



Perfecting the Air

For a Healthier, Greener & Smarter Tomorrow



IEQ



ECO



IoT

*The Press-fitting
without tools*

MECHF*it*

Patented



IEQ



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AGENDA

Cocoon One Push Press Fittings With
Multilayer (PEX-AL-PEX) Pipes

1

Product Key Features

2

Installation

3

Product Mechanism

4

Performance

5

System Comparison

6

Buildability & Green Mark

7

Product Summary

8

Project References

PRODUCT KEY FEATURES



Fig.#230



Fig.#232



Fig.#233



Fig.#231



Fig.#234



Fig.#235

ixPress

MECHF.it

KEY FEATURES



Simple

- No skills needed
- No special tools needed



Unique

- Clamp Ring Method
- Audio and visual Check
- Flexible and adjustable



Reliable

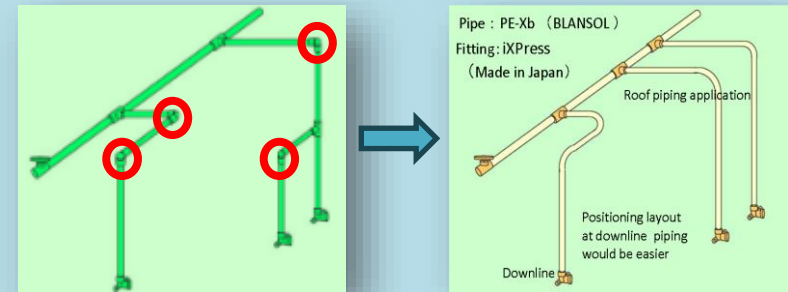
- 100% leakage free
- No corrosion, scaling and algae growth

