KEMENTERIAN PERUMAHAN DAN KERAJAAN TEMPATAN
BAHAGIAN PEMBANGUNAN DAN PELAKSANAAN PROJEK
ARAS 5-9, NO.51, PERSIARAN PERDANA, PRESINT 4
PUSAT PENTADBIRAN KERAJAAN PERSEKUTUAN
62100 PUTRAJAYA

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Ruj. Kami : KPKT.600-3/103/2 ( )
Tarikh : 19 Ogos 2020

Remt Utama Sdn. Bhd.
Ground Floor, Lot 20, Grace Square,
Jalan Pantai Sembulan,
88100 Kota Kinabalu, Sabah.

Aktif FA Konsult Sdn. Bhd.
Lot 17 & 19, 2nd Floor, Block C,
Damai Plaza, Phase 4,
Jalan Damai, Luyang,
88859 Kota Kinabalu, Sabah.

Tuan,

CADANGAN PEMBINAAN PROJEK BALAI BOMBA DAN PENYELAMAT BEAUFORT, SABAH

~ Permohonan Kelulusan Bahan Binaan – *'Roofing System – Lightweight Roof Trusses'*

Dengan segala hormatnya saya merujuk kepada perkara tersebut di atas dan surat daripada perunding Noor Izwan Architect no. rujukan : NIA1902/KPKT/BB/BS(36) bertarikh 27 Julai 2020 yang diterima melalui memo daripada Unit Senibina, KPKT no rujukan : KPKT.600-3/103/2 (48) bertarikh 7 Ogos 2020 adalah turut berkaitan.

2. Untuk makluman tuan, setelah menyemak dokumen kelulusan bahan tersebut di atas, pejabat ini mendapati beberapa perkara perlu disemak semula oleh pihak tuan dengan mengambilkira ulasan berikut :

Bahan Binaan	Jenama Bahan/ Pengeluar	Ulasan
Lightweight Steel Roof Trusses	**Model:** - **Pengeluar:** Evergold Metal Roofing Sdn Bhd	**TIDAK DISOKONG** - Pembekal yang dinamakan tiada dalam Senarai Pembekal Sistem Kekuda Bumbung JKR Malaysia. - Sila gunakan borang *Checklist For Cold Formed Steel Roof Trusses* seperti di lampiran bagi permohonan ini.

...2/

KPKT.600-3/103/2 ( )

3. Ingin diingatkan bahawa, permohonan kelulusan bahan binaan bagi sistem kekuda bumbung ini perlu melalui semakan dan pengesyoran daripada pihak Perunding C&S terlebih dahulu sebelum dikemukakan ke pejabat ini. Pihak tuan adalah bertanggungjawab mendapatkan kelulusan bertulis daripada pejabat ini sebelum sebarang kerja-kerja pemasangan kekuda bumbung di tapak bina dilakukan. Sehubungan itu, mohon pihak tuan memberikan maklumbalas segera mengenai perkara ini serta mengemukakan Borang Kelulusan Bahan yang baru untuk pertimbangan semula pejabat ini.

Sekian, terima kasih.

'BERKHIDMAT UNTUK NEGARA'

Saya yang menjalankan amanah,

(Ir. RESLI AZHA BIN MOHD. ZAIN)
Ketua Penolong Pengarah Kanan
Unit Kejuruteraan Awam Dan Struktur
Cawangan Pengurusan Projek
b.p. Setiausaha Bahagian
Bahagian Pembangunan dan Pelaksanaan Projek
Kementerian Perumahan dan Kerajaan Tempatan

Salinan Kepada :

Noor Izwan Architect
E-0-3, Block E, Karamunsing Capital,
Off Jalan Tuaran,
88100 Kota Kinabalu, Sabah.

