



Malaysia Green Building Confederation

GBI PRO SERIES 2017

NEW TAX INCENTIVES FOR GREEN BUILDINGS

GBI Roadshow 2017

QS Practice Notes & Qualifying Capex for non M&E Items

Sr Andrew Ng Shou Guan
ELP Quantity Surveyors Sdn Bhd



Cost of Going Green

- ▶ Green building practices can reduce a building operating cost by as much as 9 percent, increase building values by 7.5% and realise a 6.6 percent increase in return on investment.
- ▶ So green buildings don't just make sound ecological and environmental sense - they make sound economic sense too

TONY ARNEL, Past-Chairman World Green Building council



Incremental Cost of Going Green

Data from overseas

LEED	CERTIFIED	SILVER	GOLD	PLATINUM
LEED POINTS	23 - 27	28 - 33	34 - 44	45 - 61
ENERGY SAVINGS	25 - 35%	35 - 50%	50 - 60%	> 60%
ANNUAL UTILITY SAVINGS	US\$ 0.40/sqft	US\$ 0.60/sqft	US\$ 0.80/sqft	US\$ 1.00/sqft
PAYBACK PERIOD	Under 3 yrs	3 - 5 yrs	5 - 10 yrs	10+ yrs
INCREMENTAL CONSTRUCTION COST				
SMALL BUILDINGS	3%	7%	10%	15%
LARGER BUILDINGS	1%	3%	5%	8%
Source : Enermodel Engineering, Denver, USA				



Incremental Cost of Going Green

Data from GBI

GBI MALAYSIA	CERTIFIED	SILVER	GOLD	PLATINUM
GBI POINTS	50 - 65	66 - 75	76 - 85	86 - 100
INCREMENTAL CONSTRUCTION COST				
AVERAGE	2.83%	3.67%	7.92%	8.70%
CORRECTED AVG	1.18%	3.67%	6.80%	8.70%
RNC ALONE	1.20%	2.90%	3.40%	10.70%
LOWEST NRNC	1.10%			
LOWEST RNC	0.70%			
GBI RANGE	0.7 - 2.0%	2.0 - 4.0%	3.5 - 8.0%	6.5 - 11.0%
LEED AVERAGE FOR LARGE BLDG	1.0%	3.0%	5.0%	8.0%
Green Building Index Malaysia 2016				

Notes: Corrected Average due to case studies which distort averages

1. Omit NRNC Case Study 6 – exceptionally high EE1 cost for Gold
2. Omit NRNC Case Study 7 – exceptionally high EE1 cost for Certified

GBI Practice notes for QS

The Practice notes are to assist QS in their submission for GBI certification

Part I: Requirements and roles of project QS in submission of GBI certification

Part II: QS roles in verifying and certifying the GBI Green Incremental Cost for tax incentives

Various worked examples

Part III: FAQs

..GBI_QSPacticeNotes060813.pdf

Available for download from:

http://new.greenbuildingindex.org/Files/Resources/GBI%20Documents/GBI_QSPacticeNotes060813.pdf

GBI Practice notes for QS

GBI Accreditation Panel is entrusted by LHDN to ensure that qualifying green cost expenditure for tax incentives is professionally and consistently assessed.

Adequate supporting documents are required:-

Actual cost incurred: Extracts from BQ, final accounts, variation approvals, purchase orders, etc. to prove expenditures

Base Cost: Extracts from BQs, quotations, cost estimates original tenders, etc. to prove assumed expenditures
– *refer to pg 22 of Practice notes for “unacceptable base cost”*

References: Drawings, plans, photographs, etc.

Amount Claimed vs Amount Qualified

NRNC			
Case Study	Green Cost Claimed by Projects	Qualifying Green Cost by GBIAP	%
CS3	4,610,029.34	3,646,861.14	79.11%
CS5	8,055,906.50	6,397,540.50	79.41%
CS6	23,638,093.59	22,587,366.42	95.55%
CS7	10,450,697.08	9,291,252.31	88.91%
CS8	1,258,611.80	576,566.80	45.81%
CS9	4,284,573.53	3,641,769.73	85.00%