KEY BENEFITS

Easy to Handle



Less fittings, Less Wastage



Increase Productivity



Eliminate Poor Workmanship





INSTALLATION

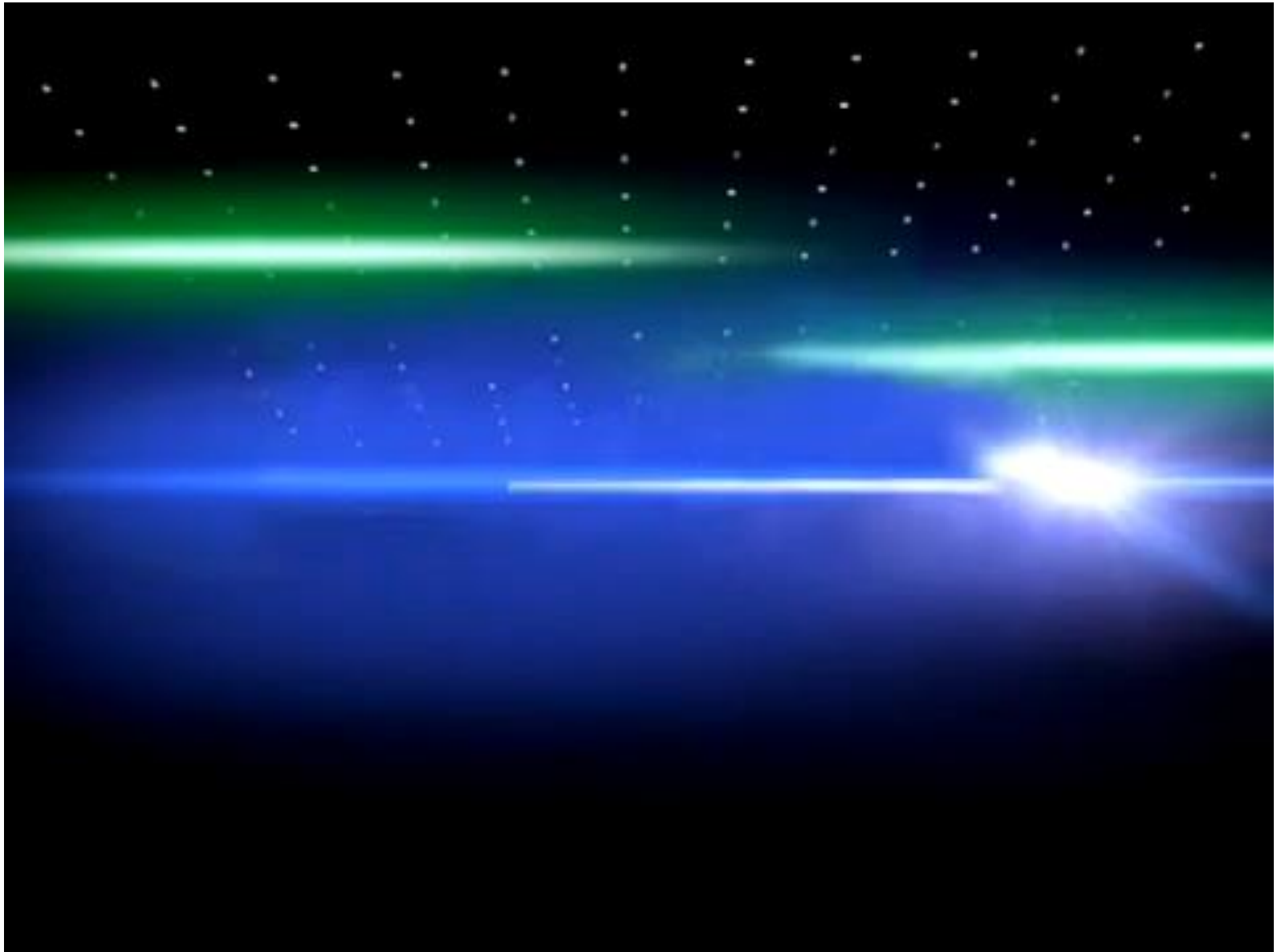
PROCEDURES

1
Cut
The Pipe

2
Calibrate
The Pipe

3
Insert
The Pipe Into
The Fittings



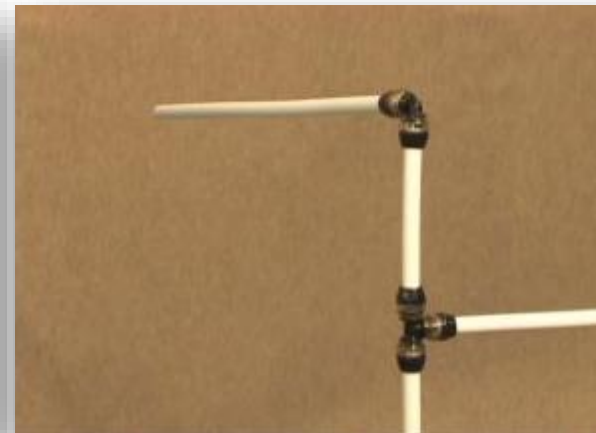


ENSURE PERFECT JOINT

Retainer jumper pin BEFORE snapping



Retainer jumper pin falls off AFTER snapping sound

