

SPESIFIKASI TEKNIS HANDMADE/CUSTOMIZED FURNITURE
PERENCANAAN PEMBANGUNAN GEDUNG IME (INTEGRATED MEDICAL EDUCATION)
FAKULTAS KEDOKTERAN UNSOED
TAHUN ANGGARAN 2024

B. PEKERJAAN HANDMADE/CUSTOMIZED FURNITURE :

No.	URAIAN PEKERJAAN	SPESIFIKASI	MERK
LANTAI 1			
I	BACKDROP LOBBY		
1	Multiplek/ Plywood	Tebal minimal 15mm	UTY Better, Semi Meranti, Meranti
2	Pelapis Multiplek/ Plywood	HPL	Taco, Carta
3	Lettering Tlmbul Stainless	Stainless Steel t: 1mm	Lokal
II	MEJA RESEPSIONIS		
1	Multiplek/ Plywood	Tebal minimal 20mm	UTY Better, Semi Meranti, Meranti
2	Pelapis PB	HPL	Taco, Carta
3	Lettering Akrilik	5 mm, Warna: Putih	Lokal
4	Solid Surface	Warna ditunjuk saat pelaksanaan	HI-MACS
5	Rel Laci/ Slorok/ Keyboard	Softclose	Taco, Huben atau setara
6	Kunci	Lokal	Taco, Huben atau setara
LANTAI 2			
I	BACKDROP HALL Tipe 1		
1	Multiplek/ Plywood	Tebal minimal 15mm	UTY Better, Semi Meranti, Meranti
2	Pelapis Multiplek/ Plywood	HPL	Taco, Carta
3	List Alumunium	Stainless Steel t: 1mm	AIMEX,YKK
II	BACKDROP HALL Tipe 1		
1	Multiplek/ Plywood	Tebal minimal 15mm	UTY Better, Semi Meranti, Meranti
2	Pelapis Multiplek/ Plywood	HPL	Taco, Carta
3	Lettering Tlmbul Stainless	Stainless Steel t: 1mm	Lokal
III	BACKDROP HALL Tipe 3		
1	Multiplek/ Plywood	Tebal minimal 15mm	UTY Better, Semi Meranti, Meranti
2	Pelapis Multiplek/ Plywood	HPL	Taco, Carta
3	List Alumunium	Stainless Steel t: 1mm	AIMEX,YKK
III	BACKDROP HALL Tipe 4		
1	Multiplek/ Plywood	Tebal minimal 15mm	UTY Better, Semi Meranti, Meranti
2	Pelapis Multiplek/ Plywood	HPL	Taco, Carta
IV	BACKDROP HALL Tipe 5		
1	Multiplek/ Plywood	Tebal minimal 15mm	UTY Better, Semi Meranti, Meranti
2	Gysumboard akustik	Tebal 9 mm	Jayaboard
V	BACKDROP HALL Tipe 5		
1	WPC Panel		DUMA, Mega komposit

SPESIFIKASI TEKNIS

PERENCANAAN PEMBANGUNAN GEDUNG IME (INTEGRATED MEDICAL EDUCATION) FAKULTAS KEDOKTERAN UNSOED TAHUN ANGGARAN 2024

PERHITUNGAN VOLUME

No.	Pekerjaan	Jenis	Deskripsi
1	Pekerjaan sipil	Kolom Balok induk Balok anak Plat Galian	Dihitung penuh tidak dikurangi sloof, balok dan plat Panjang dihitung bersih, dikurangi kolom Panjang dihitung bersih, dikurangi balok induk Luas dikurangi void, kolom dan balok Estimasi Dihitung berdasarkan gambar dengan acuan dimensi dan tinggi elevasi yang direncanakan
2	Pekerjaan arsitektur	Finishing lantai Finishing plafond Pasangan bata Volume acian, plesteran	Luas dihitung bersih batas dinding dalam Luas dihitung bersih batas dinding dalam Panjang pasangan dihitung bersih dikurangi kolom, luas kusen Volume dinding bersih dikurangi homogenous tile / keramik dinding

