH OF EXISTING CAMPUS ROAD, JAMIA HAMDARD UNIVERSITY						
S.No.	DSR 2014	DESCRIPTION	Qty	UNIT	ESTIMATED	
	(MR ITEM NO)				RATE	AMOUNT(RS.)
		DSR-2014				
1	2.6	Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lead upto 50m and lift upto 1.5m, disposed earth to be levelled and neatly dressed.				
	2.6.1	All kinds of soil	1160.00	Cum		
2	2.8	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of campus in side area				
	2.8.1	All Kinds of Soil	500.00	Cum		
3	2.25	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m. (Note: If required the additional quantity of filling material will be used available material with in campus on the same rates no additional cost will be consider for the lifting and filling the same.	600.00	Cum		
4	4.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :				
	4.1.5	1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	48.00	Cum		
5	4.3	Centering and shuttering including strutting, propping etc. and emoval of form work for :				
	4.3.1	Foundations, footings, bases for columns	205.00	Sqm		
6	4.4	Providing and laying cement concrete in kerbs, steps and the like at or near ground level excluding the cost of centering, shuttering and finishing.				
	4.4.1	1:2:4 (1 Cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	63.00	Cum		

7	15.58	Demolishing R.C.C. work by mechanical means and stockpiling at designated locations and disposal of dismantled materials up to a lead of 1 kilometre, stacking serviceable and unserviceable material separately including cutting reinforcement bars.	58.00	Cum		
8	16.1	Preparation and consolidation of sub grade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22.5 cm depth, dressing to camber and consolidating with road roller including making good the undulations etc. and re-rolling the sub grade and disposal of surplus earth with lead upto 50 metres.	1800.00	Sqm		
9	16.3	Supplying and stacking at site.				
	16.3.1	90 mm to 45 mm size stone aggregate	150.00	Cum		
	16.3.2	63 mm to 45 mm size stone aggregate	505.00	Cum		
	16.3.9	Good earth 30mm	250.00	Cum		
10	16.4	Laying spreading and compacting stone aggregate of specified sizes to WBM specifications in uniform thickness, hand picking, rolling with 3 wheeled road/vibratory roller 8-10 tonne capacity in stages to proper grade and camber, applying and brooming requisite type of screening/binding material to fill up interstices of coarse aggregate, watering and compacting to the required density.	905.00	Cum		
11	16.7	Brick edging in full brick width and half brick depth including excavation, refilling and disposal of surplus earth lead upto 50 metres.				
	16.7.1	With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	3800.00	Mtr		
12	16.12	Dry brick pitching half brick thick in drains including supply of bricks and preparing the surface complete:				
	16.12.1	With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	63.00	Sqm		
13	16.31	Providing and applying tack coat using bitumen emulsion conforming to IS: 8887, using emulsion pressure distributor including preparing the surface & cleaning with mechanical broom.				
	16.31.1	With rapid setting bitumen emulsion				
	16.31.1.1	On W.B.M / W.M.M. @ 0.4kg/sqm	750.00	Sqm		
	16.31.1.2	On bituminous surface @ 0.25kg/sqm	14221.00	Sqm		

14	16.50	Providing and fixing Glow studs of size 100x20 mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretrite) or HIP (High impact polystyrene) or ABS having electronically welded micro- prismatic lens with abrasion resistant coating as approved by Engineer in charge. The glow stud shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro- reflective surface shall be 35 (+/-5) degrees to base. The reflective panels on both sides with at least 12 cm of reflective area up each side. The luminance intensity should be as per the C42 specification and shall be tested as described in ASTM I: 809 as recommended in BS: 873 part 4 : 1973. The studs shall be fixed to the Road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge.	1800.00	Each		
15	16.54	Providing and laying Dense Graded Bituminous Macadam using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equiped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge.				
	16.54.1	50 to 100 mm average compacted thickness with bitumen of grade VG-30 @5% (percentage by weight of total mix) and lime filler @ 2% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	88.13	Tons		
16	16.57	Providing and laying Bituminous concrete using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equiped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge				
	16.57.1	40/ 50 mm compacted thickness with bitumen of grade VG-30 @ 5.2% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	1675.13	Tons		