ADJUSTMENTS**90 Degrees Bends****Overbridge Bends****Rotatable**

CONCEALED INSTALLATION

INSTALLATION ABOVE FALSE CEILING



INSTALLATION FOR PREFABRICATED TOILET

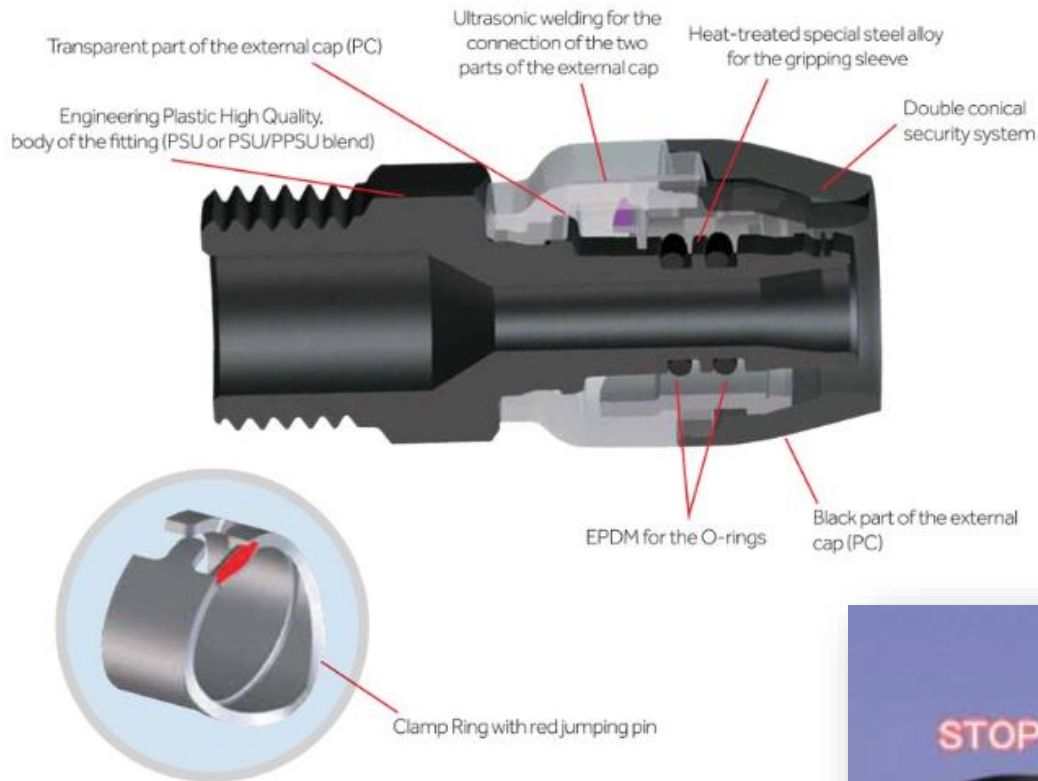


BCA Academy

Punggol Drive Primary School



PRODUCT MECHANISM



Permanent Squeeze
of the Pipe

Long Life
Sealing Against the Pipe Creep

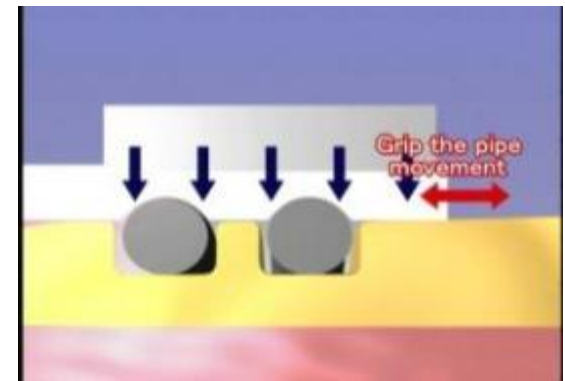
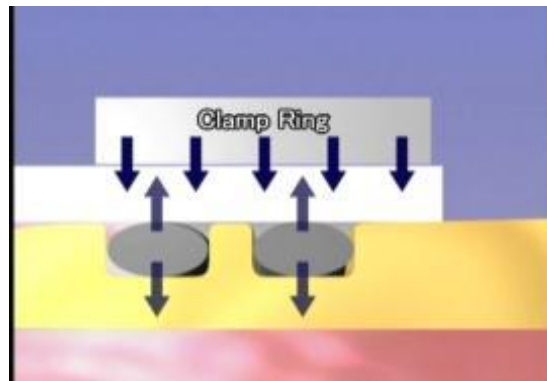
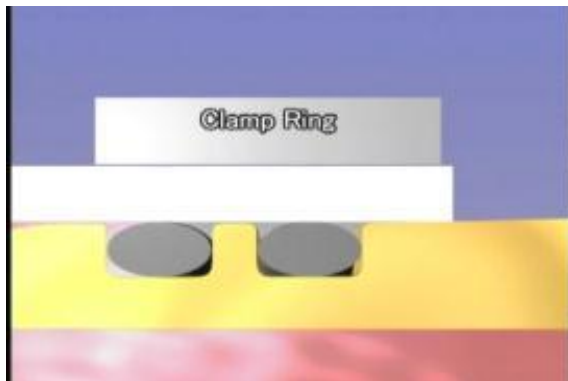