CS8 – a. EE1 not scored; b. RM 100k error in base cost

GREEN COST CAN ONLY BE CLAIMED WHEN AT LEAST ONE CREDIT POINT IS AWARDED FOR THAT CRITERIA

Amount Claimed vs Amount Qualified

RNC			
Case Study	Green Cost Claimed by Project	Qualifying Green Cost by GBIAP	%
CS1	2,007,366.96	1,468,269.72	73.14%
CS2	93,791.00	80,073.50	85.37%
CS3	301,843.37	224,297.73	74.31%
CS4	4,552,655.98	1,350,008.16	29.65%
CS5	1,500,008.16	1,015,207.86	67.68%
CS6	3,321,341.25	2,920,426.34	87.93%
CS7	1,118,425.47	794,032.83	71.00%
CS8	1,227,949.00	746,245.20	60.77%

CS4 – a. Recyclable material RM 1.7 mil rejected; b. greenery with no details rejected; c. IN claims differ entirely from CVA scored

Amount Claimed vs Amount Qualified

High professionalism expected from consultants:-

- ▶ Not eligible to claim for green cost if Completion & Verification Assessment (CVA) results is not scored (i.e. green cost can only be awarded if at least 1 point is achieved for that criteria)
- ▶ Example: double glazing and sun-shading is not claimable under EE1 if declared OTTV is not achieved
- ▶ Basic specifications which would be required for original design or commercial intent of the project are not green cost e.g. “sound insulation layers to cavity wall” was discovered to be at ballroom or “special roof insulation” under EQ was to Cineplex roof.
- ▶ E.g. additional water filtration is not extra green cost as it is a basic requirement of the rain harvesting system

Amount Claimed vs Amount Qualified

High professionalism expected from consultants:-

- ▶ Always remember to deduct reasonable base cost specifications compatible with original design concept
- ▶ Always ensure completeness of base cost, e.g. for a full system, should also include manholes and other accessories, etc. and not selectively only a few items.
- ▶ The revised specification should be comparable and within the equivalent range quality and grade of the base specification except it is a green selection
- ▶ Follow BQ and contract rates as far as possible.
- ▶ Assessors will use published rates for base materials if details are not submitted e.g. Nippon Vinilex emulsion vs low VOC paint

Amount Claimed vs Amount Qualified

High professionalism expected from consultants:-

- ▶ Submit maximum details for clarity e.g. “Greenery” cost rejected because there is no specific details to indicate expenditure for innovative green concept
- ▶ In absence of base design, use standard design parameter to price for base, e.g. if claiming for enlarged green area of 32% of site, it would be fair to assume 15% as base which will meet local by-laws
- ▶ No need to include cost reduction, e.g. concrete imprint converted to turf pave
- ▶ If assessors are still unable to assess the submissions for a valid green cost, they may only approve a maximum incremental cost of not more than 20%