17	16.69	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement concrete in position to the required line, level and curvature jointed with cement mortar 1:3 (1 cement : 3 coarse sand), including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5 mm), including making drainage opening wherever required complete etc. as per direction of Engineer-in-Charge (length of finished kerb edging shall be measured for payment). (Precast C.C. kerb stone shall be approved by Engineer-in-Charge).	124.92	Cum		
18	19.6	Providing and laying non-pressure NP2 class (light duty) R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete :				
	19.6.5	150mm dia. R.C.C. Pipe	2500.00	Mtr		
	19.6.5	300mm dia. R.C.C. Pipe	285.00	Mtr		
19	19.7	Constructing brick masonry manhole in cement mortar 1:4 (1 cement : 4 coarse sand) with R.C.C. top slab with 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 mix (1 cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement complete as per standard design:				
	19.7.1	Inside size 90x80cm and 45cm deep including C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover and frame to be not less than 38 kg (weight of cover 23kg and weight of frame 15 kg) :				
	19.7.1.1	With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	45.00	Each		
20	19.8	Extra for depth for manholes :				
	19.8.1	Size 90x80 cm				
	19.8.1.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	15.00	Mtr		
21	19.28	Constructing brick masonry road gully chamber 45x45x77.5 cm with bricks in cement mortar 1:4 (1 cement : 4 coarse sand) with precast R.C.C. vertical grating complete as per standard design :				
	19.28.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	15.00	Each		

		Non-DSR				
22	NS - 1	Providing and laying 60mm thick factory made cement concrete interlocking grass grid paver block of M -30 grade made by block making machine with strong vibratory compaction, of approved size, design & shape, laid in required colour and pattern over and including 50mm thick compacted bed of coarse sand, filling the joints with fine sand etc. all complete as per the direction of Engineer-in-charge.	1375.00	Sqm		
		Total of (DSR-2014)				
		Total of (Non-DSR)				
		Grand Total				

A LIST OF APPROVED MAKES - CIVIL WORKS	
1 Ordinary Portiant Cement	L&T, Ultra Tech, ACC , or other brands approved by the Architect
2 Steel Reinforcement Bars	TISCO,SAIL RINL, Rathí Udyog Ltd.
3 Structural Steel Sections	TISCO,SAIL RINL, Supreme..
4 Stone Aggregate (Blue/Black)	Sohna, Pali or other approved
5 Anti Termite Treatment	Bayer or any Company member of IPCA approved by architect.
6 Water proof Shuttering	Century, Green, Duro/HaryanaPlywood
7 Teak Wood	1st Class Indian Teak wood of Dandeli
8 Rubberwood/SteamBeach Wood/Specified Wood	As per specie and sourcing country
9 Flush Doors (ISI)	Merino/Shakti met-Dor, Kitply,Duro
10 Laminates	Merino, Greenlam, Century,
11 Laminates-Acid Resistant	Merino,Greenlam
12 laminate-Anti Bacterial	Merino, Greenlam
13 Hardware	Hettich, Haffle,Dorma, Geze, Ozone, Doorset, Yale
14 M.S. Fitting (ISI)	Raja, Sartaj, Nova
15 Pressed Steed Frame / Moulded Steel (Door & Windows)	AGEW (Abmedabad), Raumus, Shiva, NCL Ltd, (Hyd.
16 Rolling Shutters	Rama Industries, Prakash& Co. Jyoti Industries
17 Steel Doors/Windows (Sections)	Maan, Mahabir
18 Paints	ICI, Asian, Berger, Nerolac
19 Water proof Paint	Apex(Asian),Super Snowcem (Killick Nixon),
20 Locks	Geze, Hettich, Dorset,Godrej, Yale
21 Terrazazo tiles	Nitco, Modern, Kajaria
22 Ceramic/Vitrified tiles	Kajaria, Nitco, Pavit, Asian, Marbonite
23 White Cement	Birla, JK Cements.
24 PVC fixtures	Caliplast, Brite, Fizopan.
25 Aerated autoclaved Concrete	BILT. (New Delhi)
26 Waterproofing	Structural Water proofing Co, Dr. Fixit, Overseas Water Proofing
27 Fastners/Anchors/Firestops	Hitli/Fischer
28 Building Chemicals/ Admixtures	Hilti/Fosroc/ Basf
29 Silicon Sealants	Dow Corning/GE
30 VHB Tape/Expandable Polystyrene	3M
31 Glass and Mirror	Saint Gobain/Guardian/Asahi
32 Aluminum Extuded Sections Euro Groove Profile-14 guage (2mm)	Agarvanshi/Boruka/Jindal/HINDALCO
33 Polycarbonate	GE (Lexan), Danpalon
34 Door/Window Fittings SS 304/316 grade	Hettich,Haffle, Ozone, Yale
35 Hardware Heavy Duty Applications Door Closers/ Floor Spring/Auto. Doors	Dorma,Geze,Hettich,Briton
36 Hardware, & fittings	Hettich, Haffle, Yale, Dorma,,Dorset
37 Tile Adhesives	Weber, Lafarge, Keisel, Balendura