PIPE CREEP SOLUTION

**CREEP
DEFORMATION**

**CLAMP
SQUEEZE**

**STOP PIPE
MOVEMENT**

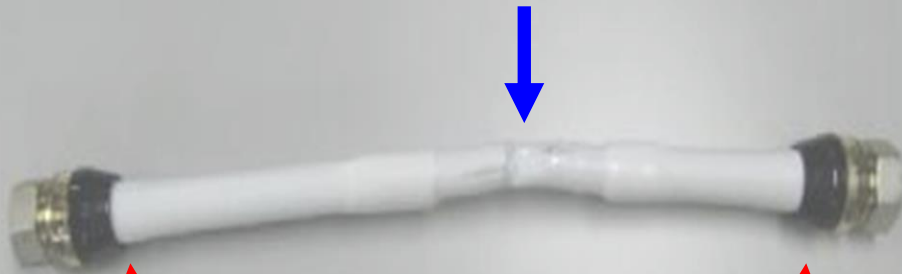




PERFORMANCE

HIGH PERFORMANCE

ML Pipe Gives Way at First



Connection Points are Still Healthy

Sample failed at the center of the pipe, no damage on fittings

Pull Out Test

The pipes failed at approx. **5 kN**

Burst Test

The pipes failed at approx. **60 bar**

Test Report No. S08MEC04638/CLC
dated 28 AUG 2008

SYSTEM COMPARISON



MECHFIT



PP-R



**Stainless
Steel
(Press
Type)**



Tools



MECHFIT

- No Special Tools required

PP-R

- Welding Machine



Stainless Steel (Press Type)

- Press Tool



Preparation



MECHFIT

- Cutter
- Calibrator

PP-R

- Power Supply
- Heat Up Welding Machine

Stainless Steel (Press Type)

- Power Supply
- Charge Up Hand Tools

Installation



MECHFIT

- Cut
- Calibrate
- Insert

PP-R

- Set-up Machine
- Pre-heating of Machine
- Weld & Install
- Hold to Cool Down

Stainless Steel (Press Type)

- Assembly of Tools
- Insert Fitting
- Press Fitting Using Press Tool



Inspection



MECHFIT

- Audio – Snap Sound
- Appearance - Red Jump Pin Off

PP-R

- Impossible

Stainless Steel (Press Type)

- Appearance – Fittings Deformation



MECHFIT

- Pipes in coiled form, easy to handle, saves wastage
- Fittings are rotatable after installation, easier for on-site interface connection
- Reduce the use of Elbow Fittings

PP-R

- Pipes come in 5-6 m length – difficult to handle on site → more wastages
- Fittings are fixed and rigid after installation
- Elbow Fittings are needed for every turn

Stainless Steel (Press Type)

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BUILDABILITY AND GREEN MARK

BUILDABILITY SCORE



- Building designs / method are required to comply with a min. buildability score.
- Our flexible piping system adds to the buildability score.

Table 2 Architectural, Mechanical, Electrical & Plumbing System (AMEP)

ARCHITECTURAL, MECHANICAL, ELECTRICAL & PLUMBING SYSTEM (AMEP) (MAXIMUM 45 POINTS)		
Construction Technologies / Methods	Allocated Points	Computation Method
1. Architectural		
(a) No screeding on floors (not stipulated in tender drawing): (i) To immediately receive tile/stone finish using thin bed adhesive (ii) Carpet or raised floor finishing	5	$\frac{\text{Floor Area with no screeding} \times \text{Allocated points}}{\text{Total Area (excluding wet areas}^1\text{)}}$
(b) RC walls left unplastered to receive (not stipulated in tender drawing): (i) Tile/Stone (ii) Wallpaper (iii) Paint (skim coat allowed)	5	$\frac{\text{RC Wall}^* \text{ Length with no plastering} \times \text{Allocated points}}{\text{Total RC Wall Length}^*}$ <i>* Refers to RC walls with finishing including tile/ stone, wallpaper & paint</i>
(c) Use of spray painting	3	Points are given if usage $\geq$ 50% of total internal painted area
2. Mechanical, Electrical & Plumbing (MEP)		
(a) Pipe Works (i) Pre-insulated chilled water pipes	3	Points are given if usage $\geq$ 80% of total pipe length
(b) Air-Con Ducting (i) Prefab ducts OR (ii) Prefab & Pre-insulated ducts	3 6	Points are given if usage $\geq$ 80% of total duct length
(c) Use of flexible pipes ² for domestic water system	3	Points are given if usage $\geq$ 80% of total pipe length
(d) Use of mechanical joints for M&E piping	2	Points are given if usage $\geq$ 80% of total pipe length