PEKERJAAN ARSITEKTURAL

No	Uraian Pekerjaan	Material		
		Bahan	Spesifikasi	Merk
1	Pekerjaan Beton Praktis	Semen PCC	Sesuai SNI 15-2049-1994	Gresik, Tiga Roda, Dynamix
		Pasir	Pasir berbutir dengan kadar lumpur maksimal 5 %	Muntilan
		Kerikil/batu pecah	Pecah mesin dimensi maksimal 2 cm	Lokal
		Besi beton BJTP-24	Baja tulangan polos diameter 8 dan 12 Sesuai SNI	
2	Pekerjaan Dinding	Batu bata ringan	Ukuran 20x60x10 cm	Grand Elephant, BLESSCON, CITICON
		Semen instan	Perekat bata ringan	TOP mortar , MU, GE mortar
			Plesteran bata ringan	TOP mortar , MU, GE mortar
			Acian bata ringan	TOP mortar , MU, GE mortar
3	Pekerjaan Pelapis Lantai, Dinding dan Halaman	Homogenous Tile lantai utama	Polished, ukuran 60x60	INFINITI, Valentinogres. Venus, Niro
		Lantai Lavatory	Unpolished, ukuran 60x60	INFINITI, Valentinogres. Venus, Niro
		Homogenous Tile Dinding Lavatory	Polished, ukuran 30x60cm pasang vertikal warna putih	INFINITI, Valentinogres. Venus, Niro
		Adukan pengisi celah	Lebar nat antar homogenous tile maksimal 0,3 mm	TOP mortar , MU, GE mortar
		Homogenous tile tangga	UnPolished, ukuran 60x60 +stepnoshing	INFINITI, Valentinogres. Venus, Niro
		Lantai ruang mushola, arsip, server, kelas, dll	Polished, ukuran 60x60 warna putih	INFINITI, Valentinogres. Venus, Niro
		Keramik lantai dan dinding groundtank	Keramik uk. 40 x 40 cm	Asiatile, platinum

No	Uraian Pekerjaan	Material		
		Bahan	Spesifikasi	Merk
		Homogenous tile Dinding ruang wudhu	Polished, ukuran 60x60 warna putih	INFINITI, Valentinogres. Venus, Niro
		Homogenous tile dinding pantry	Polished, ukuran 30x60cm pasang vertikal warna putih	INFINITI, Valentinogres. Venus, Niro
		Meja beton pantry	Meja beton finishing Homogenous tile uk. 60x60cm , Polished, warna putih	INFINITI, Valentinogres. Venus, Niro
		Halaman depan dan Parkir	Paving block minimal K200 tipe kubus	Aldas , ABC, CISANGKAN
		List plint keramik 10x50 cm warna gelap	Ukuran 10x60 cm warna gelap	INFINITI, Valentinogres. Venus, Niro
		Lantai epoxy lab riset	Cleanroom Suitable Material min 1000micron	Mapei , SIKA
		Rumput sintetis	rumput sintetis min 30 mm dan drainage cell 3cm (include)	Verdu, Rumputku
		Lantai batu sikat	Lantai batu sikat pola menyesuaikan gambar	Lokal
		Dinding eksterior		
		ACP (Aluminium Composite Panel) cutting rangka hollow galvanis	PVDF	Seven, Alucobond, Dekkson
			Tebal lapisan aluminium 0,5 mm	
			Alloy 5005	
			Warna white	
			Pertemuan antar panil tanpa sealant	
			ACP untuk eksterior	
		Kisi-kisi alumunium elemen fasad	Ukuran dan warna menyesuaikan gambar	AIMEX, ALUVEEN, ALUTAMA
4	Pekerjaan Plafond	Plafon Kalsium silica board (Lavatory dan tritisan atap, plafond drop off)	Tebal 4,5 mm, rangka metal furing, fin cat interior	Nusaboard, versaboard,
		Plafon PVC	Tebal 8 mm, rangka metal furing	Alvera, Indofon
		Plafond Gypsum board (untuk interior)	Tebal 9 mm, rangka metal furing fim. Cat interior	Yoshino,Jayaboard
		Plafon gypsum clean board	Tebal 9 mm, rangka metal furing fim. Cat anti bakteri	Yoshino,Jayaboard
		List plafond shadow line	Tebal 9 mm, rangka metal furing fim. Cat anti bakteri	Yoshino,Jayaboard
5	Pekerjaan UPVC dan kaca	Kusen UPVC (Pintu, jendela, dan bouvenlicht)	Warna putih , ukuran profil 6cm	KENDS, BAYDEE
		uk Profil UPVC lebar=6 cm t=3mm	Minimal tebal 3 mm	KENDS, BAYDEE
		Kaca bening	Tebal 6 mm	Saint gobain glass , MULIA
	6	Pekerjaan curtain wall	Kusen aluminium vertikal Back Mullion dan back transom, tebal min 1.2mm	AIMEX,ALUTAMA
		Kaca	Kaca bening , warna tebal variasi sesuai gambar	Saint Gobain Glass, MULIA