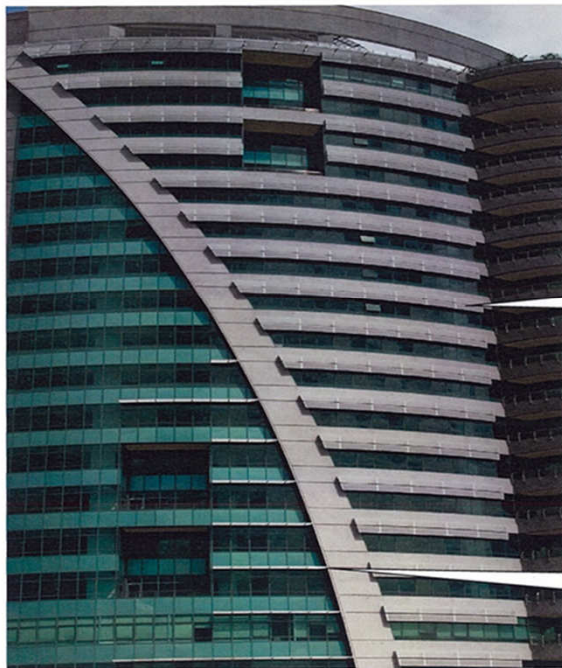
Examples of Good Submissions



1.1 Perforated Sheet Sun Shading

1.1a Horizontal Fin Sun Shading

EE - Energy Efficiency



Sun Shading using Perforated Sheet

Aluminium Horizontal Fin Sun Shading

PHOTOGRAPHS

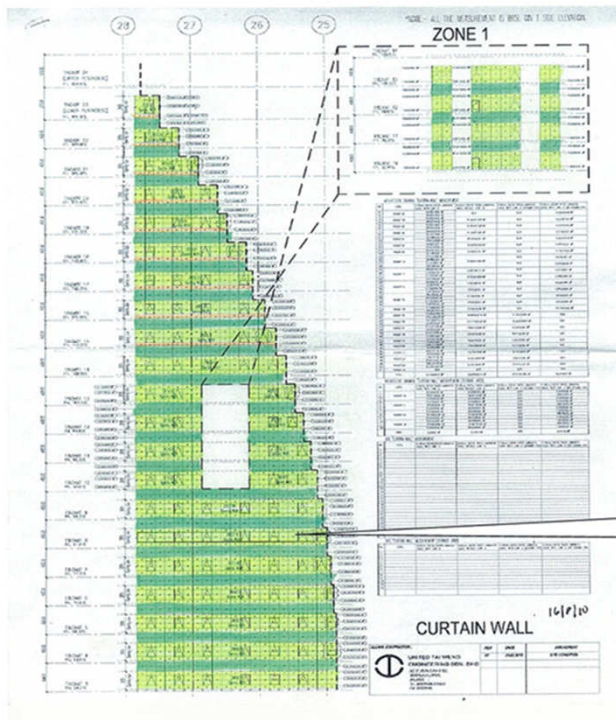
Assist assessors to identify types and location of sun-shading so that quantities can be easily checked

Examples of Good Submissions



EE - Energy Efficiency

1.2 Laminated Low-e Glass



9.38mm thick
Green Tinted
Laminated Low-e
Glass

PHOTOGRAPHS

Assist assessors to identify glazing types immediately

Examples of Good Submissions



PHOTOGRAPHS

3.2 Aluminium Grilles at External Facade
3.3 Stainless Steel Planter Box



Stainless Steel Planter Box

Aluminium Grilles



Aluminium Grilles @ External Facade



Stainless Steel Planter Box


Assessor understood immediately why “planter box” is a green cost

Examples of Good Submissions

EE - Energy Efficiency

PHOTOGRAPHS

1.2 VSD for Chiller Plant
1.2a VSD for Cooling Tower
1.2b VSD for AHU



Photographic evidence of variable speed drive

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Examples of Good Submissions

Supporting Documents to Appendix A3



2.4 Low VOC Painting

EQ – Environmental Quality



Our Ref: OD/Q/BU C/OB1/0309/10
 BANDAR UTAMA CITY SDN BHD
 NO 1, PERSIARAN BANDRA UTAMA
 BANDAR UTAMA, 47800 PJ
 ATTN: MR YAP / MISS AGNES LOONG

Dear Sir/madam,

Re: QUOTATION FOR PAINTING WORKS
 PROJECT: OBI DAMANSARA UTAMA

Our company would like to extend our appreciation to your interest for giving us the opportunity to quote for the above mentioned subject. We are pleased to append herewith our quotation for your kind consideration as follow:-

SUPPLY & LAY – PAINTING WORKS – O.D PAINTS

DESCRIPTION	UNIT RATE	
	STANDARD GRADE	Low VOC
EXTERNAL WALL		
- ONE COAT OF O.D. SHIELD SEALER		
- TWO COATS OF O.D. ULTRA SHIELD	RM 6.00/M2	RM7.50 /M2
INTERNAL WALL		
- ONE UNDERCOAT		
- TWO COATS OD LITE EMULSION	RM2.00/M2	RM3.50 / M2
- ONE UNDERCOAT		
- TWO COATS OD SILK PREMIUM GRADE	RM3.00/M2	RM4.30 /M2
WOOD & METAL WORKS		
- ONE COAT OF WOOD UNDERCOAT		
- TWO COATS OF O.D.LUX GLOSS PAINTS		
GENERAL SURFACE		
>100 MM GIRTH	RM6.00/M2	-
>100MM GIRTH > 200MM GIRTH	RM1.40/MR	-
>200MM GIRTH >300MM GIRTH	RM2.00/MR	-
>200MM GIRTH >300MM GIRTH	RM2.50/MR	-

1. Quotation document

Examples of Good Submissions



2.4 Low VOC Painting

EQ – Environmental Quality

Supporting Documents to Appendix A3

BANDAR UTAMA CITY SDN. BHD. (Company No. 29132346)
1, Persiaran Bandar Utama, (Jalan for Office) 47100 Petaling Jaya, Selangor Darul Ehsan, Malaysia. Tel: 603-77112079 Fax: 603-77112078

Our ref.: BUC/CB/1/A/09/07/0039

Date: 15th July 2009

O.D.PAINTS SDN BHD
No. 41 & 43, Jalan TPP 5/17,
Taman Perindustrian Puchong,
Seksyen 5, 47100 Puchong,
Selangor Darul Ehsan.