BUILDABILITY SCORE

Table 3 Design for Manufacturing and Assembly Technologies (DfMA)
– N Value (continued)

DESIGN FOR MANUFACTURING AND ASSEMBLY TECHNOLOGIES (DFMA)		UNIT OF COVERAGE	N VALUE	
			PERCENTAGE OF COVERAGE ⁽¹⁾	
			≥ 65% TO < 80%	≥ 80%
A4. 3 rd Class				
Prefabricated Components				
A4.1	Integrated precast components comprising at least 2 elements (e.g. multi-tier column/wall, double bay façade wall)	no.		1.50
A4.2	Precast external wall with cast-in windows	no.		2.00
A4.3	Mechanical connection for precast column/precast wall (horizontal joints)	no.		0.50
A4.4	Mechanical connection for precast beam joints	no.		0.50
A4.5	Mechanical connection for precast wall (vertical joints)	no.		0.50
A4.6	Prefabricated wall/facade with onsite dry applied finishes	length		1.00
A4.7	Prefabricated slab with onsite dry applied finishes	area		1.00
A4.8	Prefabricated ceiling with onsite dry applied finishes	area		1.00
A4.9	Prefabricated and pre-insulated duct for air-conditioning system ⁽⁵⁾ <i>(Mandatory for all projects)</i>	area ⁽⁶⁾	0.5	1.00
A4.10	Flexible sprinkler dropper ⁽⁵⁾	no.		1.00
A4.11	Flexible water pipes ⁽⁵⁾	no.		1.00
A4.12	Common M&E bracket (at least 3 M&E services) ⁽⁵⁾	length		1.00

(Source: Code of Practice of Buildability, April 2017 for publication from *Building and Construction Authority*, P.51)

PRODUCT SUMMARY

1

Long Life Span

- **Smooth surface** with PEX pipe.
- **Less Residue** made up in the pipe

2

Maintenance Flexibility

- PEX Pipe are more **user friendly**.
- No machine require.
- **No Fire Risk** while performing new and extension works.
- Varies of fittings to **allow future extension and change of layout**.

3

Ease of Material Shifting

- **Convenience** for Take Delivery/Shifting

4

Enhance Performance

- Reduce Bend, **Reduce Leakage**.
- Flexible Pipe allow minor offset especially good in precast works. **Less hacking/diversion** works