No	Uraian Pekerjaan	Material		
		Bahan	Spesifikasi	Merk
7	Pekerjaan daun pintu dan jendela	Pintu engineering solid	Rangka kayu Meranti, panel Plywood tebal 3 mm	BLESS door, Max Door, Lotus
			Tepi daun pintu diberi Edging PVC 0,30 mm	
		Pintu jendela kaca utama	Kaca tempered tebal 12mm + stiker sesuai detail gambar	Saint gobain, MULIA, Asahi
		Pintu besi shaft	Frame type C tebal plat = 2 mm	HK MANDIRI, MAXI DOOR, MARKS
			Tebal daun pintu = 55 mm	
			Tebal plat daun pintu = 1,5 mm	
		Pintu lavatory	Pintu engineering, jenis WPC	BLESS DOOR, DUMA
			Tebal daun 40 mm	
		Pintu besi tahan api tangga darurat (Tangga darurat)	Fire rated 3 hours	HK MANDIRI, MAXI DOOR, MARKS
			Tebal plat daun pintu = 1.5 mm, diisi Rockwool density 110 kg/m3	
			Tebal daun pintu = 55 mm	
			Aksesoris pintu besi	
			Hinge	
			Panic Exit Device Single Point & Handle	
			Door Closer	
		Pintu ruang genset	Plat Panel : 1.5 mm Tulang Rangka : 2.0 mm	HK Mandiri , JBS
			Ukuran : Panel Pintu : L.65 cm x T.240 cm (Ukuran Standard)	
			Finishing : Cat dasar Zincromate Finishing Powder Coating	
			Sistem : Lipat (Folding) atau Tikung (Sliding)	
			Tipe ayun ukuran 102x76x2 mm, bahan baja lapis kuningan	

No	Uraian Pekerjaan	Material		
		Bahan	Spesifikasi	Merk
8	Penggantung dan Pengunci	Engsel pintu	Hinge	Fino, Dekkson
		Engsel jendela aluminium	Window Hinge	Fino, Dekkson
		Handle	Lever Handle	Fino, Dekkson
		Pengunci	Lockcase	Fino, Dekkson
		Door closer	Door Closer	Fino, Dekkson
		Espanolet	Espanolet	Fino, Dekkson
		Slot tanam + Dust Proof	Flush Bolt	Fino, Dekkson
		Casement	Casement	Fino, Dekkson
		Rambuncis	Rambuncis	Fino, Dekkson
	Pintu Swing Kaca Frameless Glass to Glass	Handle	PULL HANDLE	Fino, Dekkson
		Floor Hinge	FLOOR HINGE	Fino, Dekkson
		Fitting	PATCH FITTING	Fino, Dekkson
		Patch Lock	PATCH LOCK T/C	Fino, Dekkson
		Patch Fitting	PATCH FITTING	Fino, Dekkson
		Pengunci	D CYLINDER	Fino, Dekkson
9	Pekerjaan Railing dan Hand Railing			
10	Ramp difabel	Pipa stainless steel	Pipa stainless steel t=0,8mm, diameter 2" kombinasi diameter 1" dan 1/2"	Lokal
	Railing tangga	Pipa stainless steel	Pipa stainless steel t=0,8mm , diameter 2" kombinasi diameter 1" DAN 1/2"	Lokal
	Pekerjaan Sanitair	Closet duduk + jet spray	Menyesuaikan detail gambar dan RAB	Rocca, Toto, KOHLER
		Head shower + asesoris	Menyesuaikan detail gambar dan RAB	Rocca, Toto, KOHLER
		Floor drain stainless steel	Menyesuaikan detail gambar dan RAB	Rocca, Toto, KOHLER
		Kran air + asesoris	Menyesuaikan detail gambar dan RAB	Rocca, Toto, KOHLER
		Wastafel + kran	Menyesuaikan detail gambar dan RAB	Rocca, Toto, KOHLER
		Kran meja dapur	Menyesuaikan detail gambar dan RAB	Rocca, Toto, KOHLER
		Kitchen sink +aksesoris	Menyesuaikan detail gambar dan RAB	Rocca, Toto, KOHLER
		Urinoir + penyekat	Menyesuaikan detail gambar dan RAB	Rocca, Toto, KOHLER
		Kaca cermin tepi bevel	Ukuran menyesuaikan gambar, tebal 5 mm, tepi bevel	Saintgobain ,MULIA
		Meja wastafel	Multiplek semi meranti t=15mm finishing HPL gloss	CARTA, TACO
		`	Meja beton lapis Homogenous tile polished 60x60cm	
			Lapisan Homogenous tile polished 60x60cm	
			Lemari double plywood lapis HPL	CARTA, TACO
		Cubicle toilet	Partisi cubicle phenolic board t=12mm + aksesoris stainless steel	Smartcubic, Spot Matrix
11	Pekerjaan Pengecatan	Cat dinding eksterior tahan cuaca	Berbahan dasar air	
			Warna ditunjuk saat pelaksanaan	NIPPON, AVIAN (Lenkote),DULUX , JOTUN
			Disertai surat dukungan dikerjakan oleh aplikator yang ditunjuk oleh pabrikan	
			Garansi 5 tahun	
			Cat emulsi berbahan dasar air	
		Cat dinding interior	Warna ditunjuk saat pelaksanaan	NIPPON, AVIAN (Lenkote),DULUX , JOTUN
			Disertai surat dukungan dikerjakan oleh aplikator yang ditunjuk oleh pabrikan	
			Garansi 5 tahun	
			Cat emulsi berbahan dasar air	