DUPLICATE

Attention: Mr. Yu Keng Seng

Dear Sir,

CADANGAN PEMBANGUNAN 1 BLOK PEJABAT 25 TINGKAT SERTA 6 TINGKAT BAWAH TANAH DI ATAS SEBAHAGIAN LOT PT 17977 (PT 37849), BANDAR UTAMA, PJU 6, BANDAR UTAMA DAMANSARA, MUKIM SUNGAI BULOH, DAERAH PETALING UNTUK TETUAN BANDAR UTAMA CITY CORPORATION SDN BHD.

Letter of Award / Acceptance for Internal Painting Works

Further to your quotation submission and subsequent negotiation with your good self, we "Bandar Utama City Sdn Bhd" (hereinafter referred to as "the Employer") are pleased to confirm the above works to your company "O.D.Paints Sdn Bhd" (hereinafter referred to as "the Contractor") to "Supply, Prepare and Apply of Painting Work to Basement" (hereinafter referred to as "the Works") subject to the following terms and conditions: -

1) The Site

The Site shall mean the land or building located at Lot PT17977, Bandar Utama, PJU 6, Bandar Utama Damansara, Mukim Sungai Buloh, Daerah Petaling, Selangor Darul Ehsan.

The Contractor is deemed to have visited the Site to ascertain the extent of the Works involve, the nature of the working conditions, site's full restriction (if any), obstruction and contingencies. In the event the Contractor fails to comply with this condition, no claim for loss and expenses shall be made against the Employer.

2) Scope of Works

The scope of works shall include but not limited to supply, prepare and apply of paints as per specification and/or drawings issued, supervision, profit and attendance, multiple handling works, taxes (if any) under the statutory regulation, working in narrow space and/or various height conditions, erection and dismantling of scaffolding (scaffold by BUC). The Contractor is required to coordinate with site crew with other contractors during the whole contract period and the sequence and timing of applying each coating and layers accordingly.

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FIRST NATIONWIDE GROUP

2. Letter of Award

Examples of Good Submissions



EQ – Environmental Quality

2.4 Low VOC Painting

Supporting Documents to Appendix A3

OFFICE BLOCK 1

Item	Description	Unit	Rate	Contract		Workdone Quantity			Amount (RM)
				Quantity	Amount	Previous	Current	Total	
<i>(All Quantities Are Provisional Only)</i>									
Ground Floor - Hospital									
a. Supply, prepare and apply approved "OD Lin" (OD 1185) zero VOC Emulsion Paint internally to staircase and lift lobby. Surface to be painted to Architect's specification as described in:-									
1	Walls & Columns above 1200mm - Internal wall for Staircase and Lift Good Lobby	m ²	2.00	4,909	9,618.00	3,947.25	561.80	4,809.00	9,618.00
2	Internal Walls & Columns - Lift and MSE Room	m ²	2.00	21,154	42,310.00	19,039.63	2,115.50	21,155.00	42,310.00
3	Office Area - Toilet Corridor (area without tiles)	m ²	2.00	25,224	50,448.00	22,761.69	2,922.40	25,224.00	50,448.00
4	Staircase - Skirt of base	m ²	2.00	1,300	2,600.00	960.03	240.00	1,200.00	2,400.00
5	Skirt of base	m ²	2.00	411	822.00	344.83	86.20	431.00	862.00
6	Skirt of base of Staircase	m ²	2.00	373	746.00	298.45	74.60	373.00	746.00
7	Skirt of open rising staircase	m ²	2.00	160	320.00	132.00	33.00	165.00	330.00
				51,025	+ 612 = 51,637 m²				
8	Supply, prepare and apply approved "OD Lin" (OD 1185) zero VOC Emulsion Paint internally to staircase and lift lobby. Surface to be painted to Architect's specification as described in:-								
1	Fibrous Plaster Ceiling	m ²	1.80	9,100	17,290.00	7,280.00	1,920.00	9,100.00	17,290.00
2	Reinforced Cement Board Ceiling "Vapourbar"	m ²	1.50	6,381	12,120.00	5,104.80	1,276.20	6,381.00	12,120.00
Total Amount Off:-					141,583.00				141,583.00