PROJECT REFERENCES

PRIZE PROJECTS

The Crest Condominium



OLA Ex. Condominium



Volari Condominium



BCA Academy



South beach Marriott Hotel



Hundred Trees



OTHER TRACK RECORDS

S/N	Project Name	Developer	Consultant	Contractor	Year
1	Marina Bay Sand Hotel (Fan Coil Unit)	Marina Bay Sands	MBS	Shin Nipon Air Technologies	2010
2	Sub-way Restaurants @ Singapore Flyer			MPB Services Pte Ltd	2010
3	Sub-way Restaurants @ Raffles City			MPB Services Pte Ltd	2010
4	Sub-way Restaurants @ East Point Mall			MPB Services Pte Ltd	2010
5	Sub-way Restaurants @ SMU			MPB Services Pte Ltd	2010
6	Sub-way Restaurants @ Bukit Panjang			MPB Services Pte Ltd	2010
7	Sub-way Restaurants @ Resort World			MPB Services Pte Ltd	2010
8	Chills Restaurant @ Resort World			MPB Services Pte Ltd	2010
9	Epson Singapore	Epson Singapore			2010
10	Detached house @ Swanage Road			Yong Chow Construction	2010
11	Viva Fit			MPB Services Pte Ltd	2011
12	Saladstop Fusionpolis			MPB Services Pte Ltd	2011
13	Mustafa Project			MPB Services Pte Ltd	2011
14	Sub-way Restaurants @ NUS			MPB Services Pte Ltd	2011
15	Doodle @ Oasis			MPB Services Pte Ltd	2011
16	Restaurant @ Shaw Tower Orchard			MPB Services Pte Ltd	2011
17	Chippy @ Plaza Singapore			MPB Services Pte Ltd	2011
18	Detached house @ Jalan Menarong			Aya Fuji Engineering Pte Ltd	2011
19	A&A Works for apartment @ Bayshare park			Yong Chow Construction	2011
20	Semi-detached huse @ Eng Kong Terrace			B-Construction	2011
21	Tanah Merah Country Club	TMCC		Yong Ta Engineering	2011
22	3 Storey Terrace House @ Soo Chow Garden			ASL Engineering Pte Ltd	2011
23	Hundred Tree Condominium	City Development Limited	Squiremech Pte Ltd	Tiong Seng Construction Markpoint Engineering Pte Ltd	2010
24	Volari Condominium	City Development Limited	Squiremech Pte Ltd	Tiong Seng Construction Markpoint Engineering Pte Ltd	2011
25	Ferrel Residences	Premium Land Pte Ltd	United Project Consultant Pte Ltd	Chang Hua Construction Markpoint Engineering Pte Ltd	2011
26	Sub-way Restaurants @ Changi City Point			MPB Services Pte Ltd	2012
27	Chillis - Jcube			MPB Services Pte Ltd	2012
28	Sub-way Restaurants @ Millenia Walk			MPB Services Pte Ltd	2012
29	Sub-way Restaurants @ One North MRT			MPB Services Pte Ltd	2012
30	Saladstop @ Citylink Mall			MPB Services Pte Ltd	2012

OTHER TRACK RECORDS

S/N	Project Name	Developer	Consultant	Contractor	Year
30	Saladstop @ Citylink Mall			MPB Services Pte Ltd	2012
31	Sub-way Restaurants @ Jurong Safra			MPB Services Pte Ltd	2012
32	Chilis Restaurants @ Central Square			MPB Services Pte Ltd	2012
33	Sub-way Restaurants @ Central Square			MPB Services Pte Ltd	2012
34	Sub-way Restaurants @ Changi Village			MPB Services Pte Ltd	2012
35	Factory @ Tuas South Ave 7		Squiremech Pte Ltd	Obayashi Corporation Magnificent Seven Corporation Pte Ltd	2012
36	Factory @ 33 Gul Drive			ASL Engineering Pte Ltd	2012
37	Industrial Development @ 13 Benol Sector	FMC Technologies Singapore Pte Ltd		Sim Lian Construction Pte Ltd B-Construction	2012
38	Halliburton Factory @ Tuas			Magnificent Seven Corporation Pte Ltd	2012
39	Terraced House @ Puri Unak			Nam Fang Co. Pte Ltd	2012
40	Detached House @ Swettenham Road		Herrizal Diltri Consultants	Nam Fang Co. Pte Ltd	2013
41	Tomlinson Height Condominium	Hotel Properties Ltd	Squiremech Pte Ltd / Alpha Consulting Engineers Pte Ltd	Chang Hua Construction Markpoint Engineering Pte Ltd	2012
42	Condominium @ Meyer Road	Hong Leong Holdings Ltd	Meinhardt Pte Ltd	Hup Soon Construction Pte Ltd Nam Fang Co Pte Ltd	2012
43	Glyndebourne Condominium	City Development Limited	Parsons Brinckerhoff Pte Ltd	Tiong Seng Construction Markpoint Engineering Pte Ltd	2012
44	The Palette Condominium	City Development Limited	Squiremech Pte Ltd	Acness King Corporation	2012
45	Condominium @ Lorong Limau		Elead Associates Pte Ltd	AM M&E Pte Ltd	2014
46	Lucky Tower Condominium	City Development Limited	Beca Center	Hyundai Engineering/Industrial Plumbing	2014
47	New BCA Academy	BCA	Squiremech Pte Ltd	Progressive Builder/ Ideal Plumbing	2014
48	Punggol Drive Primary School	MOE	Surbana International Consultants	Kwan Yong Constriction	2015
	Punggol Drive Primary School	MOE	PTP Engineers Pte Ltd	Kingston Ssanitary & Plumbing	2015
49	Macdonalds @ Gardens by the bay	Macdonalds		Hai Yong Engineering Pte Ltd	2015
50	South Beach Development	City Development Limited	Parsons Brinckerhoff Pte Ltd	Hai Yong Engineering Pte Ltd	2013
51	Fulcum Condominium		HPX Consulting Engineers	King Wan Construction Pte Ltd	2014
52	The Jewel Condominium		Squiremech Pte Ltd	King Wan Construction Pte Ltd	2014
53	Executive Condominium	SLP	Surbana International Consultants	China Construction	2015
54	Lakeview Executive Condominium	Wee Hur Development	Surbana International Consultants	Wee Hur	2015
55	Pollen & Blu Condominium	Singapore Land	United Project Consultant Pte Ltd	Chang Hua Construction Markpoint Engineering Pte Ltd	2015