No	Uraian Pekerjaan	Material			
		Bahan	Spesifikasi	Merk	
		Cat plafon	Warna putih	NIPPON, AVIAN (Lenkote),DULUX , JOTUN	
			Disertai surat dukungan dikerjakan oleh aplikator yang ditunjuk oleh pabrikan		
			Alkali Resisting Primer		
		Cat anti bakteri	Spotless Plus, Anti noda, anti kuman, anti bakteri, washable, lowsheen, Waterbased. Rekomendasi 2 kali lapis	NIPPON, AVIAN (Lenkote),DULUX , JOTUN	
		Cat dasar	Disertai surat dukungan dikerjakan oleh aplikator yang ditunjuk oleh pabrikan	NIPPON, AVIAN (Lenkote),DULUX , JOTUN	
			Garansi 5 tahun		
12	Pekerjaan ACP	ACP (Aluminium Composite Panel) Cuting dan non cuting	PVDF		
13	Pekerjaan emergency shower dan eye wash		Tebal lapisan aluminium 0,5 mm	Seven,Alucobond,Dekkson	
			Alloy 5005		
			Pertemuan antar panil sealant		
			ACP untuk eksterior		
		Rangka ACP	Besi hollow galvanis 40.40.2,3 finish cat besi		
		Rangka Ornamen Ekspose Aluminium utk Fasade	Alumunium kisi-kisi ukuran sesuai gambar ,tebal 1,2mm	AIMEX , ALUTAMA, ALUVEEN	
			material stainless steel 304/ss304, dengan pedalFunction: Spray + Eyewash Top Spray: Rotary Ball Valve: Two-piece Ball Valve Dust-proof: integrated fixed type Eye wash basin: 300 mm straight edge design Running water diameter: 42 mm Nominal pressure:1.0 Mpa Work pressure: 0.2 - 0.4 Mpa Test pressure: 2.0 Mpa Use ambient temperature: 0-40C Spray water flow: >75.7L/MIN eye/Face Washing Water Flow:>11.4L/min		TONATA SAFETY, UNICARE
14	Pekerjaan saluran air hujan	Saluran U 30 cm dan U 40 cm tertutup plat beton	Buis beton pabrikan	Lokal	
Bak-bak kontrol ukuran sesuai gambar		Menyesuaikan detail gambar dan RAB			
			Tebal 6 mm		
15	Pekerjaan partisi	Gypsum board tebal 9 mm	Rangka metal stud dan metal runner	Yoshino , Jayaboard	
16	Pekerjaan lapis HPL	HPL	Tipe menyesuaikan detail gambar	CARTA, Taco	
17	Pekerjaan dinding	Cat dinding eksterior tahan cuaca	Warna ditunjuk saat pelaksanaan	NIPPON, AVIAN (Lenkote),DULUX , JOTUN	
			Cat emulsi berbahan dasar air		
		Cat dinding interior	Warna ditunjuk saat pelaksanaan	NIPPON, AVIAN (Lenkote),DULUX , JOTUN	
			Cat emulsi berbahan dasar air		
		Epoxy dinding	anti slip, safety clean room tebal minimal 1000micron	Mapei, propan	
		Cat plafond	Warna putih	NIPPON, AVIAN (Lenkote),DULUX , JOTUN	
18	Pekerjaan Plint	homogeneous tile	hospital plint homogeneous tile tinggi 10cm	Valentino Gress	
19	Pekerjaan Penutup Atap	UPVC	Twinwall Corrugated tebal 10-12mm	Alderon, Rooftop, DR SHIELD	
			warna ditentukan kemudian		
			tipe warna solid		
			lengkap dengan aksesoris dan material support		
20	Pekerjaan Kulit Batu	bahan batu alam (natural stone venee	Uk 60x120mm tebal min 2mm	FLEXIWALL, SLIMSTONE	
21	Pekerjaan waterproof	Membran atap dak, Garansi min 10th	Self-Adhesive Bitumen Waterproofing membrane Thickness 1.5mm, Size: 1m x 20m / roll	BMI, DUO composite	
		Waterproofing toilet/area servis lainnya	Coating	MU weber, Masterguard	