38 Lifts	Otis,Kone,Schildler,Mitsubishi
39 Expansion joint covers	CS, Inpro
40 SS Railings -304/316 Grade (Knock Down System)	Carlf, Q Railing
41 Rebar	Hilti,Fischer Fosroc
42 ACP	ALUCOBOND, REYNOBOND, KNAUF
43 Glass	Saint Gobain,Guardian,Glaverbel,
44 Glass Plain-Sheet	Saint Gobain,Guardian,HNG,Asahi
45 Mirror	Saint Gobain,Guardian
46 Pavers/Interlocking Tiles	Paveespania, Ecovision, Unistone, Pavit
47 Fire Doors	Shakti Met-Dor,Navair,Duro,GMP Tecnnical
48 Cubical Partitions	Merino-Besco, Trespa, Dorma
49 False Ceiling-Gypsum	Gyproc, Lafarge
50 False Ceiling-Grid Tiles	Ecophone, Armstrong, Anutone
51 False Ceiling-Metal(Aluminum)	Armstrong,Gyproc-SG,Anutone,Fameline
52 False Ceiling-Anti Bacterial(Al)	Armstrong, Fameline, Durlam
53 Acoustic Panels- Gypsum	Gyproc-SG, Armstrong, Anutone, Knauf Danoline
54 Acoustic Panels-Sound Soak	Gyproc-SG, Armstrong, Anutone
55 Wall Panelling-Acoustics	Anutone,Armstrong,Gyproc-SG,Eomac,Earcons, Dexune
56 Exterior Cladding-HPL	Fundermax,Trespa,Fameline,Verito,Stylam
57 Exterior Al.Louvers, Grills,Building Skin	Fameline
58 Flooring-Anti Bacterial	Armstrong,Polyflor,Forbo,Wonderfloor
59 Flooring-Anti Static	Armstrong,Polyflor,Forbo,Wonderfloor
60 Blinds	Hunter Douglas,MAC, Vista
61 Trac Curtains-Hospitals	Inpro,Knauf Danoline
62 Signage	Promoflex,Kich , Primesite
63 Insulation-Expended Polystyrene,Glasswool Board	Owens Corning UP Twiga,Owens Corning,Kimko
64 Acrylic Solid Surface	Dupont-Corian,Frmica,LG-HiMacs,Marino-Hanex
65 Furniture	Godrej,Wipro,BP Ergo,Amardeep,Featherlite
66 Fire/Acoustic Door	Navair,Shakti MetDoor
67 Zinc Roofing/Wall Cladding	Vm-Zinc

B LIST OF APPROVED MAKES OF EQUIPMENT-ELECTRICAL INTERNAL AND EXTERNAL

1 MV Panels	Dynamic/Pieco/Aura/SS.Panels/NEC
2 MCB Distribution Boards	L&T/Anchor Uno/HPL
3 Air Circuit Breakers	Merlin Gerin/ L&T/ABB/HPL
4 Moulded case Circuit Breaker	Merlin Gerin/ L&T/ABB/HPL
5 Miniature Circuit Breaker	Merlin Gerin/ L&T/ABB/HPL
6 Contactors and starters	Merlin Gerin/Siemens/ L&T
7 Voltage Transformer	AE/ Kappa.
8 Current Transformer	AE/ Kappa.
9 Push Buttons	Siemens/L&T/BCH.
10 Indicating Lamps	Siemens/L&T/BCH.
11 Fuses and fuse bases	Siemens/L&T
12 KWH Meters	Neptune/L&T/HPL
13 Selector switches and rotary switches	L&T/Kaycee.