OTHER TRACK RECORDS

S/N	Project Name	Developer	Consultant	Contractor	Year
56	The Crest Condominium	Wing Tai Properties	United Project Consultant Pte Ltd	Greathearth/Kingwan Construction	2015
57	Botanique @ Bartley	UOL	Alpha Engineering Consultants	China Construction	2015
58	Commonwealth Tower Condominium	Hong Leong Holdings Ltd	United Project Consultant Pte Ltd	Kimly/Nam Fang Co	2015
59	Bungalow @ 1 Astrid Hill		HFC & Associates	Sincon Engineering	2015
60	Parclife Executive Condominium	Keong Hong	United Project Consultant Pte Ltd	Hai Yong Engineering Pte Ltd	2016
61	EC @ Anchorvale	Sim Lian	Surbana International Consultants	Sim Lian / Ideal Plumbing	2016
62	Hotel 81 Upgrading @ Lor 20 Geylang	Hotel 81		Shinhan Tech Engineering	2016
63	Marymount Convent School	MOE	Surbana International Consultants	Star Universe Service Pte Ltd	2016
64	Maha Bodhi School @ Ubi	MOE	Surbana International Consultants	Kingston Sanitary & Plumbing	2016
65	Equity Plaza @ Cecil Street	GSH Holdings	Elead Associates Pte Ltd	Markpoint Engineering Pte Ltd	2016
66	Bungalow @ Windsor Park			Trade Entrepreneur Engrg Pte Ltd	2016
67	Biomass Factory @ Tuas			Builform Construction	2016
68	Factory @ Penjuru		HFC Associates	Union M&E	2017
69	NTU Upgrading of Toilet			Chen Project Pte Ltd	2017
70	Mixed Development @ Serangoon		DP Engineer	Kimly/Nam Fang Co	2018
71	SMU Teaching Block		Meinhardt Consultants	Lian Ho Lee Construction	2019
72	High Park Condominium		United Project Consultant Pte Ltd	China Construction	2017
73	Eton Condominium @ KL Malaysia	GSH Holdings	Swan & Maclaren		2019
74	Bungalow @ Butterfly Ave			Nam Fang Co. Pte Ltd	2019
75	Bungalow @ 35 Ridout Road			Nam Fang Co. Pte Ltd	2019
76	Warehouse Building @ Tuas Port		Surbana International Consultants	HPC / Kingston Sanitary & Plumbing	2019
77	Treasure Condominium	Sim Lian		Ideal Plumbing Pte Ltd	2019
78	Florence Road Condominium		United Project Consultant Pte Ltd	Kingwan Construction Pte Ltd	2019
79	Mid Town Project at Beach Road	Guoco Land	Meinhardt Pte Ltd	China Construction	2020
80	OLA EC at Anchorvale Crescent	Evia Real Estate	United Project Consultant Pte Ltd	Ideal Plumbing Pte Ltd	2020
81	Coral Bay Hotel @ Sabah Malaysia	GSH Holdings	Swan & Maclaren		2020
82	Terrace Houses @ Belgravia Green	Tong Eng Holdings	HPX Consulting Engineers	Seah Construction / Nam Fang Co.	2021
83	Bungalow @ Moonbeam Terrace			Sincon Engineering	2021
84	Temple @ Sims Ave		Ohmz & Associates	Sincon Engineering	2021



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THANK YOU