Merk untuk IME UNSOED

PEKERJAAN MEKANIKAL ELEKTRIKAL

No	Uraian Pekerjaan	Material		
		Bahan	Spesifikasi	Merk
1	Pekerjaan Plumbing			
a	Pipa, Drain dan Clean Out			
	Air Bersih	PPRN-PN 10	Dia. 3", 2", 1 1/2 ", 1", 3/4, 1/2"	Asialing, Atp Toro, Aquaterm, One add
	Air Bekas	PVC Class AW	Dia. 4", 2 1/2 "	POWER, Pipamas, One add, Rucika
	Air Kotor, Pipa Air Hujan	PVC Class AW	Dia. 6", 4 "	POWER, Pipamas, One add, Rucika
	Pipa Vent	PVC Class AW	Dia. 2 1/2 "	POWER, Pipamas, One add, Rucika
	Sambungan Pipa		lebih kecil dari diameter 50 mm, menggunakan solevent cement	asialing, ATP Toro, power, pipamas, rucika, One add
			lebih besar dari diameter 50 mm, menggunakan Rubber ring and spigot	
	Lem perekat	solvent semen		Tangitoul pressure, RUGLUE
	Roof drain	besi		Toyo, San-ei
	Clean Out	Stainless Steel dia 2", 4"		
b	Reservoir Air Bersih			
	Roof tank		tipe tangki fiber, FRP knoc dwon panel.	Global, Biotech
			kap. 6m3 (3 x 2 x 1)	
c	Pompa-pompa			
	Pompa Air Bersih (Lifting Pump)	Jenis Vertikal multistage	kap. 20 m3/h	Ronald, Aurora, Elkan
			head : 25.5 m	
			shaft seal : mechanical seal	
			power : 4 kw @ 2900 rpm, 380v, 3 ph/50 Hz	
	Pompa booster	Jenis Vertikal multistage packaged booster	kap. 10m3/h	Ronald, Aurora, Elkan
			head : 25 m	
			shaft seal : mechanical seal	
			power : 2 x 1,5 kw @ 2900 rpm, 380v, 3ph/50 Hz	
	Pompa sumpit di ruang pompa	Jenis submersible	kap. 10 m3/h	Ronald, Aurora, Elkan
			head : 10 m	
			power : 2 x 0.75 kw @ 2900 rpm, 380v.	
d	Valve-valve			
	Gate Valve, Check Valve, Butter Fly, Strainer, AAV, PRV	Cast iron warna Bronze		conex banninger, ocean fire, Nava
2	Pekerjaan Elektrikal			
a	Panel Tegangan Rendah		Tebal Plat min. 2 mm, finishing Powder Coating RAL 7032, min. Form 2B	
	Qubicle TM pelanggan			
	LVMDP Typetest From 2B	Tebal Plat min. 2 mm, finishing Powder Coating RAL 7032, min. Form 2B	melampirkan sertifikat lisensi typetest dari prinsipal	Nata Ultima Enggal (NUE), DJE, Bless Power
	SDP, PP		Tebal Plat min. 2 mm, finishing Powder Coating RAL 7032, min. Form 2B	Nata Ultima Enggal (NUE), DJE, Bless Power
	capasitor bank		Tebal Plat min. 2 mm, finishing Powder Coating RAL 7032, min. Form 2B	Nata Ultima Enggal (NUE), DJE, Bless Power
	Panel Maker		Anggota APPI (Assosiasi Produsen Peralatan Listrik Indonesia)	Nata Ultima Enggal (NUE), DJE, Bless Power
b	Pengaman			
	- MCCB, ACB	Rating 6 KA - 200 KA / 400 Volt		Schneider, terasaki, ABB
	- MCB			Schneider, terasaki, ABB
	- Kontaktor			Schneider, terasaki, ABB
	- capasitor bank	dengan detune reaktor		Schneider, terasaki, ABB
c	Qubucle pelanggan			Schneider, ABB, LS
d	Aksesories			
	- Lampu indikator			Schneider, Siemens, ABB
	- Sepatu kabel			GAE, Schneider, ABB
	- Isolasi			3M, Nachi
	- Terminal			Unibel
e	Fixture Lampu			
	Rumah Lampu	Tebal plat minimal 0,6 mm		opple, philips, visicom, infilate,scarto, artolet
		Zinc Coated White paint		
	Louvre Mirror Reflector (inbow) (1200 x150x 100 mm)	LED 2 x 20 watt		opple, philips, visicom, infilate,scarto, artolet
	TKO (outbow) TKO136	1 x 20 watt tube LED		opple, philips, visicom, infilate,scarto, artolet
	Lamp Downlight Recessed Inbow	daya 15 watt		opple, philips, visicom, infilate,scarto, artolet