Edaran Dalaman :

1. TSUB (PP1)
2. KPPK/UPP
3. KPPK/KUB
4. KPPK/W6
5. KPP/USB

SENARAI SEMAK KELULUSAN PENGGUNAAN SISTEM KEKUDA BUMBUNG
Pre-Fabricated Cold Formed Steel Roof Trusses

PROJECT : CADANGAN PEMBINAAN PROJEK BALAI BOMBA DAN PENYELAMAT BEAUFORT, SABAH

SUPPLIER :

NO.	PERKARA	ADA / TIADA	CATATAN
1.0	**Borang Kelulusan Bahan & Mock–Up.** [BK/PEMB/PK(P)/08/07] *(pastikan lengkap diisi dan ditandatangani)*	☐	
2.0	**Borang Lampiran C – Permohonan Penggunaan Sistem Kekuda Bumbung** *(pastikan lengkap diisi dan ditandatangani)*	☐	
3.0	**Salinan Sijil Pendaftaran BEM yang sah oleh Jurutera Perekabentuk Bertauliah** (Jurutera Profesional)	☐	
4.0	**Salinan Surat Perakuan Pemasang Bertauliah dari Pembekal Sistem**	☐	
5.0	**Salinan Sijil Pendaftaran CIDB oleh Pemasang Bertauliah dan Kompetensi Personel**	☐	
6.0	**Lukisan Pembinaan yang lengkap dan ditandatangani oleh Jurutera Profesional (minima bersaiz A3)** *[Rujuk senarai semak KS Cold Form Rev.3/2019 – L1a]*	☐	
7.0	**Laporan Analisis dan Pengiraan Rekabentuk yang lengkap dan ditandatangani oleh Jurutera Profesional** *[Rujuk senarai semak KS Cold Form Rev.3/2019 – L1a]*	☐	
8.0	**Dokumen-dokumen Sokongan:** **i) Base Steel Mill Certificate** **ii) Catalogue / Technical Specification for Screw, Bolt & Anchor Bolt** **iii) Lab Test Certificate *(SIRIM or approved testing laboratory with validity certificate for base steel, fastener & anchor bolt)*** **iv) QA/QC and Method Statement** *[Rujuk senarai semak KS Cold Form Rev.3/2019 – L1a]*	☐ ☐ ☐ ☐	
9.0	**Checklist - KS Cold Form Rev.3/2019 – L1a.** *(pastikan lengkap diisi dan ditandatangani)*	☐	
10.0	**Warranty Certificate** *(immediately after the completion of the installation and prior to the issuance of the CPC)* & ***As-Built Drawing*** yang disahkan oleh Jurutera Perekabentuk Bertauliah (Jurutera Profesional)	☐	

CHECKLIST FOR COLD FORMED STEEL ROOF TRUSSES

PROJECT : CADANGAN PEMBINAAN PROJEK BALAI BOMBA DAN PENYELAMAT BEAUFORT, SABAH

SUPPLIER :

No.	Item	Supplier's Offer	Yes	No	Remarks
1.0	**Application Form : Lampiran C**				
	Completed with type of fabrication				
	Information on P.E. and Fabricator				
	Endorsed by the S.P.				
2.0	**Perticular and the C.V. :**				
	Valid P.E. registration with BEM				
	Fabricator appointment document by the S.P.				
	Fabricator acceptance document on the appoinment				
	Fabricator registration certificate with CIDB				
	Installer competency certificate from CIDB				
3.0	**Analysis and Design Calculation:**				
	Endorsed by the P.E.				
	Loading Criteria				
	live load - min 0.25kN/m2				
	dead load - min 0.25kN/m2				
	wind speed - min 35m/s / 41m/s (lightweight covering)				
	Truss analysis (2D or 3D)				
	Member design (top & bottom chord, ties, strut)				
	Bracing design				
	Tie down and anchorage design				
	Connection design				
	Fastener and anchor technical specification				
	min 3 nos fastener per joint				
	min. dept of anchor bolt				
4.0	**Construction Drawing:**				
	Endorsed by the P.E. on every sheet of drawing				
	Min. A3 size with title block (Name of project and Client)				
	Layout drawing				
	Section properties				
	Accessories properties (ex. L-Bracket, Tripie L-Grip, etc)				
	Bracing layout				
	Truss configuration				
	Connection details				
	Support detail (wall plate and anchor)				
	min thickness steel wall plate 1.2mm				
	span <10m = width 75mm, span 10m-13m = min width 100mm				
	min size of timber wall plate = 50mmx100mm				
	anchor bolt (min.42micron) - spacing max 1m c/c				
	Technical notes on base steel, fastener, anchor bolt and protective coating				
	Specific design and details for M&E equipment support.				