OFFICE BLOCK 1

Item	Description	Unit	Rate	Qty	Workdone %			Amount
					Previous	Current	Total	
<i>(All Quantities Are Provisional Only)</i>								
1	Supply, prepare and apply approved "OD Lin" (OD 1185) zero VOC Emulsion Paint internally to staircase and lift lobby. Surface to be painted to Architect's specification as described in:-	m ²	6.00	8,383	100%	0%	100%	50,298.00
2	Supply tiles in kitchen at Restaurant & in Lobby - Ground Lift Lobby as per Architect's drawings	m ²	8.90	394.00	0%	100%	100%	3,500.00
3	Supply, prepare and apply approved "OD Lin" (OD 1185) zero VOC Emulsion Paint internally to staircase and lift lobby. Surface to be painted to Architect's specification as described in:-	m ²	2.00	612.00	0%	100%	100%	1,224.00
4	Supply, prepare and apply approved "OD Lin" (OD 1185) zero VOC Emulsion Paint internally to staircase and lift lobby. Surface to be painted to Architect's specification as described in:-	m ²	6.00	1,933	100%	0%	100%	11,600.00
5	Supply labour to fix touch up and repair on wall to the following: (Blockwork accordingly) with a MSE repair	m ²	2.00	6,547	0%	100%	100%	13,094.00
6	Blockwork	m ²	2.00	518	0%	100%	100%	1,036.00
7	Walls & columns above 1200mm - Internal wall for staircase and lift lobby	m ²	2.00	1,443	0%	100%	100%	2,886.00
8	Walls & columns at 1200mm - Internal wall for staircase and lift lobby	m ²	6.00	962	0%	100%	100%	5,772.00
9	Fibrous Plaster Ceiling	m ²	1.90	2,738	0%	100%	100%	5,182.00
10	Reinforced Cement Board Ceiling	m ²	1.90	1,514	0%	100%	100%	2,876.00
Total Amount (RM) :-								91,876.00

3. Final accounts figures

GBI Tax Allowance

**What are the claimable non-M&E items ?
(including Innovation items)**



GBI GREEN COST NON M&E ITEMS

Item	Criteria NRNC	Criteria RNC	Green Item	Ref Base Cost	Remarks
Building Envelope					
1	EE1, EE5	EE1, EE3	Double Glazing Unit	Tempered Glass/ Laminated Glass	Claimable on the difference of glass rates. Base shall be of thickness and type of glass which complies with the performance of similar window/curtain walling size
2	EE1, EE5	EE1, EE3	Insulated Glazing Unit	Tempered Glass	
3	EE1, EE5, SM12	EE1, EE3	Solar Reflective Paint	External Emulsion Paint, i.e weathershield, weatherbond	Claimable on the difference of paint rates
4	EE1, EE5	EE1, EE3	Wall Insulation	NIL	100% Claimable
5	EE1, EE5	EE1, EE3	Cavity Brickwall	115mm thick brickwall	Claimable on the difference of the 2 systems
6	EE1, EE5, EQ8, EQ9	EE1, EE3	Horizontal Sunshading	NIL	Claimable if the sunshading effectively reduces the OTTV or used as light tray to control glare. Not claimable if is merely for aesthetic e.g. air-cond louvres.
7	EE1, EE5	EE1, EE3	Vertical Louvres – aluminium	NIL	
8	EE1, EE5	EE1, EE3	Vertical Landscape Green Wall	NIL	100% Claimable

GREEN COST CAN ONLY BE CLAIMED WHEN CREDIT SCORE IS AWARDED FOR THAT CRITERIA



GBI GREEN COST NON M&E ITEMS

Item	Criteria NRNC	Criteria RNC	Green Item	Ref Base Cost	Remarks
Roofing					
1	EE1	EE1, EE3	Roof Insulation	NIL	100% Claimable
2	EE1, SM12	EE1, EE3	Solar Reflective Coating to r.c roof	Epoxy coating to r.c. roof	Claimable on the difference of the 2 systems
3	EE1, EE5	EE1, EE3	Double roof, metal & r.c flat roof	RC flat roof c/w waterproofing & epoxy	Claimable on the difference of the 2 systems
4	EE1, SM12	EE1, EE3, SM4	Green roof	NIL	100% Claimable