		daya 9 watt		opple, philips, visicom, infilate,scarto, artolet
	Lampu Downlight outbow recessed	daya 18 watt		opple, philips, visicom, infilate,scarto, artolet
				opple, philips, visicom, infilate,scarto, artolet
	lampu exit + batteray EX.1P	daya 3 watt		opple, philips, visicom, infilate,scarto, artolet
	Lampu PJU DMX50	daya 8 watt		opple, philips, visicom, infilate,scarto, artolet
	strip lamp	daya 90 watt		opple, philips, visicom, infilate,scarto, artolet
f	Komponen Lampu			
	Lampu bohlam LED E27 daylight	Daylight		opple, philips, visicom, infilate (garansi min.1 thn)
	LED tube	essential led tube		opple, philips, visicom, infilate (garansi min.1 thn)
g	Outlet Saklar dan Stop Kontak			
	Saklar	warna putih	kap. arus 16A-250 V, IP55	Schneider Electric, Simon,Legrand
	Stop Kontak indoor	warna putih	kap. arus 16A-250 V, IP55	Schneider Electric, Simon,Legrand
	Stop kontak lantai	warna silver	kap. arus 16A-250 V, IP55	Schneider Electric, Simon,Legrand
	sensor gerak	warna putih		Schneider Electric, Simon,Legrand
h	Kabel dan Grounding			
	Kabel Tegangan Rendah	NYA, NYM, NYY	rated voltage 0,6 /1 KV	Extrana, Supreme, Kabelindo
	Kabel Tanah TR	NYFGBY	Mineral Insulated, zero halogen	Extrana, Supreme, Kabelindo
	Kabel Tahan Api	FRC		Extrana, Pyrotec
i	Catu Daya Back Up			
	Uninterruptible Power Supply (UPS)	TYPE VRLA	2 kva	vector, ABB
j	Alat Bantu Instalasi			
	Conduit dan Flexible Conduit	Untuk kabel warna putih, high impact		Power, RIIFO, Pipamas, One add
	Tee doos, Cross doos			Power, RIIFO, Pipamas, One add
	Isolasi			3M, Unibel
k	Kabel Tray/kabel ladder			
		type straigh SLU, Plat min. 1,5 mm, Hotdip Galvanized	kabel tray elektrik uk. 300 x 100 mm	X tray, Mega Tray, Trimulia sarana agung
			kabel tray elektronik uk. 200 x 100 mm	X tray, Mega Tray, Trimulia sarana agung
l	Penyalur Petir	Type Electrostatic non radioaktif	(lengkap dengan digital lighting event counter) radius 100 meter	LPI guardian, ABB
3	Pekerjaan Elektrikal Arus Lemah			
a	Sistem Deteksi Kebakaran (Fire Alarm)			
	Panel Kontrol Utama	Tipe MCFA adalah intelligent addressable yang dapat di expand hingga 16 loop		Honeywell Morley, Notifier, Esser
		Kapasitas 1loop setidaknya 128 address (99 detektor dan 99 module)		
		Dapat integrasi dengan public address dan voice alarm (PAVA).	Sertifikasi: UL , Frequency test: Dapat dipakai berulang kali, Dilengkapi dengan LED status, Alarm current: 10mA-130mA, Operating temperature range: 0-49° C, Operating voltage: 8.5-35 VDC	
	Detector Asap	Tipe Konvensional	Sertifikasi: UL atau EN-54 dan LPCB Approval, Strobe flash rate: 1 flash per second, Operating temperature: 0° C – 49° C, Input terminal wire gauge: 14 to18 AWG, mini horn 12 to 18 AWG, □ Operating voltage range: 16 to 33V (24 V nominal); 8 to 17.5V (12 V nominal)	Honeywell Morley, Notifier, Esser
	Detector Laju Panas (ROR)	Tipe Konvensional	Sertifikasi: UL atau EN-54 dan LPCB Approval, Dilengkapi phone jack untuk komunikasi dengan Fireman, Operating temperature: 0° C – 50° C, Current Rating: Max. alarm current- 30mA	Honeywell Morley, Notifier, Esser
	Manual push buttom	Tipe Konvensional	Sertifikasi: UL atau EN-54 dan LPCB Approval, Strobe flash rate: 1 flash per second, Operating temperature: 0° C – 49° C, Input terminal wire gauge: 14 to18 AWG, mini horn 12 to 18 AWG, □ Operating voltage range: 16 to 33V (24 V nominal); 8 to 17.5V (12 V nominal)	Honeywell Morley, Notifier, Esser
	alarm Bell	Tipe Konvensional		Honeywell Morley, Notifier, Esser
	Lampu Indikator		Mineral Insulated, zero halogen	Honeywell Morley, Notifier, Esser
	Kabel	FRC	1,5 mm	Pyrotec, Extrana
		NYA		Extrana, Supreme, Kabelindo
	Peralatan Bantu			3M, Unibel
b	pekerjaan pemadam kebakaran			