14	Indicating Instruments	AE/Rishabh
15	Terminals	Elmex
16	Crimping type lugs	Dowells
17	Cable Glands	Dowells/Comet
18	Relays	ALSTOM/Easun & Reyrolle/ABB/L&T
19	Fuses and fuse bases	L&T/Siemens
20	Cables	Universal/Gloster/Indcab/Polycab/RALLISON
21	Capacitors	Siemens/L&T
22	HT breaker	Alstom/Crompton/Kirlosker
23	Transformers	Crompton/Kirlosker/Voltamp/Powerware(SAI)
24	Battery	Exide/Amaron/Standard
25	Battery charger	Volstat/AE
26	HT cable sealing kits	Raychem/Mseal/3M
27	Electric wire copper as per ISI-FRLS	Finolex/Skytone/HPL,POLYCAB,RALLISON
28	Switches/Boxes	MK with Cover Plate/Anchor Roma/Crabtree/Panasonic.
29	MCB,RCCB,DB	Legrand/MDS/Havells/Panasonic/ABB/HPL.
30	Electrical Pipes	AKG/BEC/ATUL PIPES
31	MS Pipes	TATA, Jindal Hissar
32	HDPE Pipes/Flexible	Duraline,Blue Diamond,Pioneer
33	DG Sets	Bhaskar,Jackson,Kriloskar,Caterpillar
34	Unitized Substation	
35	LED Lights	PHILIPS,HPL,WIPRO, BAJAJ
36	Internal Light	PHILIPS,HPL,WIPRO, BAJAJ
37	External Light	PHILIPS,HPL,WIPRO, SHEREDER, BAJAJ
C LIST OF APPROVED MAKES-PLUMBING AND FIRE FIGHTING		
1	Sunken Portion Treatment	SJP,MBT
2	Sanitary ware	Queo/PARRYWARE/
3	Seat Covers	Commander (heavy duty)
4	C.P. Fittings & Bathroom Accessories	Jaquar,Kohler,Crabtree, AQUAPLUS
5	Stainless Steel Sink	Neelkanth,Nirali,AMC, Jayna
6	G.I. Pipes	Tata, Jindal (Hissar)
7	G.I. Fittings	Unik, R brand, Zolot 'M' , Kent Hexagonal
8	Ball Valve	Zoloto/ARCO/CIM/NVR
9	Butterfly Valves	Audco/Advance/C&R/NVR
10	Non return valve : a) G.M. , b) C.I.	Leader/Zoloto,Advance,IVC/NVR
11	CI Pipes/Fittings (I.S:3989-1984)	Neco/CIAL
12	C.I Manhole Cover (IS:1726-1991)	Neco/RIF/BC
13	C.I. Grating	Neco/RIF/B.C
14	CI Pipes 'Class LA'	Kesoram/Electro Steel
15	Stoneware pipes/traps	Perfect/Burn/Anand
16	UPVC pipe fittings	Kitec Supreme/Finolex

17 Insulation	Lloyd's India Ltd./Vidoflex/K-Flex/Owensand Corning
18 SFRC Manhole Cover/Grating	K.K Manhole /S.K. Precast Concrete
19 Water Flow meter	Kay Cee/Kent
20 R.C.C Pipe	Jain Spun Pipe/Pragati
21 Automatic Flushing Cistem	Angash International/AOS
22 Water Supply Pumps	Grundfos/Calpeda/KSB
23 Sump Pumps	Grundfos/Calpeda/KSB
24 Motor	Siemens/Crompton/NGEF/Kirloskar
25 Filter	Thermax/Ion-Exchange/Purge
26 Dosing Pump	Asia LMI
27 Dosing Tank	Sintex/Roto Plast
28 Pressure Gauges	Fiebig/H-Guru
29 Level Controller	Minilec/Femac/Textronics
30 Strainers	Emerald/Zoloto/DS Engineers
31 Air Vent Valve	Oven trop (Germany)/RB/Sant
32 Flanges	Able 'H'/Class 150/Rohini
33 Ball Cock	GPA,Sant,L&K
34 Gun Metal Ball/Gate Valves	Leader,Sant,Advance,Zoloto/NVR
35 Fire Extinguishers ISI Marked	CeaseFire/MINIMAX, Safeguard
36 Fire Fighting First Aid Hose reel	Padmini,Kesara Plast,SAFE GUARD
37 R.R.L. Hose	Newage,Padmini,Kesar Plast
38 Hose Coupling Branch Pipe & Nozzle	Minimax,New age,Padmini/FLAME GUARD
39 Landing Valves IS:5290/FB Connection Draw Act	Minimax,Newage,Safeguard/FLAME GUARD
40 Water Supply Hydropneumatic System	DP Holland,Grundfos,Salmson
41 fire Pump	Grundfos/Kirloskar/M&P
42 M.S. Pipes	Tata, Jindal (Hissar)
43 pressure Swith	Indfoss/Danfoss
44 Flaw Switch	System Sensor/Rapid Control
45 Pypecoat	IWL/Pypkote
46 Anunciation Panel	Daksh/ Agni/ ASE
47 I.C.V.	HD/Tyko/Viking
48 Sprinklers	HD/Tyko/Viking
49 Butterfly / Check Valve	IVC / Zoloto / Advance/NVR
50 PPSU (Polypheylsulfone) Pipe	Poloplast
51 CPVC Pipes	Astral,Kisan
Concealed Cisterns	Gabberit,Kohler.Jaquar