GBI GREEN COST NON M&E ITEMS

Item	Criteria NRNC	Criteria RNC	Green Item	Ref Base Cost	Remarks
Sustainable Site Planning and Management					
1	SM2	SM2	Rehabilitation of brownfield sites	Nil	100% Claimable
2	SM4 SM12	SM11, 12 & 13	Extra green provisions, Green roof, SRI coating, heat island effect	Original green provisions which do not create heat island effect	Claimable only if extra provisions. Not if water body is part of original aesthetics
3	SM5	SM4	Separate bins for recycling,	Conventional all purpose bins	Claimable for additional cost for construction pollution control
4	SM8	SM9	Access to public transport, Dedicated cycling path	Nil unless it is an upgrade on existing design	100% Claimable if totally additional
5	SM9		Green vehicle parking bays	Nil	100% Claimable on fittings and finishes

GBI GREEN COST NON M&E ITEMS

Item	Criteria NRNC	Criteria RNC	Green Item	Ref Base Cost	Remarks
Indoor Environmental Quality – VOCs					
1	EQ4	EQ5	Low VOC Paint	Emulsion Paint	Claimable on the difference of paint rates (negligible nowadays)
2	EQ4	EQ5	Low VOC Carpet	Carpet with no certification	Claimable on the difference of carpet rates. The base carpet range needs to be comparable in quality, range, size and thickness.



GBI GREEN COST NON M&E ITEMS

Item	Criteria NRNC	Criteria RNC	Green Item	Ref Base Cost	Remarks
Material & Resources					
1	MR4	EQ5, EQ6, MR6	Timber Flooring - Bamboo	Red Balau	Claimable on the difference of timber rates. The base timber range needs to be comparable in quality, range, size and thickness.
2	MR4	EQ5, EQ6, MR6	Engineering Timber Flooring	Red Balau	
3	MR2, MR4	EQ5, EQ6, MR6	Polypropylene Outdoor Deck	Chengal	
4	MR2, MR4	EQ5, EQ6, MR6	Polyethylene Outdoor Deck	Chengal	
5	MR4	EQ5, EQ6, MR6	Sustainable Timber Veneer Door + Sustainable Timber Door Frames	Veneer Door + Door Frames	
IBS					
1	IN1	IN1	Internal Drywall Partition	Brickwall	Claimable on the difference of the 2 systems



GBI GREEN COST NON M&E ITEMS

Item	Criteria NRNC	Criteria RNC	Green Item	Ref Base Cost	Remarks
Water Efficiency					
1	WE4	WE4	Dual Flush WC	Single Flush WC	Claimable on the difference of the 2 WCs based on the same brand and same design range
2	WE4	WE4	Sink Mixer with WELS tick	Sink Mixer with no WELS tick	Claimable on the difference of the 2 fittings based on the same brand and same design range
3	WE5		Sub-meter to monitor major water usage system	NIL	100% Claimable (for additional meters scoring GBI criteria)
4	WE1, WE3	WE1, WE3	Rainwater harvesting for landscape usage	NIL	100% Claimable



GBI GREEN COST NON M&E ITEMS

Item	Criteria NRNC	Criteria RNC	Green Item	Ref Base Cost	Remarks
1	IN1	IN1	Central vacuum system	Nil	100% claimable
2	IN1	IN1	Charging points for electric cars	Nil	100% claimable
3	IN1	IN1	Compost bins	Nil	100% claimable
4	IN1	IN1	Active facade	Nil	100% claimable
5	IN1	IN1	Enlarged green area	Min area meeting local by-laws	Claim incremental cost
6	IN1	IN1	Waterless urinal	Conventional urinals	Claim incremental cost

GBI Green Cost Items

NOTES:

- **This list is not exhaustive and serves as a guide for items not included.**
- Clarifications are welcome before submission.
- **Green Cost submission can only be done after CVA stage.**

60% of main equipment/assets in GITA Project must be recognised and registered under the MyHIJAU Mark **OR** have product certification recognised and accepted by MGTC such as Green Pages Malaysia (GPM)



Malaysia Green Building Confederation

GBI PRO SERIES 2017

Question & Answer