	head Sprinkler			ocean fire, redi fire, skay fire
	Fire Extinguisher	type Dry Chemical Powder dan Co2	kap.6 kg	ocean fire, redi fire, skay fire
	Indoor / Outdoor Box Hydrant		dari plat dengan ketebalan 1,2 mm	ocean fire, redi fire, skay fire
	Pillar Hydrant	short type two way	tekanan Kerja 16 Kg /Cm2	ocean fire, redi fire, skay fire
	Seamesse	two way siamese connection	tekanan Kerja 16 Kg /Cm3	ocean fire, redi fire, skay fire
	Pompa Hydrant	Jokey Pump (Vertikal Multi stage)	25 USGPM	Ronald, Aurora, Elkan
			4 kw, 3ph, 380v/50hz, 2900 rpm	
		Elektik Pump (centrifugal Horisontal split cassing pump)	750 USGM	Ronald, Aurora, Elkan
			90 kw, 3ph, 380v/50hz, 3000 rpm	
		Diesel Pump (centrifugal Horisontal split cassing pump)		Ronald, Aurora, Elkan
	pipa black steel Sch 40			Spindo, Bakrie
c	Sistem Tata Suara (sound system)			
	Master Control Unit - Tata Suara (Public Address dan Voice Alarm)			TOA, Honeywell
	Power Amplifier			TOA, Honeywell
	Remote Call Station			TOA, Honeywell
	Digital Multi Audio Player			TOA, Honeywell
	Ceiling Speaker			TOA, Honeywell
	Wallmount Loudspeaker			
	Volume Control			TOA, Honeywell
	Outdoor Column Loudspeaker			TOA, Honeywell
4	Pekerjaan Tata Udara dan Ventilasi Mekanis			
a	Air Conditioning Lt. 1 sampai Lt. 6	System AC VRF hemat energi, inverter , R410A	Type spit wall, cassette	samsung, daikin, LG, mitsubishi
	Pipa refrigerant		pipa tembaga ASTM B280	Koido, Kembila, Crane
	Pipa Insulasi			Armaflex, Aeroflex, Insuflex
b	Unit Exhaust Fan	Tippe Ceiling Mounted		Panasonic, KDK, Conexa
	ducting system			Pipamas, Rucika, POWER
	Presurized fan			Conexa,krueger, Nicotra
5	lift penumpang (lift passenger)			
		Roomless	Kapasitas : 1.600 kg/24 person	volkslift, KONE, Fuji HD, OTIS, Mitsubishi
			service floor : 6 stop/6 opening	
			speed : 60 mpm	
			door opening type : two panels side opening	
			daya : 9 kva	
6	Genset Open Tipe			Bless power, Energma, FPT
		prime power	model :BP-G1650MT _LS	
			engine : Mitsubishi S12R-PTAA2	
			altenator : Leroy LSA 50.2LB	
			power : 1500kva	
			voltage : 380v, 3ph, 50hz	
			1500rpm	
7	Trafo			B&D, Trafindo,Sintra, LS
		oil immersed	kap. 1600 kva	
		vektor : YnYn0	winding : Al-Al	
8	panic button			Honeywell, Vista, Alpha
	alarm control panel, 48 zone		8 zone built in and 40 zone by expansion module), eight partition, UL Listed, support up to 16 compatible four wire smoke detector, support scheduling.	Honeywell, Vista, Alpha
	keypad			Honeywell, Vista, Alpha
	expende			Honeywell, Vista, Alpha
	single panel			Honeywell, Vista, Alpha
	power supply			Honeywell, Vista, Alpha
	panic button with key			Honeywell, Vista, Alpha
	external siren			
9	data			
	Material UTP cable cat 6A dan accessories			
	UTP Cable Cat 6A, 23AWG, LSZH		UTP CAT 6A, (4pr) 23 AWG, U/UTP, PO/LSZH	belden, panduit
	Patch Panel UTP 24 port Full Loaded Cat 6A		KeyConnect Shielded/Unshielded Patch Panel, 24 port	belden, panduit
	Modular Jack Cat 6A		REVConnect 10GX UTP Jack	belden, panduit
	Patch Cord UTP Cat 6A, 3 mtr		Patch Cord, CAT 6A, 26 AWG, Stranded, UTP, LSZH, 3 METER	belden, panduit
	Wall Outlet 1 port		86x86 key connect, single port, UK style faceplate (white)	belden, panduit
	matrial fiber optik			
	Fiber Optic 6 Core Multimode OM4, Indoor		6F MM OM4 Indoor Tight Buffer LSZH	belden, panduit
	Patch Panel Fiber Optic 48 port		Rack Mount Fiber Patch Panel with splice tray c/w Adapter LC & Pigtail OM4	belden, panduit
	Patch Panel Fiber Optic 12 port		Rack Mount Fiber Patch Panel with splice tray c/w Adapter LC & Pigtail OM5	belden, panduit
	Patch Cord FO SM LC-LC, 3 mtr		Patch Cord LC-LC Duplex MM OM4, 3 METER, LSZH	belden, panduit
	Perangkat rackmount dan wallmaunt			