D. HVAC List of Approved 'Makes'	
1 Airhandling units/Fan Section Balanced Air System	Edgetech/Waves/Ethos/Neutek/ Vikram
2 VRV units	Hitech/Bluestar/Samsung
3 Axial flow fan	Dalkin/Samsung/Mitsubishi Electric / L.G / Bluestar/Samsung
4 Inline fan	Krugar/Nicotra/Greenheck/Airflow/Conaire
5 Fresh air blower	Systemair /Greenheok/Ostberg
6 VFD for AHUs	Krugar/Nicotra/Greenheck
7 Starters/switchgear	Danfoss/Honeywell/Johnson
8 Control cables	Siemens/Larsen & Tubro/English Electric/Havells Finolex/Havells/Bonton
9 Power cables	Havells/KEI/Delton
10 Push button starters	Siemens/Control and Switchgear/Cutler Hammer/Victory Enterprises
11 Auxiliary relays/contractors	Siemens/L&T/Cutler Hammer/ Jyoti
12 Line type fuse	Siemens/English electric/L&T
13 Timer	Siemens/L&T/Cutler Hammer/English Electric
14 Cable plugs	Hax/ Dowells
15 Cable Glands	Dowells/Electromech
16 Terminal block	Elmex
17 Indicating lamps	Siemens/L&T/Control and Switch-Gear/Cutler Hammer
18 Selector switches	Siemens/L&T/Kaycee
19 Electrical panel	Electra Power/Adlec/Control Wel Switchgears
20 O/L relays with built in SPP	L&T/Miniles/Siemens
21 Grilles/Diffuser/VCD/Fire Damper	Caryaire/Trister/Servax/Airflow Airmaster/Ravistar/Balanced Air System
22 G.I. sheets	Fiberfill/Sail/Bhushan/National/jindal
23 G.I. Duct	Techno/Zeco/Rolastar
24 Duct and pipe supports	Gripples U.K.
25 Pipe G.I./M.S. Refrigerant (copper)PVC	Jindal/Tata/Surya Mandev/Rajco/Maxflow/Shrishyam Prakash Surya/Poly Pack/Hindustan
26 Insulation Nitrile rubber Polyethylene (XLPE)	K-flex/ Armacell Trocellene/Thermobreak/Thermoflex
27 Duct Treatment	Paramount
28 Cable Tray	Neddo/Universal/Mecano/Fedders Lloyd
29 Sequence controller	Proton/Siemens/Schneider
30 Copper cabling	Bonton/Havells

E LOW VOLTAGE SYSTEMS	
1 Controller,Reader EM-Lock	RBH/LENNEL/GE BELL/ALGTEC/DORMA
2 Boom Barrier & Flap Barriers	Gunnebo/Faac/Magnetic/Kaba
3 FIRE ALARM SYSTEM	NOTIFIER/EDWARD/COOPER/REVELS
4 P.A. SYSTEM	JBL/BOSCH/EAW/REVELS
5 CCTV	
Indoor Dome Camera	SONY-SNCDH110/PANASONICWV-SF135E/Equivalent in BOSCH,CYBO,RANSOFT.
IR Camera	SONY-SNCCH160/PANASONICWV-SW316L/Equivalent in BOSCH,CYBO,RANSOFT.
Speed Dome PTZ Camera	SONY-SNCEP521/PANASONIC-WVSW396E/Equivalent in BOSCH,CYBO,RANSOFT.
NVR	MILESTONE/PANASONIC/NUJO
6 Intrusion Alarm System	SECURICO/OPTEX/HONEYWELL
7 Online UPS	APC/TATA LIEBERT/ Eaton
8 HSPE pipes	Duroline/Blue Diamond/Pioneer
9 PVC Conduit pipes	AKG/Sethia/BEC
10 Biometric Attendance System, Controller/Reader/Biometric Reader Enrollment Unit RBH/LENNEL/GE	RBH/LENNEL/GE
11 EM-Lock	BELL/ALGETEC/Dorma
12 Electronic Push Button Panic Switch	BELL/ALGETEC/Dorma
13 Workstation PC/SERVER	IBM/HP/Dell
14 Displays 18.5 inch	Samsung/Dell/LG
15 Displays 32 inch	Panasonic/Samsung/Sony
16 DVD Player	Sony/Samsung/LG