CHECKLIST FOR COLD FORMED STEEL ROOF TRUSSES

PROJECT : CADANGAN PEMBINAAN PROJEK BALAI BOMBA DAN PENYELAMAT BEAUFORT, SABAH

SUPPLIER :

No.	Item	Supplier's Offer	Yes	No	Remarks
5.0	**Construction Drawing (Compliance to specification):**				
	Max. span : 13 m unsupported (± 0.05m)				
	Max. spacing : 1.2 m (±0.025m)				
	Min. base steel thickness (truss member: open section & bracing) : 1.0 mm				
	Min. base steel thickness (truss member: close section) : 0.6 mm				
	Min. base steel thickness (battern / purlin) : 0.5 mm				
	Min. base steel thickness (wall plate) : 1.2 mm				
	Min. depth of section (open section) : 75 mm				
	Min. width of section : 35 mm				
	Support of trusses > cannot be supported by non load bearing wall				
6.0	**Technical Notes, Certificate and Lab Test Compliance to Specification:**				
	Base Steel Mill Certificate				
	Catalogue/Technical Specification for Screw, Bolt & Anchor Bolt				
	Lab Test Certificate (SIRIM or approved testing laboratory with validity certificate for base steel, fastener & anchor bolt)				
	Min grade for base steel (Clause 7.1.1)				
	BST ≤ 1.2mm, steel grade G550 (550 Mpa)				
	BST ≥ 1.2mm, steel grade G450 (450 Mpa)				
	Min. thread of screw (Clause 7.2.1)				
	section thickness ≤ 2.4mm, thread ≤ 16 thread per inch (coarsed thread)				
	section thickness 2.4mm-3.2mm, thread > 16 thread per inch (fine thread)				
	Min. protective coating for base steel (Clause 7.1.2)				
	site radius < 400m (Extreme) - AZ150, fastener Class 3				
	site radius > 400m - Z200, fastener Class 2				
	Min. protective coating for fastener (Clause 7.2.2)				
	Min. protective coating for anchor (Clause 7.3.2) - min. thickness 42 micron				
	Min. for wall plate (grade and strength) (Clause 7.4)				
	BST ≥ 1.2mm, steel grade G450 (450 Mpa)				
7.0	**Quality Assurance and Control:**				
	Quality Assurance and Control Plan				
	Method Statement				
	Installation Team Chart				
	Inspection Checklist				

Prepared By:

Checked By:

System Provider

C&S Consultant

MATERIAL TESTING REQUIREMENTS

PROJECT : CADANGAN PEMBINAAN PROJEK BALAI BOMBA DAN PENYELAMAT BEAUFORT, SABAH

No.	Item	Validity of Test Certificate (Year)	Yes	No	Remarks
1.0	**Base Steel:**				
	Tensile test of base steel material	2			
	Determine adhesion and mass of aluminium-zinc base coating	2			
	Determine adhesion of zinc base coating	2			
	Determine mass of zinc base coating	2			
	Chemical composition	2			
	Point bending test	2			
2.0	**Fasteners:**				
	Tensile, torsional and surface hardness	2			
	Shear	2			
	Salt spray	2			
	Coating composition and thickness	2			
3.0	**Anchor:**				
	Pull out test	2			
	Coating composition and thickness	2			
4.0	**Timber**				
	Identification of species & visual grading	per project			
	Moisture content, density and specific gravity	per project			
	Dry salt retention	per project			
	Depth of penetration	per project			
	Static bending & compression parallel to grain *(Optional: where testing required for verification, the principal standard shal be selected, for the S.O.'s approval*	per project			