	Standing Close Rack 42U Depth 1150mm Perforated Door c/w Accessories		Standing Close Rack 19", 42U Depth 1150mm, Perforated Door	indorack, abba, fortuna
	Wallmount Rack 15U Depth 600mm Double Perforated Door c/w Accessories		Wallmount Rack 19", 15U Depth 600mm, Double Perforated Door	indorack, abba, fortuna
	Wire Management, 1U		19" 1U Horizontal Cable Management	belden, panduit
	Perangkat switch dan acces point			
	Core Switch SFP+ c/w Redundant PSU		20 1G/10GBASE-X SFP+ ports, 4 10G/25GBASE-X SFP28 Ports, 2 40GBASE-X QSFP+ ports, support up to 32 10G ports, 2 modular fan slots, 2x 150W AC Power Module	ruijie Entrprise, Aruba, Cisco
	Access Switch Manageable 12 port POE w/ 4 port SFP+		12 x 10/100/1000BASE-T ports, 4 x GE/2.5GE/10GE SFP+ ports, PoE power supply, support PoE+, a maximum of 370 W PoE output, and built-in power module	ruijie Entrprise, Aruba, Cisco
	Access Switch Manageable 24 port POE w/ 4 port SFP+		24 x 10/100/1000BASE-T ports, 4 x GE/2.5GE/10GE SFP+ ports, PoE power supply, support PoE+, a maximum of 370 W PoE output, and built-in power module	ruijie Entrprise, Aruba, Cisco
	Access Switch Manageable 48 port non POE w/ 4 port SFP+ 48 x		48 x 10/100/1000 BASE-T 4 x GE/2.5GE/10GE SFP+ ports, and built-in power module	ruijie Entrprise, Aruba, Cisco
	SFP 10G Transceiver Module Multimode		10GBASE-SR, SFP+ Transceiver, MM (850nm, 300m, LC)	ruijie Entrprise, Aruba, Cisco
	WLAN Controller c/w Licenses		The next-generation wireless access controller provides 8 x 1GE electrical ports, 2 x 1GE combo ports, and 2 x 10GE SFP+ ports. It supports 32 APs by default, and up to 512 licenses are available, 16 Managed APs or 32 Wall AP Upgrade License,	ruijie Entrprise, Aruba, Cisco
	High Density Access Point Wifi 6		Wi-Fi 6 wireless access point that delivers tri radios, AI Radio design, high performance, and enterprise-grade encryption. Its hybrid cloud management mode and high-density access design allow to be flexibly deployed in high-quality network scenarios	ruijie Entrprise, Aruba, Cisco
	High Density Access Point Wifi 6		802.11ax tri-radio dual-band high-density wireless access point, up to 8 spatial streams with extra independent AI Radio, up to 7.77Gbps access rate, support 802.11a/b/g/n/ac and 802.11ax, FAT/FIT mode switching, 802.3bt/at and local power supply	ruijie Entrprise, Aruba, Cisco
11	cctv			
	Main Unit NVR (2x32 Channel), include HDD 8TB per NVR		32 Chs NVR 4K Support, H.265/H.264, 16 Chs PoE, Stream Encryption, 8TB, 4 SATA	Honeywell, samsung
	Dome Network Camera Indoor 2MP		2MP Network Ball IR Camera, TDN, 1/2.8" CMOS, 2.8mm~12mm manual varifocal, H.265, PoE, IP67	Honeywell, samsung
	Monitor		Resolution : Full HD	samsung, LG
			Power Source : 12VDC, 50-75 Hz	
			Built-in Speaker	
			Power Consumption : Max 90 W	
			Video input : 2 BNC, HDMI	
			Video output : 2BNC	
12	Telephone			
	Main Unit IP PBX Capacity 8 FXO & 100 SIP Extensions		FXO 8 Ports & 100 SIP Ext	LG ERICSSON, Sengoma
			iPECS-UCP100 Call Server SPL Default 50 Port, use 120 Up to 199 port Per system, Default IPEXT License 30 Port, Total Use 100 Port, Default 2 Copy of UCS Advances User License Default 2 Clickcall client, 8ch VM, VOIP 2ch or 4ch or 6ch, Built in 2 Fxs, and 2 year	LG ERICSSON, Sengoma
	SIP Phone (For Operator)		8 line 4.3" (480 x 272) color display, Up to 36 programmable keys with 12 self-label keys, HD audio for handset and speaker with wideband codec (G.722, Opus), Full duplex speakerphone with wideband voice, Dual Gigabit Ethernet ports, 1 USB port for charging mobile devices and USB accessories	LG ERICSSON, Sengoma

	SIP Phone (For Workstation)		Standard IP phone designed for office workers with a full range of telephony features, 4 line 2.4" (132 x 64) BW display, 4 self-label programmable keys, HD audio for handset and speaker with wideband codec (G.722, Opus), Full duplex speakerphone with wideband voice	LG ERICSSON, Sengoma
13	GONDOLA		Temporary Monorail Motorized	Power Climber, Skymax